# NZ electricity sector response to COVID-19: Lessons learned to date

Supported by Mike Underhill

2 August 2021

# **Executive summary**

During the COVID-19 lockdown periods of 2020 it was apparent that the electricity industry generally performed well in its roles of keeping the lights on and protecting vulnerable customers. As has been the case with all sectors of the economy, many lessons have been learned through the experiences of the lockdowns (and subsequently), and the Authority wanted to ensure that lessons learned in certain parts of the industry were socialised to all that would benefit. This report was commissioned to collate these lessons and share them with the wider industry.

#### **Consumer outcomes**

The potential adverse impact on domestic consumers, particularly vulnerable consumers, was a major concern at the beginning of the first lockdown. This was mitigated by strong coordination between retailers and support agencies. Regular industry meetings provided a good forum for addressing the concerns of the various industry parties represented.

A range of interventions were put in place to manage the impact on domestic consumers, including suspending disconnections and improving early communication with potentially vulnerable consumers. This significantly eased the burden of concern for consumers and led to better management of bad debt for retailers. Interestingly, rates of disconnection have not returned to pre-lockdown levels.

management is that if the industry was able to improve the service to them during the stresses of a pandemic, this must be able to be maintained on an ongoing basis.

#### **Operational lessons**

Many businesses reported serious short-term impacts on capital and operational budgets, but generally by year-end most had caught up with their work plans and budgets.

This report identifies many useful lessons learned which range from the serious immigration issues of accessing specialists to the inconvenience of field staff no longer being able to access public toilets.

#### Industry representation in compiling this report

In total 25 industry leaders, consumer advocates and regulators were interviewed to provide the information for this report. The consensus was that the industry, so far, has generally performed well during the pandemic. Although there were challenges, the industry was able to maintain high levels of operational and customer services. This situation was aided by the fact that there were no serious security of supply issues or major faults. This, coupled with the virus being kept under control, helped maintain supply and service levels.

The strongest lesson from the perspective of vulnerable consumer

### Contents

Executive summary	2 • 5	Supply Chain	26
• Objectives	4 • A	Access to contractors	27
• Method	5 • 1	Transpower	29
Pre-COVID risk awareness	6 • (	Generation	30
Government pandemic management	9 • E	EDBs	31
Electricity Desk	10 • F	Retailers	33
Transition to lockdown	12 • F	Regulation	34
Governance	14 • (	Collaboration	35
Consumers	17 • (	Conclusions	37
Utilities Disputes Itd	20 • 5	Survey participants	38
• Staff	22		

# **Objectives**

COVID-19 has impacted, and is still is impacting, the global economy in an unprecedented manner. The impact of COVID-19 is spread across New Zealand, both geographically and socio-economically.

The electricity sector is a critical economic and social enabler in NZ.

The Authority decided in 2020 to gauge how the electricity industry had responded to COVID-19, and to the national and regional lockdowns in particular.

The exercise itself has multiple objectives:

- To learn how the electricity industry focussed on meeting the needs of consumers, particularly vulnerable consumers, through the COVID-19 lockdown periods
- To explore how the electricity industry managed their businesses during the COVID-19 pandemic (up to March 2021)
- To socialise the challenges faced by individual organisations, and

how they overcame them

- To ensure that good practice is shared across the wider industry
- To develop a set of "lessons learned so far" from the pandemic and socialise them across the industry
- To provide a document for discussion and response by the industry

This report summarises direct interview responses and feedback from across the sector, both by different parts of the sector and different elements of the industry.

## Method

The Authority's objectives for the review required feedback on a broad range of each of the individual parties' operations. To facilitate this, the Authority engaged a senior industry consultant to conduct interviews with a cross-section of industry parties, at the Chief Executive level where possible.

The interviews took the form of an open discussion as opposed to a rigid, questionnaire-style interview. This allowed the conversation to naturally focus on areas of particular relevance to the interviewee.

A questionnaire style review was not considered an effective method of gathering the required information. Emailed questionnaires typically have a very low response rate. Trying to constrain face-to-face interviews to scripted questions and answers would have made it more difficult to explore individual issues as they arose.

