Understanding the impacts to TasNetworks operations of the storm event of late August 2024 and identifying potential improvements to processes & systems.

Independent assessment of the August 2024 Severe Weather Post-Incident Review by TasNetworks

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Submitted to **TasNetworks**

Submitting entity

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The Customer Advocate

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Glossary of terms and acronyms

AER	Australian Energy Regulator
AMI	Advanced Metering Infrastructure
ERT	Estimated (power) Restoration Time
GSL	Guaranteed Service Level
HV	High Voltage
ICS	Incident Contingency System (TasNetworks' primary emergency response process guide)
ICT	Information and Communication Technology
inService	The information system used by TasNetworks to record, prioritise and dispatch network faults for repair
LV	Low Voltage, typically in reference to local distribution power lines
make-safe	Attention to ensure the de-energisation and isolation of fallen wires, although repairs may be some time later
PIR	Post Incident Review
SAIDI	System Average Interruption Duration Index
SES	State Emergency Services
TCA	The Customer Advocate (report author)
ToR	Terms of Reference
Verian	Verian is a research and communications agency

About *The Customer Advocate*

Author: Mike Swanston FIEAust CPEng RPEQ IntPE MAICD

The author of this report, Mike Swanston, is a chartered engineer and principal of specialist consultancy *The Customer Advocate*.

Mike is a professional engineer with over forty years' experience in the design, development and operation of distribution power networks in Australia, including lead roles in the response to storm and flooding events impacting hundreds of thousands of energy customers in Victoria and Queensland. This included the function of communicating to energy customers through the media regarding the state of the power supply and restoration progress.

More recently, Mike has been engaged by energy regulators and utilities in Australia and overseas to advise on operational excellence, prudent and efficient capital investment and planning for the resilience and emergency response to the continually changing climate risks facing energy utilities. Mike's latest work has been with energy regulators and electricity distributors in Australia (Qld, NSW, Victoria and SA), Malaysia, Borneo and Central Asia.

About this report

TasNetworks invited *The Customer Advocate* (TCA) to provide a third-party independent assessment of the detailed Post Incident Review (PIR) that took place following the major storm event in late August and early September 2024.

The PIR itself was carried out by Nick Hassett of Dynamic Consulting, Melbourne, to a Terms of Reference issued by TasNetworks on 16 September 2024.

The PIR is "*directed to understand the impacts to TasNetworks' operations and identify potential improvements to processes and systems aimed to improve customer response performance during prolonged emergency events and to better support Tasmanian communities.*"

This assurance report focusses on TasNetwork's contingency planning and the timely and effective operational response of the incident and restoration of supply by;

a.   assessing the process and findings of the PIR, and, if appropriate, provide a level of confidence to the readers of the review that the findings are comprehensive, well researched, and presents fair, reasonable, informed and actionable recommendations;

b.   providing any additional advice related to the storm event response based on the experience of the author in studying major weather-related events that widely impact the supply of electricity to the community; and

c.   outlining the recommendations and work ahead required of TasNetworks to address the key findings of the PIR.

In undertaking this assessment, three questions are considered:

1.   Was TasNetworks prepared for the severe weather, and is there anything that they could have reasonably done (or can do in the future) to reduce the level of damage to the network and extent of the power interruptions caused by severe weather?

2.   What could Tasnetworks have done to reduce the time taken to safely identify faults, expedite repairs and restore power?

3.   What could be done to provide a more timely and appropriate flow of information to affected energy customers and communities?

Outside the scope of this assurance report is the consideration of any financial relief to affected customers; in particular the function and appropriateness of the Guaranteed Service Level (GSL) scheme that applies to TasNetworks.

Also outside scope is a detailed investigation into how broader partnering and coordination with other statutory and community bodies would enhance the overall response. Despite not being considered in detail in this report, such an investigation into the efficient and effective working relationship between Tasnetworks and local authorities before, during and in recovery from major weather events is highly recommended.

1   Introduction

The series of powerful cold fronts that brought strong wind gusts to northern Tasmania in late August 2024 and resulted in widespread power interruptions to over 200,000 of TasNetworks' customers, with some experiencing multiple power interruptions or a loss of supply of up to 20 days.

The level of damage to community infrastructure, including the power network, resulted in the event being classified as a natural disaster by both the Tasmanian and Federal governments.

