

30 September 2022

Hon Dr Megan Woods
Minister of Energy and Resources

Dear Minister

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

This letter outlines the third 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 September progress reporting against the recommendations made in that investigation report.

The highlights in this report are:

- the immediate actions due for implementation before Winter 2022 have been addressed
- the longer term policy actions are progressing, with a key deliverable being the Authority's Market Development Advisory Group (MDAG) report which is due to be published in mid-2023
- Following the pan-industry exercise in May Transpower has undertaken a communications project, which has addressed a number of the recommendations from the various reports
- Transpower has completed all of the recommendations from the Authority's phase 1 review and the Authority has confirmed completion of these
- Various other recommendations from the reports commissioned by Transpower are well-progressed.

A key recommendation from the Ministerial Investigation was that the Authority "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." As we have reported previously, the Authority has undertaken an assessment of the current state of its management, monitoring and governance of the system operator. It has made a number of changes in resourcing, approach and settings to improve coordination and enhance the Authority's ability to hold the system operator more firmly to account. This remains a focus and the Authority will continue to improve this. It is this focus on contract management and

the relationship that will support the ongoing implementation of remaining 9 August recommendations, including from the Authority's phase 2 report.

A highlight of the changes in contract management is the inaugural pan-industry event (held in May). Transpower and the Authority have agreed to hold these events annually, prior to Winter.

Given the number of recommendations completed or now part of business as usual operations of either Transpower or the Authority, the Authority proposes that this report be the final report on the recommendations from the Ministerial Investigation. Matters relating to longer-term policy changes will be part of normal updates to your office in the ordinary course of business. Matters relating to Transpower's contractual performance will be part of the Authority's normal contract management processes.

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

Yours sincerely

A handwritten signature in black ink, appearing to read 'Nicki Crauford', with a stylized flourish at the end.

Dr Nicki Crauford
Chair
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cc: James Stevenson-Wallace, James.Stevenson-Wallace@ea.govt.nz

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	30 September update
MBIE1 Performance of the system and system operator (section 3)	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.	Complete	<p>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 responded requesting a clearer and more rigorously proven problem definition, outlining various limitations of the SO requests. The SO confirmed it is not intending to respond to that request by resubmitting the code amendment request</p> <p>The amendment request has subsequently been declined on the grounds that proposal provided no net benefit to consumers nor changed any obligations on system operator or participants. The proposed drafting repeated existing powers of discretion for the system operator in its application of the clause.</p> <p>The system operator has advised that it accepts but does not necessarily agree with the Authority's position.</p>
MBIE2 Performance of the system and system operator (section 3)	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.	Ongoing implementation	<p>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 have been considered and discussed by the Authority management and Board, and also have been provided to the system operator. The Authority is now embarking on a series of actions in relation to the system operator, including a suite of initiatives to improve coordination and enhance the Authority's ability to more firmly hold the system operator to account.</p> <p>In terms of other New Zealand regulators, a workshop was held on 27 June 2022 with MPI, as a Ministry which both regulates and supports its industries. This provided a useful perspective on another entity which both supports and regulates its industries. The themes of that discussion were in line with the two external reports referred to above, but did not result in specific lessons for the Authority beyond the specific actions already being progressed.</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)	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.	Voluntary changes in place already	<p>The system operator has implemented improvements.</p> <p>The System Operator has submitted a code change request which the Authority has declined to proceed. The Authority determined that the system operator has sufficient powers under the current Code drafting to implement the necessary changes in its grid emergency management processes. The necessary steps may be outlined in the system operator's Policy Statement to give them the weight of Code obligations. Including the necessary steps in the Policy Statement will allow the SO to propose and implement any future changes as necessary without being subject to the full Code amendment process. Participants already have the obligation to comply with instructions issued under the grid emergency provisions in the Code so no changes are required.</p> <p>The system operator has advised that it accepts but does not necessarily agree with the Authority's position.</p>
MBIE17 Information and communications (section 6)	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	Complete	<p>See comments relating to MBIE 11.</p> <p>Recent standby residual shortfall events have highlighted industry's improved communications, particularly between retailers and their medically dependant and vulnerable consumers. The Authority will continue to monitor industry communication as we move through winter and will review the Consumer care Guidelines implementation, as planned, in Q4 2022.</p>

