

ELECTRICITY INDUSTRY RESPONSE TO COVID-19

SECURITY AND RELIABILITY COUNCIL

The purpose of this paper is to inform the Security and Reliability Council (SRC) of the electricity industry's response to the COVID-19 pandemic and any risks to security, reliability and resilience. This enables the SRC to provide advice to the Electricity Authority Board and in turn the wider industry.

At this time, over a quarter of a million people have died globally from the COVID-19 pandemic. The emotional and economic cost in New Zealand and internationally is enormous. As we focus on our narrow, specialised area of responding to the pandemic, we extend our sympathies to the victims and our thanks to the essential workers.

Note: This paper has been prepared for the purpose of the Security and Reliability Council (SRC). Content should not be interpreted as representing the views or policy of the Electricity Authority.

1. Electricity Industry Response to COVID-19

- 1.1. The purpose of this paper is to inform SRC of the electricity industry's response to the COVID-19 pandemic and any risks to security, reliability and resilience. The SRC provides advice to the Electricity Authority about the reliability of the power system and the performance of the system operator.
- 1.2. New Zealand has been in a state of national emergency since 25 March 2020 due to the COVID-19 pandemic.
- 1.3. Our COVID-19 alert system is at level three, which reduced from the maximum (level four) on 27 April 2020. Cabinet is due to meet on 11 May 2020 to consider the level three alert status. Their conclusions will be known by the time the SRC meets on 12 May 2020.
- 1.4. The Electricity Authority Board meets on 7 May 2020. One of the agenda items provides advice on security and reliability considerations in light of COVID-19 and invites the Board to consider whether there is any specific matter they would like advice from the SRC on.
- 1.5. The SRC's secretariat will provide a verbal update on those developments at the SRC's meeting.
- 1.6. The Electricity Authority would welcome any advice on potential security and reliability issues that may arise in the short or medium term as a result of the Government's COVID-19 response and resultant reduction in economic activity over the coming months. This could include any reduced ability to respond to other events such as extreme weather, or potential power system issues as a result of the changes in demand.

Overall, reduced demand for electricity has reduced risks to security of supply

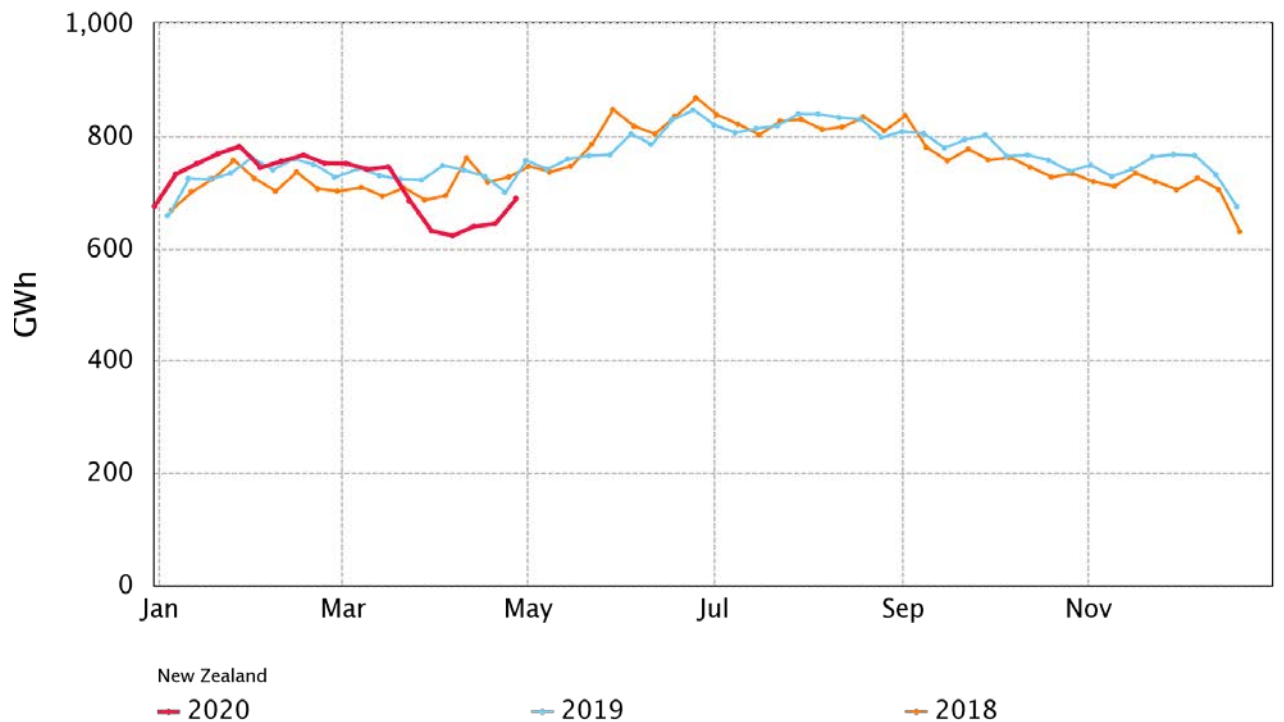
- 1.7. In general, the reduction in demand for electricity due to COVID-19 has improved the outlook for electricity security and reliability. There have been many steps taken by the electricity industry to improve monitoring and further reduce risks where possible.
- 1.8. Nonetheless, the electricity industry faces some risks that are higher than usual:
 - a) there is a backlog of maintenance built up as non-critical work was halted during alert level four
 - b) there is reduced availability and ability for personnel to visit faulted assets in their usual response times.