> The Bureau of Meteorology's Mick Conway told ABC Breakfast Hobart that the wind warnings are "quite extraordinary".
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> *"So everywhere with either a storm force or gale force today … I've never seen that before," Mr Conway said.*
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> *ABC News, August 31, 2024*

The consecutive significant weather fronts presented a rare weather event that would have challenged an effective response from most electricity utilities in Australia. Damage to electricity supply assets, both those of TasNetworks and privately-owned connections, was extensive, mainly from wind-borne debris being blown in from outside normal clearance distances to contact the equipment and cause either short circuits or failure of poles and wires.

Feedback though the Verian Customer Experience Report[1] suggested that the community was generally understanding that such an event would result in widespread and extended power interruptions; especially given the obvious severity of the weather and the level of resultant damage to trees, property and infrastructure including power distribution assets.

Despite this, there was clearly a high level of frustration in the lack of timely and useful advice to the community regarding the progress of repairs and power restoration. As the restoration efforts continued into days, concerns were expressed by the public as to the efficiency of the repair and restoration process.

Findings in this assurance report reveal that TasNetworks' systems, resource capability, and network resilience are generally consistent with good practice in other Australian electricity distributors.

Consistent with the PIR by Dynamic Consulting, the risk of extended outages and poor communication to the community after the severe weather is primarily due to the emergency response processes and accountabilities being largely ineffective. The ICS process is

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[1] Verian. Post incident customer experience review following the recent storm and outage event in Tasmania. 2024

inconsistent with recent changes to middle-management staffing levels, particularly in the regional offices that are called into action when an incident is declared. Unfamiliarity by regional and field staff with the centralised fault dispatch and job management must be addressed though regular training and simulations.

Finally, clearer roles and lines of accountability and authority once an incident has been declared would allow a more coordinated and effective response and assist in better communication within TasNetworks and to the community.

With a global focus on the resilience to increasing weather-related risks, it is timely that TasNetwork's severe weather response, network resilience, and role in supporting the community, be formally reviewed.

2   Executive Summary

Key findings	
1	The Dynamic Consulting PIR is supported as a fair and actionable review of TasNetworks' performance in the severe weather event.
2	There is little evidence of endemic shortcomings in TasNetworks' asset management, vegetation management, material availability or ICT capability that may have contributed materially to the extent of the damage to the power network, or the duration of the power interruptions.
3	It is usual for the power restoration process to have a 'long tail', with some customers not being restored for some time. This is often due to site access challenges or faults on the customer premises. However, this does not remove the fact that in this instance power could have been restored to many customers faster though more efficient prioritisation and dispatch of field resources.
4	Labour availability was impacted early by industrial action, but this matter was resolved quickly and did not significantly delay repairs and power restoration.
5	The use of remote (contractor and interstate) field resources was timely appropriate.
6	TasNetworks was not 'match fit' to effectively respond to a weather event of this magnitude. Emergency response plans were largely untested, did not align with recent staffing changes, and there are multiple lines of accountability, authority and information flow once an emergency incident is declared.
7	Unfamiliarity with dispatching systems, unclear processes in the regional offices and a reluctance by some field crews to effectively use the in-truck IT tools impacted the timely fault evaluation and prioritisation, reduced the efficient use of field repair resources and obstructed the clear and timely feedback of repair status.

Key findings	
8	The quality of available information to be shared with the community was impacted by the inability to efficiently maintain a timely and accurate flow of information. This led to an inability to provide a 'single version of the truth' of network status, prioritisation of repairs and power restoration progress. This inability to maintain good information flow is much more a 'people and process' problem than a shortcoming of TasNetworks' technical systems.
9	To some extent, coordination with local authorities 'on the ground' was effective due to local relationships, but this coordination and communication did not extend upwards to support the effective prioritisation the repair effort and clear communication of the situation to the required range of stakeholders.
10	Despite some minor safety incidents, in particular slips and trips, the manual handling and electrical safety processes within TasNetworks worked acceptably. Of concern is the lack of a robust, considered and well-observed fatigue management policy throughout the utility.

Observations and recommendations

The PIR by Dynamic Consulting is a fair and reasonable assessment of the detailed response and challenges experienced by TasNetworks during the event.