The interviews were conducted exclusively via video conferencing. This allowed greater flexibility and efficiency in the interview scheduling whilst maintaining the environment of a face-to-face interview.

# Pre-COVID risk awareness

Early preparedness

Industry participants had generally identified pandemics as a potential risk, with few exceptions. However, some did not have a pandemic risk identified, or pre-planning for such a risk was low down in their corporate risk register pre-COVID-19.

Those companies with international ownership that had experience with SARS and bird flu had already included a pandemic in their corporate risk registers.

By early 2020, many parts of the world were already in the grip of COVID-19 so we could learn from the impact in other countries in preparing our response.

Other early indicators for the need for pandemic preparedness included:

- Global industry association membership and contact networks allowed for early socialisation of issues as they arose
- An early-pandemic visit to the US for capital raising activities by one participant provided first-hand experience of the likely impacts of a widespread pandemic and the measures needed to mitigate them
- Standard & Poors pushed strongly to be satisfied of individual businesses' COVID-19 readiness when assessing their credit rating

# Pre-COVID risk awareness

Into the first lockdown

The Coordinated Incident Management System (CIMS), established to manage the communications and business actions required for incidents of any scale, was found to be very effective in efficiently implementing the lockdown requirements.

• The use of a standard system of organising the business brought structure and discipline. The common operational language and business structures facilitated better interactions with other organisations and agencies.

The Electricity Authority's pan-industry working group proved very useful for many. While it evolved over time to become more of a discussion forum, the group provided a common forum for spotlighting issues and scenarios that needed to be addressed and disseminating knowledge over a large part of the sector.

A national pandemic plan was already in place, but there were a number of issues that only came to light during the pandemic.

# Pre-COVID risk awareness

Lessons learned

- Flexibility on the application and modification of existing pandemic plans is essential to managing the pace of changing circumstances of a real pandemic
- Many potential issues did not eventuate, but it was prudent to plan for the worst
- COVID-19 shows that the industry generally needs to be more prepared for future "black swan" events
- In New Zealand at least, a truly "black swan" COVID-19 event has not occurred (i.e. we have not had long-term lockdown and wide-spread infections through staff and contractors). How the industry would have fared in such an event is unknown.

# Government pandemic management

The Ministry of Health (MoH) was the lead agency under MBIE themselves were hampered by not being able to the Government Pandemic Plan. The National Emergency formally approve essential worker status; it was up to businesses to decide for themselves which workers or Management Agency (NEMA) was the agency accountable for operational management once a regional contractors were essential and provide the relevant or national emergency was declared. documentation.

Transpower, through its Electricity Desk function, was the Once an emergency situation was declared, the conduit for information between government and the electricity industry. The Ministry of Business, Innovation and Employment (MBIE) was responsible for infrastructure and essential services in the energy and communications space.

During the early days of the pandemic, MoH were focussed on the strategic management of the COVID-19 pandemic. This led to a delay in calling in the operational capability of NEMA. It took two weeks of operational confusion from MBIE and MoH before an emergency was officially declared, and appropriate operational responses It was very difficult to get help from Immigration could be put in place.

Industry perceptions at the time were:

- it was hard for government policy makers to move from long-term policy to real-time decision making
- MBIE was slow to deal with, particularly on the issue of defining and identifying essential workers.

classification of essential businesses, and essential worker status within those businesses, could be carried out. The guiding principle working during the lockdown was that workers should stay at home. A given role or worker was only deemed "essential" if their work had a measurable impact on the management of the pandemic.

A better system was needed for regional border management. This was mainly a problem in the Auckland area for field staff and contractors.

Department and MIQ to bring specialist contractors into the country. Some requests were resubmitted several times following being repeatedly declined.

Transpower and generators met regularly with Ministers and officials, as did ENA, ERANZ and the independent retailers.

# **Electricity Desk**

MBIE activated Transpower as the "Electricity Desk", as per established civil defence emergency management (CDEM) practices, to coordinate information flows between MBIE and the industry.

The Electricity Desk has taken on this role during previous civil defence emergencies, such as the aftermath of the Christchurch and Kaikoura earthquakes, and is experienced in delivering its intended function.

The Electricity Desk owns the emergency handbook which contains the contact details of 130 industry leaders. This allowed a rapid and consistent information flow across the industry.

