Electricity Distribution Price Review (EDPR 2026-31)

Business case: Network hardening for resilience

Date: 31 January 2025

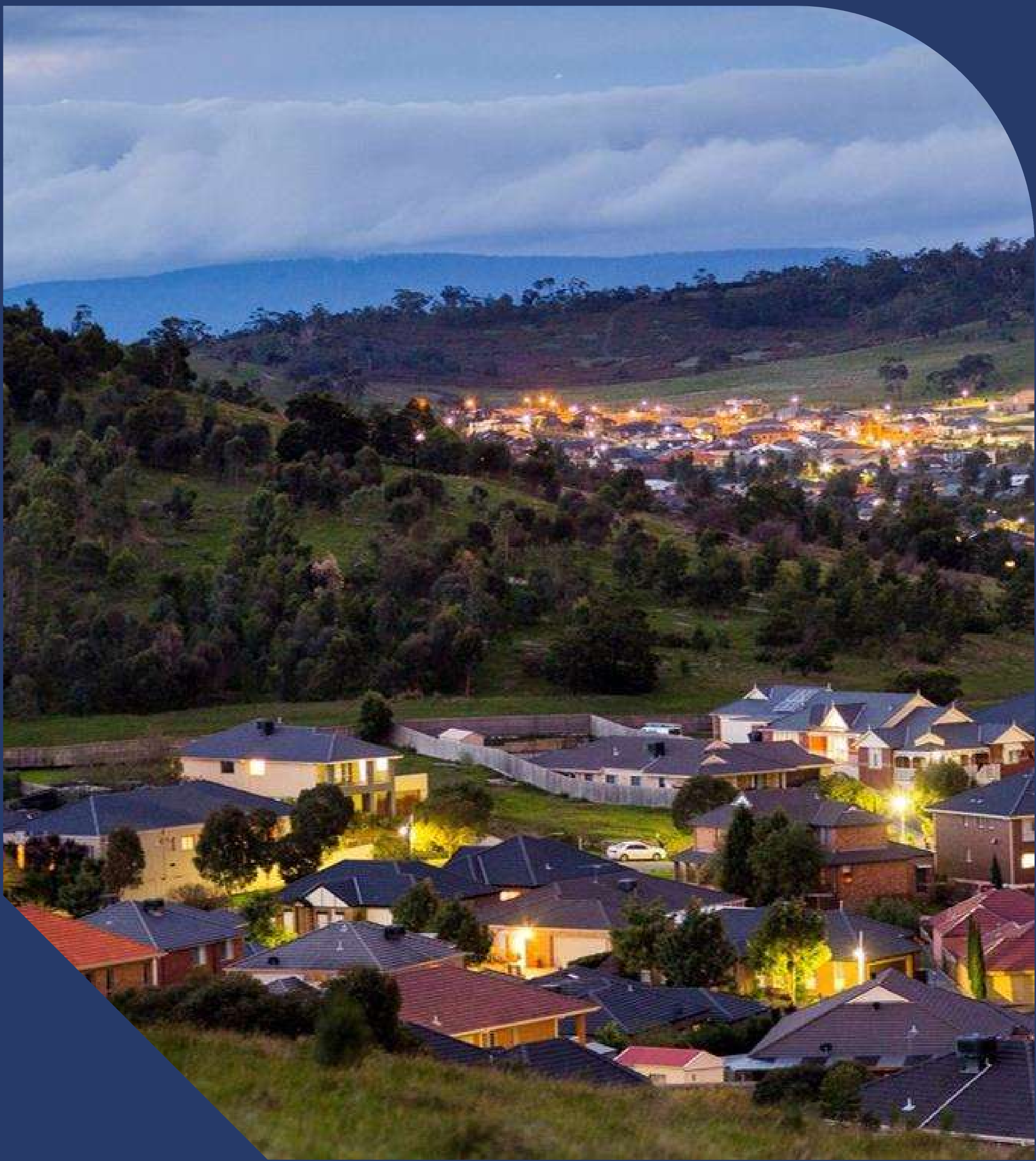


Table of contents

1. Executive summary

The AusNet distribution network supplies electricity to ~809,000 customers across the east of Victoria. Across our network, extreme weather events and climate change is a significant risk and can impact both reliability and resilience of the distribution network; the most severe of these events causing multiple prolonged outages for our customers. As a part of enhancing the resilience of the distribution network against climate change, an investigation was conducted to assess the costs and benefits of various network hardening programs in improving network resilience. This business case outlines our investment case for network hardening.

The decision to harden parts of network is underpinned by a comprehensive analysis of climate change risks and extreme weather impacts on our network assets. By evaluating network topology, historical outage data, and climate projections, high-priority and economic areas for network hardening have been identified. Network hardening enhances the network's ability to withstand and recover from the impacts of extreme weather events. The benefits include fewer outages and reduced asset replacements after severe weather events, which ultimately boosts network reliability, minimises downtime, and ensures a more consistent power supply for customers.

