

April

BULLETIN

2021

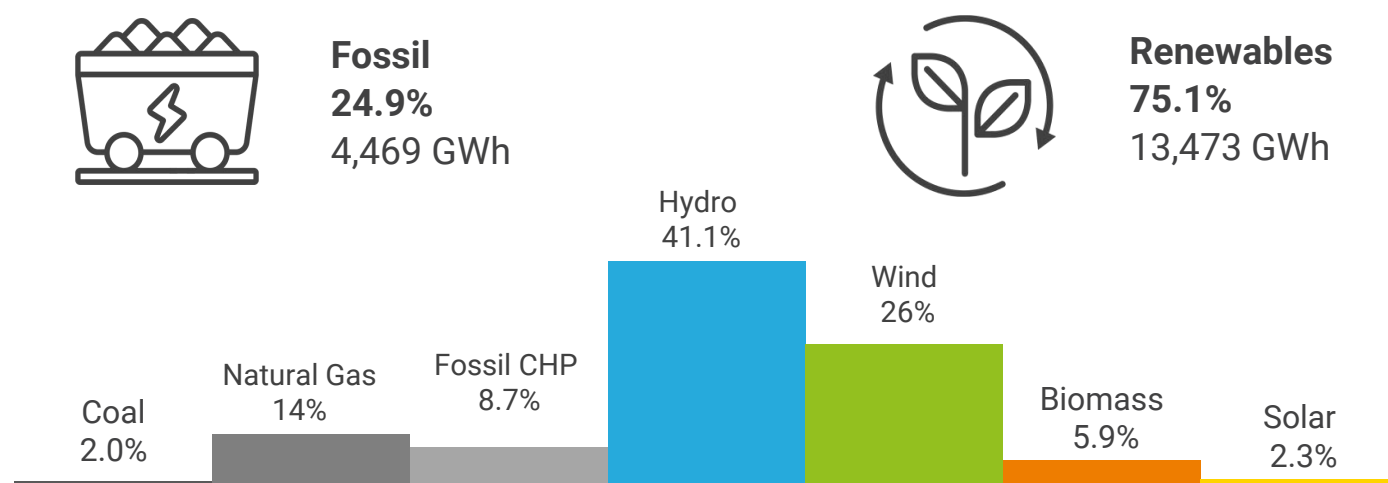
Renewable Electricity



APREN Associação de Energias Renováveis

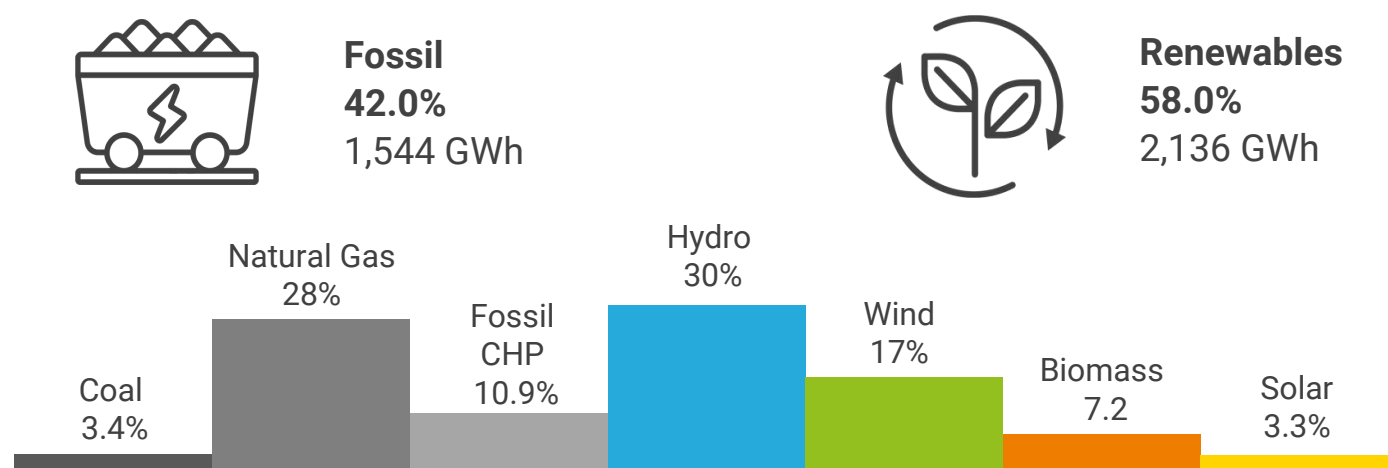
Executive Summary

Accumulated April 2021 (Jan-Apr)



Source: REN, Analysis APREN

April 2021



Source: REN, Analysis APREN

Electricity sector indicators (accumulated Jan-Apr)