This assurance report affirms the PIR being carried out by Dynamic Consulting, Melbourne, as appropriately investigating the core issues and opportunities arising from the storm event and making reasonable recommendations to improve TasNetworks' severe weather response capability. TCA was able to review the methodology applied by Dynamic Consulting and confirm it as being consistent with other major network incident reviews, including considering customer advice through the Verian report and being able to conduct open and frank discussions with a range of key staff.

The recommendations from the PIR are supported, and, whilst being viewed though a different lens, they correlate with the independent findings of this assurance report. The PIR also complements lower-level reviews carried out by individual departments within TasNetworks, a number of which were sighted as part of this assurance review.

Both the PIR and this assurance review agree that TasNetworks were not 'match fit' to meet the challenge of this severe weather event. The predominant process document – The ICS Procedure – was last formally approved in 2015. Investigations indicate that it has not been subject to formal and detailed review with clear executive support across the business since then.

Consequently, the emergency response arrangements are not aligned well with recent staffing changes and the shift of operational arrangements within the regional depots. It is this poor execution of the escalated network emergency process that is at the core of the extended outage times, inefficient use of field resources, and a lack of a 'single version of the truth' to be conveyed to stakeholders and the community.

There is also a significant step-change between the day-to-day and escalated fault response through Incident Contingency System (ICS) processes within TasNetworks. The ICS brings the regional resources into play to assess, prioritise and co-ordinate the emergency response. In many ways, these regional resources, especially those staff directing the activities, are not well supported with regular training, quality systems, and, importantly, clear lines of authority and communication.

As a priority, TasNetworks needs to review the ICS process to consider a more measured escalated response to emergencies, with more appropriate training of regional coordinators, clearer accountabilities for prioritisation and communication, and to develop a greater confidence and capability in the technical tools at field level.

TasNetworks' assets, technology and core field response capabilities are consistent with that of other good utilities in Australia. In the recent regulatory review by the Australian Energy Regulator, there was no evidence of poor asset design or asset management practices, insufficient capital investment or maintenance, or an underdeveloped capability to communicate and engage with the Tasmanian community.

In essence, in this case it was the processes, not the tools, that mainly got in the way of an effective and efficient response to the severe weather by TasNetworks. Of course, further capital investment in network resilience capability is always useful, however this must be balanced against the cost to customers and an objective assessment of the risks.

Regarding the critical issue of safety, field operations during and after a severe weather event presents many risks; and safety to workers and the community must remain a priority, even though it may further delay power restoration. Some delays were evident in the TasNetworks' response; however this is not seen as a concern as safety considerations are always top priority. What could have been better, though, is the way the delays were communicated in some localised detail to consumers and the community to help understand the reasons for longer power interruptions.

There would be value in engaging with other stakeholders of the power restoration process, such as local councils, infrastructure providers and the SES, however making any detailed recommendation is outside the scope of the review.

3   Methodology

This assurance report was compiled in late December 2024. By that time, TasNetworks staff had undertaken a number of functional reviews within their business units, and Nick Hassett was well-progressed in his post-event review work, including many interviews with TasNetworks staff.

Research company Verian, also commissioned by TasNetworks, has undertaken customer field interviews and prepared information regarding the customer observations and impact of the event.

In preparing this report, the key stages of data gathering were:

a.   Several detailed discussions with the author of the PIR, Nick Hassett, covering his experience in this type of analysis, the scope of works, and the planned methodology. As the work progressed, the draft PIR of 20 November 2024– its process, findings and recommendations - was discussed in detail. This draft of the PIR forms the basis of this assurance.

b.   Consideration of the relevant reports, process documentation, action plans, business continuity plans and work instructions relevant to TasNetworks' severe weather emergency response. This included a review of the Verian customer impact studies, its summary findings and recommendations.

c.   Two 'progress updates' that took place directly with the TasNetworks CEO and the sponsor of the report, Andrew Davis -TasNetworks' Executive Digital, Strategy and Customer. These progress reports tested key findings as they arose.

d.   Interviews with around twenty key TasNetworks main office staff with direct involvement in the emergency, including leaders and frontline staff from the customer contact centre, network fault dispatch, network operations, corporate communications and field (depot) operations. Each participant was asked to describe their involvement in not only this event but the ICS process generally, their views on the strength and weaknesses of the emergency process, and the resources and information requirements. Interviews often ran to an hour in length, and the discussions were, in general, frank and open.

e.   Formal and informal interviews with frontline field leaders in the Cambridge (Hobart) and Rocherlea (Launceston) field depots.

f.   Personal observation of network field assets in some of the worst affected areas and evaluation of the Incident Control Room facilities (organisational, technical and ICT)

4   The Post-incident Review

Approach

The later drafts of the consultant's PIR have been considered in detail. It is concluded that, despite not demonstrating a formal incident investigation methodology such as 'bow tie' or 'root cause' analysis, the investigation was comprehensive and considered. The recommendations align with my observations and experience and are well-presented.

