



REPORT RENEWABLE ELECTRICITY IN PORTUGAL

Monthly Edition

July of 2018



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 58 % of overall electricity production in Mainland Portugal.

The export net balance of electricity between January and the end of July was 2 114 GWh.

In July, the average value of MIBEL (61.84 €/MWh) was one of the highest in the last two years, only being surpassed by the average price of January of 2017.

July's load diagram also had a historical maximum value of photovoltaic production (99 GWh), equivalent to 2.4% of the monthly's electricity needs of Mainland Portugal.

In the Autonomous Region of the Azores, in the first half of 2018, renewables accounted for 41.3% (158 GWh) of electricity generation.

In the electricity production mix of the Autonomous Region of Madeira, in the first half of 2018, renewables represented 38.6% (161 GWh).



Electricity Production Profile of Mainland Portugal

In the first seven months of 2018, renewable energy sources (RES) accounted for 58% (18 982 GWh) of the overall electricity production in Mainland Portugal (32 933 GWh).

During this period, as a result of a greater availability of resource, hydro was the source that generated the most electricity: 28.3% of the production (figure 1).

In absolute terms, a cumulative consumption of 29 824 GWh was achieved, which, taking into account the temperature and working days correction, represents an increase of around 2.1% over the homologous period of the previous year.

Regarding electricity international trades, the net export balance remains positive with a value of 2 114 GWh. This result shows the market potential that the Portuguese electricity sector has and that can be maximized by increasing both the interconnection capacity and the renewable production.

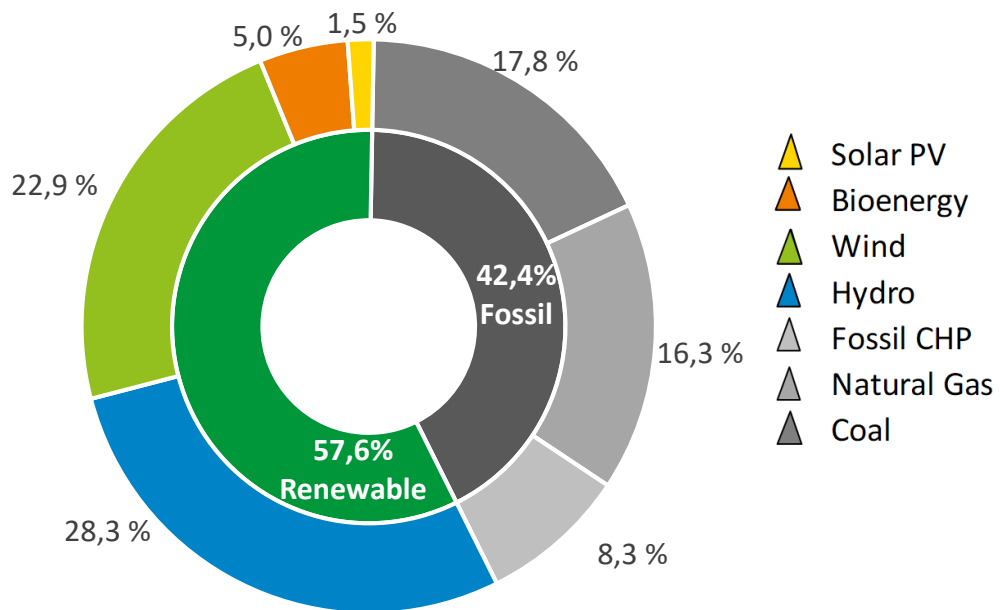


Figure 1: Electricity generation by energy sources in Mainland Portugal. (January until July of 2018)

Source: REN; APREN's analysis



Electricity Market

Until the end of July, the weighted average spot price of the Iberian electricity market was 52.2 €/MWh. In this period, it is also worth noting that the average value of the electricity exported in Portugal was 54.7 €/MWh, a value 5% higher than the average market price. On the other hand, the electricity's imports by the Portuguese electric system had a price lower than the market price: 47.8 €/MWh.

Focusing the analysis in July, MIBEL's average value was 61.84 €/MWh. This figure is one of the highest in the last two years (Figure 2), only surpassed by the average price of January 2017 (71.52 €/MWh), when the French electricity sector was in an emergency situation and increased energy imports from neighboring electricity markets.

