

23 June 2022

Hon Megan Woods
Minister of Energy and Resources

Dear Minister

RE: JUNE REPORT BACK ON PROGRESS AGAINST RECOMMENDATIONS FROM MINISTERIAL INVESTIGATION INTO ELECTRICITY SUPPLY INTERRUPTIONS OF 9 AUGUST 2021

This letter outlines the Electricity Authority's (the Authority's) second formal quarterly report back in relation to the Ministerial Investigation into the electricity supply interruptions of 9 August 2021. The information below and the attached table provide you with our 25 June 2022 progress reporting against the recommendations made in that investigation report.

We have progressed some recommendations further, closed out others and have embedded remaining recommendations into our day-to-day operations.

We have made good progress on the recommendations from the Ministerial Investigation and other reviews and investigations into the 9 August event. This builds on the progress we made leading up to the first quarterly report, which was provided to you on 25 March 2022.

As you are aware, we focused on progressing immediately actionable recommendations so that the system operator and wider industry are much better placed to manage future demand management events and minimise the impact on consumers ahead of winter 2022. We now consider many of these to be complete as shown in the table that is attached as Annex 1. Much of the Authority's work in this regard has been working with the system operator to gain assurance that recommendations have been implemented.

In the policy area, the Market Design Advisory Group (MDAG) has work underway that is focused on making sure that New Zealand can transition to renewables without compromising future security and reliability. This work is now in options analysis phase, and we expect to have a draft options paper completed in August. We will keep you updated with key milestones through the normal Authority reporting channels.

There are several key areas we have focused on progressing through the March to June reporting period. These are set out below.

A key recommendation that was addressed during the quarter was that the system operator held a pan-industry exercise, in response to a recommendation the Authority made in phase 1 of its section 16 review into the 9 August event. The exercise was designed to test systems and processes in a scenario similar to that experienced on 9 August. A number of Authority representatives observed the exercise and the Authority has also engaged with participants who attended. The Authority is currently preparing formal feedback on the exercise. The recommendation was that these exercises be held annually and the Authority sees these as a valuable tool for the industry to learn from and for the Authority in terms of its role in managing the system operator contract.

Information and Communications (section 6 of the Ministerial Investigation)

The pan-industry exercise also assisted in progressing the communications recommendations.

The System Operator has run an in-house communications project to address the MBIE Investigation communications recommendations and the pan-industry exercise was also part of that work. Transpower has provided the Authority with an update that some of the key milestones have been achieved but has moved the completion date on this work from 30 June 2022 to 30 September 2022. The Authority intends to work closely with Transpower to ensure as much as possible improvements can be implemented sooner.

Performance of the system operator (section 3 of the Ministerial Investigation)

The assurance systems and processes we have put in place have matured throughout this reporting period. The system operator is providing a regular flow of information to the Authority. Regular meetings are in place to discuss and interrogate the information provided. This is increasing our confidence in the system operator's actions so the Minister, industry and consumers can in turn have confidence in the actions taken.

We commissioned two reports to assist in our consideration of the ways in which we might better hold the system operator to account. The first of these reviews was an examination of the Authority's current management, monitoring, and governance practices. A second report, on international best practice for management of similar contractual and governance arrangements has also been completed. Both reports have now been shared with the system operator, and the Authority will now make to its practices as a result of these reports.

We also have a workshop with the Ministry for Primary Industries to learn more about their regulatory approach – specifically, the way in which the Ministry both regulates and supports its industries, and the parallels and lessons that the Authority may be able to draw from that. This workshop is scheduled for 27 June 2022.

In addition to the above, the Authority continues to look for ways to improve our working relationship with the system operator. We have had some success in the area of code amendments where sharing context and considered discussions have resulted in better outcomes.

Looking ahead (section 7 of the Ministerial Investigation)

We have clarified recommendation 18 with MBIE and understand its focus on setting standards related to demand side opportunities such as electric vehicle charging and connection of distributed generation. We are considering the need for demand side standards including EV charging, distributed generation and distributed energy resources as part of our review of the distribution regulatory settings work. We will be consulting on an issues paper looking at these settings mid-2022.

The Authority has completed all investigations and reviews into the 9 August event

In addition to addressing the recommendations raised in the Ministerial Investigation, we have completed the Authority's other investigations and reviews into the 9 August event. These investigations and reviews have provided important insights and lessons to learn in addition to those already covered by other reviews. We have provided your office separate briefings on each of these as they conclude and the next briefing will update you on the undesirable trading situation investigation, the results of which are expected to be published on 28 June.

Next steps

We will provide you with the next quarterly report by 25 September 2022 to keep you informed on how the remaining recommendations are progressing. Closed recommendations will be reported on through normal agency reporting processes.

As always, we are available to discuss any of the matters raised in this letter with you at your convenience.