Demand for electricity fell sharply in level four and has recovered slightly in level three

- 1.9. The country's response to COVID-19 has reduced demand for electricity, as illustrated in Figures 1 and 2 below.
- 1.10. Figure 1 illustrates the sharp drop in demand in mid-March 2020 and how significant this is in recent history.
- 1.11. Figure 2 illustrates that demand reductions have been greatest on weekdays, and that morning peak demand has reduced by more than the evening peak. The morning peak also occurs later each day.

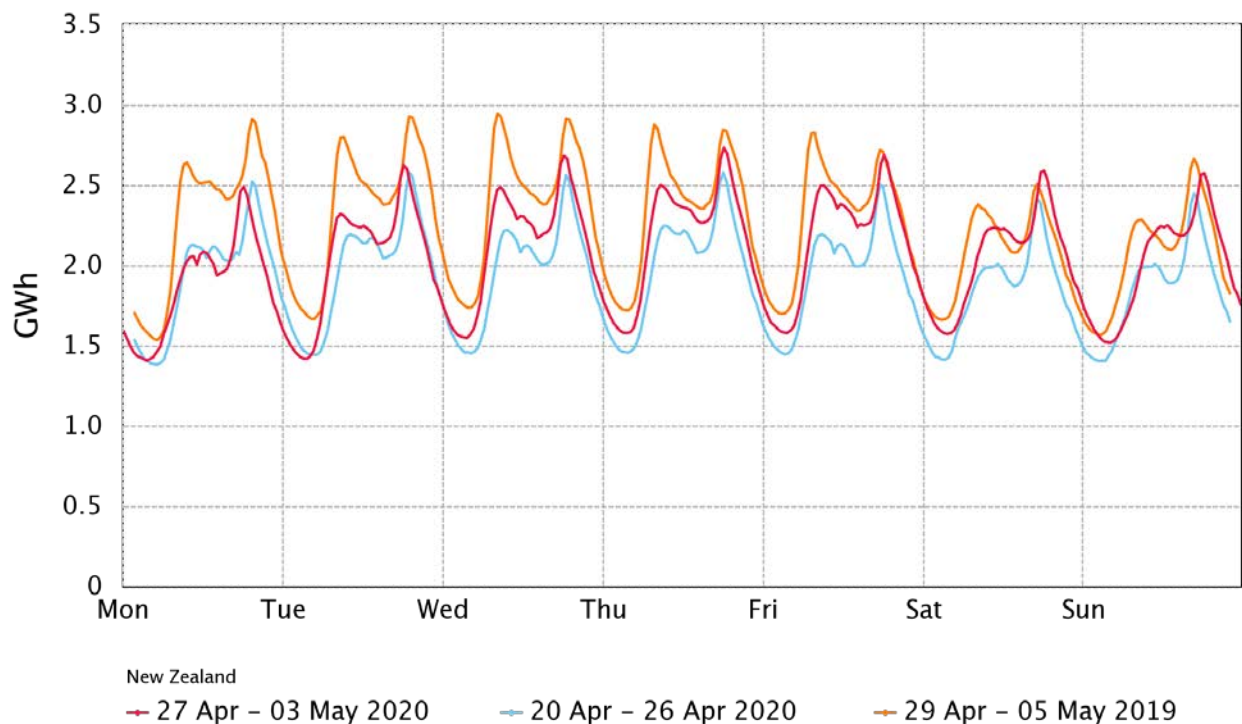
- 1.12. Both figures show how the first full week of level three has increased demand for electricity.