Number and theme	Recommendation for action	Timeframes	30 September update
	education campaign to ensure medically dependent consumers are aware of the importance of having a 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	30 September 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. This has been declined as the changes proposed by the system operator would not address the related issues encountered on 9 August without a significant review of the Code obligations on Intermittent generators. The Authority had already planned this more comprehensive review and work to address intermittent generator offer obligations is already underway.</p> <p>The Phase two report committed the Authority to assessing the quality of the forecasts used in the pre-dispatch pricing schedules. This work has been done and will be published in October 2022.</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 Q4 2022.</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 April 2023. The Major Electricity Users Group (MEUG) have indicated that the dispatchable demand and dispatch notifications enhancements being released in April 2023 will be deployed by many of their members (MEUG update from the Chair, July 2022).</p> <p>The MDAG 100% renewable energy policy work is in options analysis now with a draft options paper due in Q4 2022.</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>The MDAG 100% renewable energy policy work is in options analysis now with a draft options paper due in Q4 2022.</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 workstream.

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	As noted in previous updates, the Authority considers this to be a subset of recommendation 15. See comments below.
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 previous updates, 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. We suggest this recommendation be considered closed as it is something that will continue to arise from time to time.

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.	Closed		This was indicated as closed at the last report date because reporting will continue to provide updates regarding the specific recommendations.
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.	Closed		Reporting is ongoing.
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.	Complete	Immediate changes were made after Aug 9 2021 to improve the communication of generation emergencies, as previously reported. The System Operator has a Communications Project to address other recommendations for improvement to power system event communications. Recommendations to improve industry communications during a grid emergency were made in several reviews of the 9 August event. They were in: <ul style="list-style-type: none"> EA Phase 1: 2A, 2B, 2C, 4A PBA recommendation v MBIE recommendations: 11, 13, 14 and 15. The Communications Project has also completed other recommendations completed in this period, including around operational notices, market	The Authority considers that Transpower has made the necessary improvements to its industry communications and recognises that these arrangements will continue to evolve over time.

Number and theme	Recommendation for action	Timeframes	Transpower Action/Comment	Authority Action/Comment
			<p>system capability and internal communications and these updates are reported separately (see EA Phase 1 (1D) and (3F); TL2).</p> <p><u>Industry communications during a grid emergency:</u> The System Operator has made improvements to its industry communications including launching the fortnightly System Operator Industry Forum and implementing and testing new systems and ideas through Exercise Shortfall and several major power system events this winter. It has now completed the creation of a new communications channel (see following paragraph) to provide a broader set of industry participants with information about major power system events while the events are in progress, to provide consumer-ready information for those participants to pass on to consumers.</p> <p>Our new Major Power Systems Event contact list is for industry participants only and will be functional from 19th September 2022. It is an enhancement of (but secondary to) operational communications, with a separate, opt-in contact list. It is designed to include non-operational people such as chief executives, other senior managers, communications leads, or roles which would benefit from directly hearing up-to-date information on major events, especially people involved with communicating with consumers. The list will include contacts from generators, EDBs, traders and retailers, plus stakeholders in government.</p> <p>Situations where the Major Power System Event Contact List could be used include:</p> <ul style="list-style-type: none"> • a low residual Customer Advice Notice (CAN) being issued • a warning notice (WRN) issued about any system wide event • a grid emergency (GEN) being called • to call participants to industry conferences or to distribute information • to distribute key messages and other material from Transpower Corporate Communications. <p>The list will not be used for faults on the grid resulting in outages to specific areas unless there are system-wide implications.</p> <p>Transpower has implemented a new SMS/text alert system for advising urgent events to people outside of control rooms who may not see an email in time to respond immediately to a rapidly evolving event. This could be used at any time but generally will be used when a response is required within 1-2 hours. For instance, if a potential generation shortfall is identified at 6am for the incoming morning peak, the text alert would be activated. But it would not be activated at 6am for a potential shortfall in the evening.</p> <p>It has been made clear to stakeholders that communications via the Major Power System Event contact list are not a replacement for the operational inter-control room communications channels and formal backup procedures that are already in place, or for any related internal escalation processes that industry participants already have in place.</p> <p>The new communications solutions do not address communications with medically dependent consumers. EDBs and retailers are responsible for putting consumer-useful event information into consumers' hands and the system operator has neither the obligation nor is well placed to do so. But</p>	