Yours sincerely



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Quarterly Progress Update

9th August Recommendations

Appendix 1: Progress on Ministerial Investigation recommendations

Recommendations that are the responsibility of the Electricity Authority

1. Immediate actions – those actions that can be implemented before Winter 2022

Number and theme	Recommendation for action	Timeframes	25 June update
MBIE1 Performance of the system and system operator (section 3)	<p>We recommend that the EA amend the Code to ensure the equity rule is deployed only when ripple control and any other type of discretionary load available has been exhausted.</p>		<p>Since the last update, the Authority has issued its report on phase 2 of its investigation under section 16 of the Electricity Industry Act. In that report, the Authority clarified the position regarding the applicability of the equity rule.</p> <p>The System Operator has submitted a 4-part code amendment request (CAR169) to the Authority which covers both the equity rule and other matters relating to the use of discretionary load. The Authority has provided initial feedback to the system operator requesting a clearer and more rigorously proven problem definition before the amendment can be progressed.</p>
MBIE2 Performance of the system and system operator (section 3)	<p>We recommend that the EA scrutinise its relationship with Transpower, perhaps with international input, with a view to holding Transpower more firmly to the rules and contracts that bind it. We believe the EA should report its progress on this recommendation to the Minister of Energy and Resources after six months. We invite the EA to engage with other regulators in New Zealand which successfully both support and regulate their industries.</p>	Ongoing implementation	<p>Since the last update, the Authority has received finalised external reports on both system operations international best practice, and also on the current state of its management, monitoring, and governance of the system operator. These matters are being discussed by the Authority management and Board, and have been provided to the system operator also.</p> <p>In terms of other New Zealand regulators, a workshop is being held on 27 June 2022 with MPI, as a Ministry which both regulates and supports its industries, which will provide a different regulatory perspective.</p> <p>A paper on Evolving our Regulatory model based on our best practice report and transferring lessons from MPI will be considered by the Authority Board in July.</p> <p>This is now part of our ongoing work and can be considered business as usual.</p>
MBIE6 Demand response and demand side participation (section 5)	<p>We recommend that the Code must be amended so that the SO has real time, and acceptably accurate, awareness of discretionary load available from each EDB by winter 2022. We commend the Upper South Island load management programme as a starting point.</p>	Voluntary changes in place already	<p>As the Authority indicated in the last update, the system operator has implemented improvements on a voluntary basis.</p> <p>The System Operator has submitted a code change request which the Authority is considering according to normal processes, as noted above.</p>
MBIE17 Information and communications (section 6)	<p>Noting that these arrangements may not be materially different from those applying in the above recommendation, we suggest the EA and industry also consider an education campaign to ensure medically dependent consumers are aware of the importance of having a</p>	End of May 2022	<p>The Authority is cognisant that this recommendation is linked to other recommendations which are largely being addressed through Transpower’s communications project and were also to be considered in the pan-industry exercise, held on 26 May in response to the Authority’s recommendations from phase 1 of its section 16 review. The Authority is currently waiting for Transpower’s report into the event and is preparing its own feedback. Part of this will relate to how the exercise supported the provision of information to medically dependent consumers.</p>

Number and theme	Recommendation for action	Timeframes	25 June update
	personalised emergency response plan.		

2. Longer term actions – those actions that are not able to be implemented before Winter 2022

Number and theme	Recommendation for action	Timeframes	25 June update
MBIE3 Wholesale market and supply side (section 4)	We recommend that the EA seek to disallow persistence forecasting and require all wind generators to use acceptably accurate ways to make their offers to the SO	Consultation expected post winter 2022	<p>This work is progressing according to plan (as per the last update) and the Authority intends to consult on changes to improve the accuracy on forecasting in the second half of 2022.</p> <p>The System Operator has also submitted a Code amendment request (CAR) to remove persistence offer obligations for intermittent generators as part of the Aug 9 work. Initial feedback has been supplied to SO requesting a clearer and more rigorously proven problem definition before the amendment can be progressed.</p> <p>The Phase two report committed the Authority to assessing the quality of the forecasts used in the pre-dispatch pricing schedules. This includes an assessment of the wind forecasts. This work will be published by the end of October. Any subsequent regulatory process would start at that point.</p> <p>We consider this recommendation can be closed out as this work has now transitioned into business as usual. We will keep you informed of risks, issues, and key milestones through our normal channels.</p>
MBIE4 Wholesale market and supply side (section 4)	We recommend that the EA explore afresh the market for cap products.	<p>Consultation on issues completed.</p> <p>Consultation on options expected post winter 2022.</p>	<p>This work is progressing according to plan.</p> <p>The Authority expects an options paper on the market for cap products policy work to be considered by MDAG in the next reporting period.</p> <p>We consider this recommendation can be closed out as this work has now transitioned into business as usual. We will keep you informed of risks, issues and key milestones through our normal channels.</p>
MBIE5 Demand response and demand side participation (section 5)	We recommend that the EA demand major users are able to offer an acceptable demand side response in the event of a short-term generation shortage and regulate if commercial arrangements are not reached in a short period.	<p>Consultation on options expected post winter 2022.</p> <p>Market solution available from February 2023.</p>	<p>Real Time Pricing is still on track to go live on 1 November 2022 with a market solution for bidding demand response to be available from February 2023.</p> <p>The 100% renewable energy policy work is in options analysis now with a draft options paper due in August.</p> <p>The Authority has surveyed distributors that participated in the pan industry exercise paying particular attention to the quality of communications with load customers. We are waiting for Transpower's report on the exercise so we can collate all feedback for Transpower. Note also that NZAS participated in the exercise by shedding demand when requested.</p>
MBIE7 Demand response and demand side participation (section 5)	We recommend that the EA and the SO design and implement a new product to manage multi-hour shortfalls.	Consultation on options expected post winter 2022.	<p>The preference of the Authority remains to use market price signals to provide the right incentives e.g. interruptible load offered for instantaneous last reserves.</p> <p>Work on 100% renewable energy policy is in the options analysis stage now with a draft options paper due in August.</p>
MBIE8 Demand response and demand side participation (section 5)	We recommend that a new ancillary service be given serious consideration as the first step in the life cycle of this new product.	Consultation on options expected post winter 2022.	As the Authority noted in its last update, there are existing workstreams through MDAG and the Authority's FSR.

