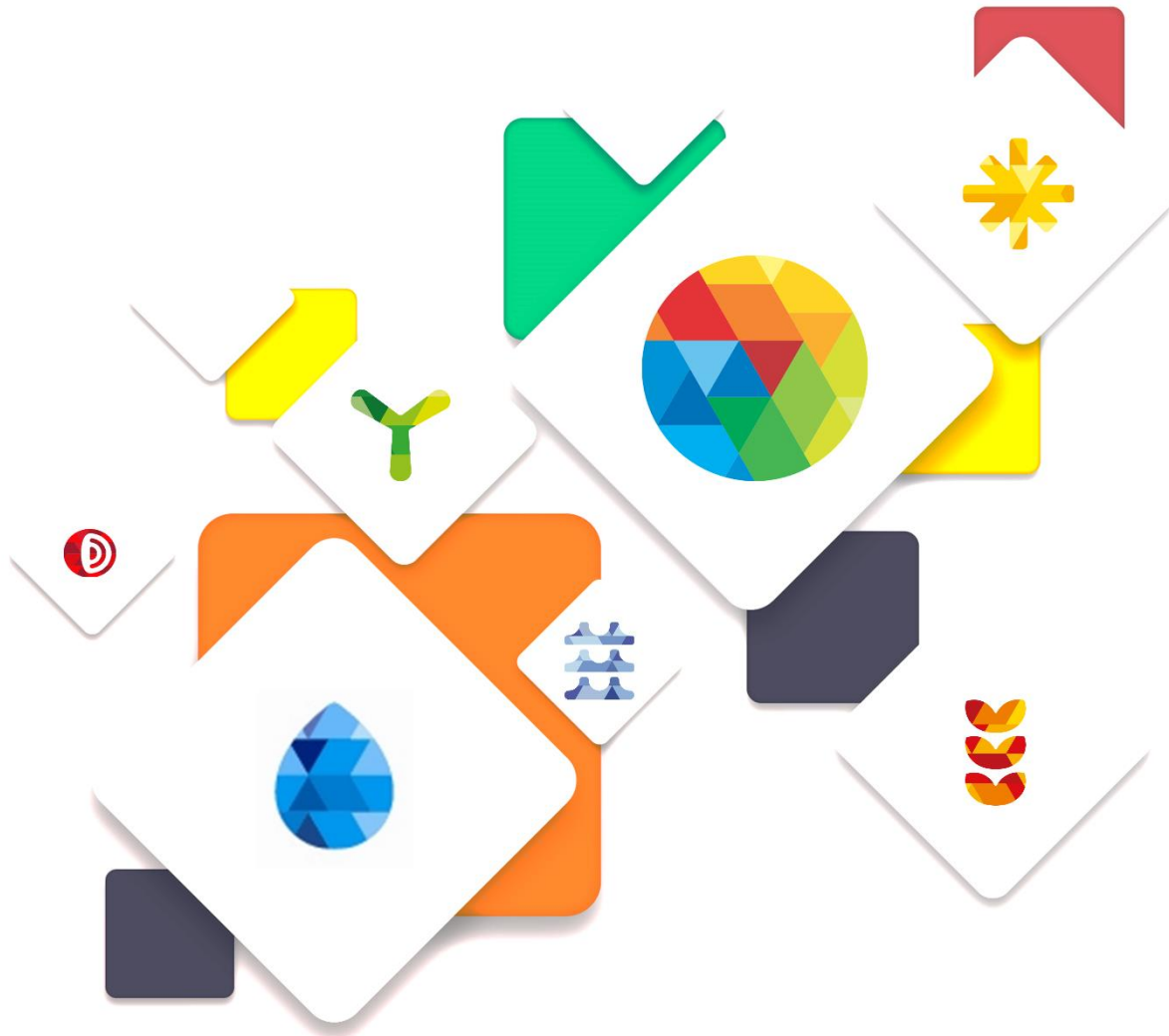




**APREN** Associação  
de Energias  
Renováveis



# REPORT RENEWABLE ELECTRICITY IN PORTUGAL

Monthly Edition  
October 2017

# RENEWABLE ELECTRICITY IN MAINLAND PORTUGAL

Until the end of October 2017, the share of renewable electricity production in Mainland Portugal was 41.7%. By comparing this value with previous years, it is highlighted that the renewable generation (RES-E) has not reached such a low level since 2012. This reduction was mainly driven by less favourable resources conditions.