Number and theme	Recommendation for action	Timeframes	Transpower Action/Comment	Authority Action/Comment
			event communications between the system operator and industry are directly relevant to what is ultimately made available to all customers, including the medically dependent.	
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 communications policies for use in an emergency	Complete	<p>The pan-industry incident management Exercise Shortfall was held on 26 May 2022. Transpower will hold a similar exercise annually and is comfortable with doing so being recognised in the System Operator Service Provider contract.</p> <p>Fortnightly industry briefings, improved notices and changes to control room procedures are all in place as part of recommendations arising from Aug 9.</p> <p>A review commissioned from PBA Consulting to look at Transpower’s response to the grid emergency experienced on 23 June found: “The outcome of the Grid Emergency of 23 June 2022 suggests that the System Operator has implemented changes to operating policies, and led pan-industry training on demand management events, which successfully avoided the disruption to consumers as previously occurred during the Grid Emergency of 9 August 2021.”</p>	The Authority provided feedback to Transpower about the exercise, which was valuable and well run. The Authority and Transpower will continue to work together on future exercises and will normalise this as part of the contractual relationship.
MBIE13 Information and communications (section 6)	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.	Complete	<p>See MBIE 11 above for details on processes to provide consumer-ready messaging to retailers and other industry participants.</p> <p>Transpower has worked to develop messaging and deal with media requests including conducting media training and inviting media organisations to join ongoing fortnightly briefing sessions.</p> <p>Transpower has worked closely with key media outlets to explain its processes around low generation situations and grid emergencies with the aim of positioning these as the power system working as intended, to keep the lights on. This has been successful in helpfully shifting media responses toward more positive commentaries. We have developed key messages to release to media when it foresees the likelihood of power cuts and has good, working processes (in its Communications Protocol) which ensures updates to its website and Facebook page. Transpower is confident that, in the unlikely event consumer power cuts become necessary (for power system reasons), consumers will have access to information explaining why the cuts have, occurred, what is happening to restore power, and how long that will take.</p>	The Authority considers that Transpower has made the necessary improvements to its communications and recognises that these arrangements will continue to evolve over time.
MBIE14 Information and communications (section 6)	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.	Complete	See MBIE11 above	The SO has worked on both its internal communications processes and systems, and with industry participants to better message and target incident communication. These improvements have been evidenced in Winter 2022 potential shortfall events where Transpower communication has been clear and audience specific.
MBIE15 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 in a grid emergency and encode such arrangements where appropriate.	Complete		

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</p> <p>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>	Complete	Complete	<p>The pan-industry incident management Exercise Shortfall was successfully held on 26 May 2022. It 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 debrief session on June 9th. Transpower will hold a similar style of exercise annually and is comfortable with doing so being recognised in the system operator service provider contract it has with the Authority. Fortnightly industry briefings, improved notices and changes to control room procedures are all in place as part of recommendations arising from Aug 9.</p> <p>A review commissioned from PBA Consulting to look at Transpower’s response to the grid emergency experienced on 23 June found: “The outcome of the Grid Emergency of 23 June 2022 suggests that the System Operator has implemented changes to operating policies and led pan-industry training on demand management events, which successfully avoided the disruption to consumers as previously occurred during the Grid Emergency of 9 August 2021.”</p>
EA Phase 1	<p>1D</p> <p>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.</p>	Complete	Complete	<p>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. Process documents and operational notices received by EDBs have been updated, NCC and NGOC teams have practised and reinforced the revised processes as part of Exercise Shortfall. These updates have been rolled out to all members of NCC and NGOC at team forum events to ensure that the updated requirements are fully understood.</p>
EA Phase 1	<p>2A</p> <p>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.</p>	Complete	Complete	<p>See MBIE 11 above.</p>
EA Phase 1	<p>2B</p> <p>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</p>	Complete	Complete	<p>See MBIE 11 above.</p>