This business case outlines the following processes:

- **Analysed data to forecast risk:** We combined our network data (e.g. historical outage data, and network asset) with the climate data that we procured[1] to forecast the 'do-nothing' risk.
- **Assessed various options:** We compared the costs and benefits of several options against BAU (defined as do-nothing). Benefits were quantified at the feeder level by estimating how the interventions reduce expected unserved energy due to climate change, then multiplying it by the Value of Network Resilience (**VNR**).
- **Identified the preferred option:** Costs and benefits from above were converted into cashflow streams to allow the Net Present Value (**NPV**) to be calculated. We have selected the preferred option based on the option that is able to deliver the highest NPV of all the options assessed, across all sensitivity scenarios.

We engaged an independent third-party (CutlerMerz) to develop the Climate Resilience Economic Model (sometimes referred to as the end-to-end risk model) where the model addressed the first two dot points above. The key output is a program of works where it could be slowly rolled out, or front loaded. This business case takes the key outputs from the Climate Resilience Economic Model and converted the costs and benefits into cashflow streams to calculate the NPV of the following options:

- **Business-as-usual (BAU):** which we have interpreted as 'do-nothing'
- **Option 1**: rolling out the full program of works over 4 regulatory periods (i.e., 25% rollout in each of the following 4 regulatory periods)
- **Option 2**: rolling out 35% of the full program of works in 2026-31, with the balance over the following 3 regulatory periods
- **Option 3:** rolling out 100% of the full program of works in 2026-31. This is the preferred option as it maximises the NPV of all the options assessed. This option is made up of C-I-C of undergrounding ($95m), C-I-C of covered conductors ($30m), C-I-C hardened poles ($66m) and C-I-C reclosers ($20m).

While option 3 has been characterised as the 100% rollout option, we note that it's a 100% rollout of the NPV positive projects that maintains today's risk levels in 2050 as much as possible, without fully achieving it. To fully achieve maintaining today's risk levels in 2050 requires some investments in NPV negative projects which has been valued at approximately $70m. This $70m has been deferred to future regulatory periods.

Options 1 to 3 are essentially the same investment program with different rollout profiles – yet our modelling has shown that there is value to be gained when frontloading the program as benefits are accrued earlier.

[1] Risk Frontiers, Climate Data for Energy Network Resilience Modelling (2024)

Table 1: Economic Outcomes ($m, real 2023-24)

	FY27 to FY31 (undiscounted)			Full assessment period (discounted)			Comments
	Capex	Opex	Total cost	Total cost	Total benefits	NPV	
Do nothing	$-	$-	$-	$-	$-	$-	
Option 1 – 25% rollout in 2026-31	$54.8[2]	$-	$54.8	$141.5	$505.7	$364.2	Undergrounding: C-I-C Covered conductors: C-I-C Hardened poles: C-I-C Reclosers: C-I-C
Option 2 – 35% rollout in 2026-31	$79.4[3]	$-	$79.4	$144.8	$515.8	$371.0	Undergrounding: C-I-C Covered conductors: C-I-C Hardened poles: C-I-C Reclosers: C-I-C
Option 3 – 100% rollout in 2026-31	$210.3	$-	$210.3	$185.7	$603.2	$417.6	Undergrounding: C-I-C Covered conductors: C-I-C Hardened poles: C-I-C Reclosers: C-I-C

Source: AusNet analysis

2. Background

Extreme weather events on our distribution network

Over the past 5 years, we have experienced 4 major storms and 1 bushfire:

2019-2020 – Black summer bushfires

The black summer bushfires across the 2019-2020 summer resulted in widespread damage across the state and destroyed a significant proportion of our distribution network. Across our network, over 300 power poles were destroyed, over 1,000 kilometres of powerlines were affected, and approximately 60,000 customers experienced outages. Significant remediation works were required to restore supply to customers across the state, and temporary supply was required to enable operation of essential services across remote regions where power was not restored for a significant duration of time.

2021 – June & October storms

Victoria was impacted by severe storms during June and October of 2021, which again caused significant outages. The significant winds during this period caused trees and powerlines to fail, faulting powerlines and resulting in prolonged outages whilst infrastructure was repaired. These events resulted in outages to approximately 249,000 customers during the June 2021 storms and 217,000 customers during the October 2021 storms; some of which lasted multiple days.

2024 – February storm

February 2024 storm impacted both transmission and distribution network infrastructure assets across the state. Much as the previous storm events, this resulted in powerline failures either through vegetation faulting or direct line failures. This storm impacted approximately 297,000[4] customers across the AusNet network, and the extent of damage left some customers disconnected for several days.

