# Widespread blackout hits Spain, Portugal and parts of France amid investigation



A widespread power blackout struck Spain, Portugal, and parts of France on Monday afternoon, causing disruptions across the affected regions. The blackout began around 12:32 pm local time when two consecutive events occurred within seconds of each other, resulting in what Eduardo Prieto, head of Spanish electricity operator Red Electrica, described as a "generation disconnection" that severed the electricity supply across the Iberian Peninsula. While the power system managed to withstand the first event, it collapsed following the second.

Despite initial speculation relating the blackout to Spain's significant use of renewable energy, both Spanish and Portuguese grid operators have ruled out cyber attacks as the cause. However, investigations are ongoing to determine the exact cause. In the five-minute window between 12:30 pm and 12:35 pm, data revealed a dramatic drop in solar photovoltaic (PV) power generation—from over 18 gigawatts (GW) to just 8 GW—amounting to a plunge of more than 50%. At the time, solar PV accounted for about 59% of Spain's electricity generation, with wind energy contributing nearly 12%, nuclear almost 11%, and combined cycle gas plants 5%.

The blackout has raised questions about the grid's "inertia," a property critical to maintaining stable electricity frequency, typically supplied by generators with rotating components such as turbines in fossil fuel or hydropower plants. Solar panels and wind turbines lack this inertia, which complicates restoring power once the grid fails.

Spanish Prime Minister Pedro Sanchez, speaking on Tuesday, dismissed the idea that an excess of renewable energy caused the blackout, emphasising that experts were still investigating the incident. "What happened yesterday cannot ever happen again," he said, underscoring the government's commitment to reinforcing the electricity system based on the findings.

Kristian Ruby, secretary general of the European electricity industry group Eurelectric, suggested to The Independent that a technical fault in a high-voltage interconnector cable linking the French and Spanish grids might have contributed to the blackout. Nonetheless, Ruby warned that it could take "weeks, if not months" to complete a thorough technical analysis and stated that such a fault alone would be unlikely to cause a blackout spanning multiple countries. “The power system is perhaps the most advanced and complex machine that we have in the world,” he explained, describing it as a network of millions of units simultaneously supplying power. The system's design is intended to prevent the loss of power on such a wide scale from a single failure.

Ruby highlighted that the rapid expansion of renewables presents significant challenges to ageing transmission systems in Europe, many of which are decades old. Weather-dependent solar and wind power bring high intermittency, necessitating new technologies to maintain grid stability. He emphasised the urgent need to reinforce and strengthen power grids to accommodate the increase in renewable sources.

Despite these challenges, Ruby affirmed the importance of continuing the transition to renewable energy, driven by the need to address climate change and enhance energy and military security. He noted that the growing frequency of extreme weather events further accentuates the necessity of investing in resilient power systems.

The Independent is reporting that the blackout's consequences were widespread, with disruptions including the closure of metro stations in major cities like Barcelona and the general loss of power affecting homes and businesses. The ongoing investigation aims to uncover the precise causes to prevent similar incidents in the future.

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://www.huffingtonpost.es/sociedad/el-gran-apagon-lupa-linterna-preguntas-respuestas-entender-que-pasado.html> - This article provides an in-depth analysis of the April 28, 2025, blackout in Spain, detailing the timeline of events, the government's response, and the ongoing investigations into the causes of the outage.
2. <https://www.reuters.com/business/energy/dont-blame-renewables-spains-power-outage-bousso-2025-04-30/> - This piece discusses the massive power outage that affected Spain and Portugal, emphasizing that the crisis underscores poor grid management and inadequate infrastructure, rather than blaming renewable energy sources.
3. <https://elpais.com/internacional/2025-04-29/el-apagon-en-portugal-civismo-de-los-ciudadanos-vulnerabilidad-del-estado.html> - This article reports on Portugal's request for an urgent audit from the European Union's Agency for the Cooperation of Energy Regulators to investigate the causes of the massive blackout, highlighting the vulnerabilities in the country's critical infrastructure.
4. <https://cadenaser.com/nacional/2025/04/29/aemet-no-detecto-en-espana-ningun-fenomeno-meteorologico-o-atmosferico-inusual-que-pudiese-provocar-el-apagon-cadena-ser/> - This report from Spain's State Meteorological Agency (AEMET) confirms that no unusual meteorological or atmospheric phenomena were detected in Spain on the day of the blackout, ruling out natural causes related to the climate.
5. <https://apnews.com/article/f091ffd3e51dfd3612edb2389eac1e11> - This article provides an overview of the sweeping power outage in Spain and Portugal, discussing the timeline, affected regions, and the ongoing investigations into the root cause of the blackout.
6. <https://www.reuters.com/world/europe/spanish-grid-operators-first-assessment-rules-out-cyberattack-behind-blackout-2025-04-29/> - This report details Spain's grid operator's preliminary assessment, which ruled out a cyberattack as the cause of the widespread blackout, and discusses the potential causes and ongoing investigations.
7. <https://www.independent.co.uk/climate-change/news/spain-blackout-renewable-energy-solar-wind-b2742000.html> - Please view link - unable to able to access data