Test & Optimise

Community Workshops

Produced for: Powercor and United Energy

May 2024

Forethought® Outcomes

Image above: Community Workshop participating stakeholders (left) & Richard Scholten, Major Clients and Event Manager, Customer Experience, Powercor & United Energy (right)

Introduction

Introduction

Regulatory Reset Proposal Program

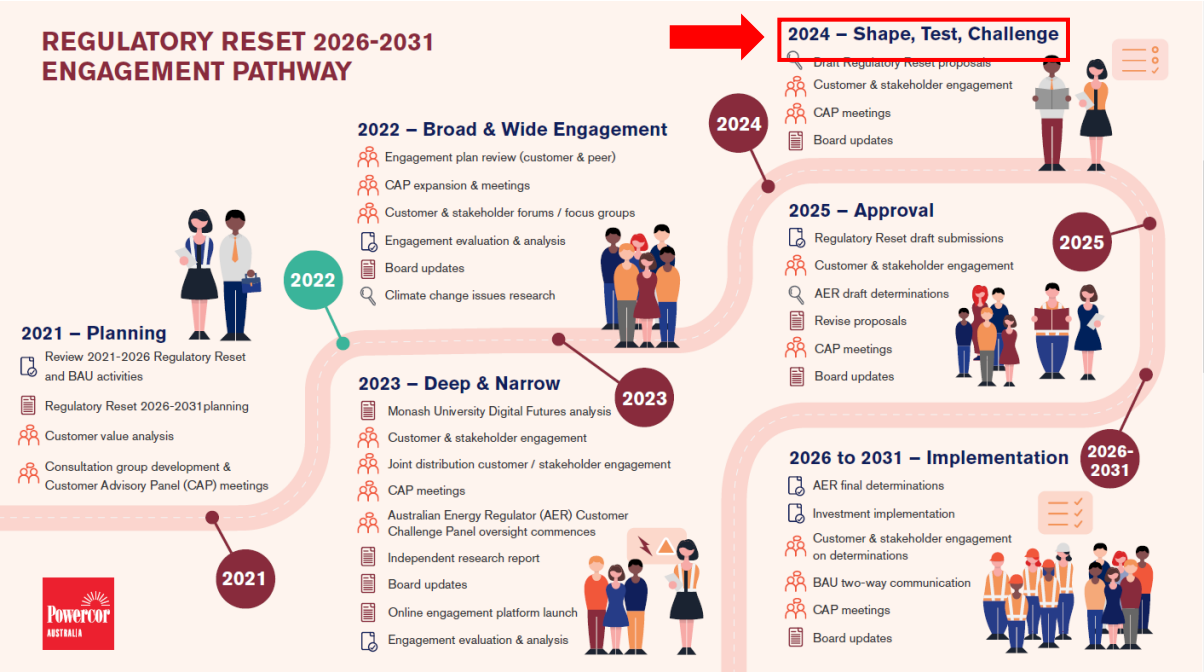
To support the development of the regulatory reset proposal, a foundational program of community engagement was conducted in 2022 and the early part of 2023. This broad and wide engagement program identified the key needs and preferences of customers and identified four themes:

1. Affordability and equity
2. Reliability and resilience
3. Energy transformation
4. Customer experience

The networks are now at the 'Shape, Test, Challenge' stage, which adopts a more targeted approach by exploring, testing, and understanding customer preferences and priorities. To achieve this outcome, resilience solutions were developed by the Powercor and United Energy team to allow participants to discuss and share their feedback, ideas and community nuances for consideration. This was the anchor for the community workshops.

The below graphic explains the full regulatory reset engagement pathway.

Following a detailed examination of these customer outcomes, the insights will feed into the subsequent phases of the 2026-2031 regulatory reset proposal development. This process will involve the formulation and evaluation of business cases that align with the identified customer outcomes.



Forethought's Involvement

Forethought is an independent marketing, analytics and strategy organisation, with teams that specialise in research and engagement within multiple industries, including utilities.

Forethought's experience in the energy industry involves conducting customer and stakeholder research and engagement with organisations across the full value chain including electricity generation, distribution, transmission and retail services. They partner with clients to provide an independent customer voice, ensuring the customer is at the forefront of organisational decision making.

Forethought was selected for this program based on their expertise across utilities, research and engagement capability to independently design and facilitate engagement forums and objectively report back on the needs and preferences of customers across the network.

Image above: Renate Vogt, GM Regulation, Powercor & United Energy (left) & Community Workshop participating stakeholders (right)

Image above: Community Workshop, participating stakeholders

Objectives and Methodology

Objectives and Methodology

The community workshops build on foundational and exploratory research conducted in the broad & wide, and deep & narrow engagement phases. This reflects Powercor and United Energy's genuine commitment to develop regulatory proposals anchored in customer needs and preferences for the longer-term future of the network.

The community workshops were hosted in several locations on the dates below. Each engagement was held from 9.00 am – 1.00 pm. There was a total of 37 participants across the three sessions.

The third session was held to accommodate participants who expressed a desire to participate but were unable to commit to a face-to-face meeting.

When seeking interest in an online forum, there was appreciation shared by Powercor stakeholders, in moving two planned face-to-face sessions online.

The online sessions incorporated a separate United Energy breakout room. This was to accommodate feedback from participants from the United Energy network unable to attend the Red Hill face-to-face engagement.

Session	Network	Engagement type	Date	Number of attendees
#1	United Energy	Face-to-face	12th March 2024	Stakeholders: 5 AER representative: 1
#2	Powercor	Face-to-face	18th March 2024	Stakeholders: 13
#3	United Energy & Powercor	Online roundtable via Teams	27th March 2024	Powercor stakeholders: 14 United Energy stakeholders: 4
			Total attendees:	37

The Community Workshop program sought to achieve the following objectives.

2026-2031 Regulatory Reset Objective
Develop regulatory reset proposals for the 2026-2031 period that align with the needs and preferences of Powercor and United Energy customers.

Engagement Objectives

Engagement with a range of Powercor, and United Energy special interest stakeholders and customer advocates to:

- Gain feedback on the networks' responses to resilience solutions across community and network hardening solutions.
- To understand feedback on how the networks could refine solutions to align with community needs that are being built into the regulatory proposal.

Approach

The community workshops were attended by Powercor and United Energy representatives whose role was to listen and answer questions from participants without biasing or influencing the conversation. The following staff attended the Community Workshop program:

1. Renate Vogt – General Manager, Regulation
2. Jeff Anderson - Head of Regulatory Strategy
3. Brent Cleeve - Head of Regulatory Policy and Compliance
4. Zahra Crocker – Manager Regulatory Projects
5. Richard Scholten – Major Client and Event Manager, Customer Experience

The community workshops wew also attended by the Australian Energy Regulator (AER) in a observation capacity.

The community workshops were open to all participants. Recruitment was however focused on participants with an understanding of resilience community needs.

Recruitment

Two channels were used to recruit participants to attract a diverse group of highly relevant participants.

- An invitation was extended to engaged individuals, including council members and community organisations. Recipients were encouraged to extend the invitation to other interested parties. As a result, participants primarily composed of council representatives, established sustainability and energy groups, and other related business representatives.
- Social media was used to share the consultation details and provide access to a link to sign up for this consultation.

Session Methodology

The workshops commenced with an introduction from Forethought and a scene setting session presented by Renate Vogt, General Manager, Regulation or Jeff Anderson, Head of Regulatory Strategy to provide participants context for the workshop and areas for discussion.

Zahra Crocker, Manager Regulatory Projects presented information to introduce each topic on energy resilience. This included:

- The current state
- What customers have shared with the networks so far
- Victorian Government and AER energy reseilience requirements
- An introduction to the solutions to be discussed

All solutions presented were discretionary. That is, they were not a regulatory or compliance requirement. The solutions presented included for United Energy:

- Expansion of mobile emergency response vehicles (MERV) fleet
- Targeted undergrounding and aerial bundling of cables
- IT tool to support prioritisation during wide-scale outages
- Commissioning of additional community liaison officers (officers) to engage with community groups and local government to support improved resilience planning for extreme weather days.

Powercor solutions for discussion included:

- Supporting worst served customers through targeted construction of feeder tie lines to support customers at the end of long radial rural lines where no alternate 'back-feed' supply is available
- IT tool to support prioritisation during wide-scale outages
- Development of local micro-grids, a distribution network that operates independently, or in addition to, the primary distribution grid, providing reliable and resilient electricity supply, during and after extreme weather events
- Additional officers and MERVs to engage with community groups and local government to support improved resilience planning and during extreme weather events
- Operation of rapid earth fault current limiters (REFCLs) to mitigate bushfire and electrocution risks.

Participants were required to complete pre-reading prior to the workshops. This information was carefully selected to educate participants without introducing bias and encompassed general knowledge about the key issues explored at the workshops.

Attention was given to presenting the information in a clear and accessible language and ensuring it did not influence participants' perspectives. The same consideration was given to information packs presented at the workshops.

Solution deep dive

The same initial briefings were provided for each discussion topic. Zahra Crocker delivered a short presentation providing detailed insights into the solution, its development rationale, and addressing any questions from participants. This ensured everyone had a clear understanding of each solution.

To develop a deeper understanding of customer preferences, each discussion topic was thoroughly examined through smaller working groups. Depending on the size of the workshops, participants were broken into smaller groups comprising approximately 4 - 8 participants. These group sessions were carefully facilitated by Forethought to ensure that all participants had an opportunity to express their perspectives and provide feedback. THhis level of engagement would have been challenging in a larger forum.

Within each discussion topic, customers were asked to share ideas, identify alternate solutions, highlight concerns and/or aspirations of their communities to further refine each solutions and ensuring they were fit-for-purpose.

Facilitators played a crucial role in moderating these discussions, allowing for the dissemination of information, whilst ensuring that the primary focus remained on participants sharing their feedback, considerations, ideas, community differences, aspirations, concerns and preferences.

Following the workshops, Forethought undertook various internal reporting workshops and quality checks to align on the participant themes and preferences that are reported on in this document.

IAP2 Spectrum

The level of participation in this program was intentional and is highlighted in our depiction of the IAP2 Spectrum shown below. Within this engagement, participants were involved in refining the solutions presented through ensuring that different community concerns or aspirations were probed on and universially understood.

