# Spain and Portugal power outages highlight renewable energy challenges



This week, widespread power outages across Spain and Portugal plunged cities into chaos, raising critical questions about the ramifications of an energy system increasingly reliant on electricity and renewable sources. The blackouts highlighted underlying vulnerabilities in the Iberian Peninsula's electricity grid, which has recently boosted its utilisation of wind and solar power.

Spain’s electricity grid had just recorded a milestone, running entirely on green power for the first time, with renewable sources like solar and wind energy reaching a peak contribution of 64% of the nation’s electricity generation shortly before the outage. However, this reliance appears to have played a significant role in the cascading failure of the grid that caused power cuts affecting millions.

While investigators have ruled out the possibility of a cyber-attack as the trigger for the outage, severe weather conditions were considered a potential factor. Yet, the temperatures at the time were comparable to those experienced in the UK, suggesting that extreme heat alone was unlikely to be the main cause. The crisis has shed light on the inherent challenges posed by renewable energy systems, particularly their lack of inertia—the mechanical momentum that conventional power plants like gas, coal, and hydroelectric turbines provide to stabilize the power grid.

Energy experts point out that the rotating machinery in traditional power plants continues spinning during supply interruptions, cushioning the impact and preventing abrupt shutdowns. In contrast, solar panels and wind turbines lack this inertia, meaning any disruption in their output can quickly escalate, potentially leading to widespread blackouts. This technical limitation has become a focal point in discussions about the sustainability and reliability of relying heavily on renewable energy.

The outage also exposed societal vulnerabilities linked to modern dependence on electricity. Urban centres were notably brought to a halt, with many shops and bars forced to close since payment card machines were non-functional. The use of cash and gas-powered cooking in restaurants could have mitigated some disruptions, had these alternatives been more prevalent. Additionally, petrol-powered vehicles would have retained functionality better than electric cars, though the blackout also affected traffic lights and other infrastructure.

The incident has sparked debate among energy experts and observers about the wisdom of rapid transitions towards renewables without maintaining a balanced, multi-source energy mix. Unlike some forms of generation, gas, coal, and nuclear energy provide a vital backup role, bolstering grid resilience in times of stress. Critics argue that setting renewable energy on a pedestal—driven by political and economic investment in reaching net zero carbon emissions—has overshadowed practical considerations of system reliability and efficiency.

The Express reports that the challenges revealed by the Iberian power cuts emphasise that advanced economies need to ensure their energy systems remain robust and diverse. One opinion suggested that an over-reliance on electricity and renewables may leave societies vulnerable to similar occurrences in the future—underscoring the importance of integrating various power sources, including fossil fuels and nuclear power, with renewable technologies to create a resilient and stable energy infrastructure.

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

## References

* <https://www.reuters.com/business/energy/dont-blame-renewables-spains-power-outage-bousso-2025-04-30/> - This article discusses the massive power outage in Spain and Portugal, highlighting that while solar power experienced a sudden drop, causing a loss of 15 GW in supply and disrupting grid stability, the author argues that renewables are not to blame. Instead, the crisis underscores poor grid management and inadequate infrastructure.
* <https://www.huffingtonpost.es/global/portugal-desconectapor-precaucion-intercambio-energia-espana.html> - This article reports that Portugal suspended electricity exchanges with Spain as a precautionary measure following the massive blackout that affected the Iberian Peninsula and southern France. It mentions that the possible excess of renewable energy could have contributed to the failure, although cyberattack causes were ruled out.
* <https://elpais.com/opinion/2025-04-30/muchas-preguntas-sobre-un-apagon.html> - This opinion piece addresses the massive blackout that affected the entire Iberian Peninsula, becoming the largest in Spain's history, and emphasizes the widespread concern over the lack of clear explanations. It mentions that the initial suspicion points to a failure in solar energy in the southwest of the country, reopening the debate on the reliability of renewable energies.
* <https://elpais.com/sociedad/2025-04-29/lo-que-se-sabe-y-no-del-apagon-masivo-red-electrica-niega-un-ciberataque-mientras-el-gobierno-se-resiste-a-descartar-nada.html> - This article reports on the massive power outage that left the entire Iberian Peninsula without electricity, excluding the islands. It occurred on Monday and Tuesday morning due to the successive disconnection of electricity generation, apparently initiated in photovoltaic installations in the southwest. Red Eléctrica ruled out a cyberattack, human error, or meteorological phenomenon as the initial cause, although the government remains cautious and does not exclude any hypothesis.
* <https://www.ft.com/content/e922cda3-801d-40df-8455-5d3aeae34288> - This article discusses the worst power outage in Europe in two decades, causing transportation disruptions, trapped individuals, and interrupted communications. It mentions that the sudden collapse of Spain’s electricity grid led to a simultaneous failure in Portugal due to their interconnected systems. The grid’s frequency dropped from the standard 50 hertz to 49 hertz, triggering automatic shutdowns of power stations.
* <https://www.huffingtonpost.es/politica/redectrica-alerto-febrero-posibles-desconexiones-elevada-penetracion-energias-renovables.html> - This article reports that in February 2024, Red Eléctrica, through its parent company Redeia, warned in a report about the risks of 'generation disconnections' due to the high penetration of renewable energies without the adequate technical capacity to respond to system disturbances. This report is relevant after the major blackout that affected Spain and Portugal on April 28, 2025, whose cause has yet to be determined.
* <https://www.express.co.uk/news/world/2048323/spain-portugal-power-cuts> - Please view link - unable to able to access data