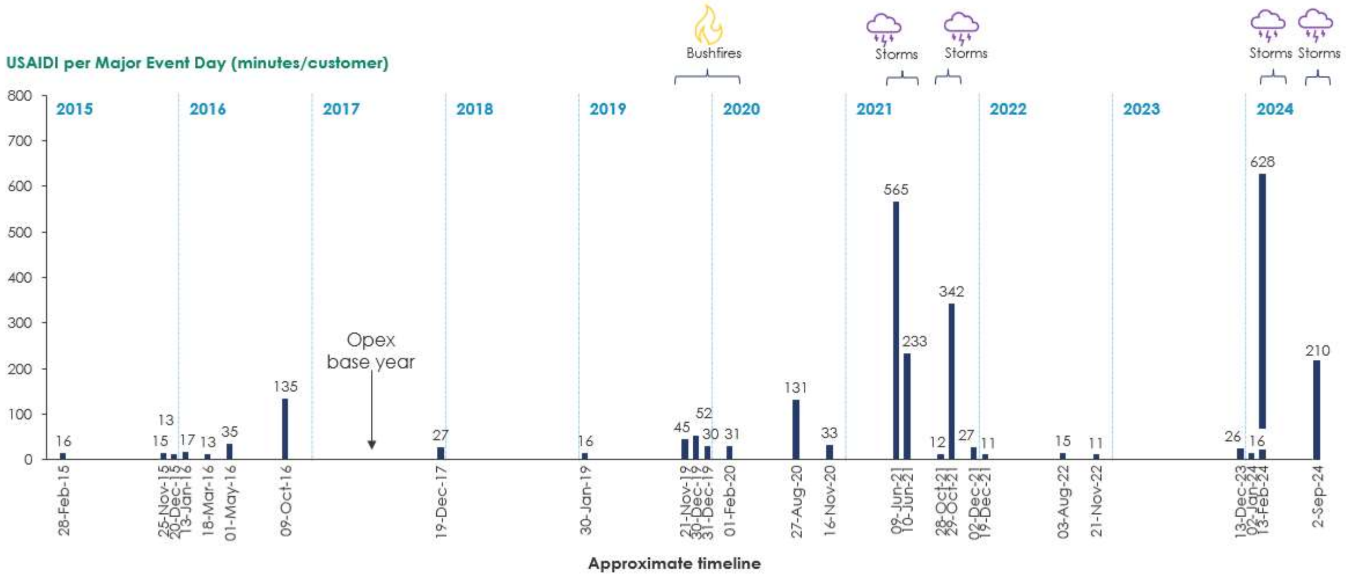
2024 – September storm

September 2024 storm impacted approximately 171,000 customers.

The impact of these events on the distribution network is depicted in the figure below.

[2] Not exactly 25% as a percentage of option 3 capex
[3] Not exactly 35% as a percentage of option 3 capex
[4] Other sources reference 255k customers which is the coincident peak customers off supply.

Figure 1: **USAIDI per Major Event Day from 2015 to 2024 (minutes/customer)**



Source: AusNet.

Weather event and forecasting climate change

The changing climate and its impact on our infrastructure, with flow on effects to our customers, is a key concern underpinning the need to invest in proactive solutions to mitigate the growing risk of weather hazards. To understand the impact of climate change, AusNet procured climate data from an independent and external consultant. We used the climate data to forecast our expected unserved energy.

Climate data: We procured climate data from an independent third-party provider which is one of the key inputs into our risk modelling (next point). Climate data focussed on two critical hazards: bushfire and windstorms. To forecast bushfire risk, the model used a Forest Fire Danger Index (**FFDI**) exceeding 100 as a threshold to quantify annual fire risk days. To forecast windstorms risk, the model assessed days with wind speeds exceeding 11.3 m/s and maximum windspeed. The selection of these high thresholds inherently assumes that MED events will only be driven by severe conditions, which also reduces the risk of over investment. Climate data was provided for three Representative Concentration Pathway (**RCP**) scenarios of 2.6, 4.5 and 8.5. We have adopted the RCP4.5 scenario as a reasonable central estimate, which is consistent with the AER's approach in assessing Ausgrid's resilience proposal.

Risk Modelling or Climate Resilience Economic Model: One of the key outputs of the risk modelling exercise is the compound annual growth rate (**CAGR**) of risk on our network. The risk modelling projected a network wide CAGR of 0.63% (the sum of windstorm and bushfire risk). This network-wide risk rate can be disaggregated at the feeder level which are more granular and location specific. The risk modelling exercise also compared the costs and benefits of several options against BAU (defined as do-nothing). Benefits were quantified at the feeder level by estimating how the interventions reduce expected unserved energy due to climate change, then multiplying it by the Value of Network Resilience (VNR).

We note that:

- CutlerMerz Climate Resilience Economic Modelling – Model Methodology report: outlines the both the climate data and risk modelling framework
- CutlerMerz Climate Resilience Economic Modelling – Program report: outlines the program of works that was determined in September 2024
- This business case: outlines the preferred option and the program of works following further refinements to the modelling.

Resilience vs Reliability

Resilience and reliability are critical and interrelated concepts but address different aspects of the energy system's performance.

Reliability refers to the consistent and dependable performance of the energy system under normal operating conditions. Reliability emphasises consistent performance and aims to reduce outage time during regular operating conditions, including scheduled maintenance. It is commonly quantified by metrics such as the average number of outages per customer, or the average duration of outages per customer, both normalised to provide a standardised measurement. A reliable energy system delivers power continuously without frequent interruptions. Regulatory standards and performance metrics exist (e.g., **USAIDI** – Unplanned System Average Interruption Duration Index, **USAIFI** – Unplanned System Average Interruption Frequency Index) to quantify network reliability. Regular and preventive maintenance is crucial to maintaining reliability.

Resilience refers to the ability of the energy system to withstand and recover quickly from disruptive events. It pertains to a system's ability to cope with and recover from challenges such as natural disasters and climate change. Ultimately, resilience is the ability of a network to respond rapidly to disruptions and restore normal operation quickly after unfavourable event.

To summate, whilst both reliability and resilience are essential for operations of a distributed energy service provider, reliability ensures the steady and predictable supply of energy under normal conditions, and resilience ensures the system can endure and recover from unexpected disruptions.