MBIE16 Information and communications (section 6)	We recommend the EA work with the SO, EDBs, retailers and consumer groups to establish best practice arrangements for information provision and communication with medically dependent consumers in a grid emergency and encode such arrangements where appropriate.	Post winter 2022 (specific timing dependant on timing and recommendations MBIE 14 and 15)	As noted in the last update, the Authority considers this to be a subset of recommendation 15. The Authority will assess the need for this work once the protocols are in place relating to recommendations 14 and 15 (see below). Once the protocols are in place the Authority will consider if arrangements need to be encoded.
MBIE18 Looking ahead (section 7)	MBIE and the EA should demonstrate leadership in their respective roles in standard setting where it is in the public interest to harness emerging demand side opportunities.	Ongoing as appropriate	As noted in the last update, the Authority clarified this with MBIE. MBIE has advised it considers the Authority's approach seems reasonable and notes there are linkages with related work by EECA (development of voluntary appliance standards) and by MBIE (regulatory framework for mandatory appliance standards). We also think there is scope for more structured coordination of such work via the Council of Energy Regulators.

Recommendations involving the Electricity Authority and Transpower

1. Immediate actions – those actions that can be implemented before Winter 2022

Number and theme	Recommendation for action	Timeframes	Transpower Action/Comment	Authority Action/Comment
MBIE9 Information and communications (section 6)	We recommend that the EA and Transpower address the findings and recommendations in the EA's Immediate Assurance Review report, and reports by PBA and Thomson Lewis (both commissioned by Transpower) as a matter of priority, with each immediately initiating a programme of work, co-ordinating where appropriate.	Ongoing	Ongoing immediate actions have been completed. Target for completion of remaining Transpower actions is September 2022. Two projects are underway to address the various communications matters raised in the MBIE report (see MBIE 11, below).	Both the Authority and Transpower have work programmes in place to address the findings and recommendations across all reports carried out. We coordinate across work programmes regularly through sharing of project documentation, aligned project management documentation and regular joint governance meetings. We suggest this recommendation does not need to be reported against specifically in future, as the reporting will include the specific recommendations from the reports referred to.
MBIE10 Information and communications (section 6)	We recommend that the EA and Transpower should each be asked to provide quarterly updates to the Minister setting out progress until the systems are in place. The EA should undertake subsequent compliance monitoring.	Ongoing	This document forms the first quarterly update to the Minister, alongside Authority updates.	The Authority is coordinating quarterly reporting. A regular process is in place for the Authority to formally have assurance over Transpower progress on relevant recommendations (i.e. on the basis of trust, but verify). The Authority will undertake regular compliance monitoring as part of its role in regulating and managing the contract with the system operator. We suggest this recommendation does not need to be reported against specifically in future, as the quarterly report itself is the recommendation.
MBIE11 Information and communications (section 6)	Transpower should ensure that it henceforth reliably and promptly provide the 24/7 communications needs of the SO in generation emergencies.	Part 1 complete Part 2: 30/09/2022	Complete Part 1: Immediate changes were made to improve the communication of generation emergencies. See the Authority's recommendations from its phase one review: 1. Completed actions EA Phase 1 (3C) Part 2: Ongoing improvements to communications are part of the group of communications recommendations the SO's project 'Evaluation of alternative NCC communications options' will address. See the Authority's	Transpower has provided an update to the Authority which indicates the timeframes for its communications project have moved from 30 June to 30 September. The Authority will continue to meet regularly with Transpower to ensure that improvements can be implemented as early as possible, including before the 30 September date.