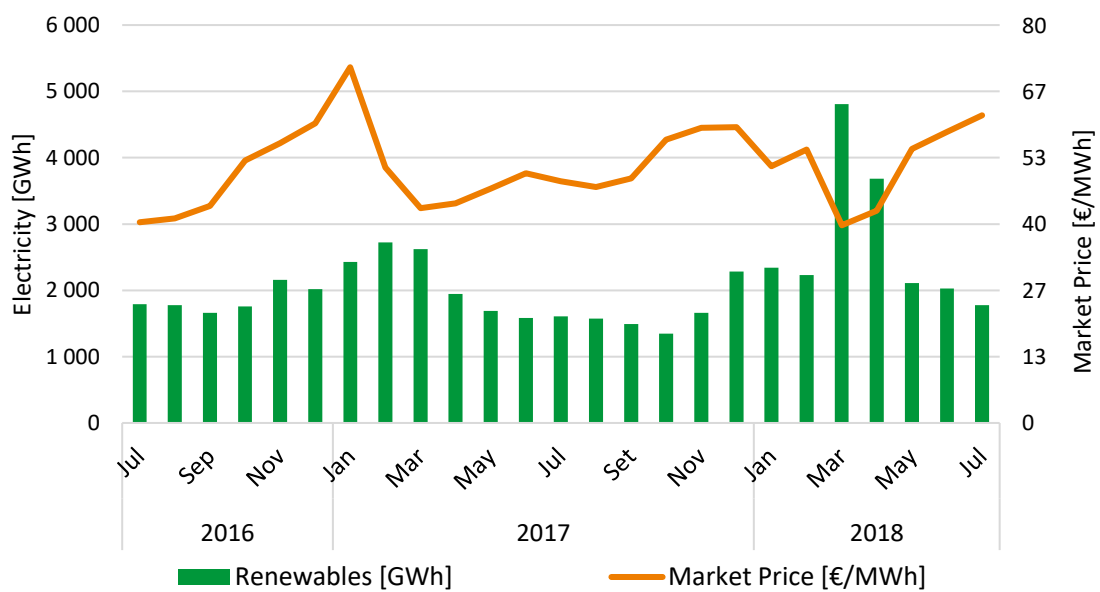


Figure 2: Evolution of the Renewable Electricity Production and of the Iberian Wholesale Electricity Price. (July of 2016 to July of 2018)

Source: OMIE, REN; APREN's analysis



Production profile in the last 2 years

The monthly electricity production by source during the last two years (Figure 3) shows the reduction of monthly hydroelectric and wind generation in the summer. Consequently, this deficit is filled by fossil thermal power plants.

In addition, it should be highlighted that the increase of fossil generation in recent months is also justified by the trend of net export balance with Spain.

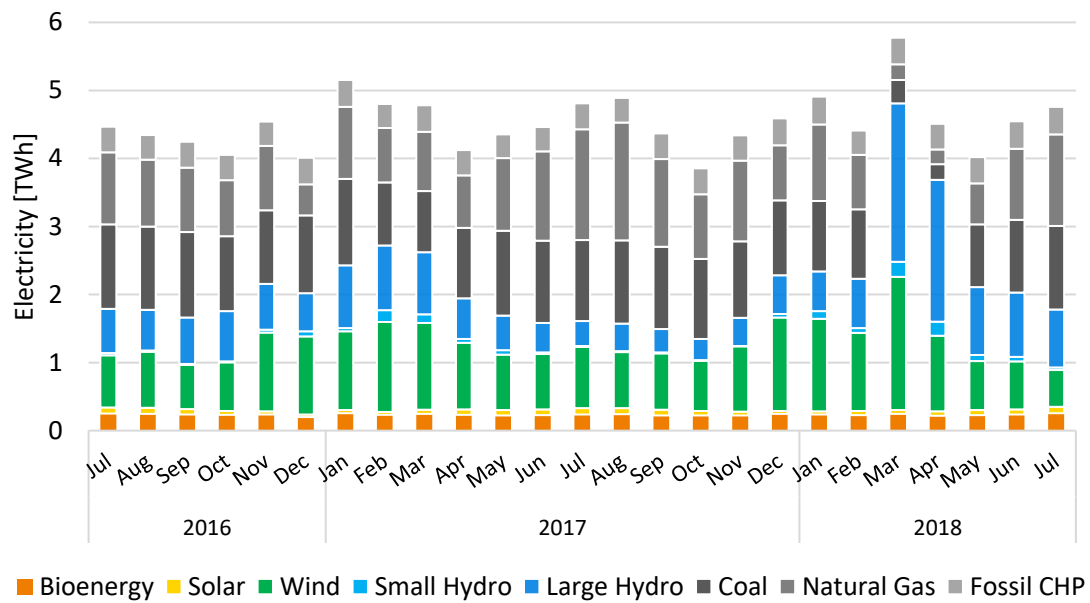


Figure 3: Distribution of the electricity generation by source in Mainland Portugal. (July of 2016 to July of 2018)

Source: REN; APREN’s analysis



July's Load Diagram

The analysis of the electric production mix of July (Figure 4), shows the high utilization rate of fossil power plants. In this month, non-renewable's electricity production accounted for 63% (2 981 GWh) of the overall production.