IAP2 Spectrum of Public Participation[1]

	Inform	Consult	Involve	Collaborate	Empower
Public Participation Goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives, and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.

Engagement Context

During the workshops, several events took place in both the lives of customers and within the wider electricity sector. We hypothesise these events impacted customers' needs and perceptions.

At the time of engagement, the following events occurred. Some participants referenced these events throughout the workshop:

- Continued cost of living increases for Victorians announced in July 2023, "more than one million Victorian households will be hit with power bill increases of up to $361 a year."[2]
- The State Electricity Commission (SEC) was reinstated in October 2023 and set to lead Victoria's renewable energy transition across the next ten years.[3]
- More than 117 councils across Australia have declared a climate emergency in response to global climate change impacts and commitments to restore a safe climate by transforming the economy to net zero emissions[4][5]
- War in Ukraine with the Russian invasion impacting Australian energy prices[6]
- Gas prices are expected to increase considerably as the updated Gas Substitution Road Map forecasts decreasing production and pressure to switch to electricity.[7]
- Victoria establishing Australia's first offshore wind generation industry – "which will be key in delivery the state's renewable energy transition". [8]

[1] IAP2, 2018, IAP2 Spectrum of Public Participation, accessed 22 November 2022, https://iap2.org.au/wp-content/uploads/2020/01/2018_IAP2_Spectrum.pdf
[2] Herald Sun, June 2023, *Power blow: Energy bills set to rise,* accessed 15 July, 2023, https://www.heraldsun.com.au/news/victoria/how-much-more-youll-pay-for-power-from-august-revealed/news-story/17187aa2411f753cab740ce1fdf86eaf.
[3] Premier of Vicotria, October 2023, *The SEC Is Back: Accelerating Victoria's Renewable Future*, accessed on 19 January 2024, https://www.premier.vic.gov.au/sec-back-accelerating-victorias-renewable-future.
[4] Cedamia, last updated April 14 2023, *CED regions in Australia*, accessed 19 December, 2023, https://www.cedamia.org/ced-regions-in-australia/#:~:text=19%20February%202019%2C%20Maribyrnong%20City,to%20declare%20a%20Climate%20Emergency.
[5] DEECA, July 2023, *Submitted council pledges*, accessed 19 December, 2023, https://www.climatechange.vic.gov.au/local-government/council-pledges/submitted-council-pledges.
[6] Mercer. D, 26 February 2022, *Russian invasion of Ukraine drives up energy costs and Australians will feel the pain,' ABC News,* accessed 8 November 2022, https://www.abc.net.au/news/2022-02-26/russia-invasion-of-ukraine-to-drive-up-energy-costs-for-all/100861246.
[7] The Age, December 2023, Bills to soar as Victoria moves away from gas, accessed 19 January 2024, https://www.theage.com.au/politics/victoria/bills-to-soar-as-victoria-moves-away-from-gas-20231214-p5erjv.html.

- Severe storms across the Powercor and United Energy networks on 13th February 2024, and October 2021 that resulted in a large number of customers being off supply.[9] [10]

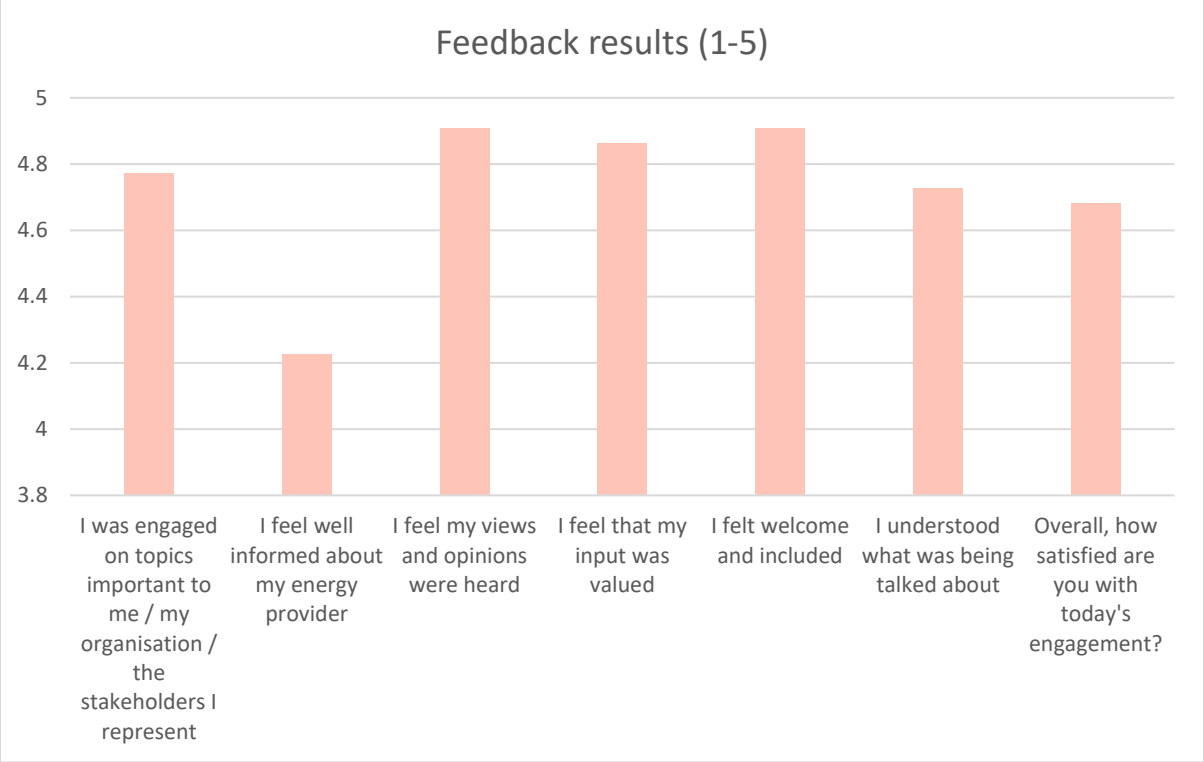
Evaluation

Following consultation, participants were asked to complete a feedback survey to support refinement of the engagement process. The results are shown below.

Overall satisfaction (Out of 5)	Customer comments
4.7	"I feel these sessions are very valuable." "Expertise from [United Energy] reps [was] extremely helpful." "Fantastic session and so good to be able to gain insight and visibility of how [United Energy]/Powercor are in their preparations for and in developing a resilient network in a changing climate." "Attendees were good cross section of the community. Presenters were well informed, democratic, friendly, and inclusive." "Good facilitators who involved anyone." "Great discussions and everyone valued." "Thank you for consulting with the community. Good luck!" "Grateful for the opportunity for community input, thank you."

[9] Powercor, 13 February 2024, '*Power outage update – 13 February storms'* accessed 27 March 2024, https://www.citipower.com.au/media-and-resources/media-centre/power-outages-february-13/.
[10] United Energy, 13 February 2024, 'Power outage update – 13 February storms' access 27 March 2024, https://www.unitedenergy.com.au/media-centre/power-outage-update-13-february-2024/.

Below are the overarching results represented on a scale from 1-5 where 1 was completely disagree/satisfied and 5 was completely agree/satisfied.



Note: Results are based on small sample size of n=22. A minimum sample of n=30 is recommended for an indicative result.

Image above: Image above: Community Workshop participants (left & right) & Richard Scholten, Major Clients and Event Manager, Customer Experience, Powercor & United Energy (middle-right)

Image above: Community Workshop participants

Customer Feedback on Energy Resilience Solutions

Executive Summary

This report provides an overview of participant feedback on resilience solutions proposed by United Energy and Powercor. Participants generally expressed strong support for these solutions, recognising their potential to enhance community and network resilience during emergencies through improved communication, coordination, and responsiveness.

The common solutions across both networks included the deployment of additional community liaison officers, MERVs, and the implementation of the single pane of glass IT platform. These solutions shared the ability to enhance communication and visibility during emergencies.

Some solutions were unique to a network. Within Powercor, microgrids and REFCLs were discussed. Within United Energy, targeted undergrounding and aerial bundling of cable were proposed.

A rich discussion was had amongst participants addressing concerns and ideas raised to meet community needs and aspirations, solutions were felt to be more effective in positively impacting energy resilience, ensuring a robust plan and recovery during emergencies.

United Energy Solution Feedback

Introduction

This section of the report provides an overview of the discussion with United Energy workshop participants. This includes consideration of network geography and recent storm events that shaped the context of feedback received on the proposed solutions. The solutions proposed to support energy resilience included both proactive and reactive measures.

Refer to Appendix 1. To see the information presented to participants at the workshop to support their feedback.

Context surrounding feedback

The geography of United Energy's network influenced the feedback provided by participants. For example, the Mornington Peninsula experiences specific challenges as the area is classified as metropolitan, however, has rural terrain and is prone to natural disasters which impact emergency responses. This meant that the region could not access the same disaster relief or government support as other parts of Melbourne. Stakeholders were particularly vocal in their efforts to ensure that this was well understood by United Energy in the context of resilience. Specifically, that the design and implementation of effective resilience solutions needed to be customised for the needs of communities across United Energy's network.

Recent storms and outages experienced in February 2024, as well as significant outages in October 2021 influenced feedback. Participants drew on their experiences of these events and believed this emphasised the need for enhanced resilience measures in the future. In the recent outage in February 2024, collaborative efforts between United Energy, emergency services such as the Country Fire Authority and State Emergency Services, as well as local councils were praised.

"United Energy, the CFA and SES work exceptionally well together, particularly in emergencies." Community Workshop Participant

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Solution #1 - Community Liaison Officers

Introduction

United Energy has proposed two community liaison officers to service the network. The purpose of their role would be to engage with relevant community groups and local government to support improved resilience planning for major weather events. Below outlines the participant feedback as well as refinements and considerations to optimise this solution.

Solution support

Participants appreciated the community-centric approach of community liaison officers, highlighting the individual's ability to optimise outcomes for the communities across United

Energy. They valued the role description that outlined that they would engage with community groups and local government to improve resilience planning, as well as their involvement during emergencies. Participants also thought it would be beneficial for the community liaison officers to operate the MERV during an emergency (refer to Solution #2). This emphasised the importance placed on the officer having local knowledge of the community, understanding the location's vulnerable community members, and supporting a coordinated response during a crisis.