The renewable electricity generation cumulative value, until the end of October, also shows that Portugal is still far from meeting the RES-E targets agreed with the European Union, displaying the need for a strong political strategy that regains the confidence of investors. It is worth mentioning that by 2020 the target of RES-E in the Portuguese electricity consumption is almost 60%.

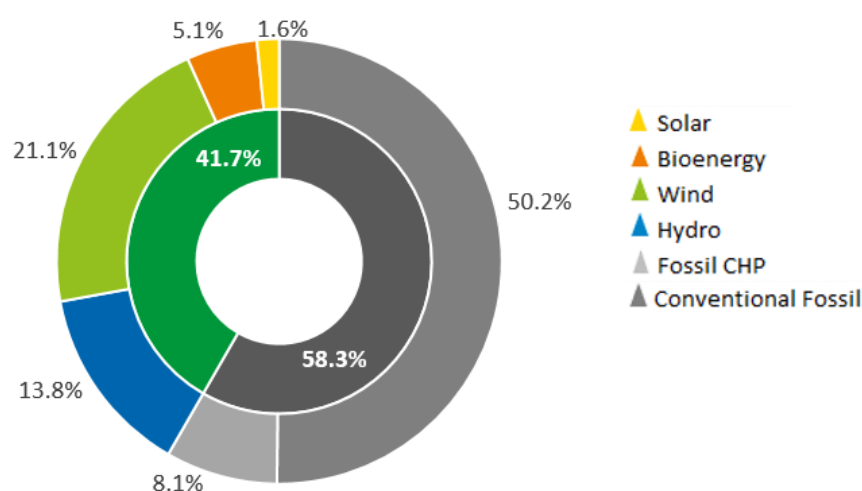
In 2017 the decrease of the renewable generation had as consequence the increase of the electricity price in the Iberian spot market (MIBEL). Between January and October 2017, the average price of electricity in MIBEL was 50.98 €/MWh, a value that represents an increase of 43% over the same period of last year.

In the first ten months of 2017, RES-E share accounted for 41.7% (19,010 GWh) of the total electricity generation, the remaining 58.3% had its origin in fossil fuels (Figure 1).

As for renewables, the largest share of production was due to the wind electricity which represented 21.1% of the total generation. By its turn, bioenergy and solar PV production accounted for 5.2 and 1.6%, respectively.

Hydroelectricity accounted for 13.8%, which denotes a significant reduction compared to the previous year. This decrease was due to the low rainfall that is occurring since the beginning of the year (accumulated hydroelectric production index of 0.55).

Regarding fossil generation, conventional thermal increase to 50.2%, while cogeneration remained at 8.1%



**Figure 1: Electricity generation by energy sources in Portugal Mainland. (January until September 2017)**  
Source: REN; APREN's analyses