The role of network hardening in resilience

AusNet's distribution network is comprised of a mix of overhead and underground cables with a total length exceeding 46,000km. Overhead cables are predominantly bare conductors, representing over 80% of the network. The primary benefits of bare overhead cables include being cost-effective and easy to maintain. Bare overhead cables are relatively inexpensive to install and repair, as they are easily accessible and do not require extensive excavation. However, their susceptibility to environmental factors, such as storms and tree branches falling across powerlines, can lead to frequent and prolonged outages and higher long-term maintenance costs. The exposed nature of bare conductors has the potential to raise safety and reliability concerns, particularly in vegetated or high-risk areas.

Undergrounding power lines significantly improves outage performance as they are less susceptible to damage from extreme weather events (such as storms, high winds, and bushfires) and thus maintaining a continuous supply to customers. However, they are significantly more expensive to install, and repair compared to bare overhead cables and only economic in high-risk areas of our network where the benefits outweigh the costs. Undergrounding cables is expensive because it involves substantial excavation, land use studies, and often traverses longer lengths compared to bare overhead conductors which are more direct. Existing underground cables make up approximately 8,500km of our network length.

Covered overhead conductor provides a middle ground by offering enhanced safety and reliability compared to bare overhead conductors but is more susceptible to damage compared to underground cables. The cost of covered conductors is also somewhere in the middle, more expensive compared to bare conductors, yet cheaper compared to undergrounding cables.

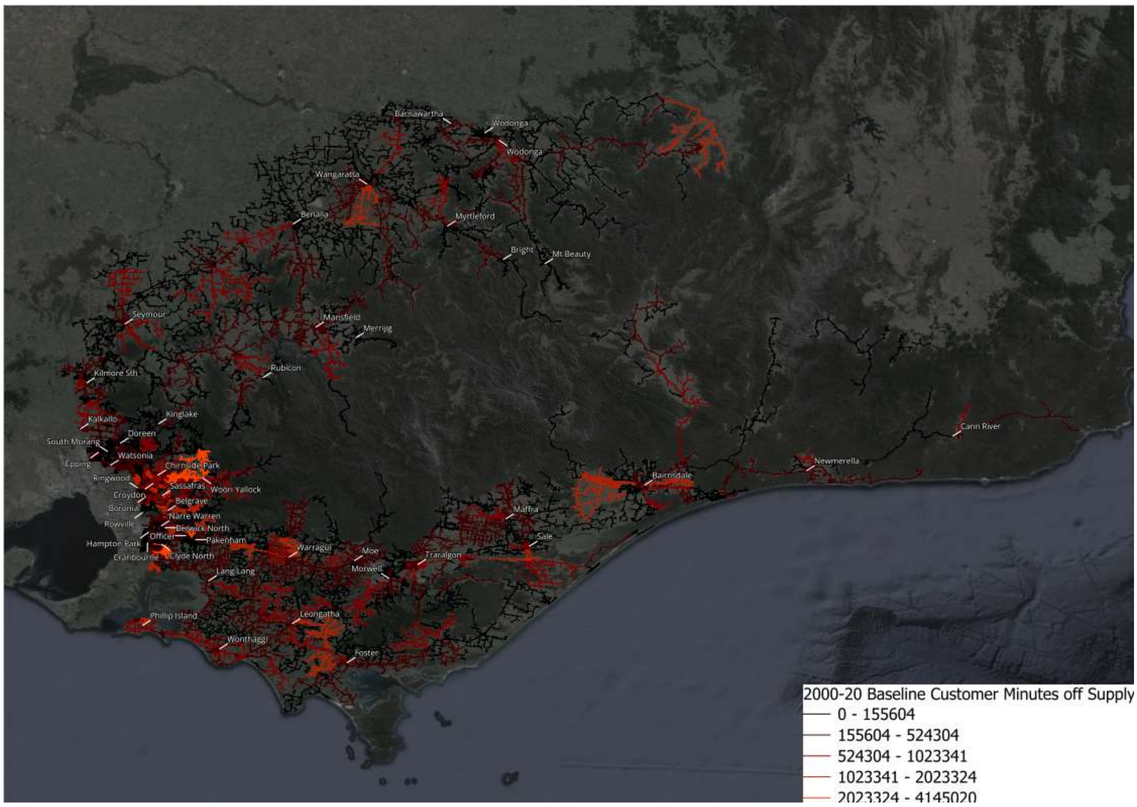
Pole hardening involves replacing or reinforcing wooden poles with more durable materials such as concrete or composite. Concrete and composite poles are less susceptible to damage and prevents issues like leaning.

Reclosers are devices installed at critical areas of the network and operate by detecting faults, isolating the affected sections, and retaining services for upstream, unaffected customers. When a fault occurs, the recloser automatically opens to disconnect the troubled segment of the network, thereby protecting the rest of the system by deenergizing it. It then attempts to close again after a brief delay to see if the fault is transient and can be cleared. If the fault persists, the recloser will remain open, but this action isolates the outage to a specific section of the grid. This automated process helps maintain service continuity for rest of the distribution network while the fault is identified and isolated for repair works by the field crew. In some parts of the network, additional reclosers do not make sense, as there diminishing benefits.