 **17,942 GWh**
Generation

 **€39.4/tCO₂**
CO₂ Price

 **€49.8 /MWh**
Price MIBEL PT

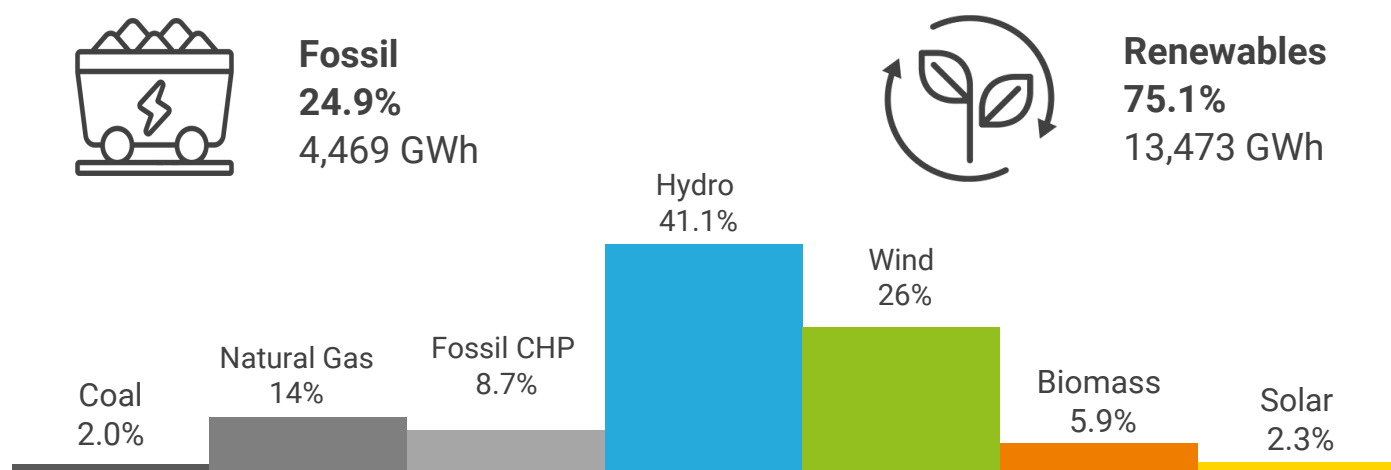
 **1.8 MtCO₂eq**
CO₂ Emissions

 **-397 GWh**
Import balance

 **100 gCO₂eq/kWh**
CO₂ specific emissions

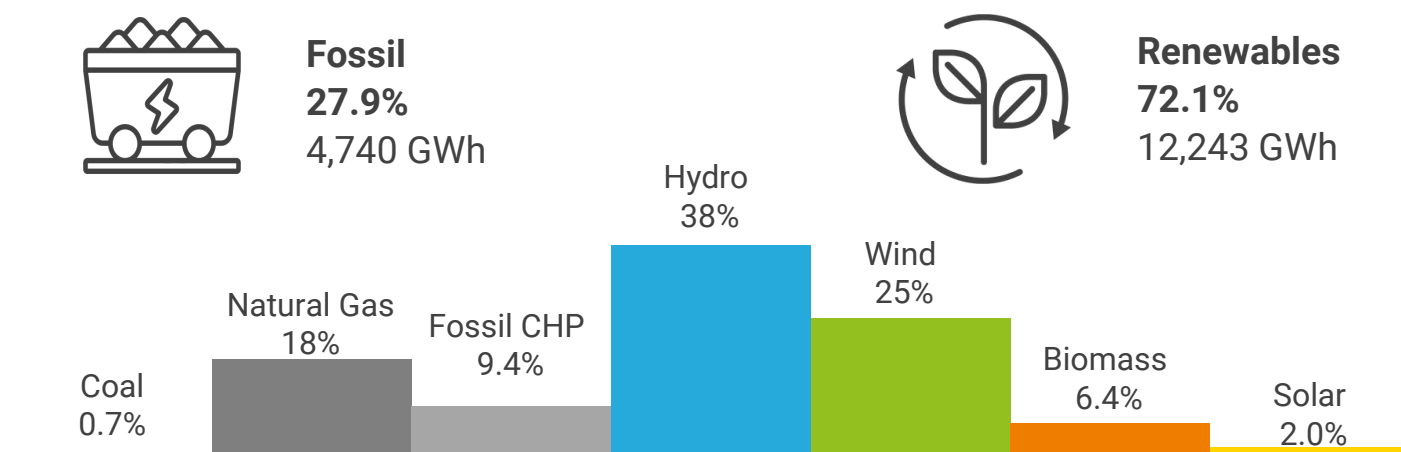
Electricity Generation: Mainland Portugal

Accumulated April 2021 (Jan-Apr)



Source: REN, Analysis APREN

Accumulated April 2020 (Jan-April)



Source: REN, Analysis APREN

Main indicators



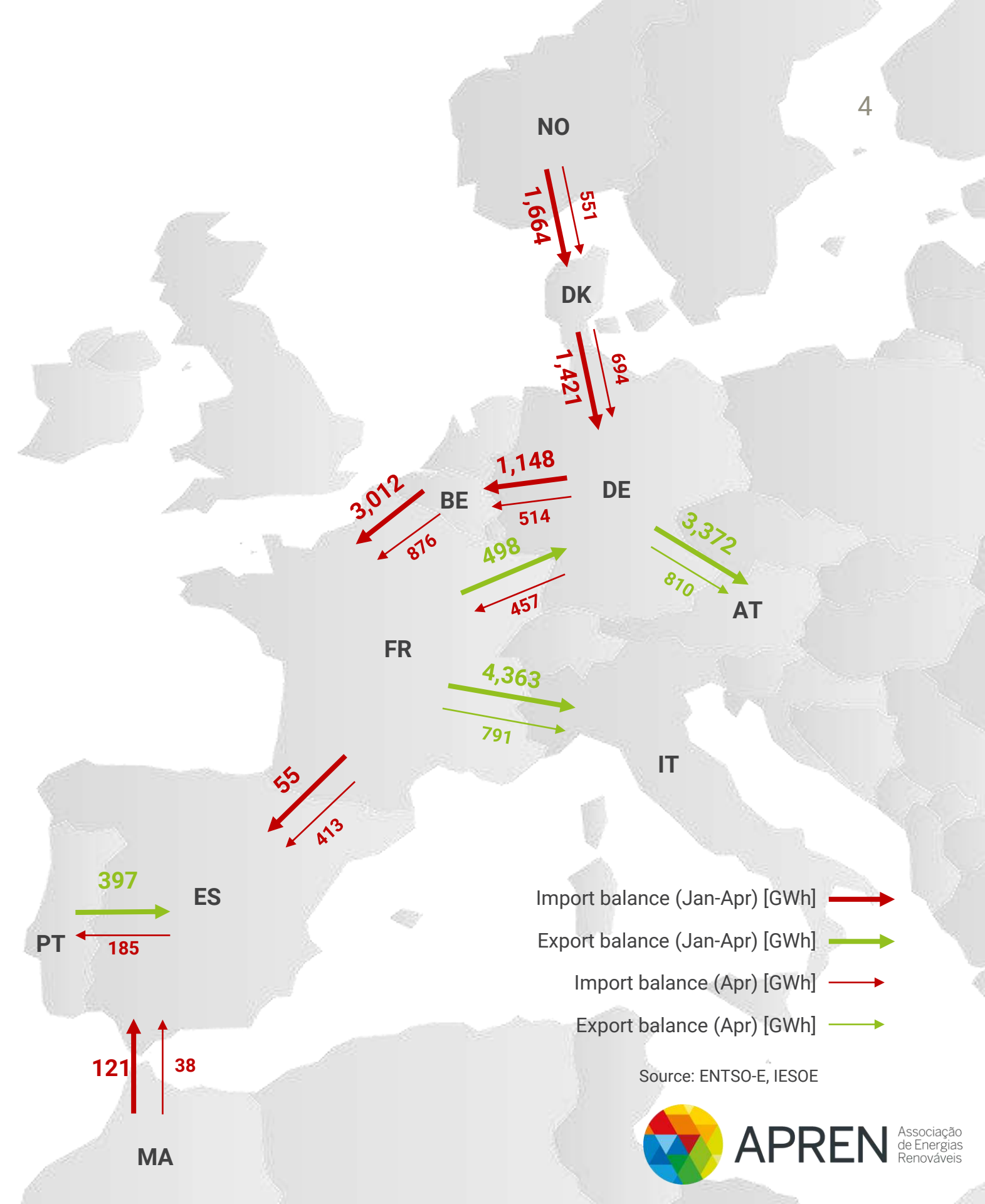
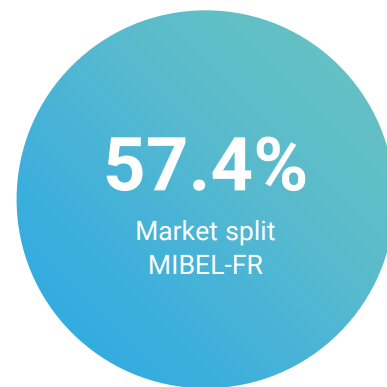
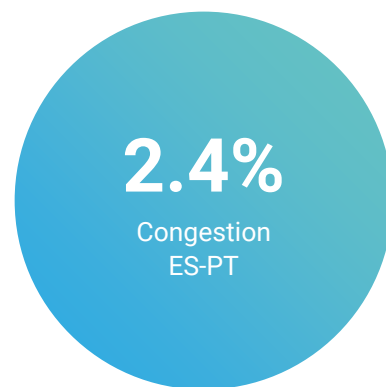
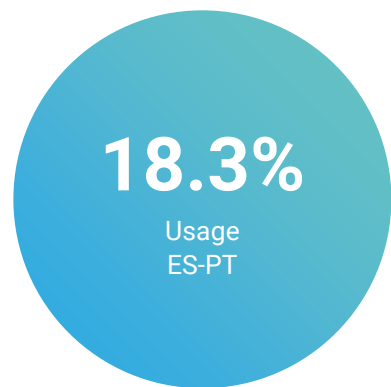
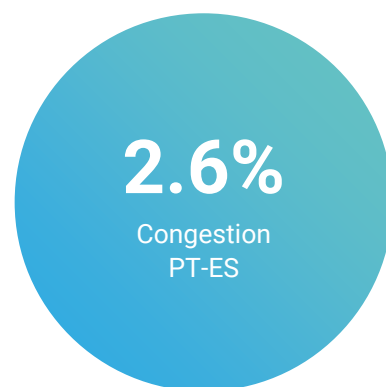
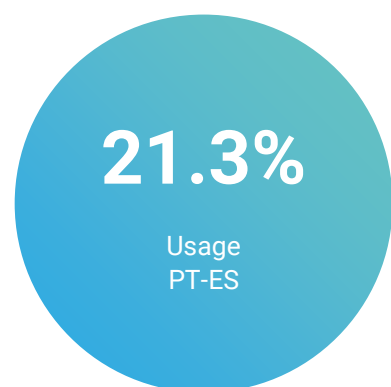
¹ «Consumption» refers to the net power generation from power plants, bearing in mind the balance of import-export.
Source: REN, Analysis APREN

Internacional trade

Between January 1 and April 30, 2021, the electricity system of Mainland Portugal registered electricity imports equivalent to 1,965 GWh and exports of 2,362 GWh, having Portugal been an exporter with a balance of -397 GWh.

