

According to Data Presented by Red Eléctrica Today

Catalonia remains a leader in electricity generation while increasing its renewable output

The ongoing drought impacts hydropower generation in Catalonia, which produced 2,203 GWh, a 17.7% decrease compared to 2022

Catalonia ranks as the second region in CO₂ equivalent (greenhouse gases) emissions-free generation

Barcelona, 21 March 2024

Catalonia, with 38,267 GWh, remains the autonomous community with the highest electricity production in 2023 and ranks second in terms of GWh from emission-free generation, up to 28,380 GWh. Additionally, this region increased its renewable generation by 2.2% last year, which now accounts for 15.7% of the total Catalan mix.

These are some of the findings derived from the [Spanish Electricity System Report 2023](#) and the [Renewable Energy Report 2023](#), documents by Red Eléctrica that compile last year's main industry figures for our country.

According to Beatriz Corredor, president of Redeia (Red Eléctrica's parent company), "the figures for 2023 prove that Spain has consolidated its renewable leadership. This has been made possible by efforts in system operation and our extraordinary transmission grid, which have allowed our country to safely reach a share of 50% renewables in the mix. The grid is and will continue to be ready to meet the objectives of the National Integrated Energy and Climate Plan (PNIEC)."

Renewable production originating in Catalonia grew in 2023 thanks to a boost in wind power, which increased by 25.3% compared to the previous year, reaching an 8% share and becoming the region's leading renewable generation source. Following wind power is hydropower, which, due to low rainfall in 2023, experienced a 17.7% decrease and contributed just 5.8% to total energy production in Catalonia. Catalonia's generation structure is led by nuclear power, which is responsible for 58.5% of the region's electricity mix.

Thus, Catalonia generated a total of 38,267 GWh in 2023, 28,380 GWh of which were CO₂ equivalent emissions-free. This is the second highest amount produced in any autonomous community. The quota of emissions-free production stood at 74.8% of the total.

Demand in Catalonia amounted to 44,209 GWh (18.1% of the national total) and decreased by 1.5% compared to that recorded in 2022, a variation in line with that of Spain as a whole.

The Year 2023 in Spain: Renewables Break Records

In Spain in 2023, installed solar photovoltaic power increased by 28%, bringing an additional 5,594 MW to the Spanish generation pool, the highest figure since records began. As a result, this technology now has 25,549 MW in service, representing 20.3% of the Spanish generation pool. This year-on-year increase means that our nation is the second among ENTSO-E countries in terms of the installed highest solar power output (both thermal and photovoltaic).

Spain ended 2023 with more than 125.6 GW of total installed capacity, with renewables constituting 61.3% of this total. Thus, in 2023, the renewable production pool grew by 8.8%, thanks not only to the new photovoltaic MW mentioned, but also to the addition of 661 MW of wind power and 4 MW from other renewable sources. In Spain's national ranking, wind power is still the technology that accounts for the largest proportion, 24.5% of capacity, followed by combined cycle (20.9%), photovoltaic power (20.3%), and hydropower (13.6%), which increased its contribution by 41.1% compared to the previous year, given that 2022 was exceptionally dry.

According to the documents presented today, 2023 will also be remembered as the year when all historical renewable generation records were shattered, as over half of the electricity mix (50.3%) came from natural resources such as wind, sun, or water.

In 2023, Spain produced 15.1% more renewable energy than the preceding year, totalling 134,321 GWh. Two technologies were the main contributors to this historic milestone: wind power, leading the mix with 23.5% of the total, and photovoltaic power, which produced 33.8% more than in 2022.

As a direct consequence of the rise in renewable energy production, 2023 also witnessed the lowest CO₂ equivalent emissions (greenhouse gases): 32,045,711 tCO₂ equivalent, nearly 28% less than the previous year.

In its Spanish Electricity System Report 2023, Red Eléctrica also analyses other metrics such as developments in demand, which in 2023 were 1.9% lower than in 2022 after adjusting for employment activity and temperatures. In gross terms, electricity demand in 2023 stood at 244,665 GWh, marking a 2.3% decrease, while electricity consumption across the ENTSO-E countries experienced a 3.3% decrease compared to 2022.

Additionally, the transmission grid availability index in the Spanish mainland system reached 97.62%, closely mirroring the values recorded in the electricity systems of the Balearic and Canary Islands, which stood at 97.84% and 98.93%, respectively.