In the July's load diagram (Figure 4), stands out a monthly's historical maximum of photovoltaic production (99 GWh), equivalent to 2.4% of the Mainland Portugal's electricity needs. In addition, it is important to mention that on July 29, at 1:45 p.m., the historical peak of electric generation of photovoltaic origin was reached: 437 MW.

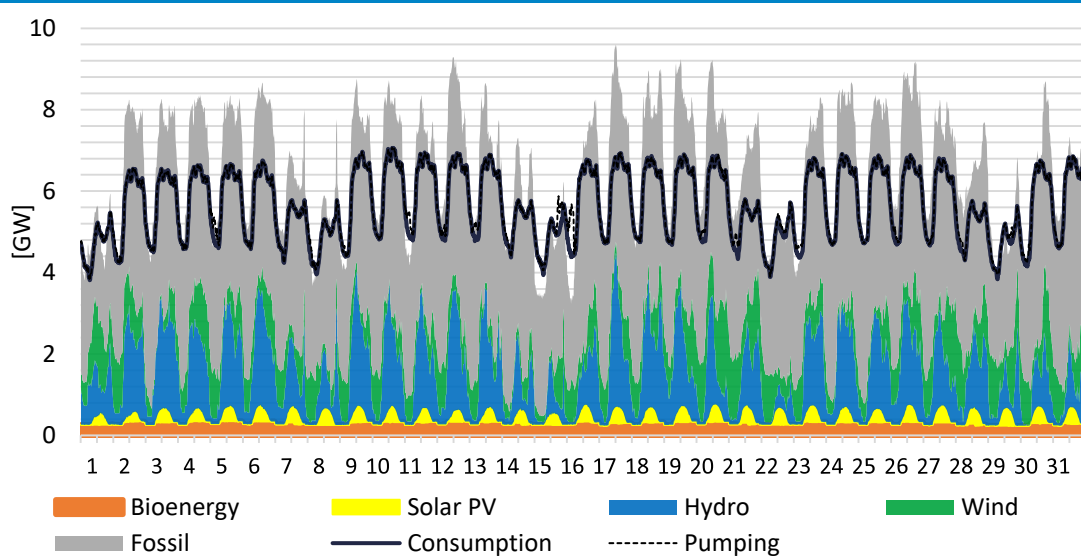


Figure 4: Load Diagram of Mainland Portugal. (July of 2018)

Source: REN; APREN's analysis



SEMESTRAL SUMMARY OF THE PORTUGUESE AUTONOMOUS REGIONS

Mix of Production of the Autonomous Region of the Azores

In the Autonomous Region of the Azores (RAA), in the first half of 2018, the electric mix was marked by a predominance of fossil sources (58.7%, 224 GWh). By its turn, renewables contributed with 41.3% (158 GWh) of the electricity production (Figure 5).

The principal renewable source was geothermal with 27.1%, which increased its production compared to the same period of the previous year by 13.6%.

The rise in electrical production from geothermal origin was due to the Pico Alto Geothermal Power Plant on Terceira Island, which started operating in September 2017.

By analyzing the remaining renewable technologies, it is verified a reduction in hydroelectric production compared to the same period last year, that was due to the drought that affected the region.

In the first half of 2018, in the RAA, hydroelectric power plants generated 14.2 GWh, representing a decrease of 11% compared to the same period last year, when production was 15.9 GWh.

