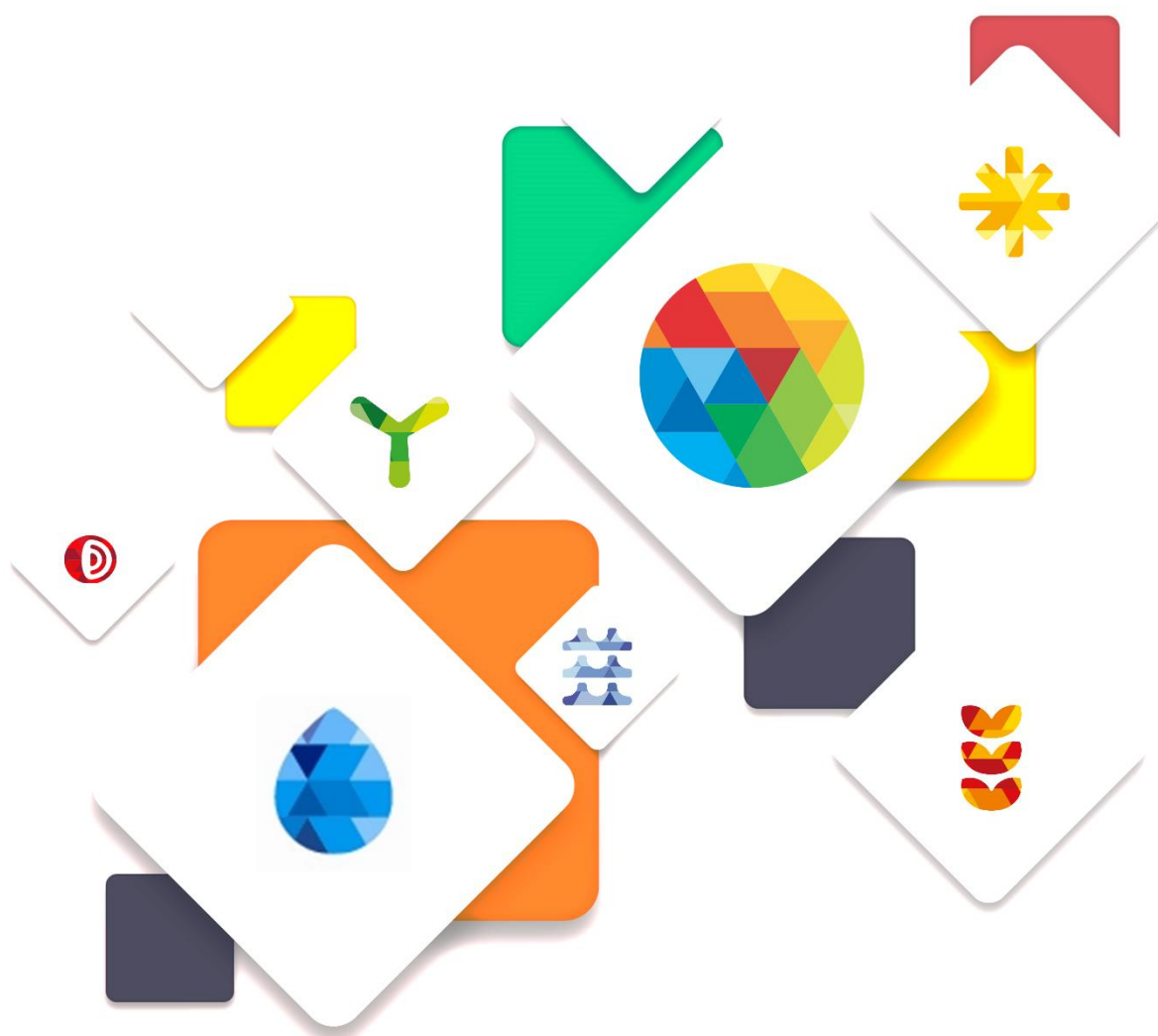




**APREN** Associação  
de Energias  
Renováveis



# REPORT RENEWABLE ELECTRICITY IN PORTUGAL

Monthly Edition

May 2017



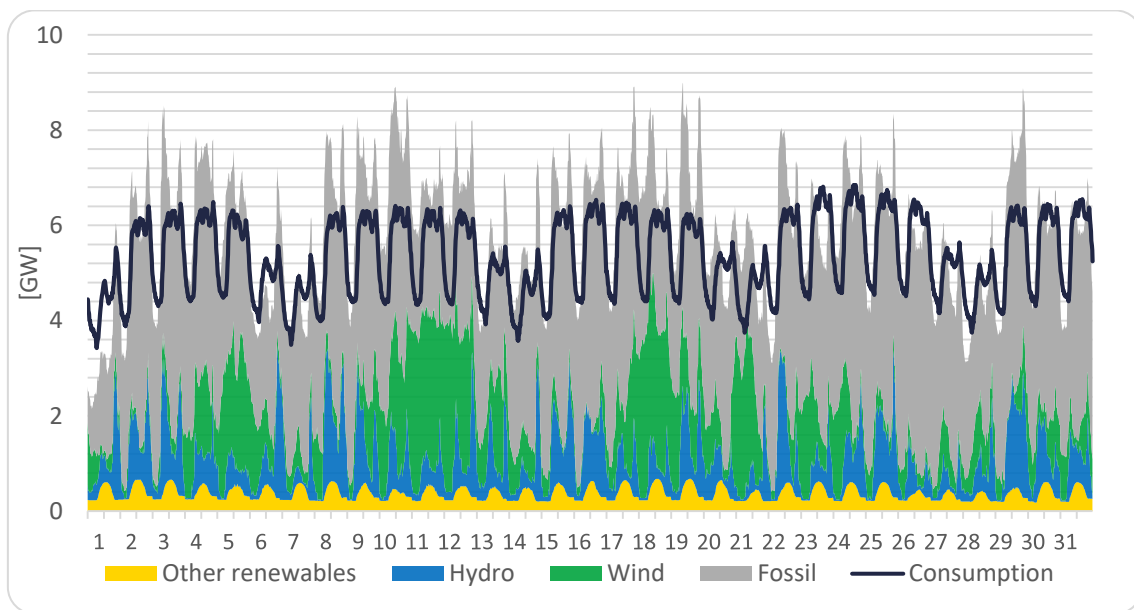
## RENEWABLE ELECTRICITY IN MAINLAND PORTUGAL

The past May was characterized by hot temperatures and regular rainfall, comparing to the historical average for this period of the year. By its turn, the electricity consumption in Mainland Portugal grew 3 %, when compared to the same period of the last year.

May was also distinguished by a reduced availability of hydro resource, comparing to the previous months, which led to a smaller share of renewable energy sources (RES) in

the electricity consumption mix of Mainland Portugal.

In the past month, the RES technologies accounted for 40.4 % (1,690 GWh) of the electricity consumption in Mainland Portugal, 4,181 GWh<sup>1</sup>. It should also be highlighted that during May the electricity production from Portuguese power plants allowed to export 174 GWh, besides the unfavourable renewable resource conditions (fig. 1).

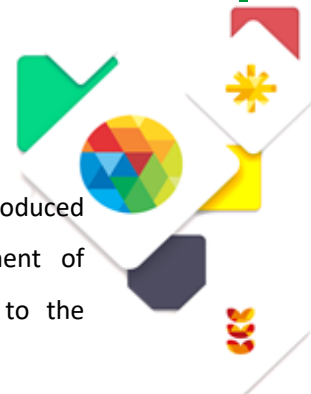


**Figure 1: Load Diagram of Portugal Mainland (May of 2017)**

Source: REN; APREN's Analysis

<sup>1</sup> This consumption value refers to the power plant's electricity generation for final consumption (grid losses and pumped

hydroelectric energy storage consumptions are added up to this value.)