Source: REN, Analysis APREN

Main interconnection indicators PT-ES



Source: ENTSO-E, IESOE

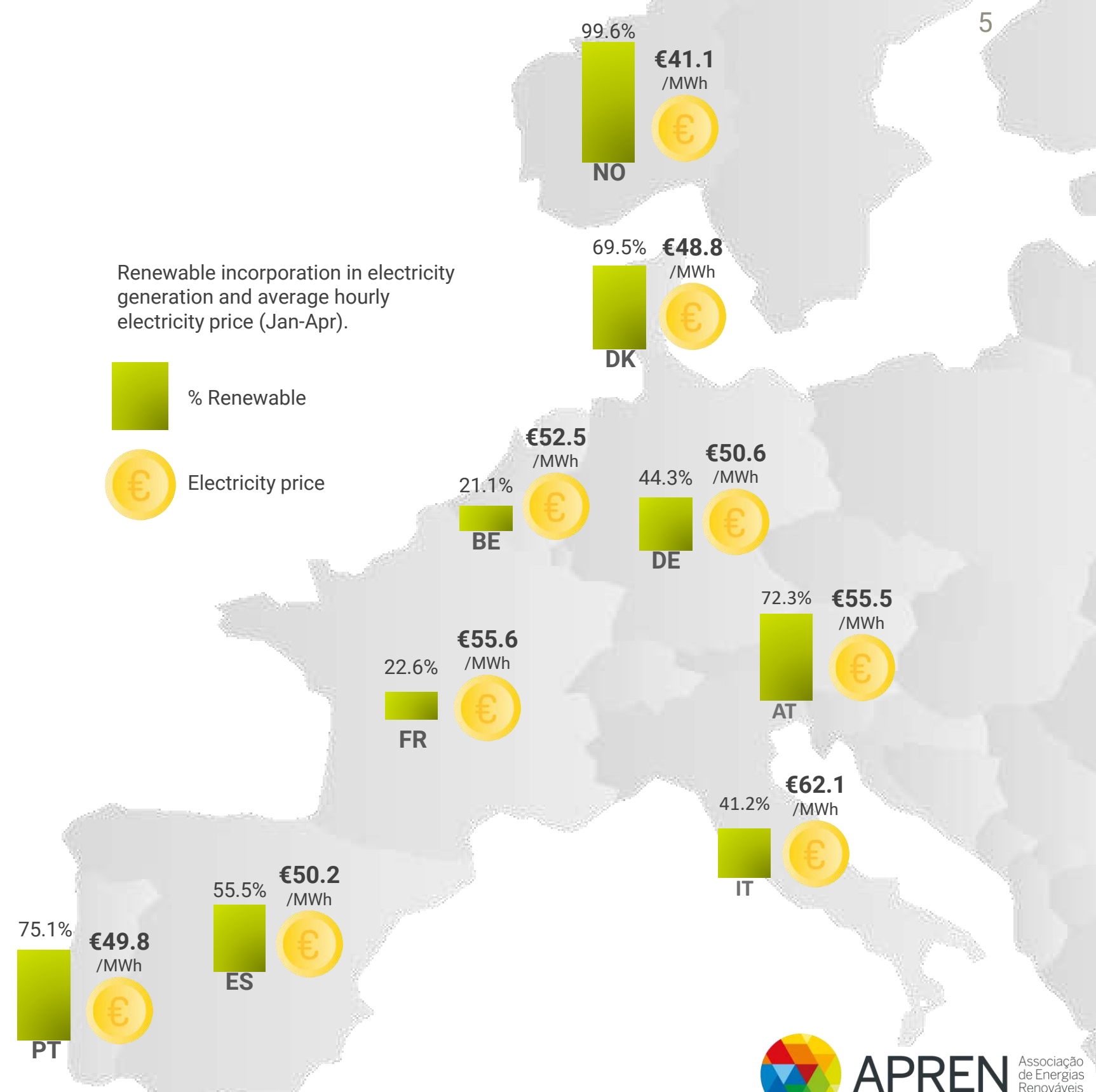
Accumulated Electricity Market Europe

Between January 1 and April 30, 2021, there was an average hourly price in the Iberian Electricity Market (MIBEL) in Portugal of €49.8/MWh², resulting of the high renewable incorporation, the third lowest price, compared to the other countries shown on the right. Portugal was the second country with the largest renewable incorporation in electricity generation, behind Norway which obtained 99.6% from RES.

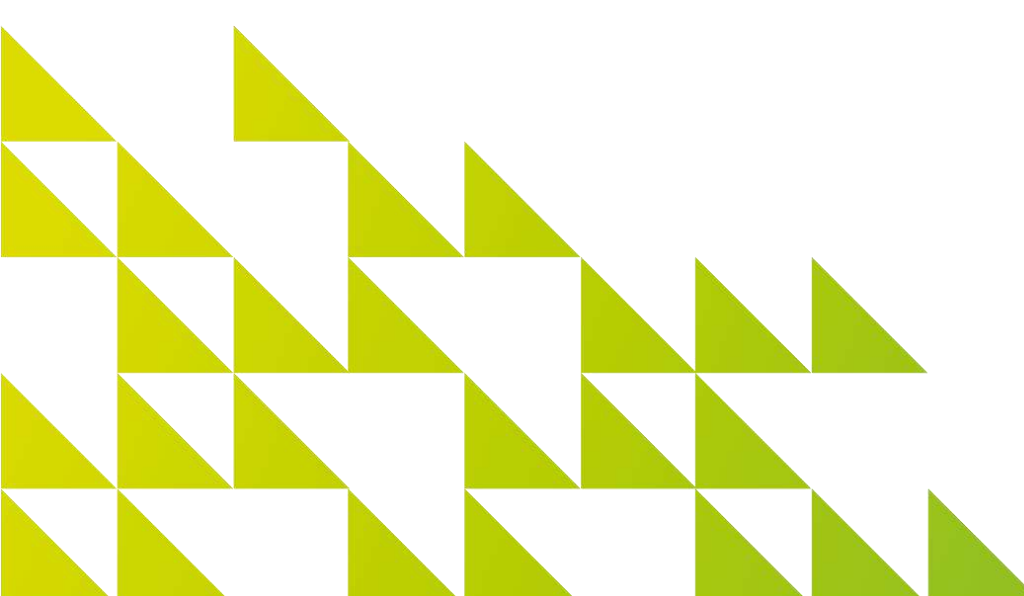
The analysis only took into account the main European markets, in order to have a representative panorama of comparison.