The final draft of the PIR was presented to TasNetworks executive management and directors in December 2024.

Statement of support

Whilst incomplete and not yet addressing all the requirements of the Terms of Reference (ToR), the purpose, process and findings of the PIR to date are supported, on the basis that:

- The author has good experience in the analysis of effective and efficient business process, strategy execution, operating model design and project diagnostics. Such expertise, whilst not deeply familiar with the workings of an electricity utility, is very useful in bringing 'a fresh set of expert eyes' to the issue.

- The range of interviews and data gathering is broad and included not only many TasNetworks staff but also observing the Verian public engagement and meaningfully including their findings.

- The PIR presents practical recommendations at a relatively high level. These recommendations concur with the observations of the author of this assurance based on independent research.

During the interviews with TasNetworks' staff, it is clear that there has been a number of local workgroup reviews into the event and how it was handled. There are, by definition, low level local actions to be taken. These reviews are certainly supported but is it clear that an overarching change process with clear accountabilities for programming, coordinating and monitoring the progress of the actions coming from the various levels of review is required.

The recommendations from the PIR, whilst supported, would benefit from a vision of 'what good looks like' and the establishment of some qualitative (at least) performance measures that would define the required capability. This action could reasonably follow the acceptance of the findings of the report.

Alignment with the Terms of Reference

Of note are the objectives of the PIR as outlined in the ToR[2]. The assessment of completeness is based on the draft of the PIR of December 2024.

Issue	Completeness
Understand the health & safety impacts to people communities & the environment	Established
Understand customer needs & their perception of TasNetworks performance during outage events	Established
Review types of outages & analyse the process of prioritisation for customer restorations	For ICS review
Identify the adequacy of TasNetworks staffing levels to respond to severe weather events & declared natural disasters	For ICS review
Identify the effectiveness of communications with impacted customers during the entirety of the event	Established
Identify internal process improvements to remove duplication or redundant effort both across	Initiated
Review regulatory (or other barriers) to TasNetworks investment in staff development/training to respond appropriately to extreme weather events	Will be addressed as part of the implementation response

The ToR also note a list of seven deliverables. At present, the PIR identifies these matters and, to a large extent, explores its causes. More work is required to 'flesh out' these findings and develop a workable and clear set of deliverables as required in the ToR.

In addition, the ToR required a number of tasks within the scope of work that includes identifying best practice from peer reviews. To my knowledge, that work is yet to be completed. Some suggestions are listed in the recommendations section of this assurance.

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[2] Terms of Reference: August Storm Response, TasNetworks, 16 September 2024 (draft)

5   Detailed Findings

5.1   Preparedness and resilience

Could the nature and extent of the damage, and hence the number and duration of power interruptions, have been avoided?

Considering the nature and ferocity of the three sequential cold fronts, widespread power outages are highly likely. Any electricity undertaking in Australia would face significant challenges in avoiding damage and safely restoring the network and supply to customers in just a few days, given similar conditions.

TasNetworks' organisational and network resilience to severe weather is considered across four factors: the network robustness, resource availability, organisational preparation and community readiness.

5.1.1   Network condition and resilience

Early investigations reveal that most damage was caused by vegetation and other material being blown in at force from outside the mandated clearance distance from electricity distribution infrastructure, causing conductor clashing or mechanical failure of overhead power assets belonging to both TasNetworks and individual customers. Similar issues are often observed in other major wind-related network outages, including the Black Saturday disaster in Victoria, east-coast lows in NSW and cyclones in Queensland.

