

ABC NEWS

Can the Northern Territory cope with a transition to 50 per cent renewables?

By Felicity James

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PHOTO: The Alice Springs power system was unable to cope with a minor cloud over the Uterne solar farm. (Supplied: Epuron)

It was a minor weather event the Alice Springs power system should have been able to cope with — an afternoon cloud drifted by causing a drop in output from the Uterne solar farm and rooftop solar.

Instead, the predictable event had been "unforeseen" by operators and a cascade of system and procedural failures caused a "system black" on October 13, according to a Northern Territory Utilities Commission investigation into the incident.

The outage affected 12,000 customers for up to 10 hours, including the hospital, vulnerable elderly people and those on life support, and remote communities such as Haasts Bluff almost 230 kilometres away.

The cloud itself was not the problem though, according to the NT Utilities Commission.

"The system should be able to cope with it, it didn't," Commissioner Lyndon Rowe told the ABC.

"We should be able to design systems that can withstand clouds — clouds are not unusual events."

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Key points:

- The Utilities Commission warns NT systems are not robust enough for renewables target
- The territory could still achieve its renewables target with careful planning, according to Grattan Institute
- A solar industry group says the sacking of NT utilities bosses was not necessary



PHOTO: The mass power outage on October 13 was Alice Springs' second mass power outage in as many weeks. (ABC News: Neda Vanovac)

Alice Springs has in the past led the way with renewable energy research and development in the NT — when the NT Government set its 50 per cent renewables by 2030 target two years ago, industry pushed for the town to become a "solar hub".

But Commissioner Rowe said there were lessons to be learnt from the most recent Alice Springs incident, about what happens when solar integration is not managed properly.

What went wrong?

Among the basic failures, the generators were not functioning properly at the Owen Springs power station before the system black, but there were no alarms to alert operators to this fact.

A new battery energy storage system — a positive addition according to the Commissioner — started functioning properly but then failed because it had the wrong settings.

Not enough work had been done to learn how to integrate the battery technology into the system.

"This illustrates the need for good coordination across the system," Commissioner Rowe said.

"That's not unique to the Territory — electricity used to be reasonably simple in the old days, it was very stable for about 100 years,"

"We're now going through some very significant changes where we have all different forms of generators."

Adding to the failures, the Ron Goodin power station — which was supposed to be in a state of standby while being decommissioned — had no machines in service to immediately assist.

And when it came to restarting the system, the person in charge could not find a "black start" procedure manual and had to get it up and running again from memory.

"There were some basic things that you would expect wouldn't have gone wrong," Commissioner Lyndon said.

"Certainly in terms of restarting the system, having up-to-date approved 'black start' procedure manuals available is pretty 'generation 101'."



PHOTO: Territory Generation is facing pressure to permanently reopen and restaff the Ron Goodin Power Station. (Supplied: Territory Generation)



PHOTO: Government-owned power supplier Territory Generation says its viability is being undermined by the rise of solar power. (Supplied: Quality Solar NT)

Authorities were warned

The NT Government and utilities were repeatedly warned about the lengthy list of problems that caused the Alice Springs system black on October 13.

"There is a concern that some of the lessons from the past haven't been learnt and perhaps they should've been," Commissioner Rowe said

The commission's most recent power system review, handed to the NT Treasurer in June, said there were "warning signs" in Alice Springs and Tennant Creek, where poor generation and network performance was observed.

As far back as 2014, after a major outage in Darwin, the Utilities Commission warned the Treasurer about an inability to enforce compliance.

The Electrical Trades Union has repeatedly pushed for maintenance of the gas-fuelled Ron Goodin power station as a back-up, while peak season testing at Owen Springs takes place.

"Territory Generation has been taking shortcuts and we predicted there would be failures," ETU NT organiser David Hayes said.

There were also warnings in the Roadmap to Renewables report in 2017, commissioned by the NT Government, which two years ago suggested a path towards the 2030 renewables target.

Among several technical recommendations, that report said the NT Government should urgently improve its planning and knowledge of the entire power system and its capacity to accommodate renewable energy, with a focus on Alice Springs.

Could it happen again?

The Utilities Commission is now warning power systems across the NT, in Darwin, Katherine and Tennant Creek, "may not be agile and robust enough" to support an early transition towards the NT Government's renewables target.

The NT Government has sacked Territory Generation chief executive Tim Duignan and Power and Water chief executive Michael Thomson and committed to implementing the commission's recommendations.



PHOTO: Industry observers say the NT can transition to 50 per cent renewables with the right systems in place. (Pixabay: Dimitris Vetsikas)

But sacking the utilities bosses was an unnecessary step, according to Geoff Goodrich, the director of solar industry advocacy group Smart Energy NT.

"I think the problems are much deeper than just chopping their heads off — in fact, we might have a couple of chickens running around not knowing where to go."

The NT does face a slightly more difficult challenge than some jurisdictions, according to Commissioner Rowe, because it will be reliant on "variable" solar energy without a real ability to supplement this with wind or hydro-power.

"All of those things make the system more complex and harder to manage, it doesn't mean it can't be done."



PHOTO: The NT receives more solar radiation than anywhere else in Australia. (Supplied: BOM)

Mr Goodrich said the NT Government should urgently revisit the 2017 Roadmap to Renewables report.

"It's now two years since that report has been presented and very little has been done."

The most recent recommendations, set out by the Utilities Commission, call for alarm systems in Alice Springs, investigation into solar forecasting options, clear and communicated system black procedures and a review of a generator system described as unfit for purpose.

"There was a control system that allowed some of those generators to go over their badged power ability and then they shut down because they overheated," Mr Goodrich said.

"Some of the systems didn't have alarms on them, so when they failed there was no alarm going off and no-one knew about it."

Mr Goodrich also suggested the NT Government's budget constraints could have contributed to a lack of maintenance at the power station.

But NT Utilities Minister Dale Wakefield said Territory Generation and Power and Water had simply not acted on previous recommendations.

"Most of the recommendations are not high-cost, they are about ensuring that we have the proper systems in place," Ms Wakefield said at a press conference on Monday.

The shift to renewables is already having an impact on Territory Generation.

"The growth of solar penetration in the NT continues to impact on our business and reduce our market share," the board's chairman, Dennis Bree, told an NT parliament estimates hearing in June.

Will the lights stay on as the NT integrates solar?

The Utilities Commission this month released draft generator performance standards for comment, which would place conditions on electricity generators such as solar farms connecting to the grid.

"That's all about making sure the system is able to cope with more renewables as they come onto the system," Commissioner Rowe said

Grattan Institute energy program director Tony Wood said the NT Government's renewables target was still achievable but it needed to learn from other jurisdictions and plan more carefully.

"There's no reason why technically the Territory couldn't achieve 50 per cent by 2030," he said.

"Put in place the technologies that stabilise the system now, and the management systems to do that, and then plan prudently."

"Whether that turns out to be back-up with what's known as 'fast start' gas, whether it's batteries — it can be done, but it can't be done just by hoping."

According to Mr Wood, a reliable, affordable low-emission energy system does not come without costs and reliability standards must be enforced by an independent regulator.

"Getting the balance right is not easy but it's critical."

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Territory Generation is broke, and it wants to bump up prices



First it was revealed the NT Government-owned power generator was broke. Then, it was heard the push to renewables would only make things worse.