3. Identified need

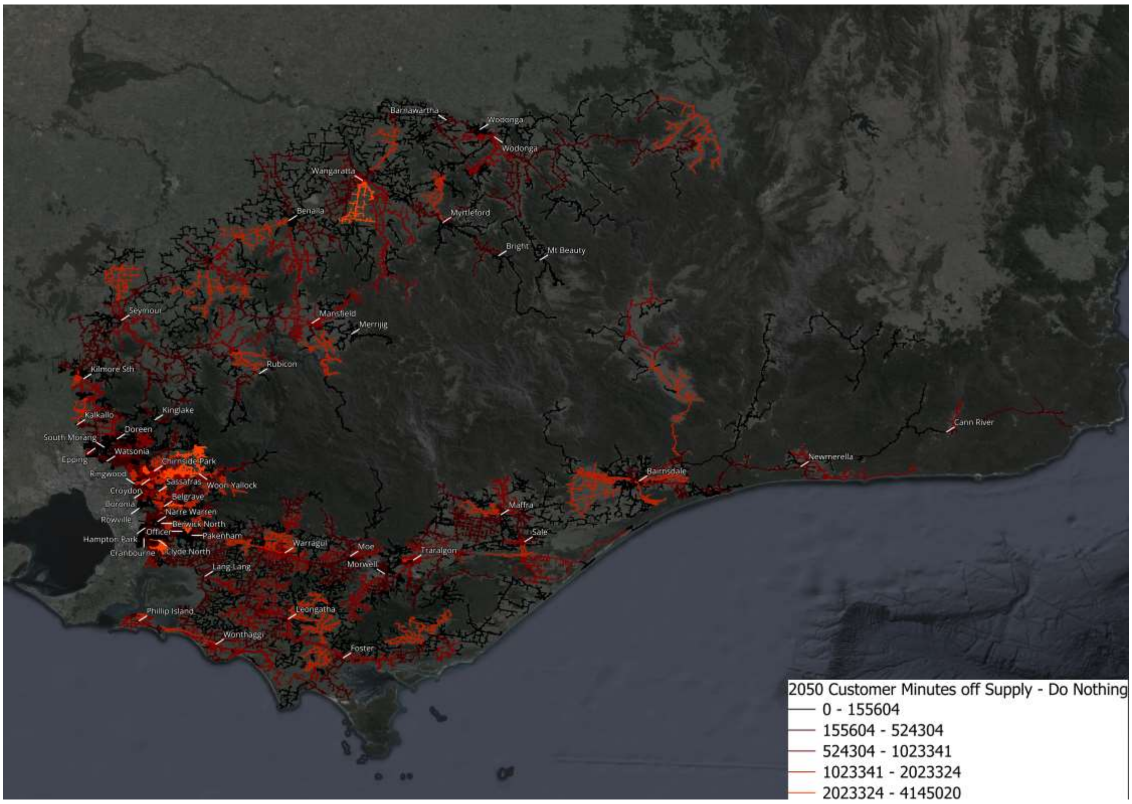
Our climate data and risk modelling has shown that the risk on our network (due to climate change) is forecast to grow by approximately 0.63% per year. The 'do nothing risk' or inherent climate risk was quantified based on the change in risk levels between the baseline risk window (2000-20 average) and the end risk window (2045 to 2055 average).