² Arithmetic average of hourly prices

Source: ENTSO-E, OMIE, Analysis APREN



Source: REN, Fraunhofer, REE, Terna, National Grid, ENTSO-E, Analysis APREN

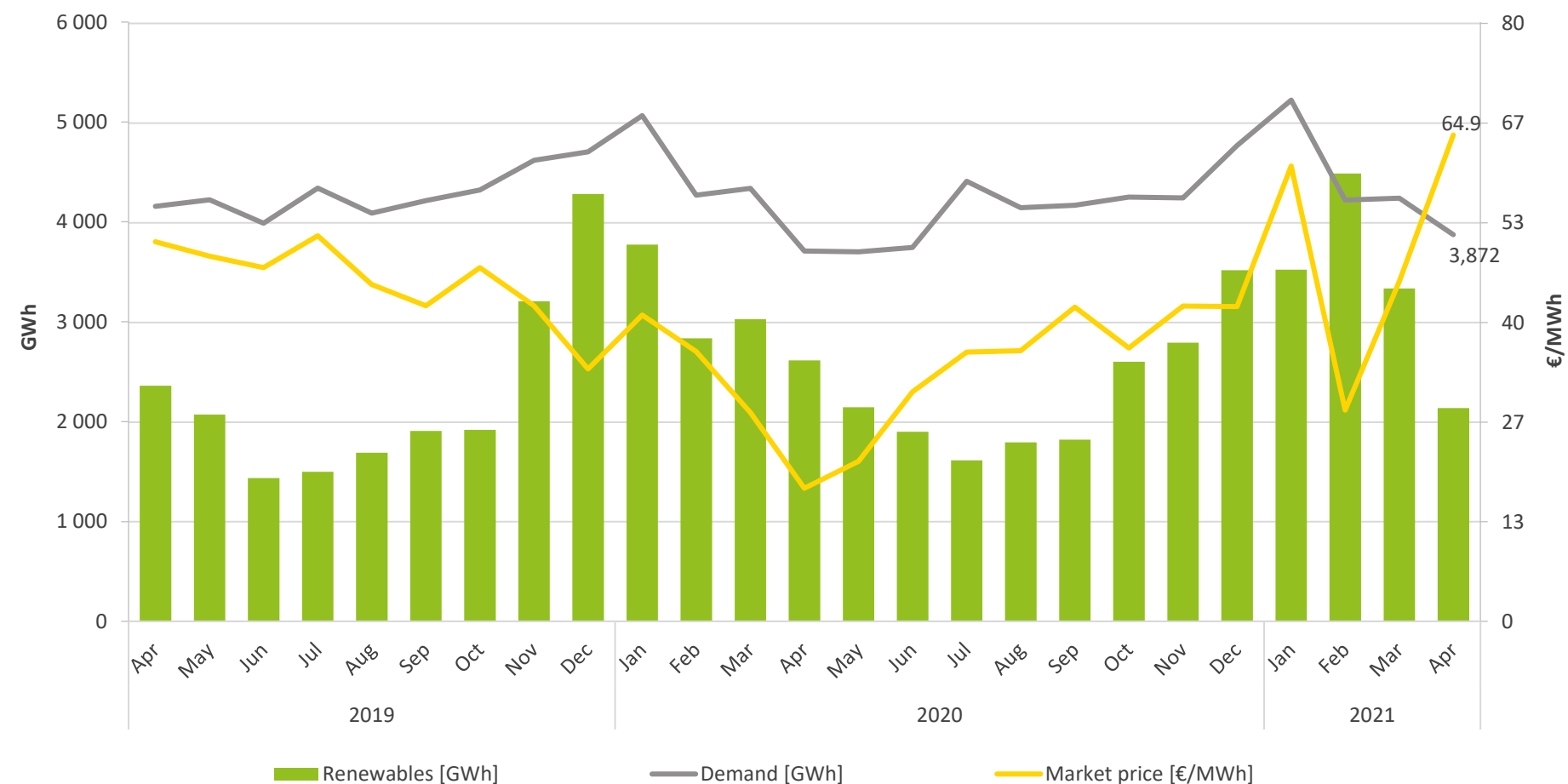


Accumulated Electricity Market - Portugal

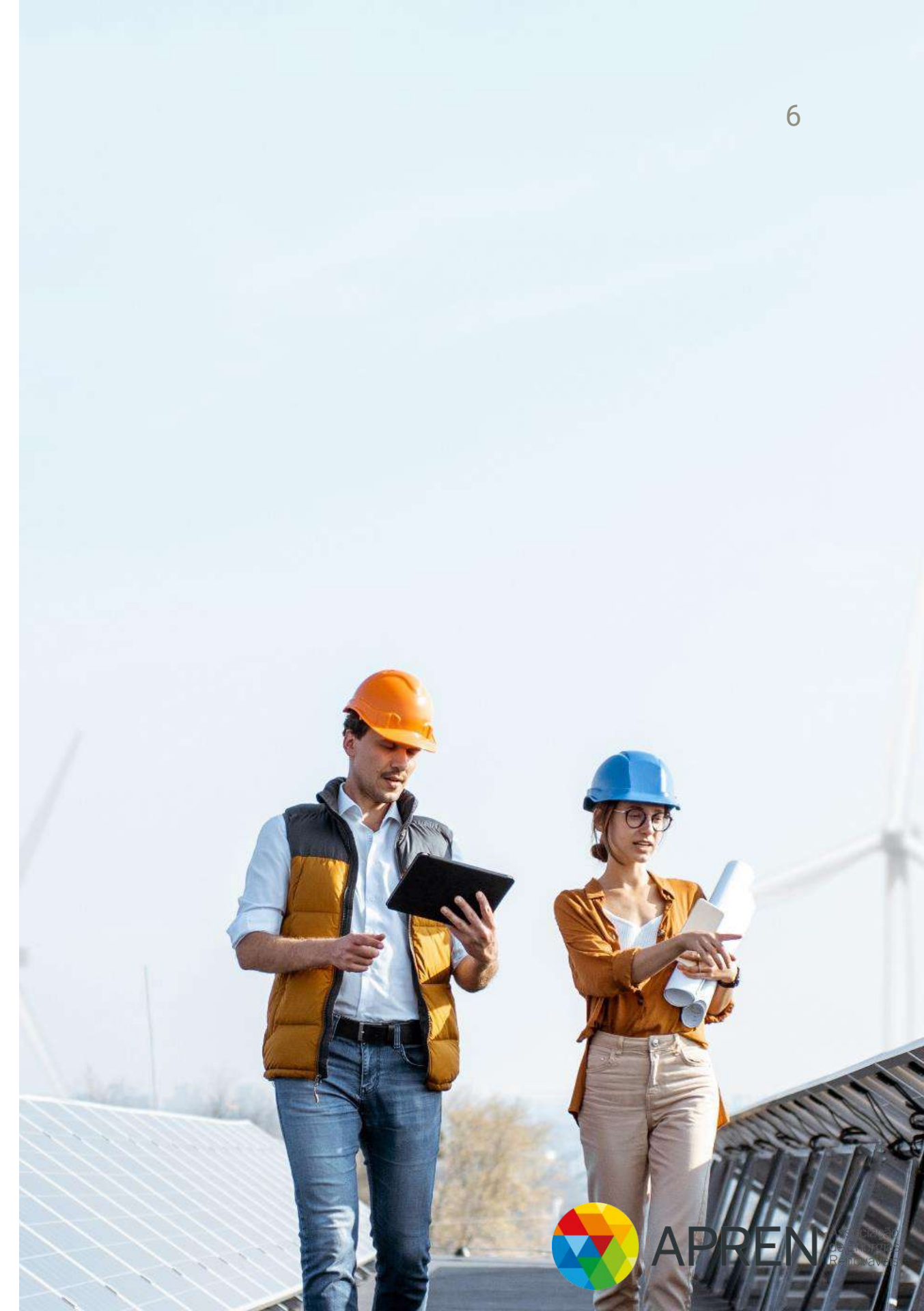
Between January 1 and April 30, 2021, the average hourly price registered at MIBEL in Portugal (€49.8/MWh²) represents an increase of 62.6 % in comparison to the same period from last year.

In the same period, 944 non-consecutive hours were recorded, in which renewable generation was sufficient to supply the electricity consumption in mainland Portugal, with an average hourly price in the MIBEL of €33.10/MWh.

