



# REPORT RENEWABLE ELECTRICITY IN PORTUGAL

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Monthly Edition

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**APREN** Associação  
de Energias  
Renováveis



# RENEWABLE ELECTRICITY IN MAINLAND PORTUGAL

## Highlights of the Portuguese Electric Sector

- Since the beginning of the year, renewable energy sources accounted for 53,2% of the total electricity production in mainland Portugal.
- The accumulated electricity consumption reached 38 121 GWh and represented an increase of 1,7% over the same time-period of 2017.
- Regarding the wholesale market prices for electricity since the beginning of the year, there has been an upswing tendency, characterized by an average monthly growth rate of 2,18 €/MWh, resulting in an average MIBEL price of 71,30 €/MWh for September.



## Electricity Production Profile of Mainland Portugal

Since the beginning of the year, renewable energy sources (RES) have contributed to a significant share in the electricity production mix (Figure 1), which has translated in 53,2% of the overall electricity production (41 765 GWh). This share shows an increase in the representativeness of renewable energies in the mix, when considering the same time-period for the year 2017, for which the contribution was 42,3%.

The hydro technology provided the largest share of electricity production, accounting for 25,7% of the total production, representing an accumulated hydroelectric producibility index of 1,2. Wind technology ranked second, with a contribution of 20,8%, although its productivity was mildly below the average (cumulative wind producibility index of 0,98).

The remaining contribution from renewable energy sources to the electricity production mix was assumed by bioenergy and solar technology, with individual contributions of 5,1% and 1,6%, respectively, which all-together, represented 6,7% of the overall production.

In absolute terms, it was registered an accumulated electricity consumption of 38 121 GWh, which represented an increase of 1,7% over the same period of 2017, after taking into account the necessary corrections of temperature and number of working days.

With regards to the international trade, we continue to observe an export trend in mainland Portugal, with an import-export balance of 2 549 GWh, even though this value is 20% lower than the one registered for the same time-period of 2017.

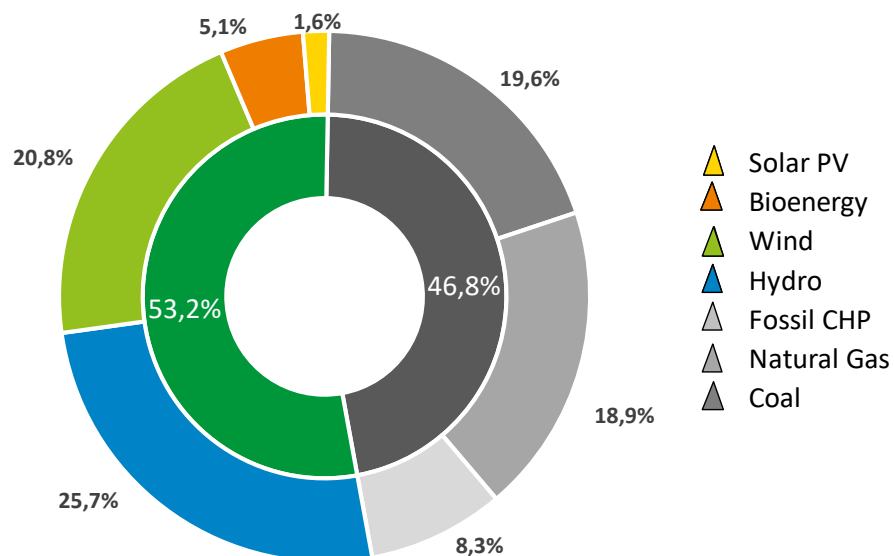


Figure 1: Electricity generation by energy sources in Mainland Portugal. (January until September of 2018)