The Electricity Desk was widely praised for its responsiveness and ability to provide real-time information to parties as they needed it.

# Government agencies

Lessons learned

The lessons learned through interaction with Government agencies generally align with the operational needs highlighted through the lockdown periods:

- Ensure that the MoH focus, on the wider health implications of the pandemic, does not impede the operational management of pandemic services by MBIE
- Quickly establish essential work status for contractors and field staff
- Think and act quickly during an evolving pandemic situation
- Put plans in place ahead of decisions to allow the rapid transition between the different levels of lockdown
- The need to develop "safety valves" to ensure regulatory pressure on national infrastructure does not impact security of supply
- A better system is needed to access vital international specialists, including immigration requirements
- Auckland has the greatest exposure to international derived COVID-19 so consideration should be given to special provisions to allow work to continue

### **Transition to lockdown**

The transition to lockdown generally went smoothly:

- Businesses were able to transition to working from home very quickly
- Help with home equipment and set-up was widely provided
- Field crews were quickly organised into a work-bubble isolation system
- Communication technology worked well Teams and Zoom were used widely to great effect
- Call centres functioned better than expected from the home environment

#### But there were some challenges:

Some found early log in and software issues – these were eventually resolved

Finance software seemed to be biggest sticking point; a number of finance staff had to come into the office and use the work bubble system

Some found a lack of clarity in government announcements led to unnecessarily shutting down all work for one or two weeks

Access to sufficient PPE was an ongoing problem; attempts were made to access PPE from MoH or NEMA but these were generally unsuccessful as PPE stocks were prioritised for health workers

The global situation had driven some to order masks and PPE before lock down

# **Transition to lockdown**

#### Lessons learned

Managing during pandemic:

- Managing regional lockdowns posed an initial challenge in getting staff and equipment across lockdown borders.
- Some contractors used a separate 'COVID-19 observer' to ensure social distancing requirements were maintained during field work
- The electricity industry needs to develop its own plans rather than waiting for government announcements
  - A number of parties noted that the electricity industry needs to learn from the construction industry on how to implement an industry-wide approach to planning and interaction with government
- Consideration should be given to prioritising essential electricity workers for vaccination. This will help ensure continuity of operations should there be a resurgence of COVID-19 in New Zealand
- The CIMS system showed its value during pandemic wider use of this framework is recommended

#### Technical issues

- Having up to date and flexible digital technology was key to managing COVID-19 transitions
  - Challenges with remote access to financial software sometimes limited that flexibility
  - Some companies had to make rapid systems updates to ensure remote working arrangements were possible

# Organisational governance

Monitoring

Most companies implemented shorter interval control, though the frequency reduced over time:

- Daily meetings with the Chair and daily updates of boards were common early in the lockdown period
- Many organisations started weekly virtual board meetings
- A number of companies devised and implemented a series of 90-day plans, derived from year-end targets, to monitor the business impacts of lockdown

Boards were generally hands-off after being satisfied on key points around staff safety, continuity of operations and financial performance (including funding issues)

• CEOs were temporarily delegated increased authority to ensure greater speed and flexibility in responding to rapidly changing issues

# Organisational governance

Financial

Some businesses took out short-term credit facilities to manage the risk of a cashflow shortfall or covenant breach, but no serious financial or funding issues eventuated.

Where necessary, debt refinancing was able to take place during lockdown and companies were able to take out bridging finance until the market stabilised.

A small number of businesses stopped major capital works. Work was halted and material was not delivered. Contractors claimed force majeure on their contract terms which threatened funding covenants. Consequently, some boards operated in an environment with considerable uncertainty.

All consumer-facing parties were concerned about the financial impact on their customers and the potential rise in the number of consumers facing hardship.

Some council owners of businesses were concerned about revenue loss and the impact on their P&L.

Many participants undertook scenario analysis and accompanying financial modelling while examining worst-case scenarios for the progress of the pandemic.

# Governance

Lessons learned

Frequency of engagement with Boards increased, but Boards were generally hands-off as operational management handled the operational issues highlighted by the pandemic effectively.

No company faced unmanageable funding or debt covenant issues.

Regular briefings to staff and management were found to be very helpful.