² Arithmetic average of hourly prices
Source: OMIE, Analysis APREN



Market price, electricity consumption and renewable generation (April-2019 to April-2021).
Source: OMIE, REN, Analysis APREN



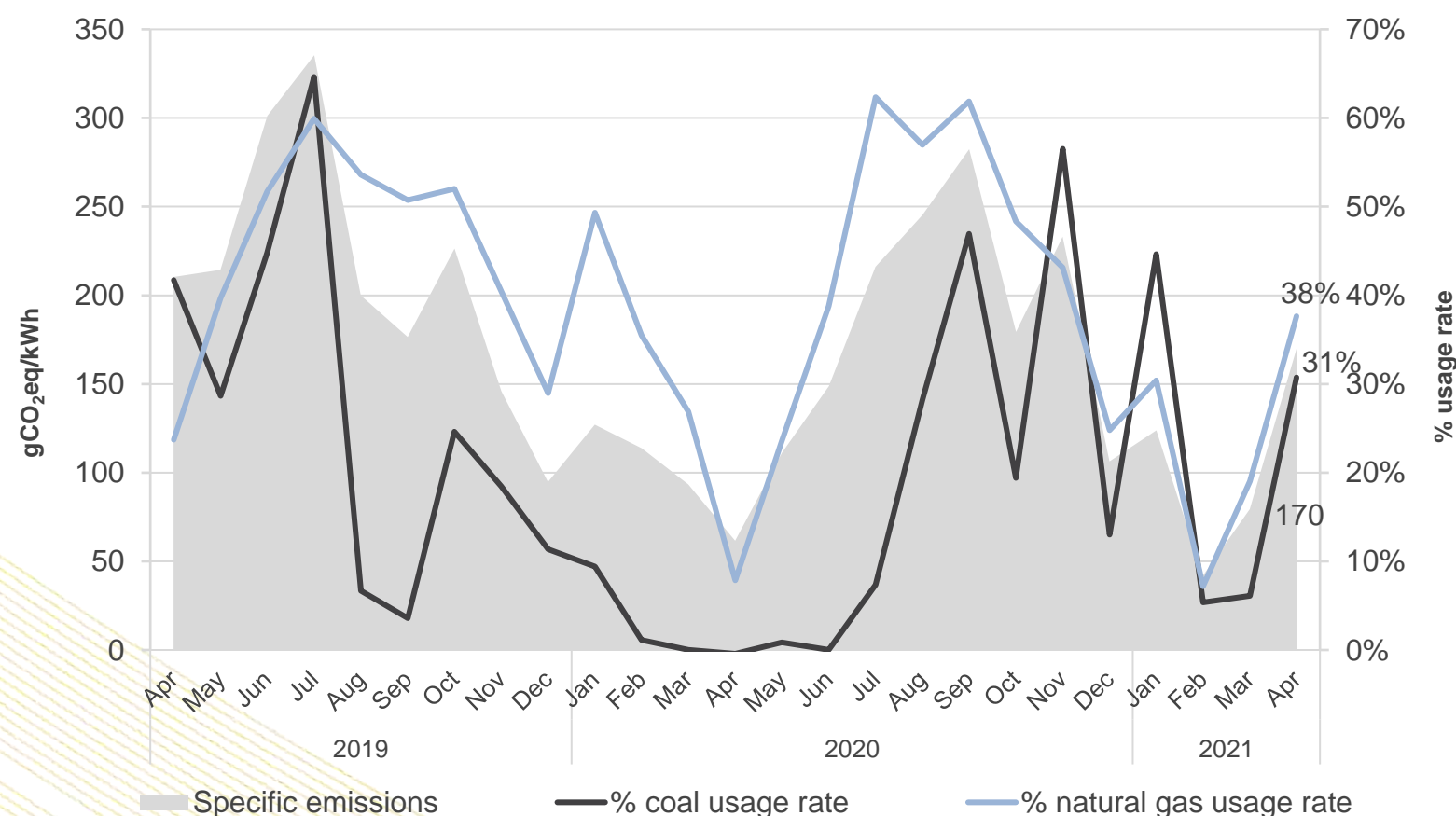
Power sector emissions

Between January 1 and April 30, 2021, specific emissions reached a total of 100 gCO₂eq/kWh, while the total emissions from the electricity generation sector reached 1.8 MtCO₂eq, of which 0.6 MtCO₂eq corresponds to the month of April.

Since the beginning of the year, the European Emissions Trading System (EU-ETS), recorded an average price of €39.4/tCO₂ which represents an increase of 78 % in comparison to the same period from 2020. The highest average price ever was recorded this month (€45.2/tCO₂), about double the price recorded in April 2020.

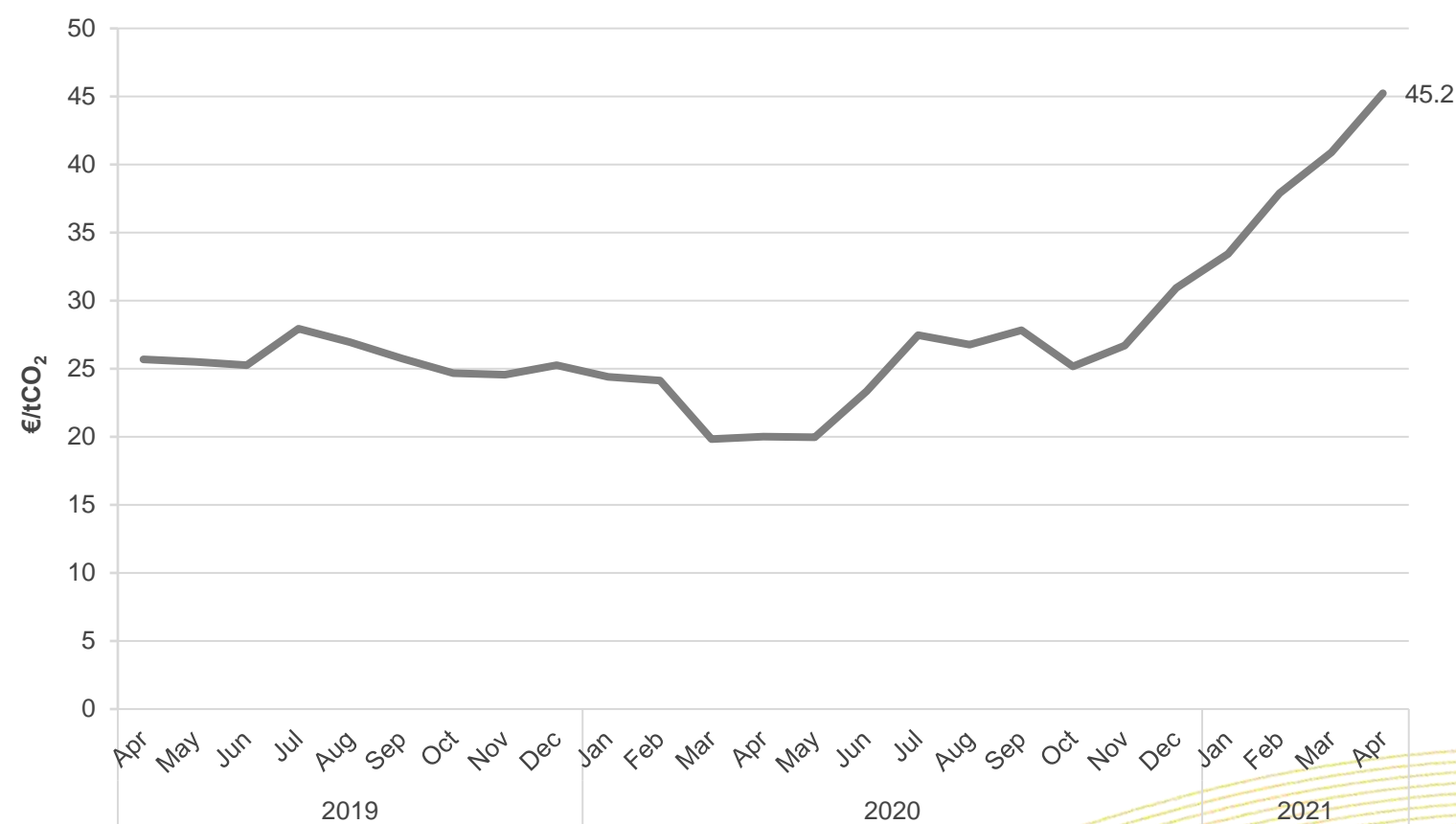


Source: SendeCO2



Specific emissions from the electricity sector in mainland Portugal, % use of coal and natural gas plant from April-2019 to April-2021.

Source: REN, DGEG, ERSE, Analysis APREN



Price of CO₂ allowances from April-2019 to April-2021. Source: SendeCO2.

