

IPART's investigation into the Broken Hill tower failures and power outages

16 December 2024

Executive summary

IPART is investigating the safety and reliability of transmission infrastructure supplying Broken Hill and surrounding areas following the recent collapse of transmission towers and power outages to the area. This information paper provides an update on this ongoing investigation, including further detail on its scope.

As part of our investigation, in October 2024, Tribunal member and Energy Networks Regulation Committee Chair, Jonathan Coppel, travelled with two IPART inspectors to Broken Hill.^a This included visits to the sites of the collapsed towers and the gas turbine generators, which provide backup generation to the area.

We also continue to engage with a wide range of stakeholders to understand what happened and how people were impacted. Tribunal member Jonathan Coppel met with the Broken Hill City Council while in Broken Hill, including Mayor Tom Kennedy. Mr Coppel has also met with local state member, Mr Roy Butler MP. IPART staff have met with a number of other stakeholders including a local mine, local business owners, the Electrical Trades Union and the operator of a large battery installation at Broken Hill.

We are engaging with other regulators such as the Australian Energy Regulator (AER), the Essential Services Commission of South Australia and Essential Services Commission of Victoria (who have experienced recent tower collapses and power outages in their respective states) and the NSW Department of Climate Change, Energy, the Environment and Water.

Specialised expertise will be crucial to fully understand the events that led to the incident and any underlying factors that contributed to it. We are liaising with subject matter experts, as the areas under investigation are complex.

IPART has also sought information from Transgrid, the licensed network operator whose tower lines collapsed which led to the power supply interruptions to Broken Hill and surrounding areas. We are also making enquiries of Essential Energy, as its infrastructure distributes the supply from Transgrid to the homes and businesses.

The terms of reference for our investigation include whether Transgrid has breached relevant regulatory obligations in relation to the incident. In particular, we will seek to understand the circumstances surrounding the tower collapses and power restoration including the availability of backup generation by the gas turbine generators.

^a IPART appoints inspectors under the *Electricity Supply Act 1995*.

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders both past and present. We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

IPART is committed to maintaining integrity throughout this investigation and ensuring compliance with legal and ethical standards. This is critical to ensuring a fair, unbiased process. While the investigation is ongoing, IPART is not in a position to share with the public any conclusions on Transgrid's compliance with its obligations. We know that the people of Broken Hill and surrounding areas want to know why this incident happened and what is being done to prevent it happening again. We will conduct the investigation as swiftly as possible and provide public updates when available.

The reliable supply of electricity is crucial. IPART will investigate any system gaps that contributed to this event. We want to ensure that lessons are learnt, and actions taken to mitigate the risk of similar events happening in the future. As part of its review, IPART may propose recommendations to improve the regulatory and licensing framework for electricity network operators in NSW for the NSW Government's consideration.

Background of the incident

Transgrid reported that near midnight on 16 October 2024, some transmission towers failed on its 220,000 volts transmission line (known to Transgrid as the 'X2' line) supplying its Broken Hill substation due to a severe storm event. This resulted in the loss of supply to Broken Hill and surrounding areas. There are no other transmission lines that supply Broken Hill or the surrounding areas from the national electricity grid. There is a privately owned 220,000 volts transmission line that supplies into Broken Hill from a wind farm however this was not able to operate while Transgrid's X2 line was unavailable.

The NSW Government reported that it immediately activated an emergency response plan and coordinated assistance across a number of emergency services and government agencies, as well as the electricity companies, to support the community with access to essential items such as generators and satellite communications.

Essential Energy and Transgrid reported that supply to Broken Hill and surrounding areas was gradually restored by Transgrid and Essential Energy using backup generation. Transgrid owns and operates two gas turbine generators as a backup supply to Broken Hill and surrounding areas. One of these generators was unavailable for the incident and the other experienced shutdowns. Transgrid and Essential Energy deployed additional backup generation to reduce reliance on the gas turbine. The use of a large battery electric storage system in Broken Hill also helped to draw on excess rooftop solar energy during the day and feed it back into the grid during the evening peak.

Meanwhile, Transgrid reported that they had erected new temporary towers to replace the failed towers. By Thursday 31 October 2024, the 220,000 volts transmission line was re-energised and supply was progressively switched over from local generators to the main network supply through to Friday 1 November 2024.

The Tribunal is conscious of the impact to the people of Broken Hill and surrounding areas

The Tribunal understands that the supply interruptions to Broken Hill and surrounding areas were very challenging for the residents and businesses trying to carry on with their lives. We heard the uncertainty and anxiety around whether the electricity would stay on or go off took a toll on people, as supply was turned off through 'load sharing' (this was to avoid overloading the backup generator).

The capacity of Transgrid's single operational gas turbine generator was not always enough to supply the peak power requirements of Broken Hill and surrounding areas. Customers were encouraged to switch off non-essential appliances such as pool pumps, clothes dryers, dishwashers and similar between 5.30pm and 10.30pm daily. On the other hand, people were also asked to use power during the day while rooftop solar panels were generating energy.

We have heard that businesses struggled to operate during the period. It was widely reported that businesses lost product and thousands of dollars' worth of medications were lost when the fridges and freezers no longer worked. The local mines also largely closed, meaning many people were left without pay or using their accrued leave. We heard of visitors to Broken Hill cancelling their plans and specialist professions which left town for the duration of the incident. We were told that study for year 12 Higher School Certificate exams was interrupted for many students in the area. We were told of businesses that bought or hired their own generators and filled them with their own fuel, to keep the lights on and the business trading.