Pan-industry perspective

The impact on consumers was a major concern at start of pandemic. Ensuring access to supply and avoiding disconnection for vulnerable consumers was a priority.

Discussions were held between government and industry participants on managing payment difficulties.

All retailers, distributors and metering equipment providers stopped disconnecting domestic customers for non-payment. This included those parties with pre-payment pricing plans (including self-disconnecting devices).

There was widespread concern about consumers losing their jobs and being unable to pay, particularly with a no disconnection policy in place. This was expected to result in a large increase in bad-debt levels, which would have a significant impact on the smaller retailers.

While medium-size enterprises met with serious issues related to the pandemic, in general electricity supply was not one of them, neither were any serious issues relating to electricity cost concerns during the lockdown periods.

Some EDBs brought forward the payment of their annual discount to provide early relief to home-bound customers.

Support agencies were very helpful in looking after vulnerable customers.

Retailer perspective

All retailers instituted a policy of regular, proactive contact with vulnerable customers and some provided credit to prevent their customers going into excessive debt.

Some retailers developed business cases for supporting vulnerable consumers but then applied the remedies to all consumers.

Following the proactive customer management policies put in place, year-onyear bad debts were generally lower following the lockdown period.

Demand from major consumers held up, SME and CBD demand dipped, but residential demand increased slightly. Some retailers noted that residential demand has remained slightly higher following the lockdown period.

Most retailers noted very positive customer feedback resulting from their lockdown management efforts. There was significant empathy between staff and customers, as all were in the pandemic together.

Agency perspectives

#### **Consumer NZ**

Very few COVID-related electricity issues were reported to Consumer NZ. Those they did encounter were generally referred to Utility Disputes Limited.

While Consumer NZ still have wider concerns around whether the electricity market is delivering for consumers, the COVID lockdown periods did not raise any new concerns.

#### FinCap

FinCap supports 200 independent budgetary advice organisations, and its focus is on the issues facing vulnerable and needy consumers:

- Growing and unmanageable debt
- Threat of disconnection
- Loss of employment, evictions and other non- electricity challenges

During the lockdowns they found themselves dealing with new groups, such as airline pilots laid off becoming vulnerable customers.

The hardship reality was much less serious than originally expected. In their view, suspending disconnections of electricity consumers was critical.

Self-disconnection with prepay meters was initially a problem, but that was resolved. They hope for "ethical" prepayment policies in future.

Industry participants were responsive to their advocacy and worked with them to manage vulnerable customers.

Going forward, they believe that retailers working on a relational basis, rather than a transactional basis, would have benefits for both vulnerable customers and the retailers themselves.

# **Utilities Disputes Ltd**

Utilities Disputes found the Authority's COVID working group particularly useful in foreshadowing issues.

They contacted all retailers on their customer policies during COVID, focussing particularly on vulnerable consumers and disconnections.

They made a commitment to be flexible when dealing with enquiries and complaints, and sensed greater reasonableness from both customers and industry.

In the past year, UDL had 10,000 enquiries (up from 7,800 in previous year), but the number of enquiries that turned in to complaints was well down on the previous year.

They have been impressed by how customers were generally treated during pandemic – their challenge to the industry, is if you can treat customers this well in challenging circumstances, why not always?

Lessons learned

Confidence in security of supply enabled large businesses to focus on other COVID issues

Regular communications with consumers were essential in managing actual or potential debt

The relationship-based arrangements with consumers over the lockdown period were more effective than current transactional arrangements in managing debt and providing a good level of consumer service and engagement.

The unexpected positive customer feedback was linked to the feeling of a common purpose during the lockdown periods.

Treating consumers well during the pandemic should become the new norm.

# Staff

All staff – these comments refer to staff across all sectors

Overall, staff were resilient to and understanding of the impact of lockdown on them.

Staff communications were essential. Employers stepped up their staff engagement activities with:

- Regular Teams and Zoom meetings to discuss company news and progress as well as engage in virtual social activities
- Regular videos sent to staff and contractors providing updates on management activities and wider COVID related news
  - Siouxie Wills was engaged by one company to produce videos for staff and contractors

Interviewees noted great motivational leadership coming through at all levels.