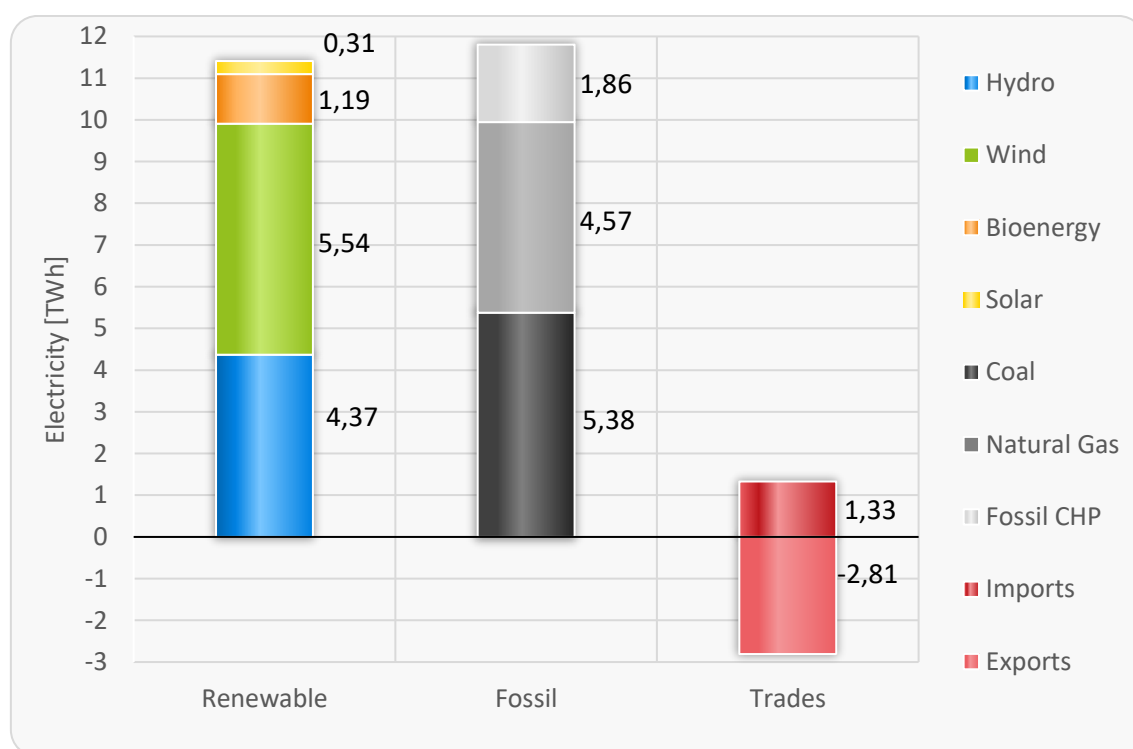


**In cumulative terms**, until the end of May, the RES electricity production was 11,411 GWh (fig. 2). The renewable electricity was produced by wind farms (5,539 GWh), hydropower plants (4,369 GWh), thermal biomass power plants (1,189 GWh) and solar PV power plants (314 GWh).

By its turn, the non-renewable electricity production totaled 11,804 GWh. Within this group the coal power plants were the main producers of electricity (5,376 GWh), the

natural gas power plants produced 4,570 GWh and the fossil component of cogeneration provided 1,858 GWh to the electric grid.

The analysis of the electricity international exchanges displays that until the end of May the Portuguese energy production mix allowed a net export balance of 1,479 GWh. This result was achieved due to the exportation of 2,808 GWh and the importation of 1,329 GWh.