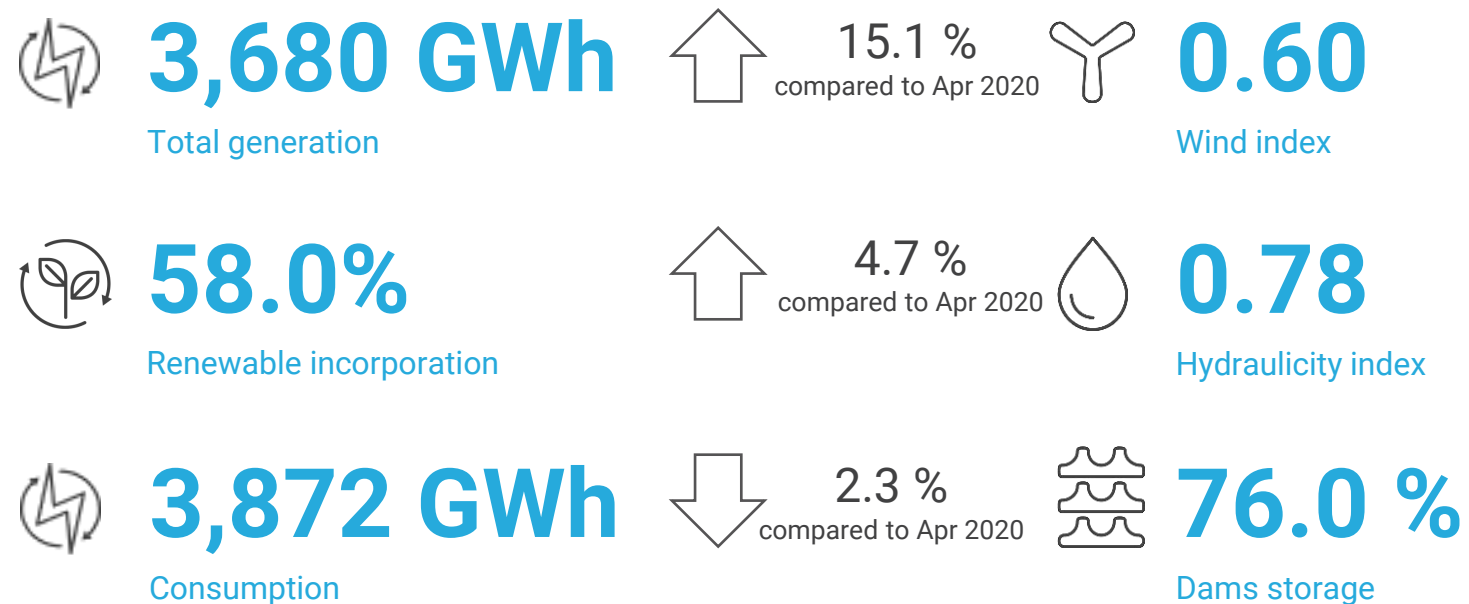
Monthly analysis in Portugal: April

In April, the generation of renewable electricity represented 58.0 % of the total of electricity generated in mainland Portugal (3,680 GWh). April recorded a total of 33 non-consecutive hours in which renewable generation was sufficient to supply electricity consumption in Mainland Portugal, with an average hourly price in the MIBEL of €71.3/MWh.

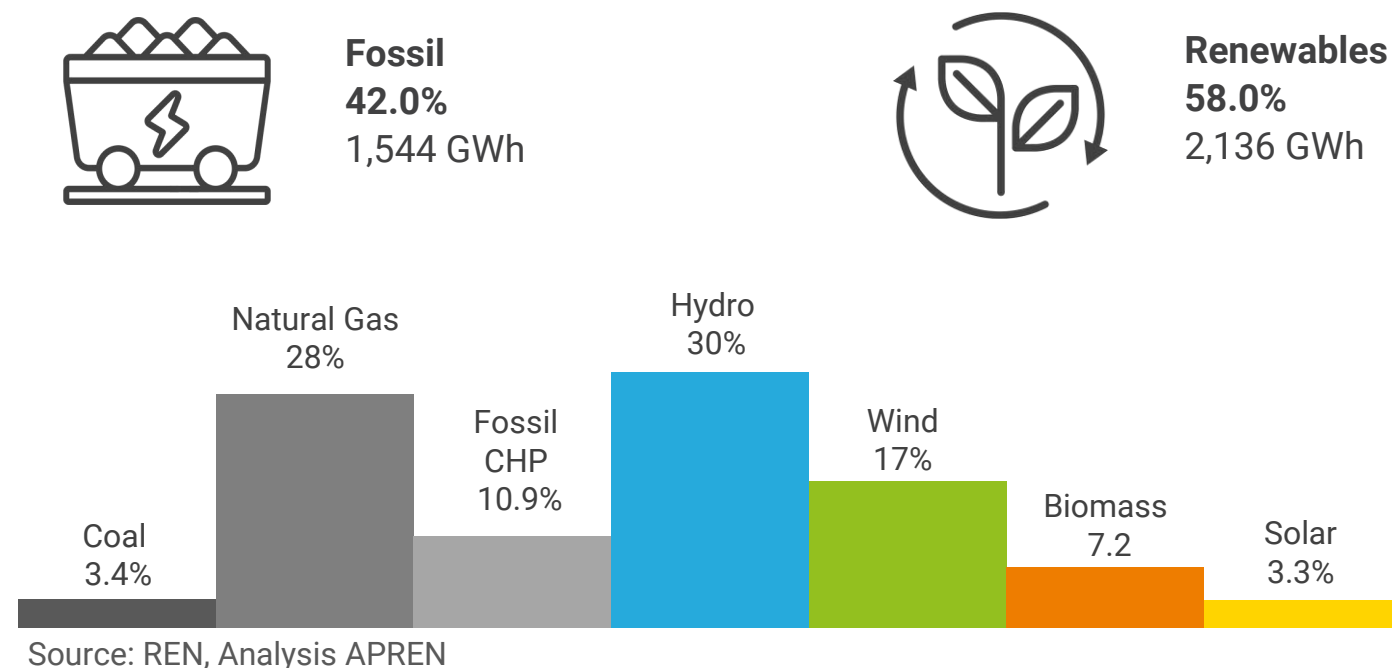
With regard to international trade in April, it should be pointed out that Mainland Portugal was an importer, registering a balance of 192 GWh, a significant reduction in comparison to the import balance registered in April 2020 (511 GWh).