Source: REN; APREN's analysis



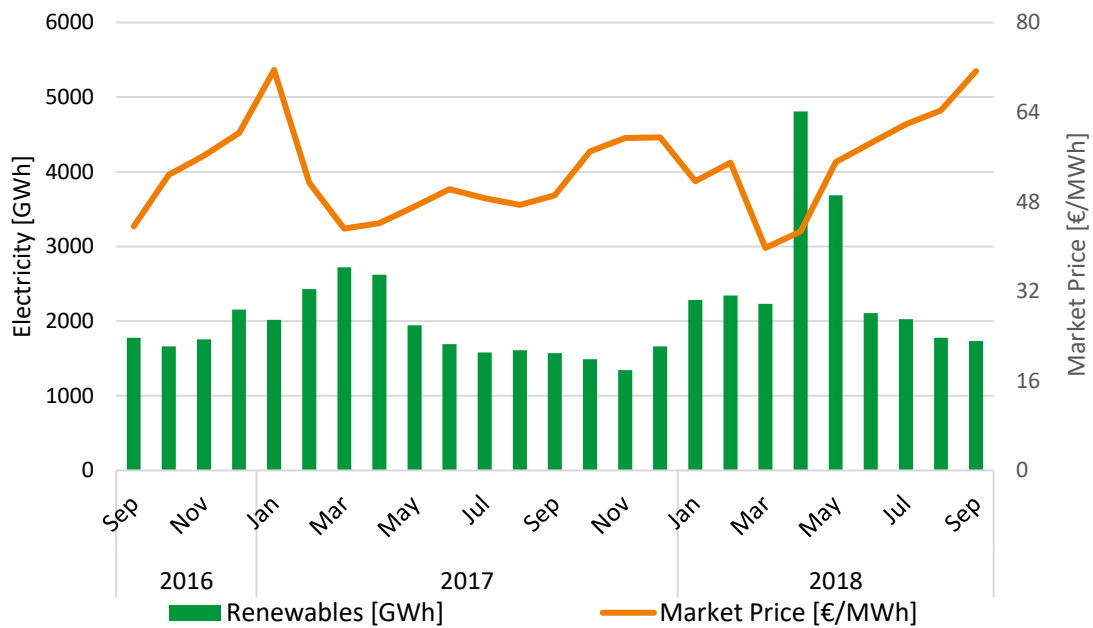
## Electricity Market

Concerning the wholesale market price for electricity, there is an inverse correlation between the market price and the amount of electricity produced from renewable energy sources, for which the monthly values and respective evolution during the last two years is presented in Figure 2.

For the first nine months of 2018, the average MIBEL price was 55,56 €/MWh, which has expressed an upswing tendency since the beginning of the year. The registered price for

September was 71,30€/MWh in a picture where the average value for the wholesale market price in the three largest European markets (UK, DE, FR) was 61,09€/MWh, denoting also an increase in relation to the 2017 equivalent period.

This trend is characterized by an average monthly growth rate of 2,18€/MWh, reflecting a current MIBEL price that is quite close to the peak of January 2017 (71,52€/MWh) and well above the wholesale market price for the same time-period in 2017 (49,16€/MWh).



**Figure 2: Evolution of the Renewable Electricity Production and of the Iberian Wholesale Electricity Price. (September of 2016 to September of 2018)**

Source: OMIE, REN; APREN's analysis



### Production profile in the last 2 years

Based on Figure 3, it is possible to observe the monthly electricity production by energy source during the last two years. The figure shows a reduction in the wind power production in September, which is very typical during this

period that is generally characterized by a reduced wind producibility index (0,61).

On the other hand, the contribution of fossil fuel technologies in the electricity production profile has been increasing in recent months, mostly due to the export trend of mainland Portugal.