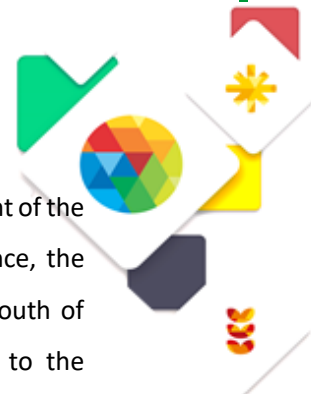


**Figure 2: Electricity generation sources and international exchanges in Portugal Mainland (January to May of 2017)**

Source: REN; APREN's Analysis

**The analysis of the electricity generation until May, by source, within the context of the last two years** (fig. 3) displays that generally the renewable production has a

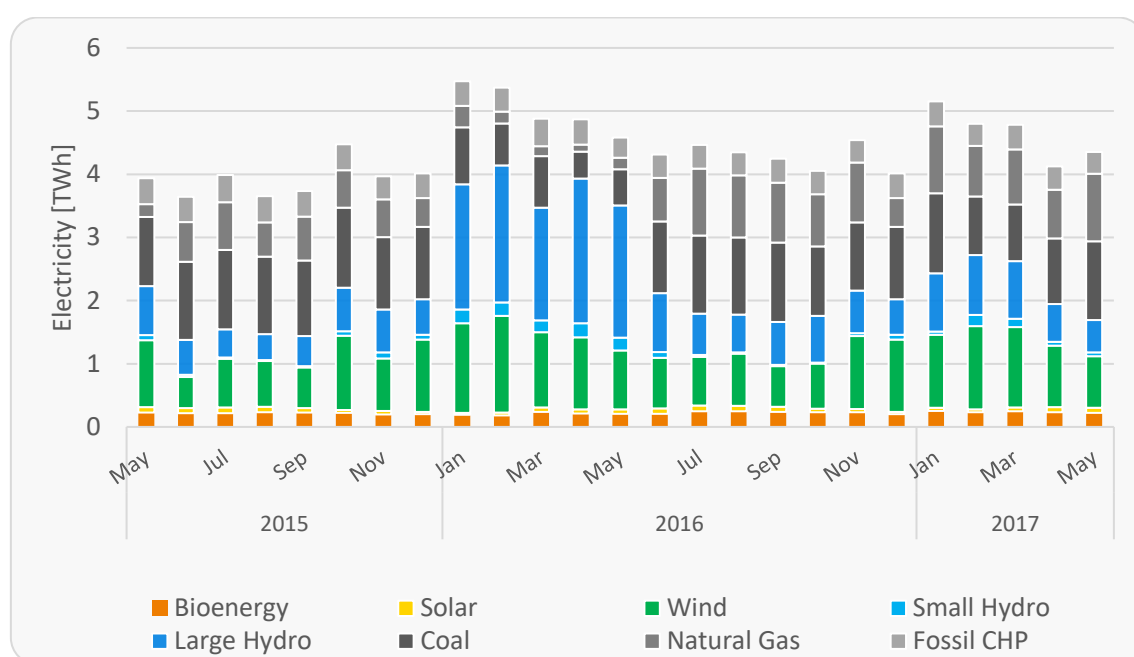
reduction in the summer months, and a consequent rise in the fossil power plants production.



Only in the summer months (June, July and August) of 2016 it is estimated that the high utilization of fossil fuels has caused the emission of more than 4.6 million tons of CO<sub>2</sub>, 6,500 tons of NO<sub>x</sub> and 8,000 tons of SO<sub>x</sub>, among other toxic air pollutants.

Currently, to reduce these pollutant emissions the most cost-effective alternative lies in the renewable power plants. It is important to

point out that besides the improvement of the Portuguese environmental performance, the solar power plants licensed for the South of Portugal can contribute significantly to the regional development. More precisely, these power plants could boost the economy of the Portuguese rural regions with the creation of new jobs. However, the Portuguese solar power capacity is stalled since mid-2016.