Source: REN, Analysis APREN

Electricity sector indicators

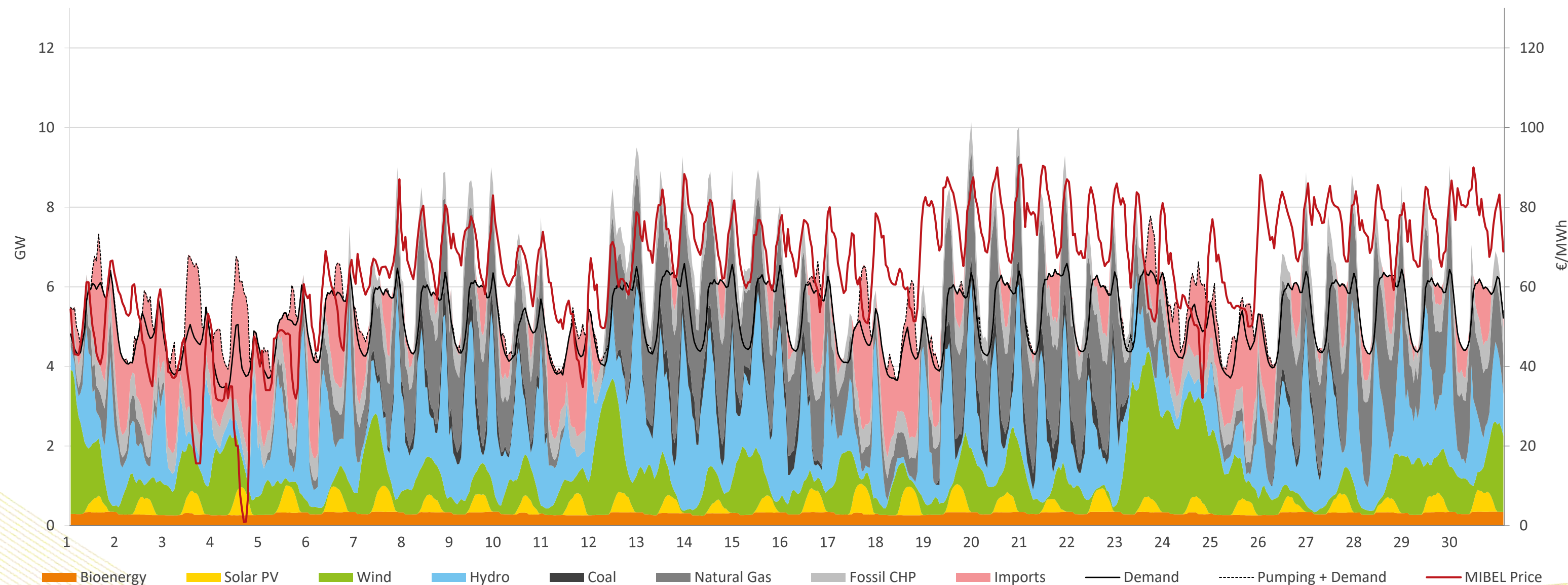


Fonte: REN, Análise APREN



Monthly analysis in Portugal: April

Load diagram from April 2021



Source: REN, Analysis APREN

Monthly market analysis: April

Electricity market in Europe

During the month of April 2021, there was an average hourly price at MIBEL in Portugal of €64.93/MWh, which represents almost four times the price from April 2020. In Portugal and Spain there was a minimum hourly price in the MIBEL of €0.90/MWh.

Of the countries shown on the right, the lowest price was €-60.0/MWh in Belgium, with Germany, Austria, Denmark and France also presenting negative hourly minimum prices. The highest maximum hourly price was recorded in France, reaching €163.77/MWh.

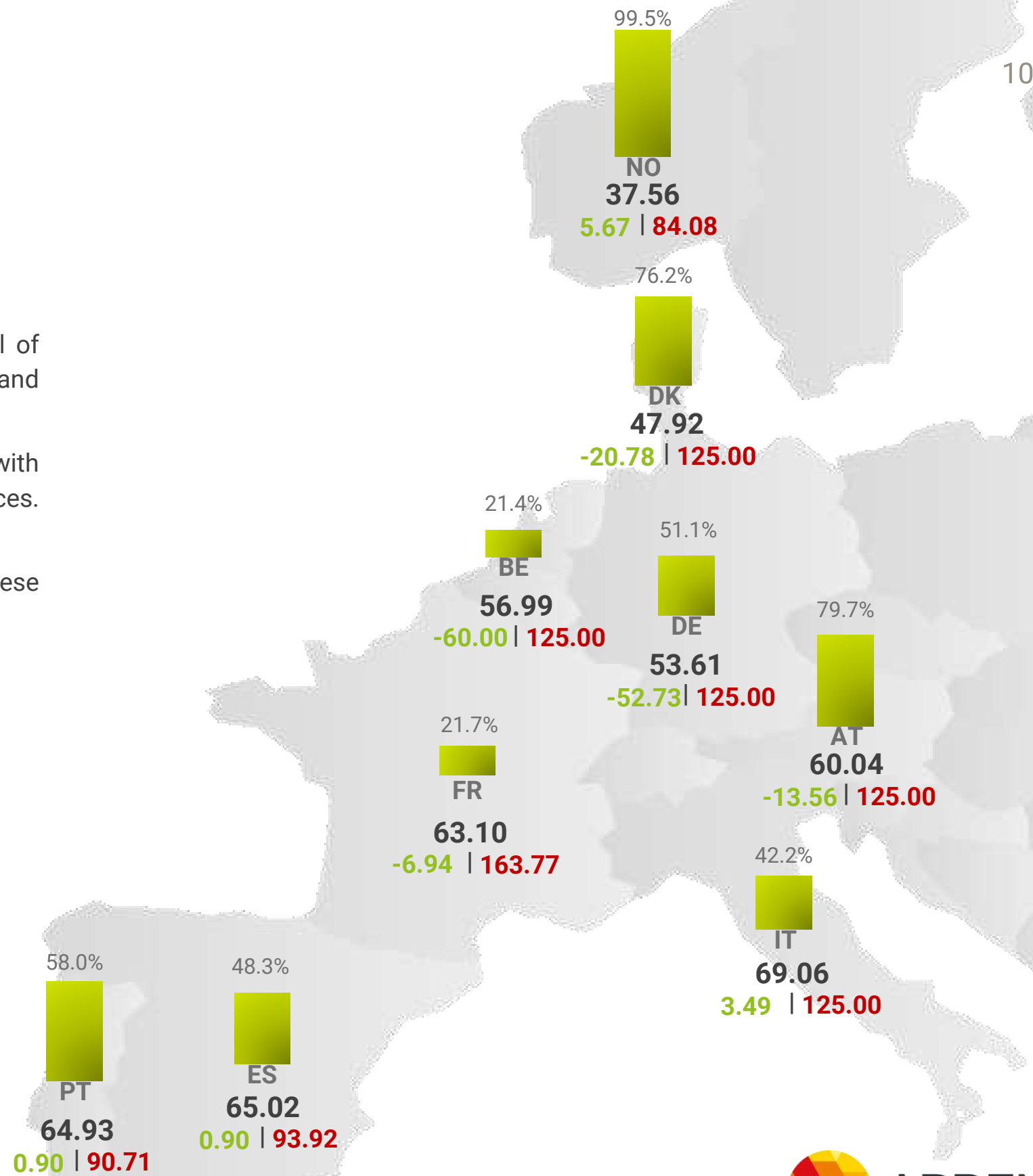
This analysis only took into account European countries with influence in the Portuguese market.