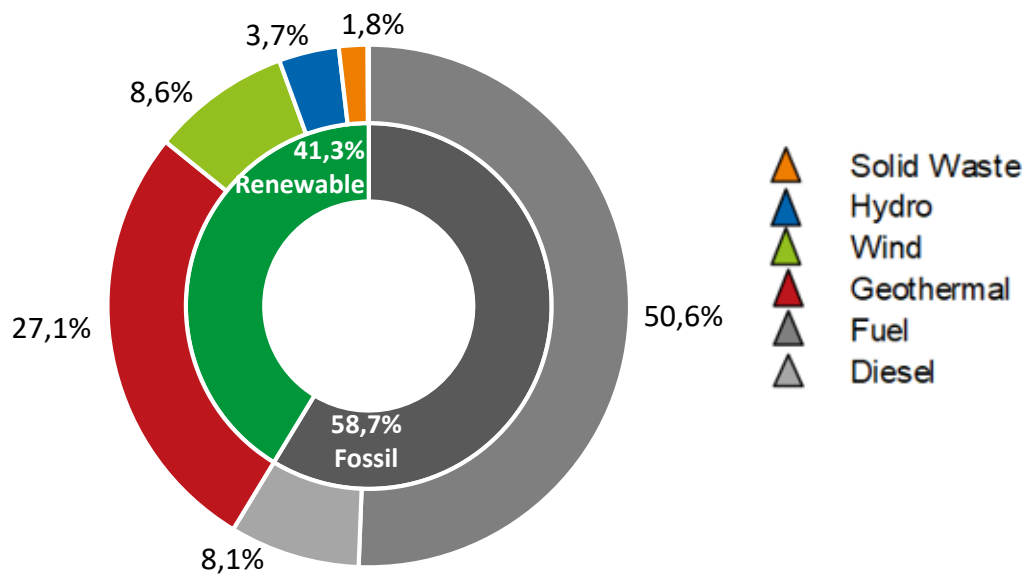


Figure 5: Electricity generation by energy sources in the Autonomous Region of the Azores (First Semester of 2018)

Source: EDA; APREN's Analysis



Production Mix of the Autonomous Region of Madeira

In the mix of electrical production in the Autonomous Region of Madeira (RAM) in the first half of 2018, RES represented 38.6% (161 GWh) and fossil sources 61.4% (258 GWh) (Figure 6).

The most representative renewable technology was hydro (16%). Wind power, which represented 14.7% of the mix, was the RES which increased its production more than the same period of last year.

In 2018 wind power plants in the RAM generated 61 GWh, a value 60% higher than the production of the first half of 2017 (38 GWh). However, the remaining renewable technologies (waste and solar) slightly reduced their electricity production, representing 7.9% of the mix.

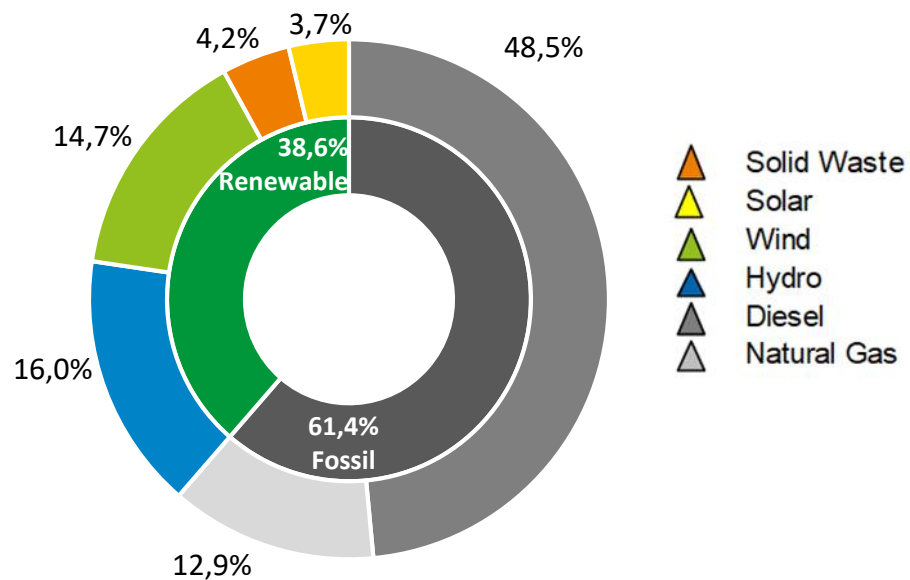


Figure 6: Electricity generation by energy sources in the Autonomous Region of Madeira (First Semester of 2018)

Source: EEM; APREN's Analysis

Information available in:

APREN | Communication and Technical Departments

Av. Sidónio Pais, nº 18 R/C Esq. 1050-215 Lisboa, Portugal

Tel. (+351) 213 151 621 | www.apren.pt