Figure 2: 2000-20 Baseline Customer Minutes off Supply



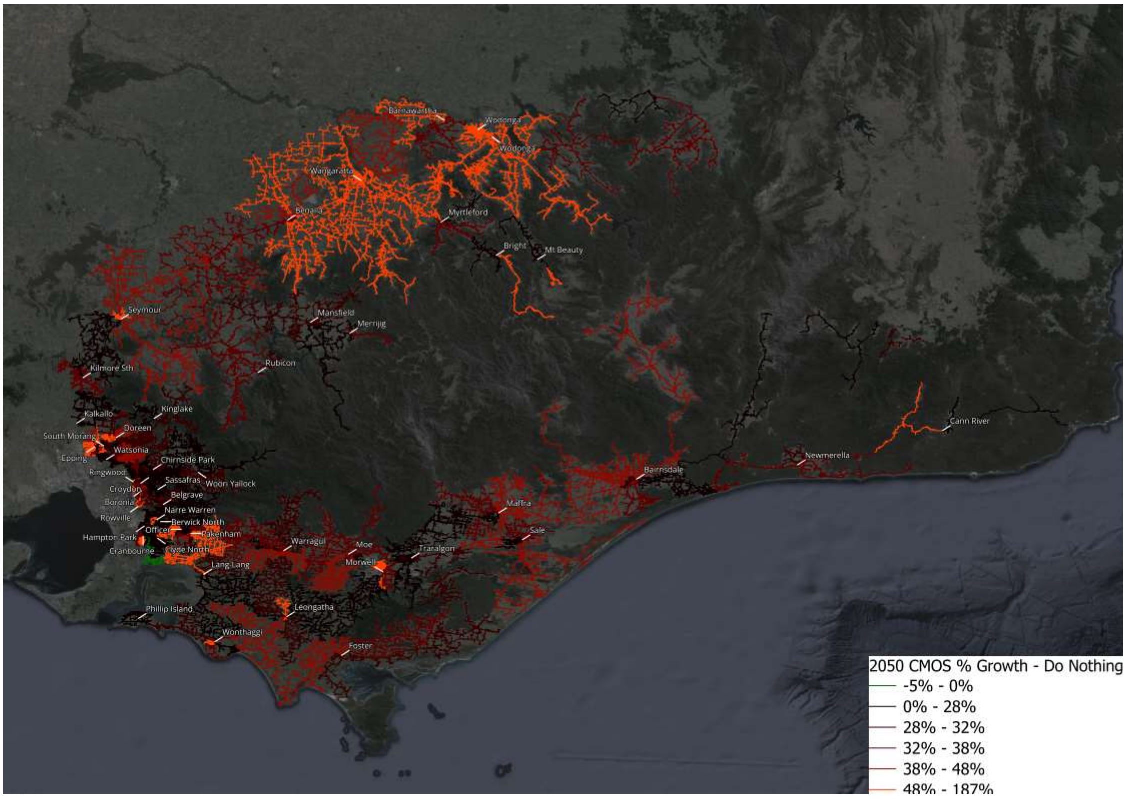
Source: CutlerMerz

Figure 3: 2050 Customer Minutes off Supply - Do Nothing



Source: CutlerMerz

Figure 4: 2050 Customer Minutes off Supply % Growth - Do Nothing



Source: CutlerMerz

4. Methodology

Below is a description of the key modelling approaches that we have adopted in developing an optimised investment program. A detailed description can be found in the Climate Resilience Economic Modelling reports.[5]

- **Step 1 – Climate data**: We procured climate data from an independent third-party provider (Risk Frontiers) which is one of the key inputs into assessing the risks on our network. Specifically, we adopted maximum windspeed, high wind days and Forest Fire Danger Index (FFDI) >100 as the key indicators of bushfire and windstorm risks on our network (the perils). The key indicators were provided for three Representative Concentration Pathway (RCP) scenarios of 2.6, 4.5 and 8.5. We have adopted the RCP4.5 scenario as a reasonable central estimate, which is consistent with the AER's approach in assessing Ausgrid's resilience proposal.
- **Step 2 - Climate Resilience Economic Model**: We engaged an independent third-party (CutlerMerz) to develop the Climate Resilience Economic Model (sometimes referred to as the end-to-end risk model).
- **Do nothing risks**: The 'do nothing risk' or inherent climate risk is quantified by forecasting the value of expected unserved energy and loss of asset due to the perils. The value of expected unserved energy (VoEUE) is the monetised value of energy that could not be supplied to a customer due to a fault or failure on the power system caused by the perils. This is the value of the energy that would have been delivered had there been no interruption. Loss of asset refers to the monetised value of the damage to an asset because of the climate event, based on historical reactive costs resulting from MED events for both asset repairs and replacements. An example of this is fallen trees damaging cables due to a windstorm. These two values aim to capture the economic cost of climate perils. The quantification of the do-nothing risks is based on the change in risk levels between the baseline risk window (2000-20 average) and the end risk window (2045 to 2055 average).
- **Baseline risk window**: We have selected a baseline risk window of 2000 to 2020 as it excludes some of the extreme weather events over the past few years; 2019-20 bushfires and the June 2021, October 2021, February 2024 and September 2024 storms. We have excluded these years from the baseline risk period to recognise that the prolonged outages that followed these extreme events have been extremely costly, disruptive and traumatic for many of our customers, and we do not consider it appropriate to include these as part of a 'target' risk level. It is clear that risk levels post 2020 have been higher than desired by our customers and government.
- **End risk window**: We have selected an end risk window of 2045 to 2055 (centred on 2050) as it represents a future period that is neither too soon nor too far into the future. Year 2050 is 25 years from today.
- **Forecast risk reduction benefits**: The Climate Resilience Economic Model assesses the risk reduction benefit from potential network hardening solutions. The risk reduction benefit is the reduction in the value of expected unserved energy and asset loss compared to the 'do nothing' case.
- **Cost benefit analysis**: By assessing the risk reduction benefits against the cost of implementing the solutions, the model provides a comprehensive evaluation of the economic feasibility, so that we can identify those options that are NPV positive.
- **Calibration**: Calibration is the process of aligning forecast risks with historical/observed risks. We have applied two types of calibration (top down and feeder level) and within the feeder level calibration, we have adopted a calibration weighting of 70% to historical and 30% to modelled risks. The weightings align to the AER's preferred weighting in its assessment of Ausgrid's resilience proposal.

The Climate Resilience Economic Model assessed the following network hardening solutions on equal footing:

- Replacement of wooden poles with a hardened pole
- Replacement of bare overhead cables with underground cables
- Replacement of bare overhead cables with covered conductors
- Installation of reclosers to improve segmentation of the network

The AER has developed a tiered multiple approach to calculate the VNR[6], which considers the varying impacts of prolonged outages on residential and business customers. Specifically, outages are disaggregated into different outage bands, with multipliers for each band. The multipliers apply to the AER's standard VCRs. Residential customers are subjected to an additional upper bound limit of $3,500. The tiers and multipliers are set out in the table below.

We have applied the VNR tiered multiple approach to the AER's 2023 VCRs in the quantification of risk reduction benefits.