Figure 1: Weekly New Zealand electricity demand for 2018, 2019 and 2020



emi.ea.govt.nz/r/fxndn

Figure 2: Half-hourly New Zealand electricity demand for the last two weeks of April 2020 compared with the last week of April 2019



emi.ea.govt.nz/r/omron

Existing reporting, tools and work programmes have been adapted to the pandemic

- 1.13. The following existing reporting, tools, and work programmes have been modified to provide heightened awareness and customisation in light of COVID-19.
- 1.14. The system operator has used the following pre-existing mechanisms to respond to COVID-19:
- a) Interagency briefings on security of supply have changed from monthly to weekly. These meetings are chaired by the system operator and attended by the grid owner, MBIE, First Gas, the Gas Industry Company and the Electricity Authority.
 - b) Voltage management has needed more frequent removal of transmission circuits to maintain acceptable voltages during low loading of circuits, and it has completed additional modelling of the low demand and assessed no other action is needed.
 - c) It activated its BCP and has been providing enhanced reporting to the Authority, key stakeholders and coordinating industry-wide reporting to the national crisis management centre (NCMC).
 - d) It included new sensitivity analysis in its New Zealand Generation Balance reporting to account for the lower demand as a result of COVID-19.
 - e) It has adjusted its short-term demand forecasts in the electricity risk curves.
 - f) It has signalled it will adapt its annual assessment of security of supply to include revised demand forecasts.
- 1.15. Transpower (including the system operator) has been providing weekly reporting to its Ministers and copying this to various stakeholders including the Electricity Authority and industry groups. The most recent example of this reporting is appended to this paper as appendix A.
- 1.16. Transpower, in its capacity as the 'electricity desk' for the NCMC, polled distributors and generators about their pandemic preparedness (with a special focus on control room operations). Of the 31 respondents, 30 had isolated their control rooms and enhanced their cleaning protocols. Over three-quarters of respondents' had all of their control room operations duplicated for emergency purposes.
- 1.17. The Commerce Commission is considering the impact of COVID-19 on its third regulatory control period for electricity lines businesses and any major investment proposals.
- 1.18. The Electricity Authority has taken numerous actions in response to COVID-19, most of which have focussed on key risks in the retail electricity market. An Authority action of relevance to the SRC is the formation of the [COVID-19 Issues Working Group](#) (CIWG).
- a) The terms of reference for the group note that "Critical infrastructure and system security are being addressed primarily through other channels,

such as the National Crisis Management Centre, but that does not restrict conversation on these topics with the CIWG.”

- b) In a summary of the initial issues raised by the CIWG, their secretariat noted that:

“No issues relating to the reliability of supply have been reported to date. However, network businesses are keen to resume their normal maintenance schedules as soon as possible so as to minimise the risk of future outages.

It is also acknowledged that there may be an issue for some networks in relation to a future weather event. For example:

- Network companies may need to break bubbles to respond to storms;*
- Some critical input suppliers may need to ramp up production to provide materials;*
- Cross-regional travel may be required to transport critical supplies; and*
- Restoration times may be considerably slower.”*

- 1.19. Across the energy sector, significant maintenance projects have been postponed¹ and general planned maintenance of the power system has been deferred.
- 1.20. Government announcements on 20 April 2020 indicate the construction sector can (where suitable) resume activity in alert level three. However, some degree of backlog can be expected and (in principle at least) this could have a minor adverse impact on reliability of assets (but has not impacted reliability to date). Cabinet announced it has approved changes to stimulate infrastructure projects. Suitable ‘shovel ready’ projects may be fast-tracked through Resource Management Act requirements.²
- 1.21. The system operator, through its normal outage planning processes, will maintain an overview of the outages being planned, and will use the normal mechanisms to flag conflicting outages and facilitate changes to ensure the security and reliability of the power system is maintained.