Number and theme	Recommendation for action	Timeframes	Transpower Action/Comment	Authority Action/Comment
			<p>recommendations from its phase one review: in progress: actions see EA Phase 1 (3F) Appendix 2 below.</p> <p>Reports from the Authority, PBA, Thompson Lewis and MBIE each contain several recommendations regarding communications between the system operator and industry, and with consumers. The recommendations overlap and to some extent duplicate each other. The system operator had a project (Comms Project) in its Authority-approved 2022/2023 capital programme to review the electronic communications (though the market system) it has with industry using the market system. The 9 August event showed the need to improve operational communications (including those by the system operator and also to the system operator, and with consumers). The system operator has extended the Comms Project to cover all the communications recommendations assigned to the system operator as much of the information required from participants is common to the original capital project and responding to many of the communications recommendations.</p> <p>The Comms Project is finalising its recommendations for changes to operational communications regarding events (directed at retailers/consumers) and changes to the preparation of operational notices (for and between industry control rooms) which are currently created within the system operator's market system. Recommendations will be ready by 30th June as will learnings from Exercise Shortfall.</p> <p>The Comms Project will deliver various elements at different times. A Code change proposal may be an outcome. Any changes proposed for the market system will take an as yet undetermined time.</p> <p>The Comms Project will not directly address the matter of communication with medically dependent consumers; that is a matter for the Authority, EDBs and retailers. But event communications between the system operator and industry are directly relevant to what is ultimately made available to all customers, including the medically dependent.</p> <p>The Comms Project responds to the following recommendations:</p> <ul style="list-style-type: none"> • EA Phase 1: 2A, 2B, 2C,3F, 4A • PBA recommendations: v • Thompson Lewis recommendations: 2 (long-term action) • MBIE recommendations: 14. and in part addresses 11, 12, 13 and 15 (as the project intends to deliver ongoing enhancements to the existing event communications process). <p>NOTE: timeframe date has been extended on this recommendation (and others related to communications) to allow reflections from the Comms Project to be taken into account. The recommendations will, in some cases, probably require industry discussion which will take some time to complete.</p>	
MBIE12 Information and communications (section 6)	Transpower should design and undertake pan-industry contingency exercises, monitored by the EA, sufficient to test processes actions and communications, and to clarify responsibilities in a generation emergency. Transpower should consider engaging the National Emergency Management Agency in designing	26 May 2022 exercise held. Work ongoing	Exercise Shortfall was held on 26 May 2022. The exercise attracted over 40 participants (in addition to Transpower personnel) from 20 EDBs and direct connect customers, as well as observers from the Authority, MBIE and Treasury. The scenario was based on one similar to the cause of the 9 August event, namely a shortage of available generation. The exercise was regarded as highly successful and worthwhile by all participants, as was evident during the exercise as well as in the lead-up the exercise and in the	<p>The Authority participated in the pan-industry exercise on 26 May. We have surveyed participants and will assess the performance of the exercise to assess whether it demonstrates that lessons have be learnt from the 9 August event. We will give this feedback to Transpower as part of our role holding the system operator to account.</p> <p>We have requested that the system operator provide a report to the Authority on the exercise and expect to receive that by 25 June. This will help inform the</p>

Number and theme	Recommendation for action	Timeframes	Transpower Action/Comment	Authority Action/Comment
	communications policies for use in an emergency		<p>debrief session on June 9th. A report will be completed by 25 June. External participants key themes from the debrief session include:</p> <ul style="list-style-type: none"> • support for being able to practise the operational and communications elements of a major power system event; many hope there will be future exercises • provided an opportunity to test and improve internal processes as well as better understand the system operator's approach to managing a major power system event • system operator briefings and information provided to participants' comms teams during the exercise were very valuable • still some work to do to provide information to participants about the context for an event and greater clarity about how they can assist an event being managed. <p>Transpower will hold a similar style of exercise at least once annually and is comfortable with doing so being recognised in the system operator service provider contract it has with the Authority.</p> <p>NOTE: action is shown as complete (from system operator perspective) as the exercise has been held and industry feedback meeting held. What has been learned will flow into the Comms Project recommendation actions in addition to any more operational changes which are recommended.</p>	<p>Authority's own observations and consideration of the successfulness of the exercise and provide further insight as to the level of completeness and next steps on MBIE 13, 14, and 15 below.</p> <p>The Authority recommended in its phase 1 report that conducting an exercise of this type will become a regular occurrence, on at least an annual basis.</p>
<p>MBIE13</p> <p>Information and communications (section 6)</p>	<p>We endorse the recommendation of PBA Consulting that the SO should improve its process for providing the public with timely and simple explanations for system-wide incidents, particularly where consumers have been disconnected.</p>	<p>Part 1: complete</p> <p>Part2: 30/09/2022</p>	<p>Part 1: Immediate changes were made to improve the communication of generation emergencies. See the Authority's recommendations from its phase one review: 1. Completed actions: EA Phase 1 (3C)</p> <p>Part 2: Ongoing improvements to communications are part of the group of communications recommendations the SO's a capital programme project (Evaluation of alternative NCC communications options) will address: See the Authority's recommendations from its phase one review: 2. In progress: See MBIE 11 above.</p>	<p>Transpower has provided an update to the Authority which indicates the timeframes for its communications project have moved from 30 June to 30 September. The Authority will continue to meet regularly with Transpower to ensure that improvements can be implemented as early as possible, including before the 30 September date.</p>
<p>MBIE14</p> <p>Information and communications (section 6)</p>	<p>However, we add that EDBs will usually hold relevant information that the SO does not, and are therefore also obliged to establish communication protocols, by multiple means. Both the SO and EDBs should be proactively in touch with all retailers and should have established and agreed systems to achieve that.</p>	<p>30/09/2022</p>	<p>Part of the group of communications recommendations the SO investigation capital programme project (Evaluation of alternative NCC communications options) will address. See the Authority's recommendations from its phase one review: 2. In progress: actions EA Phase 1 (3F)</p> <p>In progress: see MBIE11 above</p>	<p>The Authority considers industry is best placed to lead this as they understand what is required and are best placed to come up with innovative and workable solutions. The Authority notes that this recommendation needs to cut across both SO to distributor communications and distributor to retailer communications.</p> <p>The Authority will monitor and support SO, distributors and retailers in coming up with an industry led solution.</p>
<p>MBIE15</p> <p>Information and communications (section 6)</p>	<p>We recommend the EA work with the SO, EDBs, retailers and consumer groups to establish best practice arrangements for information provision and communication in a grid emergency and encode such arrangements where appropriate.</p>	<p>30/09/22</p>		<p>The Authority considers industry is best placed to lead this as they understand what is required and are best placed to come up with innovative and workable solutions.</p> <p>The Authority is monitoring progress of this recommendation. While some progress has been made, further action is under way.</p>