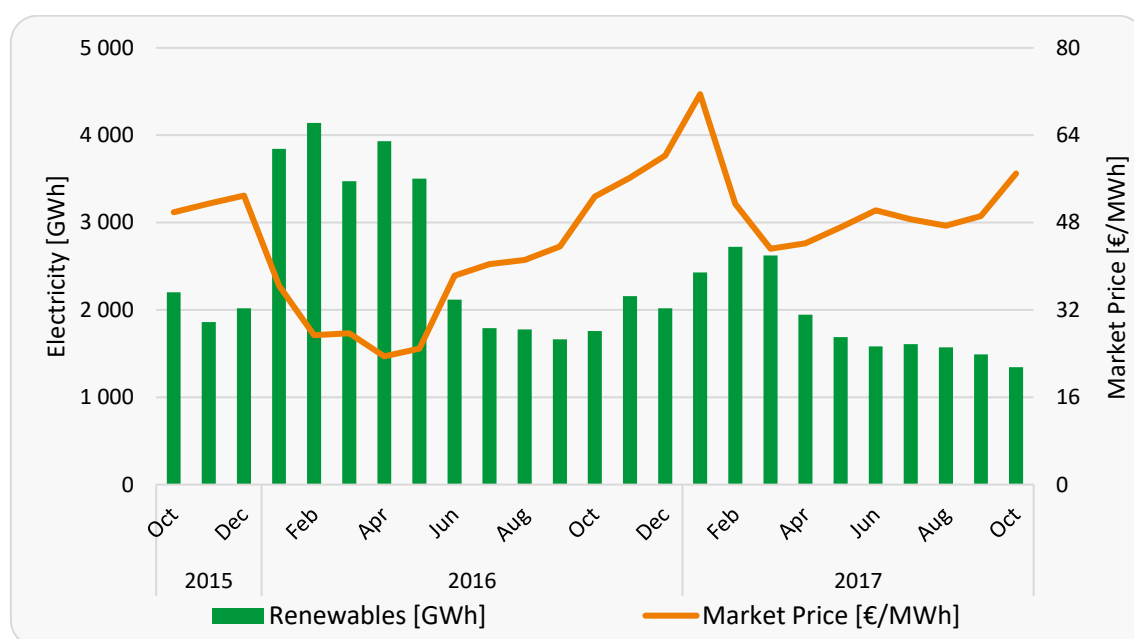


It is also worth mentioning an increase of 0.5% (1.3% considering the correction of temperature and working days) of electricity demand from January to October 2017, when compared to the homologous period of last year.

Regards to international electricity trade and despite 2017 being a dry hydrological year, the analysis of last months' data, highlights an export balance of 2,846 GWh. This value results from the export of 5,096 GWh and the import of 2,250 GWh.

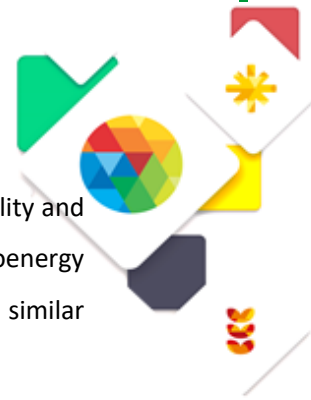
In 2017 the lower renewable contribution also had as consequence the increase of the electricity price in the wholesale Iberian market, as can be extrapolated by the analysis of figure 2.

The average price of electricity between January and October was 50.98 €/MWh, 43% more than in the same period of previous year. By its turn October had an average price of 56.98 €/MWh.



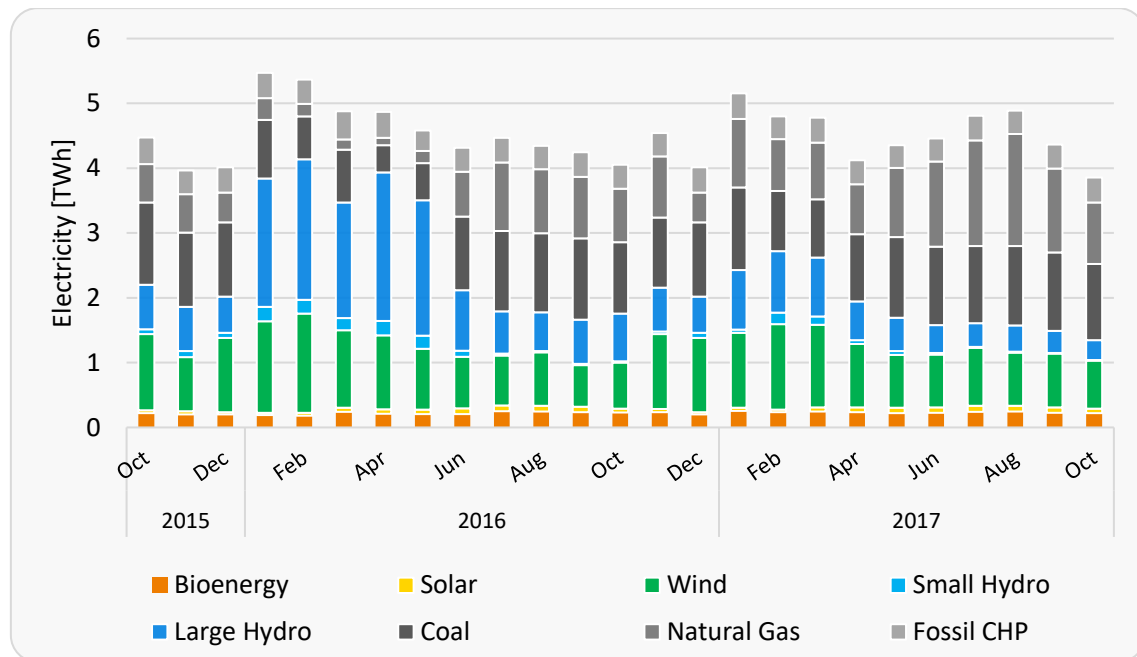
**Figure 2: Evolution of the Renewable Electricity Production and of the Wholesale Electricity Price (October of 2015 until October of 2017)**