Staff were nervous from both health and income perspectives, but the regular updates helped assuage these fears. The lockdown period highlighted the need to carefully manage staff health and wellbeing, particularly for staff who lived alone.

Temperature monitoring of staff entering buildings resulted in some adverse feedback.

### **Staff** Office-based staff

Regular, direct contact with each staff member was essential for assessing and ongoing monitoring of mental and financial wellbeing

- Managers gave staff the reassurance that they would continue to be paid
- A pay freeze was imposed to 1 January 2021 in some cases as a precaution against significant revenue impact. Many business reimbursed the frozen salary once their financial position became clear
- Financial assistance was provided to a staff member whose flatmates lost jobs and left due to COVID, leaving the staff member with full liability for the ongoing rent

There were varied responses to working from home:

- A number of staff had challenging home working environments. Confidentiality, mental health, young families and overwork are all issues that need to be considered in future
- There were challenges in bringing staff back to the workplace.
- After the return to the office, some found that staff focused well operationally but had lost focus on strategic issues
- A hybrid part-home/part-office model is now in effect in many workplaces
- Leaders used Ministry of Health announcements on what was safe to encourage staff back to work

### **Staff** Field staff

This group was required to leave the "safety" of their homes to ensure supply operation, and that critical maintenance and fault repair was undertaken.

There was real nervousness by their families about being exposed to COVID.

Social distancing, duplicate control rooms, isolated teams and PPE were all critical to minimising exposure.

- Health observers were employed on some sites to ensure staff maintained social distancing
- Work planning included minimising COVID risk

Some field staff were exposed to public criticism for working during lockdown, and for having outages while everyone else was at home.

Declaration as essential worker made working in the community easier.



Lessons learned

Regular two-way communication, motivation and social engagement with staff was essential for staff wellbeing at home.

 Staff felt nervous and concerned that management was developing policies on the fly. This actually was the case, but leaders admitting this, and increasing comms with staff, would have helped build and maintain staff understanding and trust.

Leadership at all levels is critical in these situations.

Great teamwork and resilience should not be underestimated during a crisis.

Working from home does not work for everyone.

Hybrid working arrangements are now being developed post lockdown.

# Supply chain

Supply chain problems developed over time

Some parties stocked up on additional supplies after the first outbreak in China. Interviewees' comments included:

- There was no early difficulty in accessing critical spares most had a supply of critical stock on hand
- In one case, general procurement outsourced to national wholesaler so minimal problems so far
- There were early challenges in getting supplier businesses cleared as "essential" for lockdown work

Later challenges included:

- Accessing transformers and switchgear, sourced mainly from China and Malaysia this first became difficult, and then became impossible
- Shipping problems compounded access to international suppliers

As with other parts of the wider economy, access to overseas supplies is an ongoing problem.

# Access to contractors and specialists

Inability to access international specialists for major projects led to delay and funding issues.

- Some had force majeure in place for contractors, but without backto-back arrangements for projects
- Participants found it very difficult/impossible to get visas and MIQ access etc for international specialists

There was early concern that contractor businesses would not survive the economic impact of work stopping, and their specialist staff would vanish as a result of pandemic. This was mitigated by:

- Shortening terms of payment
- Paying progressively on contracts based on time elapsed not work complete
- Preparing to buy contractor businesses, should the worst have happened

# Supply and contractors

Lessons learned

New Zealand needs:

- a faster, less ambiguous system for declaring essential business and essential workers within those businesses
- to establish a more transparent and responsive immigration policy for accessing offshore specialist workers
- a more consistent border-crossing process.

Lockdown imposed additional challenges on contractors outside the control of businesses. These factors need to be considered in essential work planning, for example food, sanitation facilities, etc

## Transpower

As the owner of the national grid and as system operator, Transpower had a critical role in ensuring the reliable supply of electricity during the pandemic

Transpower were rated by the industry as operationally excellent. In particular, the Electricity Desk was rated very highly and responsive to requests.

Transpower used CIMS, which provided rigour and discipline and formed the backbone of their pandemic response. This also tied them in to civil defence processes.

Major capital works were paused and had to be made safe during lockdown.