Appendix 2: Progress on recommendations for Transpower from Phase 1 of the Authority's review under section 16 of the EI Act

1. Completed actions (note items marked as complete at the last report have been removed)

Source	Recommendation for action	Timeframes	Authority Assurance	Transpower Action/Comment
EA Phase 1	<p>1A The system operator to further electricity sector readiness to respond to critical demand management incidents. This will include (but not be limited to) an annual pan-industry exercise - (similar to critical gas contingency incident management exercises).</p> <p>No Business Continuity Plan style exercises with the system operator have ever been held for a supply shortage situation, this left participants unfamiliar with protocols and requirements. Protocols developed for a rolling outage situation lasting many hours do not appear to have the flexibility to manage a short term, short notice event</p> <p>The development of an annual exercise, involving the system operator, distributors, generators and retailers would allow operational and communication processes to be refined and responsibilities better defined. The first exercise will place emphasis on resolving the objectives of communications between the system operator and distributors and direct connect consumers.</p>	30/06/2022	Underway	This exercise has been completed; a report is awaited. See MBIE 12 above (including comment regarding holding further similar exercises).
EA Phase 1	1E Review operational tools for accuracy. The system operator must review grid exit point to distributor modelling in their operational tools to ensure it is current.	30/09/2021 17/12/2021	Complete	Immediate action to correct inaccuracies is complete.
EA Phase 1	4B In the interim, where practicable, formal notices published using the existing email delivery approach which require timely recipient action should be followed up with phone calls. This communication would confirm the recipient's understanding of the issue being addressed and the actions required of them.	30/11/2021	Complete	Event management process has been reviewed and follow up communications via phone are incorporated (where practicable). This is also incorporated within NCC/NGOC training on the process. Aligns with EA Phase 1 (1B, 1C & 1D).
EA Phase 1	4C To support the current email-based notification, the system operator will put in place an assurance system to maintain up to date contact lists for key operational staff (and back up contacts) across distributors, direct connect consumers, generators and any other parties that could be required to respond to an emergency notice from the system operator.	30/11/2021	Complete	All industry participants have responded with confirmed contact details and distribution lists are updated.