Community liaison officers were seen to play a vital role in ensuring smooth information flow during emergencies, alleviating concerns, learning and improving the networks' resilience response, as well as acting as advocates for the community. Furthermore, proactive engagement, such as attending emergency planning meetings and community events was perceived to enhance their effectiveness and value contribution to the community.

"There is a role to play at the local level with communities." Community Workshop Participant

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<u>Considerations</u>

In terms of refinements/considerations, the following points were raised:

1. Increasing the number of officers and consider the locations they manage
2. Considering key skillsets required
3. Additional elements to the role

Below are outlines of each element in detail.

1. Increasing the number of officers and consider the locations they manage

Participants raised questions about the proposed number of officers and the areas they would service. Immediate reaction of participants was whether the officers would be stretched in managing such large areas of the network. Recommendations were made on requiring additional officers to the two included in the United Energy proposal. This would be particularly important in a widespread event where there may be a requirement to prioritise multiple areas for an effective emergency response.

In terms of locations the officers would manage, there was feedback on which areas could be re-considered. The reasoning aligned with the distance between locations, similar challenges across regions, and established working relationships.

Specific examples shared by stakeholders to refine the locations covered by the officers included:

- Grouping refinement #1
  - Bayside City
  - Kingston City
  - Glen Eira City
  - Port Phillip City

- Grouping refinement #2
  - Mornington Peninsular Shire
  - Frankston City
  - City of Greater Dandenong
  - Casey City

- Other suggestions included having 3 officers split across the following:
  - Frankston area (suburban)
  - Dandenong region (regional upper)
  - Mornington region (regional lower)

United Energy's proposed officer locations are shown in Appendix 1.1

"For one person to do this over a population of 1 million people is a really tough job."
Community Workshop Participant

Ideas were also shared on how to utilise a similar amount of spend and potentially obtain more coverage from officers. This included considering the role to be at a 0.8, or shorter working week, which could allow for 3 additional officers (above the 2 proposed). It was suggested that the personnel for this role may respond to having flexibility in their week, yet an understanding that there would be a surge in hours if an emergency occured.

Stakeholders mentioned that the officers could be leveraged as a central point of contact, with community volunteers aiding in information management before it reaches the officer. These volunteers, potentially from the local council or CFA, would assist in filtering and organising information. When considering the ideal candidate for the officer role, participants emphasised finding individuals with strong liaison skills, combining technical expertise with interpersonal abilities. This person would closely collaborate with other stakeholders and may work alongside additional team members.

Additionally, during discussions about the officers, it was highlighted that a Council within the United Energy network was also seeking solutions to support the community, particularly in aiding vulnerable customers. Their ongoing collaboration with the CFA suggested a shared commitment to this objective. Notably, the Council has found greater success in collaborating with industries such as energy, and they are also seeking individuals with liaison skills to fulfil these roles.

2. Considering key skillsets required

While technical proficiency was necessary, stakeholders emphasised the primary focus was on the officers' interpersonal skills and being a connector of information. They should possess a deep understanding of United Energy's organisational structure and technical knowledge, however, prioritise building meaningful relationships within the community.

A key callout was building a relationship with telecommunication industry personnel, and understanding the critical factor communication plays during an emergency.

It was also suggested that the officer attend municipal emergency management meetings, especially to get formalised into AIIMS which is the Australian Inter-agency Incident Management System.

“Having a professional with the ability to communicate with senior stakeholders; SES, CFA, and the Victorian Police.” Community Workshop Participant

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3. Additional elements to the role

A key addition to the role raised for the officers was advocating for community needs with relevant stakeholders. This would include telecommunications companies, local councils, and government bodies. They can foster partnerships to address challenges collectively and ensure a coordinated response. For example, they might involve themselves in initiatives such as community batteries, where currently local renewable groups were seeking support.

Once the role has approval and is established, it was advised that this individual should be promoted in the community so they understood who the officers were, what their role was and how to contact them. Utilising various channels such as community mail-outs, the councils’ existing channels, and local media would enhance visibility and accessibility.

Another role the officers could perform included training to enhance community knowledge of electricity and network resilience. Topics to be included were: defending your home (which was especially important for metropolitan residents who have holiday houses or have recently moved into the rural part of the network), and how to prepare your home. It was important to be included in already established forums, rather than build and manage their own events.

"The officers can help educate the community, help with community engagement, sharing things that do and don’t work." Community Workshop Participant

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<u>Conclusion</u>

By incorporating these considerations into the refinement of the officers’ role, United Energy can enhance its capacity to build community resilience and respond effectively to extreme weather events. The role of officers was perceived by participants as being instrumental in bridging the gap between the community and the network head office. Ensuring a coordinated and empathetic approach to disaster management and improving proactive energy resilience was valued.

Solution #2 - Additional Mobile Emergency Response Vehicles (MERV)

Introduction

United Energy has proposed two MERV vehicles to support management of wide-scale outages. These vehicles would be used not only across the United Energy network but also others where required. The vehicles would be equipped with a generator, floodlighting, internet access and phone charging facilities to provide central support and updates to communities during emergencies and prolonged power outages. Below outlines the stakeholder feedback as well as refinements and considerations to optimise this solution.

Support for this solution

Participants appreciated the role of MERV within emergency events, providing clear communication and a hub whilst United Energy and emergency teams responded to and restored infrastructure.

"Part of the solution should be a community resilience hub... Having the set location may work better so we know where to go." Community Workshop Participant

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Considerations

In terms of refinements/considerations, the following points were raised:

1. Proactively educate the community on MERV and its role

2. Considerations to decide on MERVs placement during an emergency

3. The team operating MERV

Below are outlines of each element in detail.

1. Proactively educate the community on MERV and its role

It was recommended that MERV be proactively promoted at existing community events to inform customers with education on property preparedness, especially regarding fire safety. Educating customers who may not be fully aware of the risks and necessary actions during emergencies was raised to enhance community resilience. This was particularly pertinent for the Mornington Peninsula region, where many properties were holiday homes and owners did not know how to ensure their homes were resilient against extreme weather events.

It was important that an emergency was not the first time the community knew about MERV. This sentiment stemmed from the importance placed on proactive resilience education and awareness. To educate the community, ideas such as leveraging existing community association events were raised. This included events organised at the bowls clubs, retired serviceman's leagues (RSLs), by the CFA, at the farmers markets, school events (i.e. fire drills the CFA undertakes) as well as, South East Water and Yarra Valley Water engagements. This could broaden MERV's engagement with the community. Providing

services like free water, phone charging, and Wi-Fi can promote MERV's presence at community events.

"It's education beyond MERV, also about preparedness in emergency... More proactive than reactive." Community Workshop Participant

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2. Considerations to decide on MERVs placement during an emergency

Strategic deployment of MERV to areas with the greatest need and vulnerability was essential. Clear communication about MERV's role, capabilities, and expected response times should be maintained, with established protocols for collaboration between MERV, local authorities, and community leaders.

Participants highlighted the coordination of three emergency vehicles. This included the CFA's emergency vehicle and the local council's who has established an emergency trailer. This emergency trailer included internet, solar backup, and a microwave (to help with heating up Meals on Wheels). In discussion, an idea was raised that MERV could consider adding a BBQ underneath the trailer with a gas bottle that could be used to cook meals.

A coordinated response between the three groups could help with the best placement of MERV during an emergency to ensure resources were complimentary and not duplicating efforts. Another consideration regarding placement is that the council trailer would have greater permissions with respect to parking.

It was felt essential once MERV was set up to support an emergency, that it stayed in that location throughout the entirety of an event (rather than move across locations). However, if for a particular reason, MERV needed to move, it was critical that clear signage (i.e. an A-frame) was left where residents could get information to keep updated on restoration times.

To promote where MERV has been set up, a text message and information shared on ABC radio were suggested to share the location of MERV during an emergency.

"The community wants to know where the localised issue is and what the restoration times are." Community Workshop Participant

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3. The team operating MERV

As previously outlined, the community liaison officer was ideally best placed to operate MERV. Other options might include community volunteers or the Resilience Relief and Recovery Network that connects with locals (led and funded by the CFA). This network could be tapped into by United Energy. Collaborative efforts between emergency services and community organisations were favoured to enhance response capabilities in an emergency.

Conclusion

The role of MERV was seen to be a positive proactive resource in times of crisis and could also be leveraged for building community resilience. The importance was placed on optimising MERV's utility, by ensuring a coordinated response to emergency events.

Solution #3 - Single Pane of Glass

Introduction

United Energy has proposed an IT platform to support decision making and prioritisation during wide-scale outages. This tool brings together extensive information relevant for restoration that currently sits across disparate systems. The single pane of glass is a consolidated IT platform that presents information in a single-view.

Below outlines the stakeholder feedback on this solution, as well as refinements and considerations to optimise the design and implementation.

Support for this solution

Participants appreciated the concept of a centralised portal for emergency information, highlighting its potential to improve communication and provide timely updates during emergencies. They recognised the importance of automation features in streamlining processes and ensuring rapid dissemination of information, which could save lives in crises.

This solution was felt to build trust with the network by providing transparent information.

"It is lifting the level of knowledge to enhance the distributor's professionalism, and encourages the community to know they are in good hands." Community Workshop Participant

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"Without good information, you can't run it as well…and will lose trust." Community Workshop Participant

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Participants discussed how the solution could help optimise United Energy's resource allocation through real-time information. This could potentially reduce the need for excessive staffing in call centres and enabling more tailored responses.

To support the business case, participants felt storytelling was a way to show the real impact of this system and how it could save lives in an emergency. Part of the sentiment behind this feedback was that participants could immediately see the benefit to the community in terms of identifying, and prioritising support for those in most need (e.g. hospitals, nursing homes, schools and livestock).

Two examples to support the business case included, the serious impact of community members in nursing homes who don't have backup power, or for cows who could not be milked after an extended period of time. It was recommended to focus on specific and real

life-threatening situations this system could help prevent, rather than focusing on everyday inconveniences i.e. not being able to use appliances.

"The single pane of glass seems like a really good idea... This could speed up times to get crews to location and could save lives." Community Workshop Participant

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Considerations

In terms of refinements/considerations, the following points were raised:

1. Data sharing with stakeholders

2. Data sharing with the public

Below are outlines of each element in detail.

