



## COVERSHEET

<b>Minister</b>	Hon Dr Megan Woods	<b>Portfolio</b>	Energy and Resources
<b>Title of Cabinet paper</b>	Investigation into Electricity Supply Interruptions of 9 August 2021: Final Report and Next Steps	<b>Date to be published</b>	28 January 2022

### List of documents that have been proactively released

<b>Date</b>	<b>Title</b>	<b>Author</b>
November 2021	Investigation into Electricity Supply Interruptions of 9 August 2021: Final Report and Next Steps	Office of the Minister of Energy and Resources
17 November 2021	Minute of Decision, Investigation into Electricity Supply Interruptions of 9 August 2021: Final Report and Next Steps DEV-21-MIN-0234	Cabinet Office

### Information redacted

**NO**

Any information redacted in this document is redacted in accordance with MBIE's policy on Proactive Release and is labelled with the reason for redaction. This may include information that would be redacted if this information was requested under Official Information Act 1982. Where this is the case, the reasons for withholding information are listed below. Where information has been withheld, no public interest has been identified that would outweigh the reasons for withholding it.

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Office of the Minister of Energy and Resources  
Cabinet Economic Development Committee

## Investigation into electricity supply interruptions of 9 August 2021 – final report and next steps

### Proposal

- 1 This paper provides an update on the investigation I commissioned into the electricity supply interruptions of 9 August 2021. It sets out the key findings and recommendations in the final report, and advice on next steps.

### Background

- 2 On the evening of 9 August 2021, more than 34,000 households had their power turned off in response to an instruction issued by Transpower, as the electricity system operator.
- 3 The following day, I commissioned an investigation to look into what had happened. New Zealanders have a right to expect that on a bitterly cold winter's night when they turn on the heater or flick on a light switch they will be warm and not left in the dark. I sought recommendations that will reduce the risk of future supply interruption and ensure any demand curtailment is appropriately managed.
- 4 On 17 August 2021, I announced that Hon Pete Hodgson would lead the investigation, and that Erik Westergaard would provide specialist technical advice. The Ministry of Business, Innovation and Employment (MBIE) would provide secretariat support.
- 5 The investigation into electricity supply interruptions of 9 August 2021 (the Investigation) commenced on 19 August 2021 to:
  - 5.1 understand the causes of power supply interruptions on the evening of 9 August 2021, when more than 34,000 consumers lost power in the evening following a direction from the system operator to curtail national demand, and
  - 5.2 learn lessons from the event to identify and recommend improvements to ensure similar circumstances are better managed in future.

### Scope of the Investigation

- 6 The scope of the Investigation was to investigate and report on the causes and factors contributing to the power supply interruptions of 9 August, and make recommendations that will enable relevant parties (including Transpower, the Electricity Authority, and electricity industry participants) to reduce the risk of supply interruptions and to appropriately manage any

demand curtailment that might result from insufficient generation or other constraints.

- 7 This scope, and 12 questions to be addressed, were set out in the Terms of Reference for the investigation published on the MBIE website and annexed to the final report.

### **The Investigation drew on a wide range of interviews and analysis**

- 8 Over 10 weeks, the Investigation team conducted more than 25 interviews with a range of market participants and key stakeholders including generator retailers, major users, and electricity distribution businesses.
- 9 The Investigation team drew on and analysed data and information from Transpower, the Electricity Authority, and key stakeholders. It also drew on publicly available information, including three reviews into the events of 9 August that have been published to date:
- 9.1 Phase One of a two phase<sup>1</sup> review by the Electricity Authority, *Immediate assurance review of the 9 August 2021 demand management event* which was published on 10 September 2021. Transpower has formally responded to this, accepting all of the recommendations.
- 9.2 Transpower's two independent reports released on 12 October 2021. Transpower has accepted the findings of these two reports and made a public commitment to implementing the necessary changes:
- 9.2.1 *Independent Investigation of the 9 August 2021 Grid Emergency, and*
- 9.2.2 *Transpower Communications 9 August 2021 Grid Emergency.*

### **The final Investigation report has been delivered**

- 10 The Investigators delivered a final report to the Chief Executive of MBIE on 29 October 2021, and it was provided to me by MBIE on 5 November 2021.
- 11 The report, *Investigation into electricity supply interruptions of 9 August 2021*, is appended to this paper.
- 12 I am advised, and agree, that the report satisfies the Terms of Reference for the Investigation.
- 13 The report contains a number of findings, the most crucial being:
- 13.1 Turning off any householder's electricity, apart from their hot water cylinder, simply need not have happened. The demand side had

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<sup>1</sup> Phase two is broader and will review what lessons have been learned from the experiences of the industry during the 9 August event. The review will consider many roles including, but not limited to, the system operator, lines companies, generators, retailers and the Electricity Authority.

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enough discretionary load to maintain the system, but that the system operator had inadequate visibility or up to date awareness of that resource.