2. Questions for the SRC to consider

- 2.1 The SRC may wish to consider the following questions.

Q1. What further information, if any, does the SRC wish to have provided to it by the secretariat?

Q2. What advice, if any, does the SRC wish to provide to the Authority?

¹ Though in the case of OMV's outage of Pohokura gas production facilities, Cabinet approved international travel from specialist crews to enable this critical project to proceed.

² Refer to <https://www.beehive.govt.nz/release/fast-track-consenting-get-shovel-ready-projects-moving>

Appendix A – Transpower briefing to the ministers 7 May 2020

**TRANSPOWER***Keeping the energy flowing*

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Date:	7 May 2020
Title:	Impact of Coronavirus (COVID-19) on Transpower
To:	Minister of Finance Minister of Energy Associate Minister of State-Owned Enterprises
Action:	For your information
Attachments:	
Contact:	Corporate Communications Manager
Copied to:	National Crisis Management Centre, the Treasury, the Ministry for Business, Innovation and Employment (MBIE), the Commerce Commission, the Electricity Authority, the Electricity Networks Association (ENA), the Electricity Retailers Association of New Zealand (ERANZ) and the Lifelines Group

Summary

1. Transpower continues to closely monitor the developments with the Coronavirus (COVID-19) and has an Incident Management Team meeting three times per week.
2. New Zealand declared a State of National Emergency on 25 March. Transpower is managing the NCMC's Electricity Desk in accordance with its role under the Civil Defence and Emergency Management Act.
3. All Transpower staff who can work from home are doing so, except for those working in our operational control centres and our warehouses.
4. We are currently in Recovery phase with a focus on enabling a stable business operation over the coming weeks as New Zealand progresses down through the Levels and staff return to offices in a staged manner.
5. This is the tenth of our weekly updates to Ministers. We will continue to send these updates until further notice.

Impact on our customers

6. Transpower has been in ongoing discussion with some customers, the Electricity Network Association and the Major Electricity Users Group (MEUG) regarding requests for financial relief.
7. On Wednesday 15 April Transpower announced to the NZX that it would offer deferred payment terms for transition charges, to certain customers. Discussions are now underway with individual customers.

Impact on our people

8. All Transpower staff who can work from home are doing so. All our staff are equipped to work from home, except those working in our operational control centres and our warehouses.
9. Work is continuing on a managed but reduced return of staff to our offices for such a time as the Government's Alert Level is dropped to Alert Level 2. Protocols have been developed that address all aspects of Health, Safety and Wellness and will be released to staff once expectations of Level 2 are announced and it is clear that our protocols match those.

Impact on our activities

10. All Transpower's System Operator functions are being delivered as normal. There are no issues related to Security of Supply or Capacity. The Transmission Grid is currently operating normally with no interruptions to points of supply.
11. The current work programme is ramping back to pre-Covid-19 levels. Tower painting and other project and maintenance work restarted on 28 April and is now well underway. Transpower is working with its Service Providers to ensure a safe restart to the work plan.
12. Transpower will review work protocols once expectations of Level 2 are announced.
13. We are continuing to actively manage and monitor our suppliers and project orders. Supplier work order books are looking full as organisations worldwide ramp up their work programmes.
14. Some international suppliers are shifting operations to local suppliers to complete local orders rather than offshore which will add to any capacity constraints.
15. The majority of our domestic suppliers are back to work under Alert Level 3 and operating in shifts to allow for social distancing.
16. Transpower has developed a shortfall materials list for the current programme of work and is working to assess impact on timing of projects.



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17. Sub-suppliers to main suppliers continues to be the largest risk. Transpower is allowing for flexibility in its programme of work to allow for unforeseen changes.

Financial Impact

18. Transpower has changed payment terms for all domestic suppliers to “pay now”. We have now moved to weekly payment runs for domestic suppliers.
19. Transpower maintains sufficient funds and access to committed funding facilities, to cover forecast cash flow commitments in the near term.
20. Transpower has experienced challenging debt capital markets but has avoided funding on onerous terms.