The risk management approach applied by utilities in their asset management strategies, including resilience to severe weather, reflects a number of practical and commercial compromises between the cost to customers (such as undergrounding lines or more frequent vegetation management cycles), landholder permission and the practicalities of electricity service delivery. Also, there will be some areas where asset inspection may be delayed, or vegetation management not 100% code compliant at times, due to competing pressures on resources.

A cursory investigation into asset condition, vegetation management practices and the network failures experienced in the weather event revealed no clear evidence that the design of the overhead assets, their regular maintenance or the management of vegetation was significantly sub-standard or inconsistent with good industry practice. It is unlikely that TasNetworks' current asset management strategy or practices contributed to an excessive number or extended duration of the power interruptions.

That being said, it is noted that TasNetworks tend not to have a formal annual pre-storm or pre-fire season readiness inspection and signoff as do other states, which is understandable given the range of weather risks in the state. It would be useful to implement a 'storm and fire annual readiness signoff process similar to that in Victoria.

In addition, it is understood that an audit of vegetation management practices under Chapter 8A of the *Tasmanian Electricity Code 2023* is due in 2025.This audit will provide an opportunity to undertake a more detailed assessment of compliance with vegetation management requirements.

In 2023/24, TasNetworks regulatory reset proposal to the Australian Energy Regulatory indicated that asset management practices were consistent with good industry practice and being undertaken effectively.

Network resilience and the negative impact to customers and the community of increasing extreme weather risks remains remain 'hot topics' with industry, the energy regulator, energy customers and the wider community. It is recommended that TasNetworks maintain an active presence in this arena and continue to monitor opportunities for greater network resilience consistent with community needs and expectations.

5.1.2   Labour and material availability

Factors such as the existence of Protected Industrial Action and associated voting, and the Fathers' Day holiday, had some impact in the early day or two of the response. However, these factors did not have a large bearing on the efficiency, effectiveness or timing of the response effort because:

a.   There were a number of weather fronts over a few days that continued to cause further power outages over time;

b.   Safety considerations dictate that field repairs cannot proceed until the severe weather has abated and it is safe to work aloft on overhead power assets;

c.   A major cause of restoration delay was due to access difficulties for the fault sites, which needed to be cleared before repairs could be enacted; and

d.   The primary bottleneck in restoration was TasNetworks' ability to efficiently assess, prioritise and dispatch repair crews in such a widespread event.

In the light of the increasing risk of severe storm events through the impact of climate change, it is a timely reminder to TasNetworks to review their storm operations and make the appropriate adjustments to business operations to do better in the future.

Material management and logistics were not seen to be problematic. Where there were some shortages of materials, supplies from Victorian distributors were sourced. Shortages of earthing connectors was noted, given the number of earth devices required to 'make-safe' fallen power lines before repairs could be made.

External resources were brought in later in the restoration process to assist. Indications are that this worked well, particularly in assessing and repairing individual customer connections.

5.1.3 Organisational readiness

Central to the PIR and this assurance report is the fact that TasNetworks was not well prepared in terms of its emergency escalation (ICS) process to meet the challenges of a widespread significant weather event.

It is clear that the processes that underpin major network fault management hindered TasNetworks capability to respond as effectively as possible. The escalation process to 'ramp up' capability to meet the challenges of a major storm as defined by the Incident Contingency System (the 'ICS process') is not efficient, impacted by:

a.   The process not being in tune with recent changes in staff numbers and line accountabilities, particularly in the regions, leading to disjointed lines of authority and parallel lines of communication, and consequently ineffective and inefficient use of field resources.

b.   Formal lines of authority are not clear, nor is the accountability to maintain a high level of coordination and information flow.

c.   The ICS plan has not been formally developed, approved and promulgated, staff trained, and routinely practiced as a single process across the business.

d.   The step-change from business-as-usual to ICS response level is significant, and many responsibilities tend to be passed from central control to regional accountability just as 'things get really busy'. There is no smooth and staged escalation process.

e.   The ICT tools and skills in the regional centres are limited, particularly the 'inService' fault management and dispatch system, where terminals with lower functionality are installed. Also, staff do not have the day-to-day familiarity with use of the system.

f.   There are few 'practice runs', critical to the smooth operation of the crisis process.

5.1.4 Community readiness and communications

A powerful step in readiness for severe weather events is a widespread community information campaign advising steps to be taken in preparing for such an event. TasNetworks have such media arrangements in place, and these were activated once the risk was recognised.