Source: OMIE, REN; APREN's Analysis



The analysis of the monthly electricity production, by source, over the last two years shows an increase in conventional thermal production in 2017, due to low rainfall and a net export balance.

Nevertheless, figure 3 shows the stability and predictability of wind, solar and bioenergy technologies that have very similar production values, from year to year.

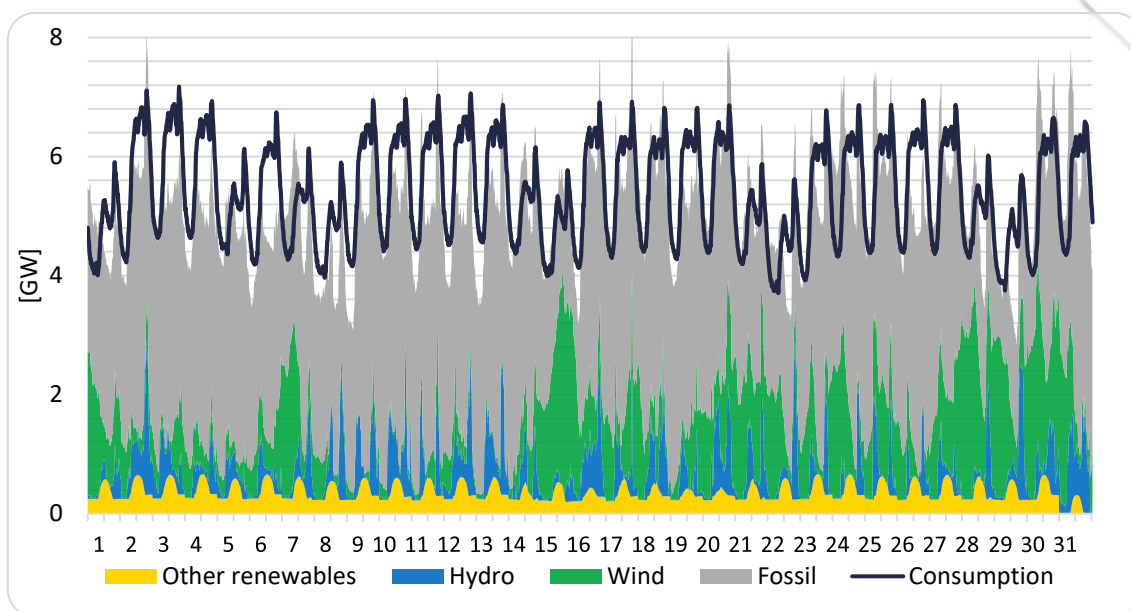


**Figure 3: Distribution of the electricity generation by source (October of 2015 until October of 2017)**

Source: REN; APREN's Analysis

Focusing the study in October, it is important to highlight its climatological situation. According to the Portuguese Institute of the Sea and Atmosphere, October of 2017 was characterized by high temperatures and low rainfall (it was the driest October of the last 87 years), which deeply worsened the Portuguese Mainland drought situation.

This phenomenon affected the Portuguese electricity production mix, as can be seen in October's load diagram (Figure 4). The above-mentioned figure illustrates the high utilization rate of the thermal fossil power plants (production of 2,510 GWh), which translated into very high levels of CO<sub>2</sub> emissions.



**Figure 4: Load Diagram of Mainland Portugal (October of 2017)**

Source: REN; APREN's analyses

Due to the reduction in the availability of renewable resources for the reasons before mentioned, allied with the forest fires that have occurred in recent months, it is expected that 2017 will be a year with greenhouse gas emissions levels much higher than the average of the last years.

These hostile conditions resulting from climate change, have a negative impact on Portugal's decarbonisation strategy under the Paris agreement. In this regard, it is important that the next revision of the agreement, currently happening at COP23, establish ambitious and binding targets for fighting climate change.

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