- 13.2 The system operator staff acted capably and professionally during a challenging evening. They got us through, notwithstanding inadequate information and a faulty demand allocation tool.
- 13.3 Forecast wholesale electricity prices seemed to provide insufficient incentive to restart Genesis' third Rankine at Huntly or Contact's Taranaki Combined Cycle plant. Some statements from generators immediately afterward were unhelpful. In coming years, slow-start thermal plants will exit the system altogether.
- 13.4 Electricity distribution businesses were also for the most part very responsive and engaged throughout the evening. Generators maximised their output where practicable – there was nothing exceptional about the planned or unplanned outages. There was a lot of cooperation and goodwill evident throughout the system, and throughout the event, though a touch of complacency was identified.
- 13.5 The electricity system's arrangements for generation shortfalls that may last for part of a day (or multi-hour) are very much less mature than arrangements for instantaneous and short outages. This will become an increasingly important issue to address.
- 13.6 The market requires much greater demand side participation. This will be essential if goals of greater electrification and decarbonisation are to be achieved.
- 13.7 Ripple (hot water) control and replacement technologies are envisaged as being at the heart of a transition to a richer demand side participation in the market over the next decade. Improved efficiency and improved security are both possible if done innovatively.
- 13.8 Transpower has room for improvement in the nature and standard of its communications. It was acknowledged that improved communication was reportedly very evident in a grid emergency event at Weka Pass in the week following 9 August.
- 13.9 The most useful piece of information for a medically dependent customer, and for everyone, is the likely length of the outage. That was mostly unavailable on the night of 9 August.
- 13.10 The Electricity Authority must review and strengthen its oversight of the system operator, and by implication Transpower.

### **The report makes 18 recommendations**

- 14 The findings of the Investigation led to 18 recommendations centred on five key themes in the final report:

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- 14.1 *Performance of the system and system operator* – two recommendations relating to ensuring discretionary load (e.g. hot water demand that can be interrupted through ripple control without affecting the quality of service) available is exhausted before households are disconnected, and the Electricity Authority scrutinising its relationship with Transpower.
- 14.2 *Wholesale market and supply side* – two recommendations relating to improving wind generation forecasting and exploring afresh a market for cap products (a financial product to manage wholesale price risk, particularly at peak times, and assist parties to make efficient investment decisions).
- 14.3 *Demand response and demand side participation* – four recommendations relating to demand side response by major users, visibility of discretionary load availability, and the development of a new product for managing multi-hour generation shortfalls.
- 14.4 *Information and communications* – nine recommendations relating to improving information provision and communications in a grid emergency, including establishing best practice arrangements for medically dependent consumers, and undertaking pan-industry contingency exercises.
- 14.5 *Looking ahead* – one recommendation relating to demonstrating leadership in standard setting where it is in the public interest to harness emerging demand side opportunities.
- 15 Many of the recommendations relate to the Electricity Authority and Transpower, and include provision of quarterly updates on progress to me.
- 16 A full list of the recommendations is annexed to the final report (Annex G).

### **Next steps**

- 17 I intend to release the final report as soon as practicable.
- 18 I intend to write to both the Electricity Authority and Transpower at the same. The letter will request that they consider the recommendations in the report directed at them, and set out my expectations regarding progress reporting.
- 19 The final report will be published on the MBIE website, and I plan to release a media statement accepting the findings and noting that I have written to the Electricity Authority and Transpower.

### **Financial Implications**

- 20 There are no financial implications.

### **Legislative Implications**

- 21 There are no legislative implications at this stage.

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## **Impact Analysis**

### ***Regulatory Impact Statement***

22 The impact analysis requirements do not apply to this Cabinet paper.

### ***Climate Implications of Policy Assessment***

23 Climate Implications of Policy Assessment (CIPA) is not required.

## **Population Implications**

24 There are no impacts for any particular population groups.

## **Human Rights**

25 There are no implications for human rights.

## **Consultation**

26 There has been no agency consultation on this Cabinet paper.

27 The findings and recommendations contained in the final report drew heavily on the Investigation team's interviews with more than 25 market participants and key stakeholders including generator retailers, major users, and electricity distribution businesses.

28 The Electricity Authority and Transpower received a draft of the final report to review for fact checking and accuracy.

29 Genesis Energy and Contact Energy were given an opportunity to fact check draft excerpts of the final report that mentioned them, and WEL Networks fact checked the case study that it was the subject of.

## **Communications**

30 The final report will be published on the MBIE website, and I will release a media statement.

## **Proactive Release**

31 This Cabinet paper will be proactively released within 30 business days of decisions being confirmed by Cabinet.

## **Recommendations**

The Minister of Energy and Resources recommends that the Committee:

1 Note that I commissioned an investigation into the electricity supply interruptions of 9 August 2021;

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- 2 Note that Hon Pete Hodgson was appointed lead investigator, and Erik Westergaard specialist technical advisor, and the investigation commenced on 19 August 2021;
- 3 Note that the purpose of the investigation was:
  - 3.1 To understand the causes of power supply interruptions on the evening of 9 August 2021, when more than 34,000 consumers lost power in the evening following a direction from the system operator to curtail national demand, and
  - 3.2 To learn lessons from the event to identify and recommend improvements to ensure similar circumstances are better managed in future;
- 4 Note that the final report *Investigation into electricity supply interruptions of 9 August 2021* has been delivered, and it satisfies the Terms of Reference;
- 5 Note that I intend to release the final report and a media statement as soon as practicable;
- 6 Note that I intend to write to both the Electricity Authority and Transpower requesting that they consider the recommendations in the report directed at them, and to set out my expectations regarding reporting.

Authorised for lodgement

Hon Dr Megan Woods

Minister of Energy and Resources

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Annex one: Investigation into electricity supply interruptions of 9 August 2021 – final report