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[5] CutlerMerz Climate Resilience Economic Modelling – Model Methodology report; CutlerMerz Climate Resilience Economic Modelling – Program report

[6] *Value of network resilience 2024*. Available at: https://www.aer.gov.au/system/files/2024-09/Final Decision - Value of Network Resilience 2024.pdf.

Table 2. VNR Tier multiples

Tier (Duration)	Residential	Business
<12 hours	1.0x	1.0x
12-24 hours	2.0x	1.5x
Greater than 24 hours up to $3,500 upper bound (residential customers only)	1.5x	0.5x
24-72 hours (business customers only)	-	1.0x
Greater than 72 hours (business customers only)	-	0.5x

Source: AER VNR.

The table below outlines the key assumptions used in evaluating the network hardening options in this business case.

Table 3: Key assumptions

	Value	Comments
WACC	5.56%	The average of 4.11% and AEMO's central discount rate (7.0%) in its latest 2023 Inputs Assumptions Scenario Report
Evaluation period	25 years	
Value of Network Resilience (per kWh)	The AER's 2023 VCRs and the AER's VNR multipliers were used to value expected unserved energy. The 2023 VCRs used are: • Residential: $25.13 • Farming/Agriculture: $44.4 • Commercial: $52.2 • Industrial: $74.79 The multipliers used for residential customers are: • 1.0 for outages less than 12 hours for prolonged outages • 2.0 for outages between 12-24 hours • 1.5 for outages greater than 24 hours, limited by an upper bound of ~$3,500 The multipliers for business customers are: • 1.0 for outages less than 12 hours for prolonged outages • 1.5 for outages between 12-24 hours • 1.0 for outages between 24-72 hours • 0.5 for outages greater than 72 hours	Adopted the AER's VNR tiered multiple approach and applied it to the AER's 2023 VCRs
Unit Rates	Undergrounding C-I-C – HV 3-phase Undergrounding C-I-C – SWER Covered conductors C-I-C – HV 3-phase Covered conductors C-I-C – SWER Pole hardening C-I-C per pole Reclosers C-I-C per unit	Our unit rates are different to the units rates in "ASD – EDPR Unit Rates Description" to reflect the challenging conditions that we expect to face, particularly the areas proposed for undergrounding. These areas are challenging due to terrain, vegetation, access, competing land use, and the forecast undergrounding/covered conductor lengths are expected to the higher than the actual lengths of existing overhead conductors.

Source: AusNet analysis

5. Options assessed

We assessed the following options:

- **Base Case:** do nothing i.e., no investment under this option.
- **Option 1:** rolling out the full program of works over 4 regulatory periods (i.e., 25% rollout in each of the following 4 regulatory periods). The scope of works over 2026-31 involves:
  - Undergrounding: C-I-C
  - Covered conductors: V
  - Hardened poles: C-I-C
  - Reclosers: C-I-C
- **Option 2:** rolling out 35% of the full program of works in 2026-31, with the balance over the following 3 regulatory periods. The scope of works over 2026-31 involves:
  - Undergrounding: C-I-C
  - Covered conductors: C-I-C
  - Hardened poles: C-I-C
  - Reclosers: C-I-C
- **Option 3:** rolling out 100% of the full program of works in 2026-31. The scope of works over 2026-31 involves:
  - Undergrounding: C-I-C
  - Covered conductors: C-I-C
  - Hardened poles: C-I-C
  - Reclosers: C-I-C

Options 1 and 2 have higher proportion of reclosers and hardened poles because reclosers and hardened poles have been prioritised when there is a gradual rollout of the full program of works.

5.1. Do Nothing

The "do nothing" approach serves as a benchmark scenario against which other options are evaluated. This approach involves no upfront investment on the network, instead relying on the existing network configuration to manage future climate risks. Under "do nothing", the expected unserved energy value is $658m in present value terms.

Table 4: Expected unserved energy across the full assessment period

	VoEUE ($m, discounted, real 2023-24)
Metrics	$658.07[7]

Source: AusNet analysis

[7] The 'do nothing' risk is the sum of the do-nothing risk on feeders where we have proposed interventions.

5.2. Option 1 – 25% rollout

5.2.1. Summary

Option 1 has a NPV of $364.2m over the full assessment period. While the cost of this program is low over the 2026-31 regulatory period ($47.9m in present value terms), it relies on the balance of the program ($93.6m in present value terms) to be delivered in future periods to derive the long-term benefits that have been quantified at $505.7m.

Table 5: Economic Outcomes of Option 1 ($m, discounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Total FY27-31	Full assessment period
Cost	$6.4	$8.3	$4.4	$15.6	$13.2	$47.9	$141.5
Benefits	$10.7	$13.2	$25.1	$19.5	$30.6	$99.1	$505.7
NPV	$364.2						

Source: AusNet analysis

5.2.2. Cost

5.2.2.1. Capex

The following table shows the capex forecast for 2026-31 as well for the full assessment period. The capex forecast is based on the unit rates described in section 4 and total lengths and volumes in section 5.

Table 6: Capex Distribution of Option 1 ($m, discounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Total FY27-31	Full assessment period
Capex	$6.4	$8.3	$4.4	$15.6	$13.2	$47.9	$141.5

Source: AusNet analysis

5.2.2.2. Opex

Assumed to be negligible.