Transpower:

- worked hard to help contractor cash flow with payment flexibility, and as a result had no major contractor issues.
- undertook an exercise in identifying who and what their critical resources were to develop management plan for worst case scenario
- deferred payment offered to EDBs in exceptional circumstances, but drew the line at EDBs still paying discounts
- had no challenging funding issues, despite being highly geared
- stayed in constant contact with officials and Ministers, benefitting from strong lines of communication.

### Generation

Previous crisis planning and experience (e.g. seismic preparedness) had set generators up well, with multiple control centres.

Generators enabled the use of bubbles, overcoming the need for access being required to site.

Generators were able to demonstrate continuity of operations and security of supply. Once confident of security of supply, participants were then able to focus on other COVID-19 related issues.

Some generators anticipated a potential Level 5 – i.e. COVID-19 rampant amongst staff – and booked campervans to enable isolation of staff and families on a two week on/two week off roster at power stations.

Generally hydro operating and maintenance teams could be stood down, but geothermal teams kept operating, reflecting the differing technical requirements in operations.

The main concerns following transition were staff safety and the continuation of routine maintenance.

# Electricity Distribution Businesses (EDBs)

Office-based staff, including control room staff, easily transitioned to working from home or in bubbles.

There were initial challenges with managing and motivating field staff:

- Families were concerned about exposure in the field
- There was adverse feedback from the public about seeing staff in the field prior to being announced as essential workforce.

There was concern about outages for critical maintenance while New Zealand's population was locked down at home. Consequently, distributors focused on critical maintenance in rural areas with lower population levels.

It was essential to establish the difference between critical maintenance and routine maintenance. South Island CEOs met regularly (via Zoom) to standardise approaches.

# Electricity Distribution Businesses (EDBs)

The requirement to enforce social distancing requirements meant some used health observers on work sites.

Fortunately, no major faults occurred during lockdown:

• One major sub-Antarctic storm caused huge waves which damaged coastal low-voltage pillar boxes and roads, and it was a challenge to coordinate repair of these during lockdown.

Some felt EDBs' financial risk was low as most revenue comes from substantial / government-owned retailers, and regulated EDBs could make up any revenue loss through ComCom's 5-year revenue rules

Some found unexpected consequences during lockdown – for example as all public toilets were shut down, there were no toilet facilities for field staff.

EDBs generally caught up both financially and operationally by year end, so there is very little maintenance backlog.

## Retailers

A major concern for retailers was that they would not be paid by domestic customers who lost their jobs, or business customers that were required to shut down, which had the potential to lead to a significant increase in bad debt.

The introduction of non-disconnection policies by retailers raised fears that some consumers may take advantage of the situation to not pay their bills. This fear did not manifest during the lockdown period.

Different consumption patterns left some retailers more exposed than others in the wholesale market. Those retailers that predominantly sell to domestic consumers were particularly exposed to the increase in domestic demand through lockdown and beyond, and had to procure extra cover. Other retailers with a weighting towards SME customers were potentially exposed to business shutdowns.

Independent retailers formed an informal group for meeting with officials and the Minister, which resulted in a consumer debt risk sharing proposal being taken to Cabinet for consideration. A similar scheme was proposed at the Authority COVID working group forum.

# Regulation

#### The Commerce Commission:

- The Commission's responsiveness to issues during COVID was generally considered good
- The Commission was initially flexible with regulatory timetables and commitments, but this diminished quickly after lockdown
- The Commission's priority moved from economic regulation to minimising the impact on supply during the pandemic
- Some participants found they were not helped much by the Commission, particularly when seeking clarity on reliability objectives
- Most generators had no issues, however generators had useful discussions with the Commission on how to avoid a perception of collusion when working with other generators during the lockdown period

#### The Electricity Authority:

- The Authority's COVID working group was generally rated as excellent for the foresight it provided to the industry, especially early in the lockdown
  - MEUG called out their constructive relationship with the Authority
  - Many generators said the Authority was good to deal with
- The Authority asked for large amounts of data from generators and retailers to monitor consumer debt levels, but many did not see any visible practical use made of that data
- The Authority's retailer default scheme was not well received by EDBs
- The Authority was seen as the natural industry leader during the pandemic, but some commented that they are not set up to provide a pan-industry voice.

