REPORT
RENEWABLE ELECTRICITY IN PORTUGAL

Monthly Edition

1st Semester of 2018

APREN Associação de Energias Renováveis

RENEWABLE ELECTRICITY IN MAINLAND PORTUGAL

Highlights of the Electric Sector in the 1st Semester of 2018

• Renewable energy accounted for 61% of the total electricity production in Mainland Portugal, due to the greater availability of hydro and wind resources.

• A set of 623 hours, non-consecutive, equivalent to 26 days, in which the renewable electricity was enough to fully supply the Mainland Portugal's electricity demand.

• An increase of 3.7 % in the Mainland Portugal electricity demand.

• An average price of the Iberian electricity spot market of 50.4 €/MWh. A value 2% lower to the average price of the same period of the previous year (51.4 €/MWh).

• The approval, in June 2018, by the European Union institutions, of the renewable energy contribution target for 2030. The agreed value of the 2030's target was 32%, which represents a significant increase compared to the value initially proposed by the European Commission of 27%.

Electricity Production Profile

In the first half of 2018, renewable energy sources (RES) generated 17 204 GWh, which accounted for 61% of the total electricity produced in Mainland Portugal, 28 174 GWh.

This good performance of RES was due to the greater availability of renewable resources, specially to hydro and wind resources.

In fact, in the first half of 2018 the accumulated index of hydroelectric production was 1.15. By its turn, the Wind index of March boosted an average monthly wind index of 1.08.

Figure 1 shows the accumulated value of the electricity generation divided by sources, in the Mainland, in the first half of 2018. This electricity generation mix supplied the Portuguese electricity consumption needs (26 656 GWh) and allowed an export balance of 1 518 GWh.

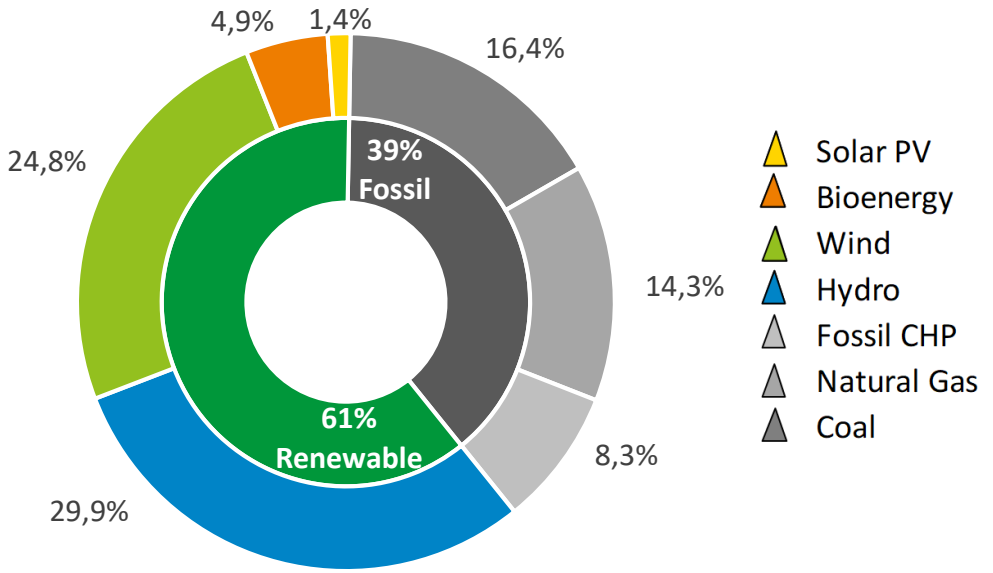

Figure 1: Electricity generation by energy sources in Mainland Portugal. (1st Semester of 2018)

Source: REN; APREN's analysis

In the period under analysis it is still worth mentioning a set of 623 hours, non-consecutive, (equivalent to 26 days) in which renewable electricity was enough to fully supply, by itself, the Portuguese electricity demand.

The electricity demand denotes an increase of 3.7 % in Mainland Portugal, 2.9% when is taken into consideration the effect of temperature and working days, according to REN (Portuguese TSO).

Electricity Market

From the beginning of January to the end of June the average price of the Iberian electricity spot market was 50.4 €/MWh. This figure was 2% lower than in the same period last year (51.4 €/MWh).

By its turn, in June the average market price was 58.48 €/MWh, a value higher than the same period of the last year.

The market price in June was influenced by the following factors:

• The increase in the crude oil price and, consequently, the increase of the generation costs of natural gas power plants (old contracts still indexed to oil prices).

• The increase in electricity consumption, in relation to the homologous period of the last year.

• The temporary shut-down of the Vandellòs 2 Spanish nuclear power plant (1,087 MW), which will be under maintenance until mid-July.