Tasmania has a good framework that includes the SES and Business Tasmania to remind the community of the risks of storms, what preparations to make and what to expect.

Also, TasNetworks' web and SMS-based communications capability is consistent with best-in-class in Australia. These robust systems operated well, despite the low quality of the data.

5.2 Repairs and restoration

What could TasNetworks have done to reduce the time taken to safely identify faults, expedite repairs and restore power?

The safe repair and restoration of supply after the event relied heavily on basic safety procedures and the commitment and local knowledge of staff; because the efficient assessment and prioritisation of faults, effective coordinated dispatch processes and clear 'up and down' information flows in many ways "went out the window [3]."

Communications

Public mobile and internet communications such as Optus and Telstra were not identified as major factors in limiting information flow to communities. This is a good outcome, as in many other major weather events and bushfires on the mainland the failure of public communications unfortunately not uncommon and is seen as a major concern.

The communication systems for dispatching and coordinating work suffered some failures and 'black spots', however the reliable operation and technical support of the Tasmanian Government shared radio network as a backup meant that communication with field crews remained effective.

Incident and response management systems and processes

The core ICT infrastructure that underpins the call centre, evaluation and dispatch and customer information (Website, SMS), as well as radio and mobile communications, are robust and, in a technical sense, operated effectively.

However, the Incident Control System (ICS) – the process used by TasNetworks to pass an element of 'fault response command and control' to regional centres when 'things get busy' – is not as clearly understood by regional staff as it needs to be, meaning the technology systems are not used effectively nor efficiently when it is most critical.

Staff feedback is that it "tends to work [4]" in small events but is lacking in widespread major network events. The main issue is that the ICS requires a considerable 'gear shift' from business-as-usual routines to 'incident mode', and that shift is not smooth, well-documented, integrated nor well-rehearsed.

Facilities such as the "InService" faults management system 'net viewer' used by the remote sites (depots) tend to be of a lower capability and performance than those in the main dispatch centre. The network fault evaluation and assessment process ('triage') became overloaded, meaning work was not assessed and prioritised effectively, and work was often dispatched to the field in a piecemeal and uncoordinated way.

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[3] Verbatim comment made by staff during interviews
[4] Verbatim comment made by staff during interviews

The transfer of accountability for fault dispatch in major weather events a bit of a paradox, where lower capability facilities and staff less familiar with its operation are called into play when things are at their busiest. Such a challenge is not unique to TasNetworks and can only be addressed by familiarity and confidence in the systems, with frequent training and practice.

In addition, it was observed that some field crews were reluctant – whether it be a skills issue or a concern to being held accountable for repair times was unclear - to provide timely job progress feedback through the in-vehicle information facilities, This created further challenges for coordinators to assess and respond to repair progress and for timely information to be provided upstream to the critical customer and stakeholder communications activity.

Safety

The potential for such accidents and risks to workers and the community in such a major event, with many wires down, is immense and must be a major consideration for make-safe and repair activities.

Despite there being a number of safety incidents reported over the repair period, it is important to note that there were no significant electrical or other accidents that resulted in a major injury or death. This result is a testament to the skill of TasNetworks field staff and frontline safety processes.

One high-risk issue was noted – that TasNetworks' fatigue management requirements appear to be not well defined nor practiced. It was frequently noted that field staff and office supervisors 'worked to their own perceived capability' during the event.

In addition, the calling of a 'rest day' by the CEO (which is seen as a very useful and important decision) highlighted the fact that a robust fatigue management process is not currently well promulgated throughout TasNetworks.

Internal reviews noted the high number of minor incidents – predominantly slips, trips and manual handling. Operating without a robust fatigue management policy presents a high risk of serious injury and must be improved in order to steadfastly deliver on TasNetworks' duty of care to its staff.

Mutual Aid

The introduction of contractors and the supply of additional materials from interstate was effective and well-received. There is an opportunity to further improve the way these external crews are utilised, especially in the faut inspection and make safe roles.

Local incident control and coordination

An insight from the Verian consumer engagement highlighted the opportunity for better coordination between the local groups responsible for the severe weather response. This suggestion is strongly supported. It is useful to note that it is not generally appropriate that the electricity distributor take a lead role; rather it contributes to a local community response coordinated by the local council, police or SES.