# Collaboration

Transpower, via the Electricity Desk, was a focal point for collaboration

Northpower produced an excellent practical guide for working in a bubble, and this was widely adopted by EDBs.

Generator-retailers worked closely with FinCap and ERANZ to manage vulnerable customers, establishing the power credit scheme.

Independent retailers united as a group to interact with government and ministers.

The Authority's weekly working group video meetings for key industry participants provided a valuable forum to most participants.

The South Island CEOs forum was a valuable information sharing forum for EDBs

One retailer attempted to work with some of the larger EDBs on a risksharing scheme

There was good interaction with Transpower and some EDBs

# Collaboration

Lessons learned

The electricity industry demonstrated that it could collaborate very well within established interaction groups. The Authority's working group was a notable exception that allowed stronger collaboration to be established to meet vulnerable consumer needs, for example between retailers and FinCap.

Existing relationships between the various CEOs were very important in sharing information and lessons as they were learned.

In future, the industry as-a-whole needs to proactively develop its own plans to meet high-level government aims, rather than waiting for sometimes confusing and incomplete government announcements.

Several respondents highlighted the need to learn from the construction sector on an industry-wide approach to planning and interaction with government agencies. The electricity industry's experience highlighted the lack of a single pan-industry organisation.

The CIMS framework showed its value during pandemic in allowing faster communication between different participants using a common language, and its wider use should be explored.

## Conclusions

Feedback both from within the industry and its observers was that the electricity sector generally performed well during the COVID-19 lockdowns.

The fact that the industry is familiar with dealing with real-time faults, severe weather events and other emergencies allowed for fast responses to rapidly evolving situations.

Good planning and flexibility enabled the industry to manage the pandemic as it manifested in New Zealand. The industry should maintain this preparedness in the event there is a significant Covid-19 resurgence.

Most importantly, vulnerable consumer service was judged to have improved over the course of the pandemic. The challenge is to determine, if the actions to improve customer service were able to be carried out during the stress of a pandemic, how they can they be continued following a return to business as usual.

Initially, Government agencies took some time to align their processes and responsibilities regarding managing the pandemic. Now the roles and responsibilities are better defined, the industry should be able to work better with government to ensure that essential services are maintained through any future lockdown periods.

Some consideration should be given to the easing of regulatory oversight to ensure that security of supply is not impeded during a "black swan" event.

Although there was good collaboration across parts of the industry, the lack of a considered industry-wide voice meant that important issues were not handled as well or as quickly as they could have been. The construction industry was repeatedly held up as a sector that interacted well with both Government and other stakeholders with a single voice and was able to navigate its own path through the various government lockdown requirements.

Vigilance against further and more severe COVID-19 strains and future "black swans" requires the industry to have a coordinated, generic crisis management system in place. This lockdown period has demonstrated that time spent planning is not wasted, even if the plans are re-written multiple times in the face of operational requirements. Crisis management tools, such as the CIMS framework, should have widespread adoption.

# Survey participant list

### The Electricity Authority would like to thank the following for their time:

•	Genesis	Marc England
•	Mercury	Vince Hawksworth
•	Meridian	Neil Barclay
•	Trustpower	David Prentice
•	Contact	Catherine Thompson
•	Transpower	Alison Andrew & Andrew Renton
•	Vector	Simon Mackenzie
•	Powerco	Nigel Barbour
•	Orion	Jono Brent & David Freeman-Greene
•	Powernet	Jason Franklin
•	Wellington Electricity	Greg Skelton
•	Top Energy	Russell Shaw

٠	Network Waitaki	Geoff Douch
٠	Electrix	Robert Ferris
٠	NorthPower	Andrew Mcleod
٠	Commerce Comn.	Nick Russ
٠	Utilities Disputes	Mary Olivier
٠	Consumer NZ	Jon Duffy & Jessica Wilson
٠	FinCap	Tim Barnett (former CE)
٠	Pulse & Pioneer	Fraser Jonker
٠	MBIE	Gareth Wilson
٠	MEUG	Ralph Matthes
٠	NZ Steel	Alan Eyes
٠	Flick Electric	Mary Ann Mitchell
٠	Export NZ	Catherine Beard