1. Data sharing with stakeholders

Participants were able to visualise how local authorities and informed groups such as energy community groups, could utilise the information provided by the single pane of glass. This would support them in making informed decisions regarding evacuations, resource allocation, and support for vulnerable populations in an emergency response. It was therefore important that for effective use of this new IT platform, education sessions were held with informed stakeholders on how to use it optimally.

“It also helps councils decide whether they need to vacate places, like nursing homes, when they are vulnerable.” Community Workshop Participant

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2. Data sharing with the public

Participants believed the broader general public could benefit from access to this information. By making the solution public-facing, and providing localised and accessible information, the solution could empower customers to make decisions, especially during an unplanned outage. An example shared was someone’s ability to review the information and know where to go in an outage to support their family or animals. When reviewing the map, they could see that their parents or a friend had power, and would know who to call or ask for support. This information was felt to ‘alleviate panic,’ and ‘help manage life’ which was fundamental.

In addition to a website or portal, it was also advised that this information was shown on MERV’s display screen.

"People want to be part of the solution." Community Workshop Participant

Conclusion

By incorporating these considerations into the refinement of the single pane of glass solution, United Energy can enhance its capacity to provide accurate and accessible information during emergencies. The solution has the potential to empower individuals, build trust through transparency, and improve overall community resilience and well-being.

Solution #4 – Targeted Undergrounding and Aerial Bundled Cabling

Introduction

United Energy has proposed a targeted undergrounding and aerial bundles cable program that would focus on the backbone of the network.

Below outlines the stakeholder feedback on this solution, as well as refinements and considerations to optimise the design and implementation.

Support for this solution

Participants recognised the need for investment in the infrastructure around specific areas of the United Energy network, particularly in high-risk areas like Red Hill. There was rich discussion to understand which solution was optimal when considering aerial bundled cables and targeted undergrounding.

Aerial bundled cable was seen to be more cost-effective. There was also an understanding that this solution was less likely to be damaged compared to existing infrastructure. We received feedback from a stakeholder who supported aerial bundled cables, noting that integration of aerial bundled cables "after a spate of fires back in early 2000, [have]… seen a reduction in fire starts by approximately 75%". Participants believed that undergrounding would be a more expensive option, and had also appreciated that network hardening 'would seem like something that would have to happen' to build a robust resilience solution for the community.

"I would like to see this program extended to remove all open strand high voltage lines from our area. This might not be the preferred option for some community groups, but the risk is so much higher." Community Stakeholder

Considerations

In terms of refinements/considerations, the following points were raised:

1. Resilience alternatives

2. Consider community impact in solution implementation

3. Vegetation management

4. Aerial bundled cable solution analysis

Below are outlines of each element in detail.

1. Resilience alternatives

The discussion evolved to consider alternative investment options in resilience such as islanding, to complement undergrounding efforts and mitigate the impact of outages. This would reduce reliance on customer-level solutions that were also discussed, like energy storage.

Key elements discussed when considering optimal solutions included:

- The severity of the situation being proactively managed
- Who this solution would impact (highlighting vulnerable customers as a key community group)
- That the solution addresses the challenge without negative external impacts
- The level of investment required

It was assumed United Energy would undertake a cost-benefit analysis that included these factors before deciding on the final solution to put forward in its draft proposal.

When considering community batteries, there was an understanding that at the moment this was not economically viable. Participants referred to this with respect to battery lifespan, as well as customers acquiring batteries as they become cheaper which could make community batteries redundant. However, batteries could eventually progress into an optimal solution. Especially as solar technology evolves.

A stakeholder representing Bayside Council was investigating community batteries and questioned what the process was to connect with United Energy. There was understanding that community batteries may not be the sole solution. For them to be effective, they needed to be supported by local generation and secure and compatible infrastructure. It was raised as an option however “on everyone’s radar”.

To support the decision making of this solution, a council member had shared that they were investing in weather monitoring research. This system would help predict national hazards. This was particularly important for Rosebud, Red Hill and Hastings. Utilising advanced research could also benefit the network in evaluating the impact of the solution outcomes. The council representative shared that they would be happy to share this information with United Energy.

> “[Batteries were] only a piece of the puzzle”. Community Workshop Participant

2. Consider community impact in solution implementation

When undertaking a significant infrastructure upgrade, such as this solution, there was consideration wanted in the planning phase regarding the anticipated disruptions caused to the community. This included roadblocks, whether it interfered with residential areas, electric fences for farmers, water supply, and telecommunication towers. Understanding that significant planning would be undertaken, participants wanted to note that any of these interruptions would require notice and information shared with impacted community members.

3. Vegetation management

Participants wanted United Energy to consider the impact of greenery and the necessary clearing required for these activities. Suggestions, such as offset planting and collaboration with councils was needed to preserve biodiversity and address climate change concerns. Understanding the impact of this solution, participants also visualised how beneficial this solution would be in supporting climate change targets. For example, it would help develop a fire break.

It was raised that a considered approach from experts was necessary for the offset planting activity. Consideration was required as to whether planting native vegetation was optimal and ensuring a more fire-prone solution was implemented.

4. Aerial bundled cable solution analysis

A participants asked whether the aerial bundled cable solution was evaluated with consideration of repairing damaged aerial cables and their lifespan. This was felt to be important in undertaking the business case analysis and when the solution was compared to undergrounding.

"[Understanding] what the lifespan is as when it fails (worn or split) which has happened, it causes a significant explosion." Community Stakeholder

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<u>Conclusion</u>

The feedback gathered from participants underscored the importance of collaborative efforts and proactive measures in bolstering energy resilience. Recommendations for each solution highlighted the need for refinement, community engagement, and strategic planning to address challenges effectively. Collaboration with stakeholders and councils, thorough environmental assessments, and transparent communication were crucial for successful implementation and community support.

Powercor Solution Feedback

Introduction

This section of the report provides an overview the discussion from Ballarat and online Powercor engagements. This includes a discussion on network geography and recent storms that shaped the context for feedback received on the proposed solutions. The solutions proposed to support network resilience included proactive and reactive solutions.

Refer to Appendix 2. to see the solution information presented to stakeholders at the engagement.

Context

Understanding context was essential for comprehending the feedback provided by stakeholders across the different regions served by Powercor.

1. Recent events

Recent events, such as the storms of 13 February 2024 and October 2021 had significantly impacted these areas, influencing their perspectives on resilience and emergency preparedness.

2. Geography diversity

There was geographical diversity within Powercor's service area that influenced the feedback on solutions. For example, covering a breadth of rural and regional areas, as well as areas closer to urban centres like Geelong. Understanding these geographical nuances supported tailoring bespoke solutions that would ensure effective and equitable support across Powercor's service territory.

Apollo Bay had a heightened awareness of the need for robust infrastructure and resilience enhancements due to key reasons:

- Apollo Bay was described as the ‘caring, medical, security, hospitality centre’. For the Great Ocean Road and surrounding communities, it was a strategic location for community resilience of all surrounding towns from a CFA perspective, and other emergency services. This area was therefore raised as being essential in including resilience solutions.

- There were current concerns about poor reliability in the area.

- Its proximity to significant tourist attractions like the Great Ocean Road highlighted the need for reliable energy infrastructure to support both residents and visitors during emergencies.

"Strategically, from the perspective of the Vic Government, it takes on a whole new meaning and priority for resilience for the greater Great Ocean Road. We have a wonderful hospital with equipment and trained staff, we have a wonderful helicopter pad. We have all the emergency infrastructure but if the lights go out, we are in trouble."

Community Workshop Participant

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3. Energy inequity & the regulation framework

Participants expressed frustration with regulatory framework. This sentiment was raised at the start of the engagement, and again when responding to solutions such as 'supporting worst served customers'. Participants raised concern with the number of community members experiencing 'energy poverty' and inequity in energy supply that extended beyond those classified as the worst served customers. This issue was particularly pronounced when comparing the situation of regional customers to those in Melbourne. Although the conversation focused on resilience, stakeholders wanted to understand and challenge the AER's economic framework in how investment was determined and allocated.

Participants emphasised the need to support worst served customers and improve reliability as a priority. It should be a "no-brainer" to support these community members. This would include residential customers and businesses (including farmers). Consideration of animal welfare in agricultural communities should be considered in the evaluation of solutions.

"Outside of just the fridge and freezer, there is also the entire food supply chain gets affected…. If you can't milk the cows, they'll die. If they can't get wool off the sheep, they may die. This has broad implications. It affected the entire food chain." Community Workshop Participant

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Participants saw immense value in the longer term that Powercor spoke to in relation to enhancing network reliability, particularly the replacement of single wire earth return (SWER) lines. This highlighted the interconnectedness of reliability and resilience efforts.

Overall, this contextual background provides valuable insights into the perspectives and challenges faced by communities across Powercor's network. By considering these factors, Powercor can better align its solutions with community needs and enhance energy resilience solutions.

Solution #1: Supporting Worst Served Customers

Introduction

Powercor proposed a solution focusing on 'worst-served customers'. Worst served customers were often located in isolated pockets of the network towards the end of long radial rural lines where no alternate 'back-feed' supply is available. The solution focused on building feeder ties to adjacent feeders. Doing this would improve both reliability and

resilience. Below outlines the particpant feedback as well as refinements and considerations to optimise this solution.

Solution support

Participants expressed significant support for solutions aimed at better serving worst-served customers. They emphasised the need to prioritise customers facing ‘energy poverty’ and reliability challenges, advocating for solutions that promote equity and social well-being.

Within the areas identified, participants saw the necessity of prioritising these communities as many lived in ‘high-risk areas’. Some locations have single lane roads and are deeply forested which is where hazards tend to escalate.

There was agreement among participants that everyone should contribute to the additional costs associated with supporting worst-served customers, emphasising the importance of collective responsibility in ensuring energy access for all.

Considerations

In terms of refinements/considerations, the following points were raised:

1. Location prioritisation

2. Innovation and future-proofing

3. Supplementing and alternative solutions

4. Regulatory framework and funding

Below are outlines of each element in detail.

1. Location prioritisation

Participants emphasised the need to include Apollo Bay, as the location was considered a strategic hub for emergency management for surrounding towns, as well as a tourism destination that was also ‘worst served’. Participants raised the importance of these factors when undertaking the modelling and deciding on the final investments. One stakeholder remarked that "not all communities are created equal".

