

## Italy electric grid

Italy's total electricity consumption was 302.75 terawatt-hour (TWh) in 2020, of which 270.55 TWh (89.3%) was produced domestically and the remaining 10.7% was imported.

Italy has a high share of electricity in the total final energy consumption. The share of primary energy dedicated to electricity production is above 35%; and has grown steadily since the 1970s.

In 2020, 38.1% of the national electric energy consumption came from renewable sources (compared to 16.6% in 2008), covering 20.4% of the total energy consumption of the country (7.5% in 2005). Solar energy production alone accounted for almost 8.1% of the total electric production in the country in 2019. Wind power, hydroelectricity, and geothermal power are also important sources of electricity in the country.

Italy abandoned nuclear power following the 1987 referendum in the wake of the 1986 Chernobyl disaster, and nuclear power in Italy has never been greater than a few percent of total power generation.

In 2018, gross electricity production in Italy reached 289.7 TWh, down 2.1% compared to 2017; thermal power stations ensured 66.5% of production and renewable energies 33.5%: hydraulic 17.4%, solar 7.8%, wind 6.1% and geothermal 2.1% (note: this statistic includes biomass and waste in the thermal). Net production was 279.8 TWh, including 2.3 TWh for pumping.

The Great Recession at the end of 2008 reduced demand for electricity by 5.7% in 2009. The strong growth of renewable energies (+47% since 2010) has made it possible to reduce fossil fuel-based production by 27% between 2010 and 2020; the drop in demand caused by the Covid-19 pandemic in 2020 is however partly responsible for this decline in fossil fuels.

In 2008 Italy consumed electricity in 6,054 kWh per capita, while the EU15 average was slightly higher 7,409 kWh per capita. In 2009 consumption was divided by power source: 13.5% import, 65.8% fossil electricity and 20.7% renewable electricity.

Combined cycle (gas) units numbered 174 and totaled a power of 40,242 MW (including 58 purely electric units: 22,300 MW and 116 cogeneration units: 17,942 MW), and gas turbines 130 units (3,073MW); steam (coal) condensing units were 104 (12,637 MW).

Enel launched a call for projects for 23 old power plants being closed, representing 13,000 MW, out of a total of 54 power plants; the Tor del Sale combined cycle power plant in Piombino, near Livorno in Tuscany, will serve as a pilot site.



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In 2017, Enel plans to achieve its goal of zero CO2 emissions, initially set for 2050, 10 years in advance. Enel Green Power installed 2,500 MW of renewable energy plants in 2017. Enel had already closed 13,000 MW of old fossil thermal power plants in 2015.

Wind farms are mainly located in the six southern regions: 90% of the number of sites, 90.5% of the installed capacity and 90.6% of the production in 2017.

Photovoltaic installations are installed both in the north and in the south, although the yield is better in the south; there is a maximum settlement density on the Adriatic coast, from the Marche to Apulia.

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