5.3   Informing customers and the community

What could be done to provide a more timely and appropriate flow of information to affected energy customers and communities?

It is clear that TasNetworks' response could have been markedly better in terms of the timely and appropriate communications to its customers and the wider community regarding the extent of the network interruptions and restoration priorities and progress. It is important to maintain a 'conversation with the community' regarding the nature of the faults, the action being taken, and a reasonable estimated restoration time (ERT) (or an explanation why an ERT cannot be reliably forecast).

The key shortcoming was the way the fault assessment, dispatch and reporting systems were utilised – such as the inability to make timely and appropriate fault report assessments, coordinate job dispatch and tracking, make clear situation analysis and ultimately decision making, and customer providing timely and useful information.

This inability to maintain a 'single version of the truth' regarding network repairs severely impaired the ability for TasNetworks to provide clear, timely and accurate information to electricity customers.

The lack of clear information flow – both into TasNetworks restoration prioritisation assessment and outbound to local authorities - impacted the quality of working relationships and coordination with other groups involved with the storm response such as councils and the SES. It is strongly recommended that such working relationships be examined as an exercise outside this incident report.

Customer expectations

Both the Verian customer tracking report and anecdotal information pointed to the fact that the community recognised the sequence of weather fronts as being a rare and widespread event. The Verian consumer research is well founded and highlights the fact that the core concern of the community was the lack of timely and appropriate information so that reasonable arrangements can be made by the community to respond to no power.

The key observations from the community response research are:

1. As the wave of severe windstorms was clearly a 'smoking gun', the focus of the community initially focussed on the information flow regarding power restoration; with only limited concern initially regarding the ability of the network to withstand the winds.

    A different event, such as cybersecurity attack, load shedding event or extreme hot weather leading to network overloads is unlikely to bring a similar understanding and level of acceptance from the community, and place far greater pressure on TasNetworks' ability to effectively communicate with its customers and the community.

2. The response to the needs of vulnerable customers, in particular those who rely on in-home heath support, was not raised specially by customers nor TasNetworks as a major

issue. Generators were deployed in some cases, and customers were supported in their need to have a contingency plan for extended power interruptions. Despite the somewhat neutral response, the ability to appropriately support health-vulnerable (life support) customers before, during and after a major outage must remain a focus for TasNetworks.

3. The need to integrate a coordinated community response across a range of community and government agencies and service providers was highlighted. This is consistent with findings in other jurisdictions, with the response to recent Victorian bushfires providing useful insights for consideration by both TasNetworks and other community services.

Communication capability

The normal flows of information, essential to provide detailed and timely updates to the many customers and communities affected by the loss of electricity, collapsed. This was not because the information systems themselves failed; rather the supply of information from the field and regions as to the extent of the damage, the status of the repairs and, importantly, and the likelihood of power restoration, was severely compromised.

The very busy regional centres were operating relatively independently, and the need for clear and accurate information flow 'up the line' suffered, as key resources concentrated on the details of the field repair effort. Unfamiliarity and challenges with the use of the centralised job control system (InService) at a regional level meant much of the repair process reverted to a more fragmented manual operation, and the automated information systems could not be relied on for accurate and timely data.

Enquiries revealed an adequate capability at a corporate level for communication through telephone and web contact, social and mass media, as well direct communication with major customers.

The challenge was that these people did not have the timely and granular information flowing from the field and regional response co-ordinators to provide to customers and stakeholders.

Systems and technology

Investigation showed that TasNetworks' ICT systems are robust and consistent with good industry practice, and operated reliability throughout the event. Web and SMS-based information technology generally operated as intended despite the high load of use.

Field communications remained operational though the use of the state government radio system and the support from in-house technicians, highlighting the value of the government radio network.

6 Recommendations

6.1 Process and capability reviews, trials and practical implementation

This independent review confirms the key findings of:

> **A. *Review and effectively implement the Incident Contingency System (ICS) processes to improve the way TasNetworks operates in major incidents.***

The transition to escalate network and customer responses from business-as-usual level to a more widespread emergency response is not effective; not well understood, well-resourced or well-rehearsed. In some ways, some slack can be cut as an event of this severity is rare and the organisation is somewhat unfamiliar with what is needed; but as climate change risks escalate and community reliance on energy increases, TasNetworks needs to be on the front foot and develop and maintain effective escalation procedures.