“I am concerned that Apollo Bay is not considered as a worst served. “
Community Workshop Participant

"I can assure you in Apollo Bay, that we fall well outside the reliability criteria. We are poorly served." Community Workshop Participant

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Another community group to prioritise were customers categorised as ‘just above the worst served’ definition and who were also described as the ‘energy poor’. This concern was specific to regional or rural areas, especially when compared to Melbourne.

2. Innovation and future-proofing

There was consensus regarding the necessity of future-proofing solutions in times of rapid energy technological advancements. While the solution of feeder tie lines was proposed, some participants raised concerns about infrastructure becoming redundant with emerging technologies (such as batteries). As one stakeholder remarked, "The landscape is changing so fast." Questions were raised as to whether the regulatory framework would restrict Powercor in developing innovative approaches.

3. Supplementing and alternative solutions

Participants shared ideas for supplementing the proposed solutions such as mobile generation and combining consumer energy resources (CER) or other non-network solutions. Additionally, there was an idea raised for exploring alternative service models that could be established to allow CER to make up for any central shortfall in supply.

There was interest in learning from alternative energy systems such as Western Australia’s standalone systems. However, participants recognised the need for bespoke solutions unique to the challenges and opportunities within Powercor's service area.

"There should be something else." Community Workshop Participant

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A broader role for the Victorian Government in exploring alternative options for addressing worst served customers was discussed. This included setting a minimum reliability standard. It was raised that this minimum reliability standard should be higher than what worst served customers experience today. Ideas such as the Victorian Government community battery program and the work between Department of Energy, Environment and Climate Action (DEECA) and the Australian Energy Regulator (AER) on data standards were discussed.

4. Regulatory framework and funding

Participants were frustrated at the approval criteria set by the AER to address the needs of worst-served customers. It was felt necessary to review the existing regulatory framework. Participants wanted to remove the ‘hard and dry line” of focusing solely on economic efficiency and instead, consider social and environmental benefits.

Conclusion

While there was strong support for this solution, participants highlighted the importance of addressing wider considerations to enhance community and resilience outcomes.

Solution # 2: Single pane of glass

Powercor has proposed an IT tool to support prioritisation during wide-scale outages. This tool brings together extensive information relevant for restoration and prioritisation that currently sits across disparate systems. The single pane of glass will provide a consolidated platform that presents information in a single-view.

Below outlines the participant feedback on this solution, as well as refinements and considerations to optimise the design and implementation.

Solution support

Participants supported the proposed solution, noting transparency, empowerment of communities, and operational efficiency as key reasons for support. The ability to provide a single, accessible platform for outage information was considered critical in supporting the network's ability to respond more efficiently to emergencies.

Considerations

In terms of considerations, the following points were raised:

1. Sharing information publicly

2. Greater information on the solution rationale

3. Ease of implementation and utilisation

4. Clarity on a timeline for implementation

5. Integration with existing systems and data quality

Below are outlines of each element in detail.

1. Sharing information publicly

Participants raised that another benefit of this solution was its ability to publicly share the information with the community and, importantly, emergency response agencies. This included the CFA, Victorian Government, Emergency Management Victoria and local councils to support state-level awareness and coordination during crises. The solution would also empower individuals to be part of solving the problem, and make better informed decisions during an emergency event.

Importance was highlighted to ensure medically vulnerable customers, as well as organisations that powered aged care, hospitals and supported animal welfare had shared access to information contained within the system.

A specific example shared on how customers could help with solving the problem was developing a customer-facing portal. This could provide the ability to report an incident to the network e.g. a tree falling on the powerline. An additional functionality could include the ability to see if an incident was already raised by other community members and the incident status.

"To have a single source of truth is invaluable in making decisions. Because so many have their own source, and it doesn't match the other organisations." Community Workshop Participant

This platform could also serve as an efficiency measure, alleviating the bottleneck created by customers contacting multiple emergency agencies for situational clarity. By providing an additional layer of information, it addresses community inquiries that they might otherwise seek independently.

2. Greater information on the solution rationale

Participants were concerned the idea might be rejected by the AER on the basis that the benefits were broad, and dispersed across the community. They therefore advocated for Powercor to include more detailed information on the impact and improvements resulting from this solution to be included in the regulatory proposal.

3. Ease of implementation and utilisation

Concerns were raised regarding the ease of implementing the solution. Comments such as this program being seen as a 'lofty, big solution' illustrated these concerns. This indicated that it may be difficult to implement a large IT project such as this. Some participants noted projects such as these typically cost more than originally envisage and take longer to deliver.

Questions were raised as to the compatibility of existing platforms with each other. Further, it was questioned if the IT system could actually fill the gaps in information that exist today. Gaps identified included information on livestock and vulnerable customers. This aspect could serve as a role for officers to update, as they gathered insights from the community.

Being user-friendly, accessible, and integrating seamlessly into existing systems would maximise the effectiveness of this solution.

4. Clarity on a timeline for implementation

Participants questioned the implementation timing of the proposed solution. Whether it would be realised in three, or ten years. The question stemmed from wanting to understand if the technology would be redundant before completion. Participants emphasised the need for transparency and accountability in project timelines to manage community expectations.

5. Integration with existing systems and data quality

Participants raised queries about the integration of the proposed solution with existing systems and data quality. They queried whether the new tools and platforms would replace

or integrate with current systems and databases. This highlighted the importance of seamless integration to avoid duplication of efforts.

Participants highlighted the importance of investing in staff training to support the integration and operation of the proposed solution.

Additionally, participants highlighted the need for adequate backup infrastructure investment as part of the solution planning to ensure a ‘fail-safe’ and ‘backup’ option.

What happens if that system goes down? Then you are toast. There needs to be a backup plan or fail-safe." Community Workshop Participant

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"Besides investing in the infrastructure, you also need the proper training of staff to use it. Because this can often be lacking." Community Workshop Participant

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Conclusion

There was strong support for this solution, however, participants highlighted the importance of addressing practical considerations to enhance community and resilience outcomes. This included sharing information publicly, ensuring ease of implementation and utilisation, as well as ensuring compatibility with existing infrastructure.

Solution #3: Micro-grids

Introduction

Powercor has proposed construction of three micro-grids at Trentham, Ballan and Lancefield. A micro-grid is a localised energy system that operates independently, or in addition to the main power grid. The micro-grid would provide reliable and resilient electricity supply to a specific area, such as a town, during and after extreme weather events or power disruptions. The purpose of the micro-grid is to provide emergency power supply during extreme weather events or power outages, energising the town centre to support relief and emergency response activities.

Below outlines the stakeholder feedback as well as refinements and considerations to optimise this solution.

Solution support

Participants generally support the micro-grid solutions and their ability to address resilience issues. This was especially true given the frequent outages and challenges faced by these communities during extreme weather events.

Participants commended the innovative approach, emphasising the benefits of community collaboration and support in enhancing energy infrastructure.

“This is excellent for the communities, particularly for smaller townships."
Community Workshop Participant

Further importance was raised regarding the necessity of electricity even in evacuated towns during emergencies like bushfires. While the immediate priority is evacuating residents, the township still relies on electricity to respond and restore infrastructure once the danger has passed. This underscores the ongoing importance of a reliable power supply. Moreover, during emergencies, there are situations where community members cannot leave their town and depend on electricity for essential communication, among other everyday needs.

"Anything that increases reliability is positive, especially in the case of a widespread event."
Community Workshop Participant

Considerations

In terms of refinements/considerations, the following points were raised:

1. Economic viability

2. Integration with existing infrastructure & energy sources

3. Additional micro-grid locations

4. Emergency power availability

Below are outlines of each element in detail.

1. Economic viability

Some paticipants pressure tested the commercial proposition of microgrids, specifically, whether the benefits outweigh the high costs. Others shared that they trusted and assumed that financial models were undertaken prior to proposing this solution.

The Victorian Government had been critical in funding previous microgrid solutions for them to be economically viable. Specifically for Apollo Bay, there was a study undertaken "…and it came out to $12-18 million [to invest in a microgrid], and it couldn’t be justified without 50% being covered by the government".

There were questions on whether a more holistic approach was considered to respond to this challenge. For example, understanding if the communities identified for a micro-grid to be built, were also due to be upgraded as part of another solution. This feedback stemmed from the desire to ensure that the investment and infrastructure would not become redundant.

Other comments surrounded the size of the micro-grid. It was felt that building a small scale micro-grids was more appropriate than larger ones designed to support an entire town.

There was further discussion regarding energy storage options for microgrids. While batteries were commonly associated with microgrids, stakeholders expressed reservations about their long-term robustness. Some suggested that diesel generators may be a more practical and reliable option until battery technology advances.

"The challenge of a microgrid is whether it is stored in a battery which we know is not commercially viable." Community Workshop Participant

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A key area to consider was education, particularly amongst the community about micro-grid use. This was specific to managing community load during peak periods, or when they are islanded from the network. Community education would increase the benefits of the solution by optimising the use of a microgrid during an outage.

A member from Newstead, who participated in this engagement, had buillt a micro-grid. This participant was keen to continue the conversation with Powercor to support an effective design of future solutions. The Newstead participant thought that there was a benefit in sharing learnings to support design of future microgrids. This could extend to supporting Powercor in understand community experiences through research, testing and learning from the Newstead micro-grid.

2. Integration with existing infrastructure & energy sources

Participants highlighted the importance of integrating microgrids with existing infrastructure to avoid redundancy and ensure a 'social solution' was adopted.

They raised the need for careful planning to ensure that microgrids complemented and enhanced the current network resilience. For example, additional solar or community batteries may impact the rationale for a micro-grid in some areas.

In terms of providing a social solution, stakeholders shared the broader benefits of being connected to the network and ensuring any solution benefits the entire community and does not disadvantage anyone through exclusion. One participant raised concern for community members serviced by SWER lines. It was felt that building a micro-grid may de-prioritise replacing SWER lines which were considered essential to meet future reliability needs.

3. Additional micro-grid locations

In addition to the locations proposed by Powercor, participants proposed other sites including Blackwood, Port Campbell and Apollo Bay.