2. In progress actions

Source	Recommendation for action	Timeframes	Authority Assurance	Action/Comment
EA Phase 1	1D Communicate any changes to actions required to all participants. Any update information regarding the demand management notices, i.e., instruction to some participants to hold action, must be immediately communicated to NGOC and all participants. This is critical in events where customer demand has been, or is intended to be, disconnected beyond discretionary load management.	30/09/2022 [note this timeframe is different from the previous report, of 30 June but the commentary which indicated August completion remains the same]	In Progress	There is a now well embedded understanding of the importance of ensuring the NCC speaks directly with EDB's regarding any questions about demand reduction requests. This is included in current process documents and operational notices received by EDBs. Members of both NCC and NGOC teams were involved in Exercise Shortfall where we practised and reinforced the revised process. Early feedback and findings indicate that further changes might be beneficial; these are being considered while the report on the exercise is readied for 25th June delivery. A learning module has also been developed for NCC and NGOC personnel and will be included in training after the current SCADA refresh training is completed (to be scheduled for later in 2022).
EA Phase 1	2A The system operator to work with stakeholders to develop an agreed and comprehensive communication approach to ensure prompt and consistent information. The system operator will work with distributors and retailers to resolve and formalise how priority information is to be promptly and consistently cascaded, and how affected customers and stakeholders will be notified for critical grid emergencies, unplanned outages, and material deterioration in network security. The system operator will put in place an agreed communication approach that will enable distributors and direct connect consumers to support a response to critical grid emergencies, in parallel to managing localised network support pressures.	30/09/2022 [the Authority notes this has moved from the last report which indicated 30 April 2022 completion]	In Progress	See: comments in progress: see MBIE11 above Timeframe date extended to allow Comms project to pick up information from Exercise Shortfall.
EA Phase 1	2B Communication between distributors and retailers during an emergency situation, where customers are being disconnected, should be active rather than the passive forms used for planned outage communication. This must be balanced against the operational needs and workload of the distributors during the event. Distributors and retailers must work together to formalise contact points and communication methods. The agreed communication methods must: (a) be between identified roles within each organisation with responsibility for ensuring the communication is sent, received and escalated appropriately, and (b) not rely on individual communication, alternate contacts should have access to the notification process to mitigate the risk of staff absence impacting the communication process, and (c) use standard language to provide formal notice of outages identifying the customers being disconnected.	30/09/2022 [the Authority notes this has moved from the last report which indicated 30 April 2022 completion]	In Progress	
EA Phase 1	2C Given most distributors use webpages and/or phone apps to communicate local outages, an automated messaging extension to this system may be a suitable long-term solution.	30/09/2022[the Authority notes this has moved from the last report which indicated 30 April 2022 completion]	In Progress	
EA Phase 1	3F Update participants on any worsening of the situation. Ensure relevant market indicators of the event are clearly communicated to all affected parties. The language used in any notification should use a standardised form that has been developed in conjunction with the expected recipients. This will ensure a common understanding of the meaning of the notification and any actions required of the recipients. Changes in the shortfall or residual level published through the market schedules would not necessarily be seen	30/09/2022 [the Authority notes this has moved from the last report which indicated 30 April 2022 completion]	In Progress	

Source	Recommendation for action	Timeframes	Authority Assurance	Action/Comment
	or understood by distributor operations staff even though they are most likely to be impacted by a worsening situation.			
EA Phase 1	4A Evaluate alternatives to email distribution for critical notices. The system operator will evaluate alternative communications systems that would better support notification to the operations focussed staff that are the target recipients (separate to the current email-based notification approach).	30/09/2022 [the Authority notes this has moved from the last report which indicated 31 May 2022 completion]	In progress	See: comments in MBIE11 above
EA Phase 1	5B Specific to the LSR decision support tool, the system operator must determine if the LSR decision support tool continues to be fit for purpose.	Part1: 30/04/2022 Part 2: 31/07/2022 [the Authority notes this has moved from the last report which indicated 30 April 2022 completion for the whole recommendation]	Part 1; Complete for removal of LSR from service Part 2; Code changes to be drafted.	Part 1. Review of the LSR tool is complete and supports the system operator's decision already made to withdraw the LSR tool from operational use. Part 2. Consideration is being given to whether any non-urgent Code/Policy Statement changes are needed
EA Phase 1	5D Redesign the LSR interface to simplify its operation. The user interface must be simple, clear and allow for intuitive assessment of the tool outputs to ensure they meet the needs of the power system. Process documentation should be clear and explicit about the expected operation of the tool and the checks necessary to validate the outputs of the tool.	TBA	In progress (Complete from Transpower's perspective but Authority assurance still to be completed)	Completed. LSR tool completely removed from operational use.
EA Phase 1	5E Enhance training on the revised LSR decision support tool. Training on any reinstated LSR decision support tool must include validating tool outputs and corrective actions that can be taken.	TBA	As above	As above
EA Phase 1	5F Enhance post market system update testing to validate LSR decision support tool inputs and outputs. A process needs to be put in place to ensure that the data load is carried out at the required frequency and is tested and signed off as complete, correct and functional after each upload.	TBA	As above	As above
EA Phase 1	5G Testing scripts in the test automation suite need to be updated to not only check that the tool remains usable after any changes but also that the inputs it requires – i.e., historic data is appropriate and the output it generates is correct.	TBA	As above	As above
EA Phase 1	5H Ensure distributors and direct connect consumers are familiar with the aims and outputs of the new LSR tool. The system operator must ensure that distributors are made familiar with the function, and expected outputs, of any future LSR decision support tool and the actions expected of them in response to related notices.	TBA	As above	As above
EA Phase 1	5I The Authority will monitor the system operator's review of the LSR decision support tool. The Authority must closely monitor the investigation, development and implementation of any fixes, or wholesale redesign, of the LSR decision support tool.	TBA	As above	As above