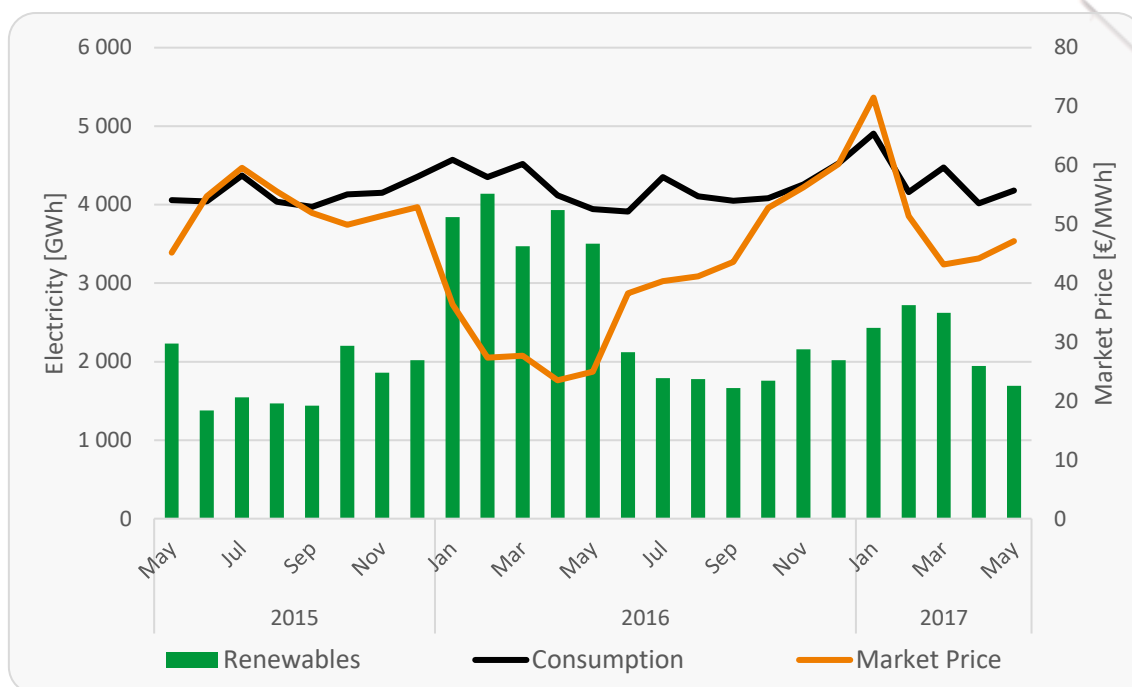
**Figure 3: Distribution of the electricity generation by source (May of 2015 until May of 2017)**

Source: REN; APREN's Analysis

**The negative correlation between the electricity spot market price and the renewable production** in the past two years is shown in figure 4.

In the past May the smaller share of renewable electricity, contributed to an increase in the electricity spot market price.

The May's price average was 47.12 €/MWh, an amount that contrasts with the last year's May average price (24.93 €/MWh), when the renewable sources accounted for 89 % of the Mainland Portugal's electricity consumption demand.



**Figure 4: Correlation between the renewable electricity production and the wholesale electricity price (May of 2015 until May of 2017)**

*Source: REN; APREN's Analysis*

In addition to this technical information it should also be highlighted the latest developments in European energy policy. As stated in the December's edition of this monthly report, 2016 was marked by the presentation of the Clean Energy legislative package. This package establishes the regulatory framework proposals covering the energy efficiency, the renewable energy and the electricity market design for the post-2020 period. In 25<sup>th</sup> of May the European

parliament announced a draft counter-proposal of the regulatory framework, suggesting more ambitious objectives. These objectives include a 35 % share of EU energy consumption for renewables by 2030 (the original framework proposed 27 %) and binding targets per country.

This is an important target in the path of the decarbonisation that Portuguese government should necessarily support if it wants to mitigate the impact of the climate change.



## SUMMARY

In May, the reduced availability of hydro resource led to a smaller share of the renewable energy sources in the electricity consumption of Mainland Portugal, when compared to previous months. In the past month, the RES accounted for 40 % of the Mainland Portugal electricity consumption. Concurrently, the electricity demand increased and the average spot market price was 47.12 €/MWh.

Furthermore, May was also highlighted by the presentation of the European parliament's counter-proposal of the Clean Energy legislative package. The draft counter-proposal has more ambitious objectives and reinforces the decarbonisation's targets of the member states.

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