Participants raised that the benefits of microgrids should include tourist locations. Understanding that Apollo Bays "…year-round population is relatively small. The tourism surge of the coast's population may find communities like the bay catering to large catchments of tourists during the highest risk periods…[consideration was raised to] the resilience requirements that must cater to the regional population with the capacity to serve the tourism surge".

In addition to the location of the community's micro-grid service, consideration was also wanted on the optimal land placement to ensure it was fit-for-purpose, and was not at the detriment of farmers' land.

4. Emergency power availability

Some participants expressed concern with the inability of microgrids to provide power during emergencies. This highlighted the importance of reliable power sources during crisis situations and the effectiveness of microgrids in addressing this need. Questions raised to pressure test this solution included, "How long can a microgrid power a town?" and "Do they meet total energy needs?"

Specifically, participants queried the ability of microgrids to provide frequency control ancillary services (FCAS), which is the ability to contribute to grid stability. Micro-grid's inability to support grid stability was raised as a limitation and may impact their overall effectiveness.

Conclusion

The insights from participants provide valuable considerations for the successful implementation of microgrid solutions. While participants expressed broad support for microgrids, they also underscored the importance of addressing practical considerations to enhance community and resilience outcomes.

Solution #4: Community Liaison Officer

Introduction

Powercor has proposed 5 full-time community liaison officers (officers) to service the Powercor network. The purpose of their role is to engage with relevant community groups and local government to support improved resilience planning and during an emergency event.

Below outlines participants feedback as well as refinements and considerations to optimise this solution.

Solution support

Participants valued the role additional officers could play, viewing them as a positive addition to a proactive and reactive resilience strategy. The role was seen as an approach to improve communication, empowerment, and collaboration within communities.

"Music to my ears." Community Workshop Participant

Considerations

In terms of refinements/considerations, the following points were raised:

1. Number of officers to build local knowledge

2. Community engagement and empowerment

3. Collaboration and coordination

Below are outlines of each element in detail.

1. Number of officers to build and have local knowledge

Participants advocated for officers to have a presence in the communities they served, emphasising the importance of officers being known. The role's effectiveness was their ability to understand local dynamics, anticipate needs, and build meaningful relationships. Participants highlighted the need for officers to reside in the communities they served to build credibility and trust.

"I suggest you get more than one per region... Someone who is a local known face... Otherwise, it seems like a drop in the ocean." Community Workshop Participant

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In order to support this requirement, it was questioned whether the proposed number of officers was sufficient to meet the diverse needs of communities. There were suggestions for increasing the number of officers to ensure adequate coverage, particularly in larger regions like Geelong and the South-West.

Concerns were also raised regarding the potential for burnout among officers with the spread of locations, especially considering the residential and commercial focus of their role. There was felt a need to define clear boundaries and priorities to prevent overload.

Participants shared ideas exploring alternative models, such as leveraging existing community resources, SES, or appointing part-time officers supplemented by volunteers to enhance efficiency and scalability.

Although it was desired that there was one officer per area, there was an understanding that the networks needed to consider the budget allocated to this solution to support resilience. Considerations on exploring the number of technical officers vs. interpersonal strong officers could be a factor.

Specific recommendations on how to split the officers across the network included the below:

- Split locations below into separate groups due to differences in geography needs:

  Group #1
  - Rural City of Ararat
  - City of Ballarat

  Group #2
  - Golden Plains Shire
  - Hepburn Shire
  - Hindmarsh Shire
  - Rural City of Horsham
  - Moorabool Shire
  - Northern Grampians Shire
  - Pyrenees Shire
- To include all Grampians together (as Southern Grampians Shire was also noted in the Barwon South West area)
- The City of Geelong has very different needs and therefore could be separated from the Barwon South West group

The service locations proposed by Powercor are shown in Appendix 2.4

"Decision makers and networkers... Ideally two in Grampians, or ability to spread themselves." Community Workshop Participant

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Other considerations raised on how to group officers were the aspirations of communities. Examples included vulnerable customers requiring more focused attention, or locations striving for 100 per cent renewable energy.

2. Community engagement and empowerment

There was consensus regarding the need for proactive engagement of officers with the community. Suggestions included developing user-friendly apps for incident reporting and involving community members in decision-making or the solution processes. Empowering communities to participate actively in addressing issues was deemed essential for fostering a sense of ownership and resilience.

Participants advocated for clear and proactive communication with the community through diverse channels, including text messages, local newspapers, and networking platforms.

"If you have Community Officer, then you actually get the answers you want." Community Workshop Participant

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To further empower communities, officers could play an advocate role for community needs within Powercor and regulatory authories. By working closely with the community, they

would build an understanding of the community's aspirations, hopes and concerns, and ensure these areas are considered in resilience planning.

"They should be a catalyst for change." Community Workshop Participant

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As part of their day-to-day role, it was felt officers could support the education of the community on resilience planning, as well as building an understanding of the energy sector such as the energy transition.

It was important to clearly define the roles and responsibilities of an officer to avoid ambiguity, and ensure alignment with community expectations. There were specific concerns that without clear guidelines, the role may become perceived as satisfying customers' everyday. Therefore their focus may get distracted in addressing smaller needs, rather than effecting meaningful community change.

"Important that the liaison officer isn't just someone working for Powercor to put customers at bay. They should represent communities not represent Powercor."
Community Workshop Participant

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3. Collaboration and coordination

Participants emphasised the necessity for officers to collaborate with stakeholders, including local councils, emergency committees, and telecommunication companies. A key meeting was the emergency municipal meetings which officers should attend.

It was important for officers to communicate both community needs and the network's strategic vision in these engagements. This role would support the establishment of a social license for the network, and help provide a stronger mandate.

"The communication goes back and forth. Coordination with other organisations like council, weather, and telecommunications is very important." Community Workshop Participant

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"How are the officers going to engage in the community? They have some emergency committees already; can they get involved?" Community Workshop Participant

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<u>Conclusion</u>

The stakeholder feedback highlights the value of the officers and participants were eager to share ideas and refinements to support this resilience solution.

Solution #5: Rapid Earth Fault Current Lines (REFCLs)

Introduction

REFCLs operate as giant safety switches, rapidly detecting faults and reducing voltage to mitigate bushfire and electrocution risks. If a fault persists, the REFCLs instruct a circuit breaker to switch off power until the fault is located and fixed.

REFCLs were implemented in response to the devastating bushfires experienced in Victoria on Black Saturday, 7 February 2009. REFCL has targeted at enhancing bushfire safety and mitigate the risk of fires caused by powerline faults, safeguarding lives and property during extreme weather events.

The two REFCL operating modes were discussed including fire-risk mode (which is the most sensitive setting) and bypass mode (which is a lower sensitivity compared to fire-risk mode).

Below outlines the participant feedback on the two operating modes as well as refinements and considerations to optimise this solution.

Solution support

REFCLs were seen as a critical. Partricipant REFCL discussions highlighted the complexity in decision-making regarding their activation modes to ensure both safety and service provision.

This next section of the report delves into participant feedback on REFCL operating modes, exploring reasons for fire-risk mode and considerations for bypass mode.

Considerations

In terms of refinements/considerations, the following points were raised:

1. Flexibility of operating modes across different areas

2. Undertaking supporting data and analysis

3. Community communication and education

Below are outlines of each element in detail.

1. Flexibility of operating modes across different areas

The REFCLs operating mode debate was felt to be a ‘conundrum’. The advice of Energy Safe Victoria to keep the REFCLs on fire-risk mode all year was taken seriously by participants, who understood the severe impacts a bushfire has on a community. However, as the conversation evolved, there was recognition of the negative impacts frequent energy interruptions may have on communities, especially in seasons where fire dangers are low.

"The consequences of a bushfire are worse than an outage."
Community Workshop Participant

Some participants emphasised the need for flexibility, suggesting REFCLs don't have to operate in an ‘all-or-nothing’ manner. This highlighted the desire for a more nuanced approach to operating modes. Questions were raised as to the level of flexibility in operating modes. For example, could sensitivity settings differ across the network based on specific conditions, zones, or incidents.

"Could you take a zone-based approach, based on the data for who is suffering the most?"
Community Workshop Participant

When considering the impact on energy reliability, participants expressed concerns. Those affected would include customers who were heavily reliant on essential services such as air conditioning, heating and refrigeration, as well as residents ability to protect their property on bushfire days.

“This [fire-risk mode] would make it impossible to lift the service [improve reliability] of any of those customers who are worse served.” Community Workshop Participant

2. Undertaking supporting data and analysis

Suggestions to support an informed decision included conducting a thorough analysis by obtaining data on areas that included:

- Winter analysis: understanding how many fires have started in winter
- Current effectiveness: identifying the number of fires REFCLs prevented (across the year and by season)
- Worst served customers: understanding the impact on worst served customers of the REFCL bypass mode
- Zoned approach: leverage existing data to determine areas most susceptible to bushfires or suffering during outages

3. Community communication and education

Participants highlighted the importance of effective communication and education regarding REFCLs operating modes. They emphasised the need for the community to understand the reasons behind the chosen mode and how to plan accordingly. However, participants recognised the challenges associated with communicating such complex information, particularly given the current complexity of the industry for customers.

Suggestions were made to explore alternative communication methods and to prioritise education initiatives to ensure community understanding. One participant urged, "you need to make noise about this, or the government will make an illogical decision". This

emphasised the importance of advocacy and clear communication in this decision-making process.

Conclusion

Through these discussions and recommendations, participants provided valuable insights into the complexities surrounding REFCL operating modes. Their feedback highlights the importance of balancing safety considerations with the need for reliable service provision. Operating entirely in fire-risk mode could result in unwanted vulnerabilities and risks for community members.