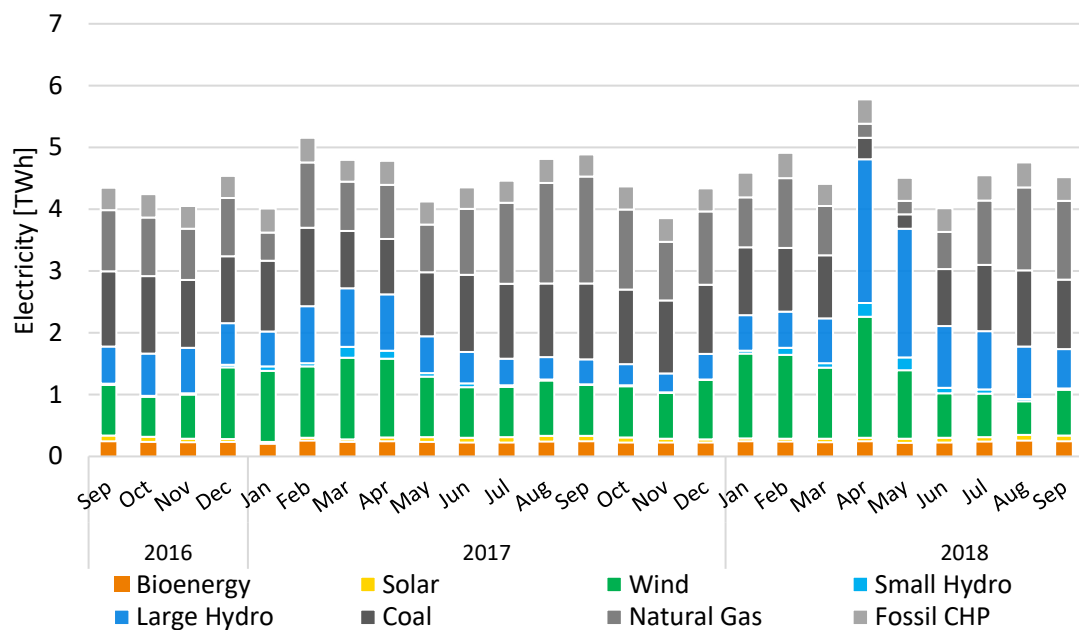


Figure 3: Distribution of the electricity generation by source in Mainland Portugal. (September of 2016 to September of 2018)

Source: REN; APREN's analysis



## September's Load Diagram

The analysis of Figure 4, which represents the September load diagram, reflects a strong utilization rate of fossil fuel technologies (66,42%) in comparison to those of renewable origin, which contributed with 33,6% to the monthly electricity production.

In the graph below, one can also see the periods with electricity exports to Spain, for which the national production presented more competitive prices within the Iberian market.

These periods occurred, essentially, during peak hours of working days.

Finally, by taking a closer look at the variation range in the electricity production in mainland Portugal, we identify a maximum value (10 363 GW) on the 20<sup>th</sup> at 7 pm and a minimum on the 30<sup>th</sup> at 7 am (3 269,8 GW), which demonstrates the flexibility of the national electrical system to adapt to a high range of production and consumption profiles.

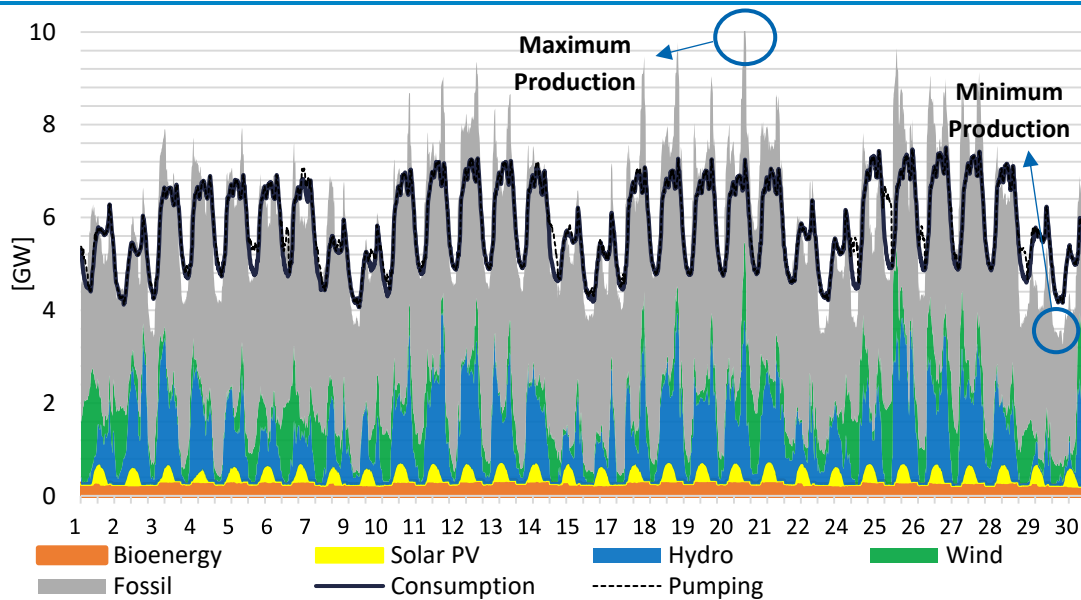


Figure 4: Load Diagram of Mainland Portugal. (September of 2018)

Source: REN; APREN's analysis

Information available in:

APREN | Communication and Technical Departments

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