A decentralised fault management process for major network events is not unusual across the distribution industry and can be efficient and effective; but in TasNetworks' case the transition from the day-to-day centralised processes to an arrangement based on regional operation lacks a smooth transfer of accountability and information handover, nor does the regional model have the same clear lines of authority and accountability to operate in 'emergency mode' as it does in normal operation.

> **B. *Comprehensively address the ability to provide timely and accurate information from the field to the response coordinators and on to the corporate level so that meaningful information can be provided to customers, communities and stakeholders.***

This requirement relates to a larger issue; that is, TasNetworks' difficulty in establishing 'a single version of the truth' from which fault restoration prioritisation, crew management and customer advice relies.

This concept of a single view of network and repair status works well when the utility is in day-to-day mode; in fact, TasNetworks has quality systems and processes consistent with industry good practice, including the web and SMS information services. The challenges arise when in 'ICS – emergency mode' and the operational accountability is divested to the regions.

In this case, information flow regarding repair progress is often unable to be adequately resourced, and the effective use of the fault management system and also the way field crews are provide timely updates into the system is in question.

This recommendation does not require all communications and information the community to be centralised. There are times when local staff should be empowered to provide information relevant to a specific town or region, where 'local knowledge' can enhance the quality of the information.

C. Review the architecture, process, intent and implementation of business continuity plans, especially those relating to major network events

Both the PIR and this independent study suggests that TasNetworks would benefit greatly from a step-change in how business continuity and emergency processes are documented, reviewed, practices and enacted. The fact that key processes such as the escalation to ICS alert level, asset allocation and cost monitoring in major events, or crew fatigue management are not well documented, or have not been reviewed for some time, or remain in draft stage, is of concern.

6.2   Other recommendations for action

It is recommended that the following additional studies be carried out to confirm TasNetworks' severe storm response preparedness and capability:

a.   Asset management

  i.   Undertake an audit of compliance with asset management and vegetation management requirements consistent with codes and shareholder expectations.

  ii.   Consider an annual 'resilience readiness' signoff similar to that of Victoria.

  iii.   Work with others to develop a community resilience plan**.**

  Addressing the effectiveness and transition of fault dispatch and repair processed will be a necessary step for TasNetworks as they, along with all other utilities Australia, take steps to address increasing climate risks and its likely increasing impact on power networks. It will be very useful for TasNetworks to continue its work with other utilities and local government authorities.

b.   Operational response

  i.   Continue to refine efficient working relationships with other groups involved with emergency response – SES, local utilities, local government – on the ground at local council level, and consider how these relationships can be extended to improve the prioritisation and utilisation of field resources at a regional level.

  ii.   Review and implement an effective fatigue management framework for all staff. That the draft plan needs to be completed, negotiated across the business, promulgated and enforced.

  iii.   Update the 'inService' facilities in regional centres to allow better job analysis and support capability

  iv.   Support the better use of the in-vehicle information and automation tools, in particular job status and close-out.

v.   An annual 'trial storm' be undertaken to re-familiarise staff, test resources and identify opportunities. This should include the "pre-ICS" stage, as well as wind down and work status communication.

vi.   Consider a staged escalation: The ICS should be reviewed to consider a more seamless transition, perhaps using the depot ICS facilities more often in a '9 to 5' sense to maintain skills and continually test resources.

vii. Examine the fault evaluation bottleneck: The fault evaluation and prioritisation function, based near the customer contact room, has the potential to be a major bottleneck in the emergency response process. This is due purely from the capability to manage the large volumes of information.

viii. Investigate the more effective use of smart meter data:

Tasmania has a very high penetration of smart meters across the network. Granted, the meters are not useful at reporting a loss of supply - 'the last gasp function' – but it would be useful to further consider how 'pinging' meters would assist in understanding the extent of extended power interruptions.

c.   Customer response

i.   Review and update the approach to supporting at-health-risk (life support) customers in cases of extended power interruptions.

ii.   Continue to develop the capability to match premise address to network connectivity to assist in fault report evaluation.

iii. Look at well-performing peers: Consider visiting and cherry picking the good ideas from:

- SAPN – bushfire readiness and response

- Ausgrid – storm response to east coast lows

- Energex / Ergon – escalated response, customer data management