Image above: Community Workshop, participating stakeholder

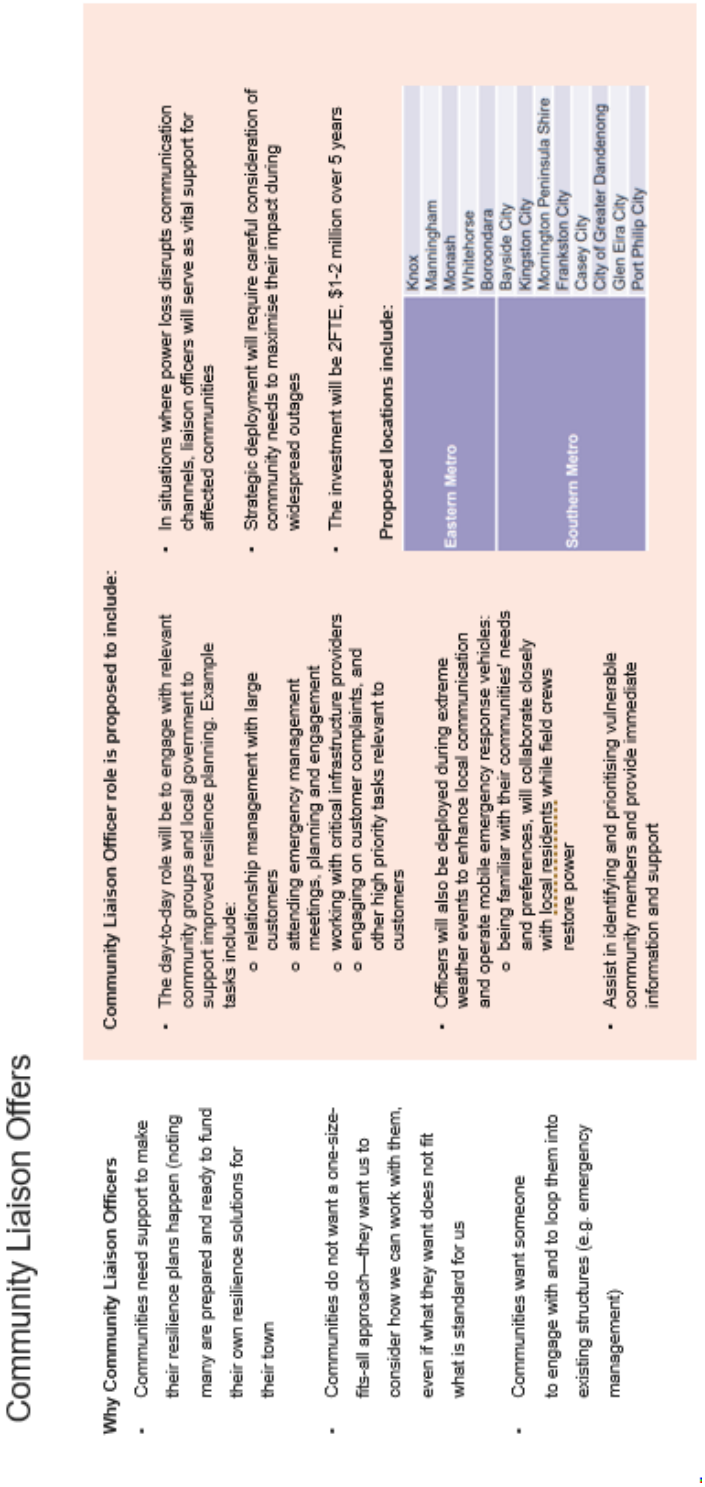
Appendix

Appendix

1. United Energy Solutions

Below outlines the solutions presented at the Red Hill and online United Energy engagement.

1.1 Community Liaison Officers



Community Liaison Offers

Why Community Liaison Officers

- Communities need support to make their resilience plans happen (noting many are prepared and ready to fund their own resilience solutions for their town
- Communities do not want a one-size-fits-all approach—they want us to consider how we can work with them, even if what they want does not fit what is standard for us
- Communities want someone to engage with and to loop them into existing structures (e.g. emergency management)

Community Liaison Officer role is proposed to include:

- The day-to-day role will be to engage with relevant community groups and local government to support improved resilience planning. Example tasks include:
  - relationship management with large customers
  - attending emergency management meetings, planning and engagement
  - working with critical infrastructure providers
  - engaging on customer complaints, and other high priority tasks relevant to customers
- Officers will also be deployed during extreme weather events to enhance local communication and operate mobile emergency response vehicles:
  - being familiar with their communities' needs and preferences, will collaborate closely with local residents while field crews restore power
- Assist in identifying and prioritising vulnerable community members and provide immediate information and support
- In situations where power loss disrupts communication channels, liaison officers will serve as vital support for affected communities
- Strategic deployment will require careful consideration of community needs to maximise their impact during widespread outages
- The investment will be 2FTE, $1-2 million over 5 years

Proposed locations include:

Eastern Metro	Knox
	Manningham
	Monash
	Whitehorse
Southern Metro	Boroondara
	Bayside City
	Kingston City
	Mornington Peninsula Shire
	Frankston City
	Casey City
	City of Greater Dandenong
	Glen Eira City
	Port Philip City

Mobile Emergency Response Vehicles (MERV)

What is MERV?
A vehicle deployed by the network that is equipped with a generator, flood lighting, internet access and phone charging facilities to provide central support and updates to communities during emergencies and prolonged power outages.

Context
- MERVs were introduced in response to the extreme storms experienced in Victoria during 2021 and 2022
- Feedback from the community and internal reviews emphasised the need for an improved on-the-ground engagement model during such challenging times
- Deploying MERV during widespread and prolonged power outages enables partnership with communities, offering practical assistance to enhance customer and community resilience.
- MERV deployments are best supported by specialist employees, including community liaison officers, who provide friendly advice, practical support, and temporary power solutions
- Successful trials have demonstrated effectiveness in providing restoration information, charging devices, and general support to impacted communities
- MERV initiatives extend beyond immediate response efforts, encompassing resilience-focused initiatives and summer preparedness campaigns in collaboration with various stakeholders

Our proposal
- 2 new vehicles for United Energy
- The investment will be $0.5-1 million for 2 vehicles over 5 years

The rationale for additional vehicles considers the nature of the network in terms of:
- The size of the network
- Customers spread across the network geography

MERV providing respite and information to residents impacted by floods in 2022

MERV on the ground at Pomonal providing support and a touch-point for local services

Single pane of glass

Context

- The independent government review into community and network resilience following the 2021 storms emphasised the importance of prioritising restoration efforts, facilitating information sharing with stakeholders, including the government, and conducting 'after action reviews' post-extreme events.

Our current restoration approach

- Where there is an outage, our primary function is to restore supply quickly and safely to as many customers as possible. All else equal, we will prioritise restoring our feeder ‘backbone’ before addressing single customer outages
- Within this approach, we maintain operational flexibility to address safety issues, or to target restoration of critical infrastructure and/or specific customers where practicable (or where directed). Our processes need to be dynamic given changing conditions and priorities during extreme weather events.
- For example, a wire down at a single premise site will be prioritised to be made safe regardless of its size. We also feed in special cases on an as needs basis if we can, such as to prioritise the local water sewerage plant

Our proposal

- While our current systems contain extensive information relevant for restoration and prioritisation, these systems are disparate and we do not have an ability to view all information together
- During an escalation, a single-view will support more informed decisions about what is practically able to be prioritised (and potential trade-offs), and to account for those decisions in an after-action review
- A single view also enables us to be more responsive in our engagement with those who need information during emergencies, including regulators and government, as we do not need to manually work across different systems to provide them the needed visibility. During an escalation, the time saved enables a quicker response for those agencies as well as our teams
- Outside of an escalation, information in the ‘single pane of glass’ can be used to support community liaison officers to work with local communities in areas most at risk, and prioritise their engagement
- The investment will be $3-5 million for 5 years for the system

Targeted undergrounding and aerial bundled cable

Overview

Since 1997, United Energy has invested in not just improving “average” customer service but also the supply to our worst served customers. This has meant that pockets of poor performance are now smaller.

Recent investments and focus include:

- replaced aged HV 'aerial bundled cable' in bushfire risk areas to reduce fire start risk
- installed REFCLs (i.e. giant safety switches) at Dromana and Mornington and Frankston South to reduce fire risk
- continued to improve and expand automatic supply restoration schemes
- using LiDAR to better identify vegetation risks.

However, climate change and the impacts that natural hazards can have on our network (which comprises ~80% overhead conductor) are now increasing the frequency and customer impact of hazardous weather.

Context

Our biggest exposure remains to be storm events that result in trees falling onto lines. Many are from trees that are cut to compliance and increasingly for United Energy we have looked to identify hazard trees.

Potential solutions to manage this are undergrounding existing overhead lines, or using covered conductor (such as aerial bundled cables).

What is targeted undergrounding and aerial bundled cable

Targeted undergrounding is taking overhead lines and running them underground. This means they are less exposed to external damage which may mean power is lost.

Aerial bundled cable is another alternative. It is lower cost than undergrounding, and has safety benefits above 'uncovered' conductor. However, as an overhead network, some exposure remains to trees falling onto lines

Proposal for consultation

- The proposed undergrounding program would target the sections of the network with predominantly HV only and in the backbone with the aim of keeping the feeder lines on supply where customer centres are spread out. This is predominantly on the Mornington Peninsula.
- The scale of the program would begin to make the network more resilient to major storm events and is more efficient than increasing the number of field personnel available to respond to meaningfully improve recovery after a major event.
- The investment will be up to $25 million for 5 years for the program of works

Worst served customers

Who are our worst served customers?

- We have identified a subset of feeders and rural townships (~12,500 customers) that are consistently among our worst-served communities, collectively averaging >6 outages and >15 hours off supply per year over a three year period
- The outage experience for worst served customers can be 3 times more than the typical rural customer
- The problem is not always entire feeders, but rather pockets, townships and circuits within feeders

What's required to support worst-served customers

- Worst-served customers are often those located in isolated pockets of the network, and towards the end of long radial rural lines where no alternate 'back-feed' supply is available
- Fixes generally require significant investment to build a feeder tie to an adjacent feeder, or install an alternate generation for back up supply (e.g. a microgrid). Doing this will improve both their reliability, and the resilience of those customers

Proposal for discussion

- Tie-line: Lyonville, Glenlyon, Trentham, Blackwood
  - BAN003–WND024 tie – $3m [benefits ~1,400 customers]
- Tie-line: Ballan, Gordon, Mt Edgerton
  - BAN003–BMH003 tie – $3m [benefits ~1,050 customers]
- Tie-line: Rokewood, Dereel & Chorindhap Town
  - CLC006–BAS022 tie – $4m [benefits ~900 customers]
- Tie-line: Peterborough Town, Nirranda Sth Area
  - TRG024–WBL012 tie – $2m [benefits ~450 customers]

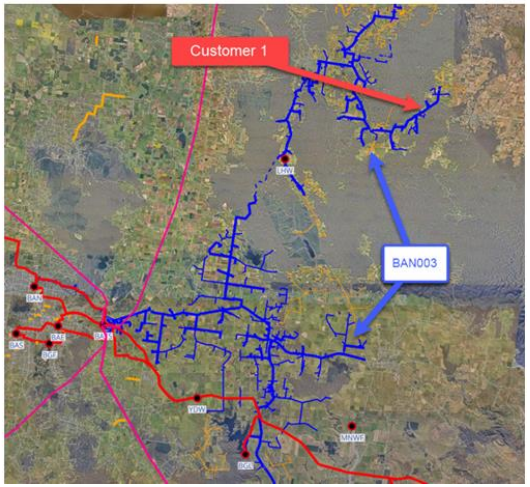


Image show where our worst-served customers are generally located, and an example of where customers may be more exposed to frequent or longer outages (e.g. customer is located towards the end of a line with no alternative network supply feed)

Single pane of glass

Context

- The independent government review into community and network resilience following the 2021 storms emphasised the importance of prioritising restoration efforts, facilitating information sharing with stakeholders, including the government, and conducting 'after action reviews' post-extreme events.