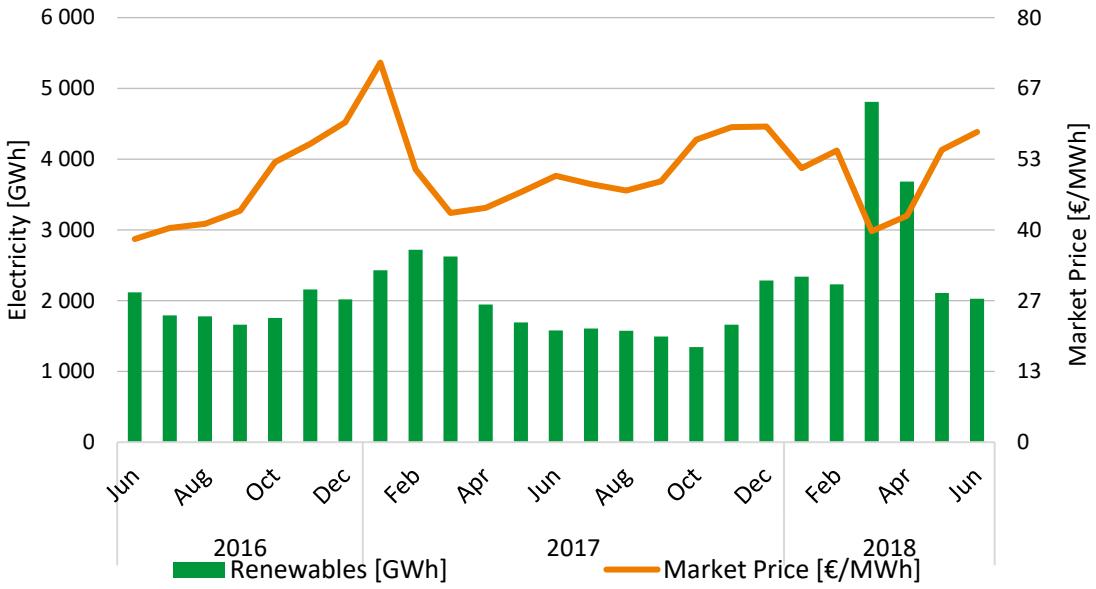

Figure 2: Evolution of the Renewable Electricity Production and of the Iberian Wholesale Electricity Price. (June of 2016 to June of 2018)

Source: OMIE, REN; APREN's analysis

Also, important to analyze is the value paid by market agents to compensate deviations of forecast in MIBEL. In Portugal they have to pay 0.89 €/MWh and in Spain market agents must pay 0.17 €/MWh. This data shows that Portuguese producers are subjected to a negative discrimination when compared to the Spanish producers. So, there is an urgent need for a greater harmonization of rules and conditions for Iberian producers to enter the market, promoting fair and equitable competition in MIBEL.

Production profile in the last 2 years

By studying the electricity generation trend from June 2016 to June 2018, it is verified a regularity of the solar and biomass generation, a great variability of the hydroelectric production, including the production from pumping, and still very high values of electric generation due to fossil power plants.

According to the available information, on average natural gas and coal production accounts around 2 TWh per month, which corresponds to a monthly average emission of 1.4 million tons of CO_2. These production figures are estimated to generate financial burdens on imports of fossil fuels of around 60 million euros per month.