Source: ENTSO-E, IESOE, Analysis APREN

Prices in €/MWh

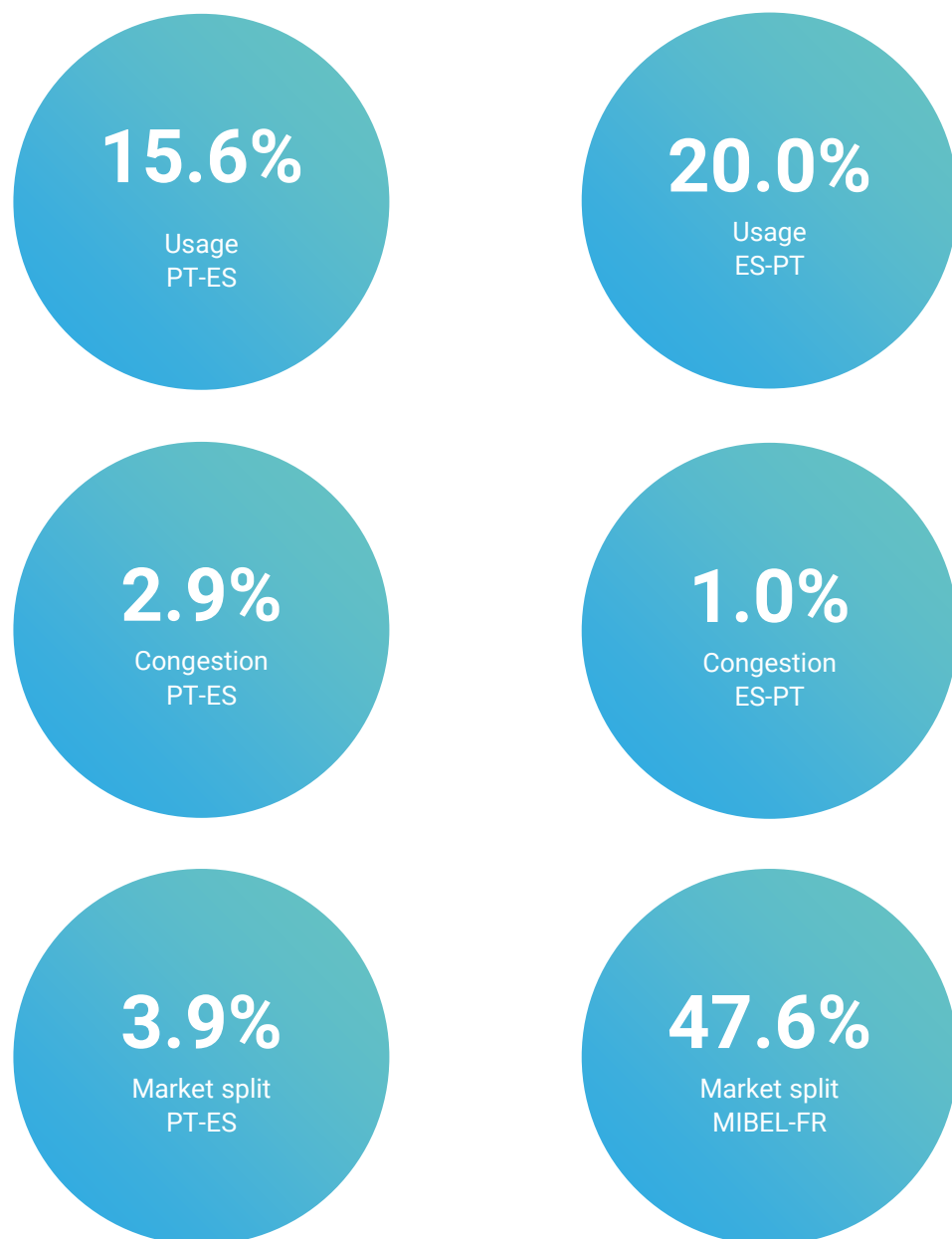
- Highest
- Lowest
- Average

Source: ENTSO-E, IESOE



Monthly market analysis: April

Electricity market in Portugal



Environmental Service

The indicators below show the savings achieved between January 1 and April 30, 2021, in fossil fuels, CO₂ emissions and CO₂ emission licenses, resulting from the renewable incorporation in electricity generation.

This analysis is based on the assumption that, in the absence of renewables, production would be ensured firstly by natural gas, followed by coal and finally the use of imports.

Renewables have avoided ...

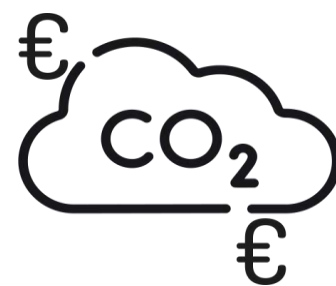


€ 333 M

Imported fossil fuels (Jan-Apr)

€ 74 M

Imported fossil fuels (Apr)

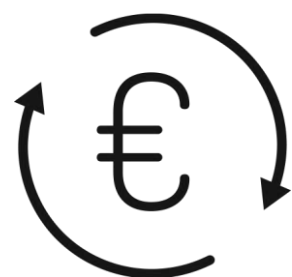


4.7 MtCO₂eq

CO₂ emissions (Jan-Apr)

0.9 MtCO₂eq

CO₂ emissions (Apr)



€ 179 M

Imported electricity (Jan-Apr)

€ 13 M

Imported electricity (Apr)



€ 165 M

CO₂ allowances (Jan-Apr)

€ 39 M

CO₂ allowances (Apr)

Source: REN, SendeCO₂, WorldBank, DGEG, ERSE, Analysis APREN.

Note1: To estimate savings on imported fossil fuels, coal prices until November 2019 were considered, due to unavailability of data.

Note 2: For the estimate of savings in imported electricity, the average price in the MIBEL market was considered.

European Policy and Regulation

European Climate Law

The Parliament and the European Council reached a provisional agreement on the European Climate Law, which introduces the climate neutrality target for 2050. The need to prioritize the reduction of emissions over its removals was agreed, thus it was decided to introduce a removal limit of 225 MtCO₂eq to reach the target set for 2030.

Delegated Act on EU Taxonomy Rules for Sustainable Activities

On April 21, the European Commission (EC) published the [first delegated act on sustainable activities for climate mitigation and adaptation objectives](#), followed up by the communication [EU Taxonomy, corporate sustainability reporting, sustainability preferences and fiduciary duties: Directing finance towards the European Green Deal](#)".

European CO₂ Emission Allowances

Ursula von der Leyen, announced at a summit of world leaders that the European Emissions Trading System (EU-ETS) will be expanded into new sectors, namely for buildings and transport. On the other hand, Diederik Samson, chief of staff of the European Green Deal office, said that it is being considered an EU-ETS mechanism for transport and buildings adjacent to the existing EU-ETS.

RED II review leak

The possible definition of renewable hydrogen was published in the context of the revision of the Renewable Energy Directive. For hydrogen to be considered as a renewable source, it must guarantee a set of criteria such as the principle of additionality, proven not only by the establishment of PPAs and Guarantees of Origin, but also by the entrance into operation of new renewable plants in a period not exceeding 12 months from the installation of electrolyzers; the location must be limited to bidding zones and the renewable supply plant must not have had investment support. This definition is still under discussion.

National Policy and Regulation

Bioenergy

On April 1, the [Ordinance No. 76/2021](#) was published, which establishes the instructions for applications for production and exploration permits for biomass power plants.

Transition rules for the alternative remuneration provided for in Decree-Law No. 35/2013

On April 15, the [Dispatch No.5/DGEG/2021](#), from the Directorate-General for Energy and Geology (DGEG) was published, on the transition rules for the alternative remuneration provided for in Decree-Law No. 35/2013, of February 28, when it applies only to a part of the total energy produced in a wind power plant with time-phased start-up under successive permits.

Gas sector infrastructure

On April 14, the [Regulation No. 341/2021](#) of the Energy Services Regulatory Entity (ERSE) was published, which approves the Regulation for the Operation of Infrastructure in the gas sector and repeals the Regulation No. 417/2016.

Energy Efficiency Promotion Plan (PPEC)

On April 15, ERSE published the [Regulation No. 343/2021](#), which approves the PPEC.

Incentives for low-emission vehicles

On April 26, the [Regional Regulatory Decree No. 4/2021/A](#) was published for the Azores Autonomous Region, which regulates the allocation of financial incentives for the introduction into consumption of new electric vehicles as well as the allocation of financial incentives for the acquisition of charging points for electric vehicles and fix the values and conditions for the allocation of financial incentives.

European Barometer



European Climate Law

The Parliament and the European Council reached a provisional agreement on the European Climate Law, which introduces the climate neutrality target for 2050.



Delegated Act on EU Taxonomy Rules for Sustainable Activities

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Barómetro Nacional



Charges borne by PRE in the market

ERSE published the Directive No. 5/2021, which approves the definition of the parameter of charges borne by PRE within the scope of the transitional rule of article 8 of DL No. 76/2019.



Assessment and Taxation in IMI of wind and solar power plants

Circular No. 2/2021 of the Tax Authority was published, according to which the wind and solar power plants fulfill the requirements underlying the concept of building, for tax purposes of the DL No. 76/2019.



Parliamentary Commission of Inquiry into the Payment of Excessive Rents to Electricity Producers

On March 3, the Circular No. 2/2021 of the Tax Authority was published, according to which the wind and solar power plants fulfill the requirements underlying the concept of building, for tax purposes.



Transition rules for the alternative remuneration provided for in Decree-Law No. 35/2013

The Order No. 5/2021 was published, by DGEG, on the transition rules for alternative remuneration provided for in Decree-Law No. 35/2013, of February 28, when it concerns only to part of the total energy produced in a wind power plant with time-phased start-up under successive permits.

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