Appendix 3 – PBA Consulting recommendations that involve the Authority

Source	Recommendation for action	Timeframes	Transpower Role	Action/Comment
PBA	<p>i. Slow Start-up Generators</p> <p>Market pricing signals did not provide sufficient commercial incentive to start-up inflexible generators in time to meet the evening peak demand. The Investigator recommends that the Electricity Authority consider the relative benefits of the following suggestions:</p> <p>1) If these conditions are expected to occur very infrequently, then make no changes to the existing market rules, and accept that demand management may be infrequently required when inflexible generators cannot start in time to make up for unexpected generation shortages.</p> <p>2) Encourage a more elastic demand response to high prices. There may be a future opportunity here for aggregators to offer control of household batteries and EV charging.</p> <p>3) Adapt the existing scarcity pricing mechanism to also cover scarcity of standby reserves. The scarcity pricing price floor and cap might improve revenue certainty for slow start expensive generators. This might be a relatively small change to the present market design.</p> <p>4) Add unit commitment to the existing energy and reserve markets to give slow start generators the revenue certainty needed to start and run when there is uncertainty in the ability of generation to meet peak demands. This would be a significant change to the market design.</p> <p>5) Create a market pricing signal for standby residual generation, additional to the existing pricing signals for energy and reserves (some might call this a short-term capacity market). This would be a significant change to the market design.</p>	As noted in the action column in relation to existing work.	No active role. Will support the Authority as appropriate	As noted above, the MDAG work is progressing and that is the main progress since the last report.
PBA	<p>ii. Demand Allocation Process</p> <p>This Grid Emergency was the first time the demand allocation process has been used after a nation-wide demand reduction. The demand allocation calculation in the Policy Statement is based on historical demands and does not appear to be appropriate for reallocating demand shed on a real time percentage basis, as occurred for this event.</p> <p>The Investigator recommends that:</p> <p>1) The Electricity Authority and System Operator review whether the demand allocation calculation defined in the Policy Statement, and implemented in the LSR tool, is fit for purpose for reallocating demand shed on a real time percentage basis.</p>	This work is dependent on Transpower's work to review the future of the LSR tool.	Finalise review of the future of the LSR tool.	The main update since the last report is that the LSR tool has been removed from operational use for national and island-wide event management.
PBA	<p>iv. Wind Generation Forecasts</p> <p>Offers of wind generation significantly over-estimated the amount of wind generation that could supply the evening peak demand. This was partly due to the use of a</p>	As noted in relation to MBIE3 above	No active role. Will support the	As noted above, the Authority is progressing this work and intends to consult on changes to improve the accuracy of forecasting in the second half of 2022.

Source	Recommendation for action	Timeframes	Transpower Role	Action/Comment
	<p>persistence model for forecasting wind offers 2 hours ahead.</p> <p>The Investigator recommends that the Electricity Authority reviews the way persistence is currently used for offering or forecasting intermittent generation and considers improving forecasting requirements for intermittent generation.</p>		<p>Authority as required</p>	

Appendix 4 –recommendations from independent Transpower reports progress update

1. Completed actions

Source	Recommendation for action	Timeframes	Authority Role	Action/Comment
PBA	<p>iii. Controllable Load</p> <p>In principle, it is preferable to shed controllable load before disconnecting consumers. At present, the SO has very limited visibility of controllable load in the distribution networks. Better visibility will be needed to determine how much controllable load is available for shedding at any point in time.</p> <p>The Investigator recommends that the Electricity Authority, System Operator, and distributors work together to improve the utilization of controllable load by:</p> <ol style="list-style-type: none"> 1) Improving the System Operator’s visibility of controllable load. 2) Formally agreeing that all relevant controllable load should be shed before disconnecting consumers. This includes shedding the controllable load of one distributor to avoid disconnecting consumers of another distributor. 3) Establishing processes for how the System Operator requests distributors to manage shedding and restoration of controllable load. 4) Considering the Upper South Island Load Manager (operated by Orion and visible to the System Operator) as a possible model for better utilization of controllable load. 	30/11/2021	Assurance in progress	As per EA Phase 1 3A,3B and 5B, controllable load baseline has now been received and procedure has been revised and approved.
TL	1. GM External Affairs and Corporate Communications Manager to continue work to agree a communications protocol with key government stakeholders to ensure clarity of events to be escalated and the information requirements when escalation occurs.	30/11/2021	Assurance in progress	Protocol developed and shared with key government stakeholders. Quarterly review cycle implemented as BAU.
TL	2. Transpower policy GL-DP-008 Guidelines for Internal Communication During an Event or Incident be amended to specify in a GEN being issued due to anticipated insufficient generation, the GM Operations and CEO are to be immediately notified by phone.	30/11/2021	Assurance in progress	Immediate updates to guidelines completed. There is a longer-term action related to this recommendation still in progress.
TL	3. That a System Operator policy focused on communications with external stakeholders be developed - could be based on the grid owner’s Event Response – Major System Event Policy.	30/11/2021	Assurance in progress	Major System Event Policy has been redeveloped to cover grid owner and system operator, as well as ensuring procedure is consistent with other procedures and will become a Controlled Document. See next action.
TL	4. Event Response – Major System Event policy be amended to make clear reference to both the Minister of Energy and Resources and shareholding Ministers being advised in a timely manner should a significant event occur to meet Transpower’s “no surprises” obligation	30/11/2021	Assurance in progress	The Major System Event Response document (not a policy) has been updated and referenced both the Grid Owner and System Operator.
TL	5. Amend the Process for Unplanned Outage Communications to specify in the case of significant events the CEO’s approval for key messages is to be sought and obtained and advice provided to Chair and Board in appropriate cases.	30/11/2021	Assurance in progress	Amendments to the process are complete.
TL	6. That in future security of supply situations, escalation both to the CEO/Chair and to key government stakeholders be undertaken via phone rather than text/email.	30/11/2021	Assurance in progress	Major System Event Policy, Communications protocol and Duty GM protocol all now clearly document how escalations are to be managed. Annual Industry exercises will embed changes.
TL	7. In the event that significant security of supply issues occur or can be reasonably foreseen to occur in the coming hours, the GM Operations and/or Duty GM should in a timely fashion pull together key management in an Incident Management Team (IMT).	30/11/2021	Assurance in progress	Major System Event Policy and Duty GM protocol have addressed how and when IMT’s will be established for system events.
TL	8. External Affairs and Corporate Communications management continue to build ongoing relationships with key officials and the relevant Private Secretaries in Ministers offices to understand their information needs and make it easier to make direct calls in times of need.	30/11/2021	Assurance in progress	Now an ongoing BAU activity.

