

INVESTIGATION INTO THE IBERIAN BLACKOUT OF 28 APRIL 2025

1. FRAMEWORK

On 28 April 2025, a blackout occurred in Spain and Portugal at 11.33am, resulting in a widespread interruption to the electricity supply on the Iberian Peninsula. Some areas in France close to the border were also affected, albeit for a very short period.

As this was a major incident involving several European electricity systems, Commission Regulation (EU) 2017/1485 applies, establishing guidelines for the operation of networks and obligations to report and investigate the incident. At national level, in addition to aspects related to security of supply and risk preparedness plans - which are the responsibility of the Directorate General for Energy and Geology (DGEG) - the Quality of Service Code for the electricity and gas sectors (Quality of Service Code), approved by Regulation 826/2023 of 28 July of the Energy Services Regulatory Authority (ERSE), also applies.

The different objectives, methodologies and deadlines applicable in each of these regulatory frameworks are explained below.

In Portugal, following the *blackout*, REN - Rede Eléctrica Nacional (National Electricity Network) fully restored the National Electricity Transmission Network at around 11.20pm from the Castelo de Bode (hydroelectric power plant) and Tapada do Outeiro (combined cycle gas turbine plant) power plants with *blackstart* capacity.

The contracts for the provision of the *blackstart* service with these power plants were signed assuming a cost for the autonomous start-up service of around 240,000 euros per year in the case of Castelo de Bode and 8,200 euros per start-up, plus the gas consumed at cost price, in the case of Tapada do Outeiro.



2. EUROPEAN LEVEL

The European regulation on guidelines for the operation of the electricity transmission system mandates the [European Network of Transmission System Operators for Electricity European Network of Transmission Operators for Electricity- \(ENTSO-E\)](#) System to establish a [methodology for classifying and analysing incidents](#) and provides for the formation of a panel of experts to investigate each of the most serious incidents (Article 5(5) of Commission Regulation (EU) 2017/1485 of 2 August 2017 on guidelines for the operation of the electricity transmission system).

According to ENTSO-E's Incident Classification Scale (ICS), the Iberian blackout will be classified as "ICS 3 - Blackout", the most serious level on the international incident scale.

2.1 Who is leading the European investigation into the blackout of 28 April 2025?

The investigation will be conducted by a group of experts set up for this purpose in accordance with the ENTSO-E ["Incident Classification Scale Methodology"](#).

Last Friday, 9 May 2025, ENTSO-E released a preliminary chronology of the events that led to the blackout, which can be consulted on the [ENTSO-E](#) website.

ENTSO-E has already contacted the Agency for the Cooperation of Energy Regulators (European Union Agency for the Cooperation of Energy Regulators) and the national regulators to appoint their representatives to the panel of experts for the 28 April 2025 incident.

2.2 How will the panel of experts be composed?

The panel of experts will include:

- **Expert panel leader:** ENTSO-E shall appoint a representative of a Transmission System Operator (TSO) not affected by the incident as the leader of the expert panel to ensure the neutrality of the investigation;
- **Members of the expert panel:** representatives of the TSOs affected by the incident - REN and Red Eléctrica (REE) - and, if necessary, a representative of CORESO - the Regional Coordination Centre for South-West Europe;
- **Representative of the ICS Steering Group (SG ICS):** other TSOs not directly involved in the incident, to ensure compliance with the investigation procedure;
- Representatives of European Union Agency for the Cooperation of Energy **Regulators** and representatives of national **regulatory bodies**.



2.3 What will the investigation cover?

The panel of experts will investigate the causes of the incident, draw up an exhaustive analysis of what happened and make recommendations in a final report that will be published by ENTSO-E.

Prior to the publication of the final report, the expert panel will publish a comprehensive factual report with all the technical details about the incident. In addition, ENTSO-E will provide regular updates to the European Commission and EU Member States, including progress reports on the investigation to the Electricity Coordination Group.

2.4 What is the timetable for the investigation?

The timetable to be observed as a grade 3 incident on the Incident Classification Scale is as follows:

- a) each TSO has to report the incident classified according to the ICS criteria;
- b) no later than 6 months after the end of the incident, the panel of experts will draw up a **factual report** which will form the basis of the final report - in case, no later than **28 October 2025**;
- c) the **final report** on the investigation of the incident must be published no later than the date of publication of ENTSO-E's Annual ICS Report for 2025 - in this case, no later than **30 September 2026**.