Source	Recommendation for action	Timeframes	Authority Assurance	Transpower Action/Comment
	<p>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:</p> <p>(a) be between identified roles within each organisation with responsibility for ensuring the communication is sent, received and escalated appropriately, and</p> <p>(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</p> <p>(c) use standard language to provide formal notice of outages identifying the customers being disconnected.</p>			
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.	Complete	Complete	The System Operator's new industry power system event communications practices include delivery of information by email and text according to choices made by the participants who subscribe. Participants are then able to use the information to populate their own websites or push information to consumers in the way each participant chooses.
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 or understood by distributor operations staff even though they are most likely to be impacted by a worsening situation.	Complete	Complete	<p>As part of other recommendations (EA Phase 1: 1D, 3C, 3D, 3E), improvements have been made to event management notices to the extent possible within the current system, as well as to processes to provide additional context and background to all impacted parties. These improvements were tested during Exercise Shortfall, and again on June 23 (and in several subsequent generation shortage situations in July and August); changes have been well-received by industry and the Authority and led to good power system outcomes to the benefit of consumers. In fact, after the events of 23 June the Authority's Chief Executive wrote to Transpower on 12 August thanking the:</p> <p><i>"system operator for the way that they managed this mornings' potential low residuals. It was a difficult situation and I understand that overnight there were further complications which no doubt added to the challenges the SO faced in managing though."</i></p>
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).	Complete	Complete	See 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.	Complete	Complete	The LSR tool is withdrawn from operational use. Transpower advise that any changes to the policy statement to remove reference to the LSR tool will be made when the policy statement is next reviewed.
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.	Complete	Complete	As per 5B, above.
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.	Complete	Complete	As per 5B, 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	Complete	Complete	As per 5B, above.

Source	Recommendation for action	Timeframes	Authority Assurance	Transpower Action/Comment
	carried out at the required frequency and is tested and signed off as complete, correct and functional after each upload.			
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.	Complete	Complete	As per 5B, 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.	Complete	Complete	As per 5B, 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.	Complete	Complete	As per 5B, 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	The MDAG 100% renewable energy policy work is in options analysis now with a draft options paper due in Q4 2022.
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>	Complete.	The LSR tool has been removed from use and therefore there is no requirement for a demand allocation calculation	Complete.
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. <p>This includes shedding the controllable load of one distributor to avoid disconnecting consumers of another distributor.</p> <ol style="list-style-type: none"> 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	Evidenced in recent event processes and comms.	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	Evidenced in recent event processes and comms.	Protocol developed and shared with key government stakeholders. Quarterly review cycle implemented as BAU.
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	Evidenced in recent event processes and comms.	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	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	Complete	Now an ongoing BAU activity. Key relationships have served during real-life events throughout this winter.
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>	Complete	Complete (see MBIE 13)	See MBIE 13 above
PBA	<p>vi. NCC Staffing and Training</p> <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.</p> <p>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. 	Complete	This matter is an operational matter for Transpower.	Transpower engaged IBM to conduct an Operational Excellence review to ensure that teams in real-time control rooms and closely related functions have the tools, processes, and training they need now and in the future. Relevant recommendations arising from the Aug 9 investigations were in scope of IBM’s work. IBM have now produced a roadmap of prioritised initiatives including across resourcing, and training and capability workstreams, to ensure that the control rooms and closely related functions have the tools, processes, and training they need now and in the future. These initiatives will now be mapped against the System Operator plan and reported against as part of our normal reporting cycles.
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.</p> <p>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>	Complete	Complete	<p>The pan-industry incident management exercise was successfully held on 26 May 2022. 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>Fortnightly industry briefings, improved notices and changes to control room procedures are all in place as part of recommendations arising from Aug 9.</p>
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.	Complete	Complete	All updates to guidelines completed. The updated guidelines have now been tested as part of the industry exercise and during the real-life events of this winter

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	Complete	Complete	The Major System Event Response document (not a policy) has been updated and referenced both the Grid Owner and System Operator. The updated processes have now been tested as part of the industry exercise and during the real-life events this winter.
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.	Complete	Complete	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.	Complete	Complete	Major System Event Policy, Communications protocol and Duty GM protocol all now clearly document how escalations are to be managed. Annual Industry exercise and real-life events experienced this winter have embedded 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).	Complete	Complete	Major System Event Policy and Duty GM protocol have addressed how and when IMT’s will be established for system events and these have been followed throughout the winter (although no further IMTs have been required).
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.	Complete	Complete	Now an ongoing BAU activity. Key relationships have served during real-life events throughout this winter.
TL	9. System Operator and Corporate Communications develop an annual scenario practice session to help ensure readiness for future events.	Complete	Complete	The pan-industry incident management exercise was held on 26 May 2022; see EA 1A above for full update.