

## 'The Spanish Electricity System in 2025': Electricity demand, generation, and installed power capacity increase

Electricity consumption grows by 2.8%, an increase higher than the average experienced by ENTSO-E member countries, which was 0.5%.

In 2025, nearly 10 new GW of wind and solar photovoltaic power were installed, an amount that rises to 11.6 GW if self-consumption facilities are taken into account.

Spain increased its electricity exports by 25.1% and closed the financial year as a net exporter of electricity for the fourth consecutive year.

During this year, 212 bays and 456 km of line circuit were commissioned, bringing the transmission grid to 46,155 km.

### Madrid, 11 March 2026

The demand for electrical energy in Spain increased in 2025 and registered a 2.8% rise. Factoring in the calendar effect and temperatures, this increase was 1.6%. This year, nearly 10 new GW of installed power capacity of solar photovoltaic and wind power were commissioned. Counting self-consumption figures, renewable generation reaches 56.6%.

These are some of the data extracted from the summaries of the [Spanish Electricity System Report 2025 and Renewables in the Spanish Electricity System 2025](#), two documents by Red Eléctrica presented today in Madrid at an event attended by the Secretary of State for Energy, Joan Groizard, and the Chairwoman of Redeia, Beatriz Corredor.

The Secretary of State for Energy, Joan Groizard, has highlighted the progress in renewable generation to meet new demands in a context of the electrification of the economy: '2025 has brought many advances, both in the physical reality of our country's electricity system, and in the regulatory, normative, and operational reality, which allows us to have a stronger, more advanced, and more sophisticated system.'

Meanwhile, Beatriz Corredor highlighted that 'the increase in electricity demand associated with new industrial and digital consumption, and the increase forecast for the coming years with the advance of the electrification of the economy, place Spain in a strategic position within the European context, with a cleaner and more efficient electricity model.'

The reports presented by Red Eléctrica, the Redeia company responsible for the transmission and operation of the Spanish electricity system, analyse the evolution of the main indicators of the electricity sector in a year in which the company has expanded the

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information it offers through the [Data section on its website](#), the [eSios website](#), and the [redOS app](#), incorporating, for the first time, generation and installed power capacity data from storage and self-consumption facilities.

For the second consecutive year, electricity consumption in Spain has increased: by up to 2.8% compared to 2024, registering 256,086 GWh. This increase in Spain exceeds the average of the ENTSO-E member countries as a whole, in which 2025 consumption was 0.5% higher.

If we consider self-consumption, demand increases by 3.7%, to 269,753 GWh, a figure that recovers the levels prior to the COVID-19 pandemic.

This increase at the national level has also been experienced in the Balearic and Canary Island archipelagos, whose demand rose by 2.2% and 1.1% respectively, two values that take the calendar effect and temperatures into account.

At the peninsular level, peak electricity demand for the year was recorded on 15 January at 20:57, at which point 40,070 MW were reached.

## **Installed power capacity**

As of 31 December 2025, the Spanish electricity system had a generation fleet of 142.5 GW, 7.3% more than in 2024, after adding 10 GW of renewable power (8.8 GW of solar photovoltaic and 1.2 GW of wind). Meanwhile, storage power stood at 3,427 MW.

Considering self-consumption facilities, the installed power capacity reaches a total value of 150.8 GW, of which 68.9% corresponds to renewable generation power, 28.9% to non-renewable generation power, and 2.3% to storage power.

Spain positions itself as the second country among ENTSO-E members with the greatest presence of solar and wind technology, surpassed only by Germany.

Solar photovoltaic continues to be, with almost 50 GW installed, the technology with the greatest presence in the installed power capacity structure, accounting for 33.1% of this mix that includes self-consumption. It is followed by wind (with 22.1%), combined cycle (17.4%), and hydro, with 11.3% of the total. On the other hand, the conversion of the Aboño II coal-fired power plant into a steam turbine reduced the share of this technology to 1%.

## **Electricity generation: an increasingly sustainable country**

Electricity generation grew by 3.7% this year, in which renewables produced 55.5% of all the electricity in Spain. With the inclusion of the estimated contribution from self-consumption facilities, the renewable share rises to 56.6%.

Wind is, for the third consecutive year, the leading technology in the Spanish mix without self-consumption, contributing 21.6% of the total GWh produced. It is followed by nuclear, with 19%, solar photovoltaic (18.4%), combined cycle (16.8%), and hydro, responsible for 12.4% of the total. As a consequence of all the above, 75.5% of generation was free of CO<sub>2</sub> equivalent emissions.

Considering the estimation of energy produced by self-consumption facilities, the national mix would be led by solar photovoltaic.

During 2025, storage systems such as pumped storage or batteries have contributed to integrating 9,213 GWh (6.2% more than in 2024), which has allowed for greater use of renewable generation.

### **Exchanges, quality of supply, and new km of line circuit**

In relation to electricity exchanges, Spain has exported 25.1% more electricity to neighbouring countries and, with 12,794 GWh, closes its fourth consecutive year with an export balance. It should be noted that the peninsular electricity system has had a continuous export balance for more than 50 months, specifically since November 2021.

In compliance with the current 2021–2026 Electricity Transmission Grid Plan and in order to strengthen grid meshing, support new demands, integrate more renewables into the system, and satisfy industrial consumption, a total of 212 bays and 486 km of electricity line circuit were added to the transmission grid in 2025, reaching 46,155 km nationwide. In total, the transformer capacity of the electricity system has increased in this financial year by 1,455 MVA, reaching 99,071 MVA.

[Consult the summary documents of the \*Spanish Electricity System Report 2025 and Renewables in the Spanish Electricity System 2025\* here.](#)