Our current restoration approach

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- Outside of an escalation, information in the ‘single pane of glass’ can be used to support community liaison officers to work with local communities in areas most at risk, and prioritise their engagement
- The investment will be $5-7million for 5 years

Micro grids

What is a micro grid?
A localised energy system that operates independently, or in addition to the main power grid, providing reliable and resilient electricity supply to a specific area, such as a town, during and after extreme weather events or power disruptions.

How will a micro grid benefit the community?
Providing an emergency power supply during extreme weather events or power outages, energising the town centre to support relief and emergency response activities.

Cost-benefit context
DEECA conducted a feasibility study where sites were selected based on key severe weather event impact indicators including wind speed data, elevation, bushfire risk, reliability, vegetation density and population density. The proposed microgrid coverage area for each town was based on:

- the location of key emergency centres and services
- the existing network configuration and infrastructure,
- reduction of the likelihood of severe weather events impacting the microgrid network

Our proposal
For the development of our regulatory proposal, we built on these feasibility studies. Of the sites assessed, **Trentham, Ballan and Lancefield** were found to provide the most feasible.

This analysis will be updated based on our refreshed customer values work

The investment will be $15-$20million for 3 microgrids over 5 years

Ballan Case Study

Context
Ballan has one main electricity supply line, which means if that line is damaged (due to storms, bushfires etc) the town will lose power. A microgrid would be able to provide an emergency back up supply to the town centre, keeping it powered if there has been damage to the network upstream.

Outage example of the impact of a microgrid

- Ballan was affected by one 728-minute outage in June 2021 (due to storm damage) and, another 609-minute outage on in October 2021 (again due to tree damage). A microgrid would be able to assist by reducing the impact of these outages on the town centre.
- Other communities and localities close by would also benefit from a stable power supply in Ballan, as it would support relief activities and other emergency responses to continue uninterrupted.

Indicative area that could be supported by a micro-grid

Community Liaison Officers

Why Community Liaison Officers

- Communities need support to make their resilience plans happen (noting many are prepared and ready to fund their own resilience solutions for their town
- Communities do not want a one-size-fits-all approach—they want us to consider how we can work with them, even if what they want does not fit what is standard for us
- Communities want someone to engage with and to loop them into existing structures (e.g. emergency management)

Community Liaison Officer role is proposed to include:

- The day-to-day role will be to engage with relevant community groups and local government to support improved resilience planning. Example tasks include:
  - relationship management with large customers
  - attending emergency management meetings, planning and engagement
  - working with critical infrastructure providers
  - engaging on customer complaints, and other high priority tasks relevant to customers
- Officers will also be deployed during extreme weather events to enhance local communication and operate mobile emergency response vehicles:
  - being familiar with their communities' needs and preferences, will collaborate closely with local residents while field crews restore power
- Assist in identifying and prioritising vulnerable community members and provide immediate information and support
- In situations where power loss disrupts communication channels, liaison officers will serve as vital support for affected communities
- Strategic deployment will require careful consideration of community needs to maximise their impact during widespread outages
- Investment will be 5 x FTE, $3 - 4million over 5 years

Proposed locations include:

Emergency management region	Municipalities
Grampians	Rural City of Ararat
	City of Ballarat
	Golden Plains Shire
	Hepburn Shire
	Hindmarsh Shire
	Rural City of Horsham
	Moorabool Shire
	Northern Grampians Shire
	Pyrenees Shire
Loddon Mallee	Buloke Shire
	Campaspe Shire
	Central Goldfields Shire
	Gannawarra Shire
	City of Greater Bendigo
	Loddon Shire
	Macedon Ranges Shire
	Mildura Rural City
	Mount Alexander Shire
	Swan Hill Rural City
	Buloke Shire
	Campaspe Shire
	Central Goldfields Shire
Barwon South West	Borough of Queenscliffe
	City of Geelong
	City of Warrnambool
	Colac Otway Shire
	Corangamite Shire
	Glenelg Shire
	Moyne Shire
	Southern Grampians Shire
	Surf Coast Shire
Hume	Moira Shire
	Mitchell Shire
	Strathbogie Shire
	Greater Shepparton City
Northern and Western Metro	Hobsons Bay
	Brimbank
	Maribyrnong
	Melton
	Wyndham

Rapid Earth Fault Current Limiters (REFCLs) cont.

Network reliability is generally measured in three separate ways:

- System Average Interruption Duration Index (**SAIDI**) measures the duration of outages
- System Average Interruption Frequency Index (**SAIFI**) measures the frequency of outages
- Momentary Average Interruption Frequency Index (**MAIFI**) measures momentary outages

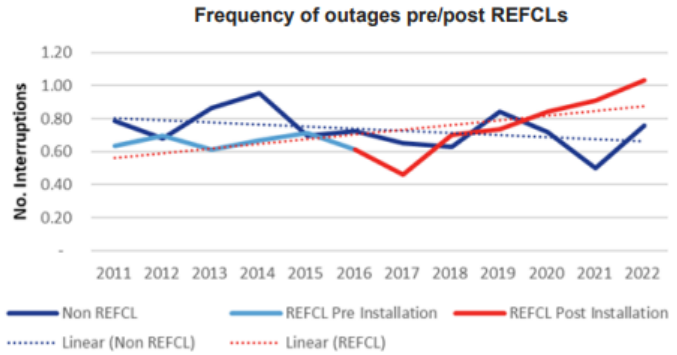
Since 2016, the duration and number of momentary outages across our network has declined (i.e. reliability performance has improved). These trends have been consistent across REFCL protected and non-REFCL protected areas.

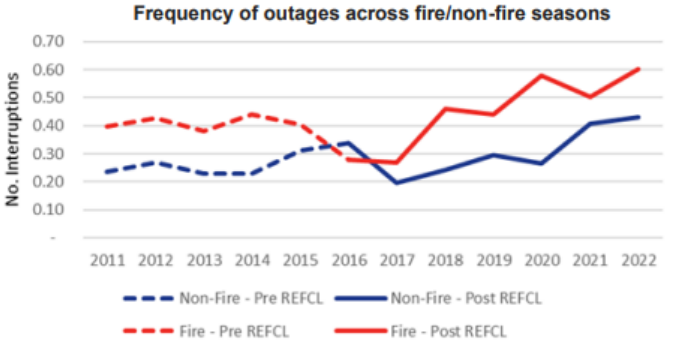
However, while the frequency of outages has improved on non-REFCL networks, performance has deteriorated on REFCL protected networks.

Further, the frequency of outages differs across the fire and non-fire seasons, reflecting the impact of the different REFCL operating modes.

It is expected that Energy Safe Victoria will shortly undertake consultation that will consider the requirements for when and/or how we apply our REFCL operating modes. This would represent a trade-off between safety outcomes and reliability. For example:

- requiring REFCLs to operate in fire-mode all year round would increase bushfire protection (albeit, during lower bushfire risk periods), but result in deteriorating reliability
- limiting or removing the ability to turn-off the REFCL for fault-finding processes would also result in deteriorating reliability.





Rapid Earth Fault Current Limiters (REFCLs)

What is REFCL?

REFCLs operate as safety switches, rapidly detecting faults and reducing voltage to mitigate bushfire and electrocution risks. If a fault persists, the REFCL instructs a circuit breaker to switch off power until the fault is located and fixed.

REFCL community benefits

Rapid Earth Fault Current Limiters, were developed in response to the devastating bushfires experienced in Victoria on Black Saturday, 7 February 2009.

This proactive approach aims to enhance bushfire safety and mitigate the risk of fires caused by faulted powerlines, safeguarding lives and property during extreme weather events.

Implementation

To expedite installation, the Victorian Government amended regulations to require distribution businesses to install REFCLs at 45 zone substations supplying high bushfire consequence areas by specified dates.

Current requirements

REFCLs on the Powercor network are available to operate all year round, albeit in different operating modes:

- **fire-risk mode** applies during the declared fire danger period
- **bypass mode** applies at all other times.

During the fire danger period (declared by the CFA, but typically around October – March), we may also turn-off our REFCL for fault-finding processes (but do so in ways to minimse fire risk, e.g. overnight on mild days).

6

Our current learnings since 2020

REFCLs not only minimise bushfire risk but can also prevent serious injury or fatality due to third party contact with HV powerlines.

REFCLs, however, have led to a deterioration in reliability performance since the first site was commissioned in late 2016.

There is a relationship between reliability performance and operating mode.

Examples of avoided potential serious safety incidents

Seven serious safety incidents have been avoided since early 2020, most of which occurred during the fire season:

1. **January 2020** - Excavator made contact with HV overhead line multiple times. Excavator operator was unaware of the contact. The REFCL operated tripping the feeder circuit breaker. No injuries were incurred
2. **September 2021** - Copper thieves broke into an indoor distribution substation, stole earthing conductor and tried to cut and remove the HV cable from the supply pole to the substation. The REFCL operated tripping the feeder circuit breaker. No known injuries
3. **March 2022** - Excavator made contact and broke a HV overhead line bringing it to ground. The REFCL operated tripping the feeder circuit breaker. No injuries were incurred

Image above: Mix of Community Workshop participants & Powercor & United Energy team members