2.5 What elements make up the first (factual) report?

After collecting the data, the panel of experts must draw up a factual report that provides at least:

- A description of the system conditions immediately before the incident;
- A description of the condition of the system after the incident;
- Actions and corrective measures activated from the system defence plan;
- The sequence of events, including a description of all violations of operational safety limits and other consequences of the incident.



2.6 What elements make up the final report?

The panel of experts will draw up the final report, which will include at least:

- Analysing the causes of the incident;
- The evaluation of the corrective actions activated and the measures in the system defence plan;
- The description of the operation of the network element(s);
- The conclusions and explanations of the reasons for the incident;
- Recommendations based on the survey's conclusions.

2.7 Who is responsible for drawing up and publicising the final report?

The final incident report is the responsibility of the panel of experts appointed for this purpose and will be published by ENTSO-E on its website. In addition, ENTSO-E must publish an annual report on operational safety indicators based on the Incident Classification Scale on its website by 30 September each year, which will also include information on this incident.

For example, the incident that took place on 21 June 2024 in the Balkans saw its [final report](#), prepared by the Panel of Experts appointed for the purpose, on 25 February.

3. NATIONAL LEVEL

In Portugal, the entity that sets out the rules, methodologies and responsibilities to be observed in drawing up risk preparedness plans in the electricity sector, in the face of regional electricity crisis scenarios, including the adequacy and security of the national electricity system, is the DGEG, under Decree-Law no. 15/2022 of 14 January and Decree-Law no. 130/2014 of 29 August, as amended.

ERSE is responsible for the economic regulation of the sector and, in this context, for defining the binomial between the quality of the service provided and the price of network access tariffs. To this end, ERSE approves the Quality of Service Code (Quality of Service Code) and other complementary rules that make it possible to assess the fulfilment of continuity of service obligations by electricity transmission and distribution network operators. This has consequences both in terms of the network operators' remuneration, since their remuneration includes incentives/penalties for the continuity of service verified in the previous year (if the operators are found to be responsible), and in terms of possible compensation for affected customers.



3.1 What is the Quality of Service Regulation?

The Quality of Service Regulations for the electricity sector state:

- quality of service obligations and standards to be met by operators, namely the continuity of the supply service (without interruptions);
- compensation to be paid to customers in the event of non-compliance;
- monitoring and reporting obligations.

3.2 Does the Quality of Service Code establish in the case of incidents with a major impact on the electricity supply?

Electricity network operators are obliged to notify ERSE of all incidents that result in the interruption of the electricity supply with impact of more than 50 MWh of energy not supplied or not distributed. These events, known as "high impact incidents", are defined in article 16 of the Quality of Service Code. The blackout of 28 April 2025 is undoubtedly a major impact incident.

3.3 How do electricity network operators communicate?

These high-impact incidents are reported in two stages: a preliminary report, which must be submitted within three days of the start of the event, and a final report, due within 20 days of its end.

This deadline can be extended by ERSE's decision for highly complex situations, particularly those involving several European organisations.

The first document is provisional in nature and should bring together the best information available at the moment. It is a first working basis for ERSE's analysis of the event and will be shared with other entities, namely the Directorate-General for Energy and Geology (DGEG).

In the final report, companies provide a detailed description of the causes and consequences of the interruption, the number of customers affected, the geographical areas affected and the amount of energy interrupted, as well as the actions taken to restore service and the impact on continuity of supply indicators.



3.4 Can operators ask for the incident of 28 April 2025 to be classified as an exceptional event?

High-impact incidents can be classified as "exceptional events" (article 8 of the Quality of Service Code), provided there is a reasoned request from the affected organisations, accompanied by detailed documentation and submitted within 30 days of the start of the event. This deadline is still running.

The event can only be considered exceptional by ERSE if it fulfils four criteria:

- Low probability of the event or its consequences occurring;
- Result in a significant reduction in the quality of service provided;
- It is not reasonable in economic terms for network operators to avoid all the consequences;
- The event and its consequences are not attributable to the network operators.

3.5 What are the deadlines for ERSE's decision?

Once network operators have submitted their requests for classification as an exceptional event to ERSE, ERSE is expected to receive a technical opinion from DGEG within a maximum of 30 days.

ERSE must take a decision on the requests submitted within 40 days.

ERSE may extend these deadlines on its own initiative, at the request of the administrative body to be consulted in the decision-making process or following a justified request from the applicant. In the present case, since this is a Europe-wide incident, the decision may have to await the final report from ENTSO-E.

3.6 Will ERSE's classification of the event be public?

ERSE's decision is public and duly substantiated. Until the decision is made, the application of financial incentives for service continuity, as well as the payment of individual compensation to each of the customers affected, may be suspended.