We are investigating Transgrid's compliance with its obligations

The Minister for Energy issues licences to electricity transmission and distribution network operators. IPART is responsible for monitoring and enforcing compliance with the conditions of those licences. We may make recommendations to the Minister on the terms of licences and on enforcement action. We are also responsible for regulating the safety of NSW electricity assets.

The NSW Department of Climate Change, Energy, the Environment and Water oversees energy policy and planning within NSW and supports the relevant regulatory frameworks administered by the Minister for Energy.

IPART's investigation will assess Transgrid's compliance with a range of obligations under the legislation and their licence, as set out in IPART's terms of reference. To make the public aware of the relevant obligations, each is outlined below.

1. Whether there has been a breach of regulatory obligations, including the *Electricity Supply Act 1995 (ES Act)* and the *Electricity Supply (Safety and Network Management) Regulation 2014 (Safety Regulation)* and whether any breach is continuing.

The ES Act sets out various obligations for network operators, including Part 5D of the ES Act in relation to electricity safety.

The Safety Regulation requires network operators to take all reasonable steps to ensure that the design, construction, commissioning, operation and decommissioning of their networks are safe. The primary objective of safety management systems is to assist network operators to comply with this obligation and, in particular, to support (among other things) the management of any safety risks arising from the loss of electricity supply.

2. Whether there has been a breach of Transgrid's licence, including

(a) condition 3 and Appendix 2 concerning reliability and performance standards

Reliability standards are included in network operator licences to keep the number and duration of electricity outages within certain limits. Transgrid's licence requires it to design its system to meet the reliability standards in the licence.

The standards provide:

- a required level of redundancy (that is, the number of backup arrangements that must be in place to support continued supply of electricity in the event that part of the transmission network fails), and
- an allowance within the standard for Transgrid to plan for having some "expected unserved energy" at each bulk supply point (that is, an expected amount of energy that cannot be supplied in a year because of a network failure).

Transgrid may meet the requirements for redundancy and expected unserved energy using any combination of transmission network assets, non-network solutions (like backup power generation) or agreements with distribution network service providers (DNSPs) to use part of an attached distribution network.

(b) condition 6 concerning the maintenance of certified management systems

The Transgrid licence requires Transgrid to certify and maintain an asset management system (AMS) to a recognised standard.

(c) condition 7 concerning the implementation of management systems

The Transgrid licence requires Transgrid to ensure that its AMS is fully implemented, and all relevant activities undertaken are carried out in accordance with the AMS.

(d) any other conditions relevant

In addition to the specific licence conditions identified in the terms of reference above, IPART will consider any other conditions that become relevant as the investigation progresses.

3. The circumstances of the failure of the towers, including the asset management system compliance

IPART is seeking to understand the reasons why the towers failed.

4. The circumstances of the backup generators, including their availability and asset management system compliance

IPART is seeking to understand the reason why one of the backup gas turbine generators was not available and why the remaining gas turbine generator was not able to supply the full load.

5. Any other matters considered relevant.

IPART is conducting a broad investigation and will consider all matters relevant to the investigation. In conducting the investigation, we may identify matters relating to regulation of network operators more broadly which need to be responded to. For example, this might include recommendations to the Minister for changes to the regulatory framework or licences.

IPART has regulatory powers to conduct our investigation

IPART has a range of regulatory powers to enable it to monitor compliance of network operators with their regulatory obligations. IPART will use these powers, as appropriate, to conduct this investigation, including to obtain information including documents, records or reports from network operators or other relevant persons.^b To ensure the fairness of the process, IPART will provide a reasonable period of time for responses to be provided.

The nature of an investigation can be iterative. As information is provided, IPART's investigation may identify areas of further interest and require further information to be provided. This is required so that IPART's investigation is thorough and comprehensive.

IPART may also require a licensed network operator or its officers or any other person to attend a meeting of the Tribunal to give evidence in relation to compliance with a network operator's licence.^c This provides the opportunity for verbal enquiry with people who hold information relevant to the investigation.

IPART may engage experts to assist during the investigation. Experts may be involved in conducting tests, providing advice, reviewing material or otherwise assisting.

Other Investigations and Inquiries

Australian Energy Regulator investigation

The AER has a role in regulating electricity networks, including Transgrid. The AER is the pricing regulator for major network operators in NSW, and monitors and enforces compliance with national energy legislation.

The National Electricity Rules require transmission and distribution networks to ensure their systems and infrastructure are properly operated and maintained, including by using good industry practice and undertaking compliance programs to ensure reliable operation and adherence to performance requirements.

^b Information gathering powers include those available through [s87B of the *Electricity Supply Act 1995*](#), [s42 of the *Electricity Supply \(Safety and Network Management\) Regulation 2014*](#) and through the licences.

^c Through [s87B of the *Electricity Supply Act 1995*](#).

Every 5 years the AER determines whether an electricity network operator's business' proposal (which includes forecast expenditure and tariffs) is a reasonable and realistic forecast of how much money it needs for the safe and reliable operation of the network. The regulatory framework also provides the ability for the electricity network businesses to maintain network reliability and resilience.

The AER [announced an investigation](#) into the Broken Hill power system event. IPART has been liaising with the AER throughout our investigations. We visited Broken Hill together and will continue to work together, as appropriate, to complete our investigations.

Parliamentary Inquiry

The Tribunal notes that the NSW Parliament's Legislative Assembly Committee on Environment and Planning has commenced an inquiry into [The electricity outages affecting Far West NSW in October 2024](#), following a referral from the Minister for Energy. IPART intends to make a submission to the Inquiry.

Next steps

IPART will continue its investigation and work to understand as swiftly as possible why the incident occurred and whether Transgrid breached any of its obligations.

The public may contact IPART on this topic through our dedicated [webpage](#) or the contacts below.

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