5.2.3. Benefits

We note that the long-term benefits ($505.7m) can only be achieved if the balance of the program ($93.6m) is delivered in future periods. Without the rest of the program, the benefits are relatively modest.

Table 7: Benefits Summary of Option 1 ($m, discounted, real 2023-24)

	Total 2026-31 ($m)	Total over full assessment period ($m)
Total benefits – reduction in VoEUE compared to BAU	$99.1	$505.7

Source: AusNet analysis

5.3. Option 2 – 35% rollout

5.3.1. Summary

Option 2 has a NPV of $370.4m over the full assessment period. While the cost of this program is relatively low over the 2026-31 regulatory period ($69.7m in present value terms), it relies on the balance of the program ($75.1m in present value terms) to be delivered in future periods to derive the long-term benefits that have been quantified at $515.8m.

Table 8: Economic Outcomes of Option 2 ($m, discounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Total FY27-31	Full assessment period
Cost	$7.3	$8.1	$16.3	$25.7	$12.3	$69.6	$144.8
Benefits	$10.9	$13.4	$26.5	$22.4	$35.5	$108.6	$515.8
NPV	$371.0						

Source: AusNet analysis

5.3.2. Cost

5.3.2.1. Capex

The following table shows the capex forecast for 2026-31 as well for the full assessment period. The capex forecast is based on the unit rates described in section 4 and total lengths and volumes in section 5.

Table 9: Capex Distribution of Option 2 ($m, discounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Total FY27-31	Full assessment period
Capex	$7.3	$8.1	$16.3	$25.7	$12.3	$69.6	$144.8

Source: AusNet analysis

5.3.2.2. Opex

Assumed to be negligible.

5.3.3. Benefits

We note that the long-term benefits ($515.8m) can only be achieved it the balance of the program ($75.1m) is delivered in future periods. Without the rest of the program, the benefits are far lower than over the full assessment period.

Table 10: Benefit Summary of Option 2 ($m, discounted, real 2023-24)

	Total FY27-31 ($millions)	Total over full assessment period ($millions)
Total benefits – Reduction in EUE Compared to BAU	$108.6	$515.8

Source: AusNet analysis

5.4. Option 3 – 100% rollout

5.4.1. Summary

Option 3 has a NPV of $417.6m over the full assessment period. While the cost of this program is relatively high over the 2026-31 regulatory period ($185.7m in present value terms), it requires no further like-for-like capex in future periods (unlike options 1 and 2 which requires significant investments in future periods).

This option is the preferred option, as it delivers the highest NPV out of the options assessed.

Table 11: Economic Outcomes of Option 3 ($m, discounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Total FY27-31	Full assessment period
Cost	$13.3	$37.7	$56.8	$41.7	$36.1	$185.7	$185.7
Benefits	$12.1	$16.1	$40.0	$32.0	$51.8	$152.0	$603.2
NPV	$417.6						

Source: AusNet analysis

5.4.2. Cost

5.4.2.1. Capex

The following table shows the capex forecast for 2026-31 as well for the full assessment period. The capex forecast is based on the unit rates described in section 4 and total lengths and volumes in section 5.

Table 12: Capex Distribution of Option 3 ($m, undiscounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Total FY27-31	Full assessment period
Capex	$13.3	$37.7	$56.8	$41.7	$36.1	$185.7	$185.7

Source: AusNet analysis

5.4.2.2. Opex

Assumed to be negligible.

5.4.3. Benefits

The 2026-31 capex forecast is estimated to deliver benefits to the value of $603.2m over the full assessment period. This is the highest benefit of all the options considered.

Table 13: Benefits Summary of Option 3 ($m, discounted, real 2023-24)

	Total FY27-31 ($millions)	Total over full assessment period ($millions)
Total benefits – Reduction in EUE Compared to BAU	$152.0	$603.2

Source: AusNet analysis

6. Preferred option and sensitivity testing

6.1.1. Sensitivity Analysis

Option 3 is the preferred option as it provides the greatest NPV under all sensitivity scenarios tested.

Table 14: Net Present Value ($m, real 2023-24)

	Central Assumptions	Higher Discount Rate	Lower Discount Rate	Higher Costs	Lower Costs	Average	Comments
Do nothing	$-	$-	$-	$-	$-	$-	
Option 1 – 25% rollout in 2026-31	$364.2	$208.2	$509.7	$343.0	$385.4	$362.1	
Option 2 – 35% rollout in 2026-31	$371.0	$211.8	$518.7	$349.3	$392.7	$368.7	
Option 3 –100% rollout in 2026-31	$417.6	$223.7	$593.3	$389.7	$445.4	$413.9	

Source: AusNet analysis

6.1.2. Recommendations

Based on the economic results, and sensitivity testing outcomes, Option 3 is the preferred investment option. It is made up of:

- C-I-C of undergrounding ($95m)
- C-I-C of covered conductors ($30m)
- C-I-C hardened poles ($66m)
- C-I-C reclosers ($20m).

The full upfront investment case begins delivering resilience benefits sooner by bringing key network hardening programs, such as covered conductor, undergrounding, pole hardening, and reclosers, into the 2026-31 regulatory period. This approach ensures that critical investments are made sooner, enhancing the network's resilience while delivering long-term value.

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