2. In progress actions

Source	Recommendation for action	Timeframes	Authority Role	Action/Comment
PBA	<p>v. Public Communications During Incidents</p> <p>The System Operator has a much better overview of system-wide incidents, such as this Grid Emergency, than other market participants. However, disconnected consumers direct their first queries at distributors and retailers who may not have ready answers to the situation and likely reconnection times.</p> <p>The Investigator recommends that the System Operator improves the process for providing the public with timely and simple explanations for system-wide incidents, particularly where consumers have been disconnected.</p>	Part 2: 30/09/2022	Assurance (reviewing Transpower output)	<p>Part of the communications project.</p> <p>See EA Phase 1 (3F) appendix 2 (above)</p> <p>The Authority notes this date has moved, as noted above.</p>
PBA	vi. NCC Staffing and Training	Ongoing	Assurance (reviewing	In progress. Issues to be considered as part of the Operational Excellence project, which is now underway, led by external consultants IBM (includes input from international team members). Operational Excellence will conclude in August 2022 with

	<p>The continuous improvement of NCC coordinators is challenging because in addition to their primary roles of managing system energy and security there are additional demands from projects for subject matter experts, change implementation, and COVID requirements.</p> <p>Aside from challenges with finding time for continuous improvement, it is increasingly difficult to access the training simulator environment for internal training as well as real time exercises including industry partners. The Investigator recommends that the System Operator:</p> <ol style="list-style-type: none"> 1) Reviews the staffing of NCC coordinator roles with a view to facilitating continuous improvement. 2) Reviews the adequacy of the training simulator environment for meeting the overall needs of training coordinators, real time exercises with industry partners, and projects. 		Transpower output)	recommendations for the of future of real time operations and pathways to deliver the recommendations.
PBA	<p>vii. Industry Training for Rare Events</p> <p>Training for rare events is a common problem for many industries. In this case, the NCC coordinators lack of familiarity with the LSR tool for nation-wide generation capacity shortages contributed to the incorrect DAN. The Investigator recommends that the System Operator identify rarely used procedures, review the associated training requirements, and take leadership in maintaining industry competence in handling rare events.</p>	30/09/2022	Assurance (reviewing Transpower output)	<p>In progress</p> <p>Part of the industry exercise Operation Shortfall project. Exercise Shortfall held and outcomes now being assessed. Delivery date extended to enable exercise learnings to be incorporated into ongoing project actions.</p> <p>See: comments in MBIE11 above</p> <p>The Authority notes the moved dates as noted above.</p>
TL	<p>2. Transpower policy GL-DP-008 Guidelines for Internal Communication During an Event or Incident be amended to specify in a GEN being issued due to anticipated insufficient generation, the GM Operations and CEO are to be immediately notified by phone.</p>	Operational Excellence project recommendations due 30/06/2022; timetable for any relevant changes to be established after recommendations received.	Assurance (reviewing Transpower output)	<p>Remains open to undertake further review at conclusion of Operational Excellence project and industry exercise.</p> <p>The Authority notes this date has been moved.</p>
TL	<p>9. System Operator and Corporate Communications develop an annual scenario practice session to help ensure readiness for future events.</p>	30/09/2022	Assurance (reviewing Transpower output)	<p>In progress</p> <p>Part of the industry exercise Operation Shortfall project. Exercise Shortfall held and outcomes now being assessed. Delivery date extended to enable exercise learnings to be incorporated into ongoing project actions.</p> <p>See: comments in MBIE11 above</p> <p>The Authority notes these dates have moved.</p>