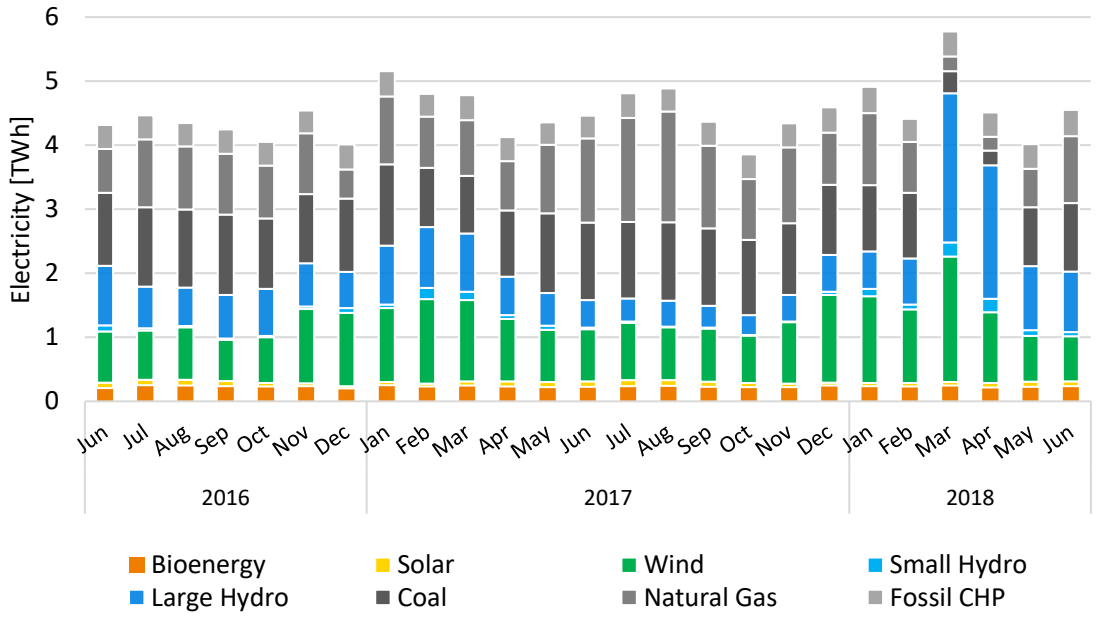

Figure 3: Distribution of the electricity generation by source in Mainland Portugal. (June of 2016 to June of 2018)

Source: REN; APREN's analysis

June's Load Diagram

In June, Mainland Portugal's electricity production was mostly due to fossil fuels (2,521 GWh, 55% of the mix). In terms of electricity exchanges, export periods prevailed (the export balance was 494 GWh), partly explained by the temporary reduction of the Spanish nuclear power production.

The monthly peak of electricity production occurred on the day 5 at 11h and had a value of 9,360 MW. In this period, the Portuguese generation represented 143% of the consumption and was distributed by 4,188 MW of renewable power stations and 5,172 MW of fossil power plants.

The June load diagram shows (figure 4) the peak of monthly production of the Portuguese electricity sector and the peak of renewable generation.

The peak of renewable production in the electrical system in June was 4,987 MW, which represented 72% of the Portuguese consumption. This fact happened at 11h on the 19th.

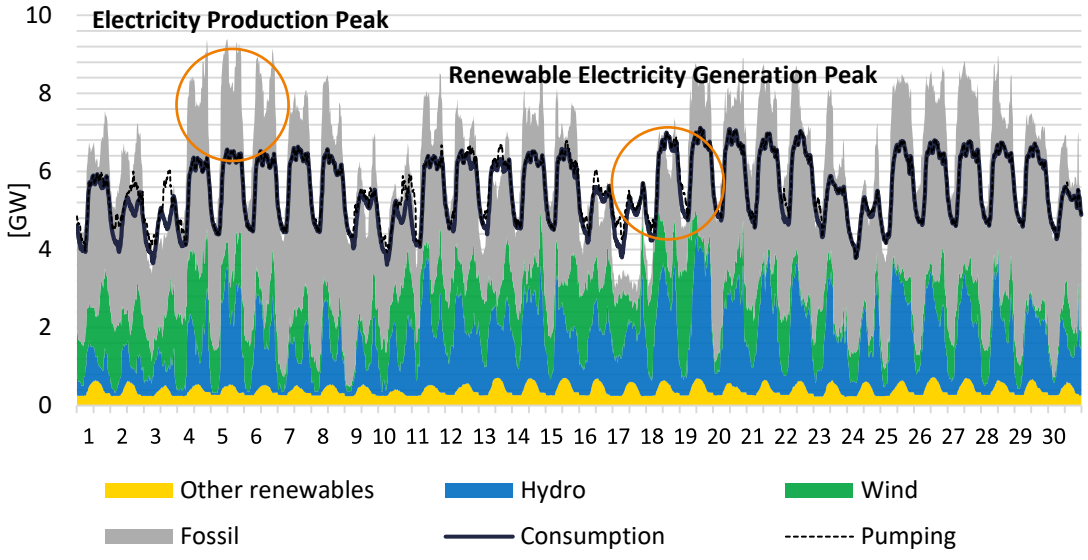

Figure 4: Load Diagram of Mainland Portugal. (June of 2018)

Source: REN; APREN's analysis

Political Developments of the 1st Semester of 2018

During the first half of 2018, the European Institutions approved the renewable energy contribution target for 2030 under the Renewables Directive. The agreed value was 32%, which represents a significant increase compared to the value initially proposed by the European Commission of 27%.

It is also important to highlight some measures approved under the Energy Efficiency Directive and the Energy Union Governance model, also beneath the 2030 package:

• The commitment to self-consumption, which recognizes the right not to be penalized for costs of access to the network in the component of self-consumed energy.

• The definition of a linear trajectory of renewable energy penetration to reach the goal established until 2030.

• The target of energy efficiency - 32.5% compared to 1990, shows the need for a concerted strategy between the electricity, transport and heating and cooling sectors. It should be recalled that the energy efficiency target for 2020 is 20% compared to 1990 levels.

Information available in:
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