

According to Data Presented by Red Eléctrica Today

Extremadura, leader in solar photovoltaic energy generation in Spain in 2023

Renewables in Extremadura produced 31.9% more in 2023, accounting for 45.1% of its electricity generation

Nearly 100% of the region's electricity production is emissions-free

Extremadura has increased its installed renewable capacity by 13%

Mérida, 21 March 2024

Extremadura is the leading autonomous community in terms of electricity produced from solar photovoltaic power in 2023. It generated 9,167 GWh, a 31.8% increase compared to the previous year. Thus, this technology was responsible for 30.8% of the Extremaduran electricity 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)."

With the boost in photovoltaic power, renewable energy sources in Extremadura experienced a 31.9% increase in 2023 compared to the previous year, reaching a quota of 45.1% of total regional energy production. In addition, this autonomous community remains the top producer of emissions-free electricity in Spain, with 26,647 GWh, nearly 100% of its generation.

Extremadura's regional generation structure in 2023 was led by nuclear energy. This technology was responsible for 54.7% of the total GWh produced in the region, followed by solar photovoltaic power and hydropower, which recorded a total of 2,100 GWh and accounted for 7.1%. Solar thermal, other renewable sources, wind power, cogeneration, and

pumped storage complete Extremadura's electricity generation structure, with a combined share of 7.4%.

As for installed capacity, Extremadura's regional generation pool added an extra 1,064 MW from solar photovoltaic technology and 50 MW from wind power, increasing its renewable generation pool by 13% compared to 2022. In total, Extremadura has a production capacity of 11,696 MW installed power, 82.7% of which came from renewable technologies that use natural and inexhaustible resources such as the sun, wind, or water.

Once again, this year Extremadura has maintained its position as the region with the highest installed solar photovoltaic power, totalling 6,410 MW, which accounts for 54.8% of its generation capacity. Following this technology, hydropower boasts the largest presence, accounting for 19.5% of the total, followed by nuclear energy (17.2%), and solar thermal energy (7.3%). Completing the region's installed power structure are wind power, other renewable sources, and cogeneration, which together represent the remaining 1.3%.

Electricity demand in Extremadura during 2023 stood at 4,761 GWh, 1.8% less than in the previous year, a decrease in line with that recorded in 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 highest installed solar installed 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 thanks 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 power, 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 electric 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, electrical 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.