AusNet

Electricity Distribution Price Review (EDPR 2026-31)

Business case: Summer and Winter Network Readiness

Date: 31 January 2025

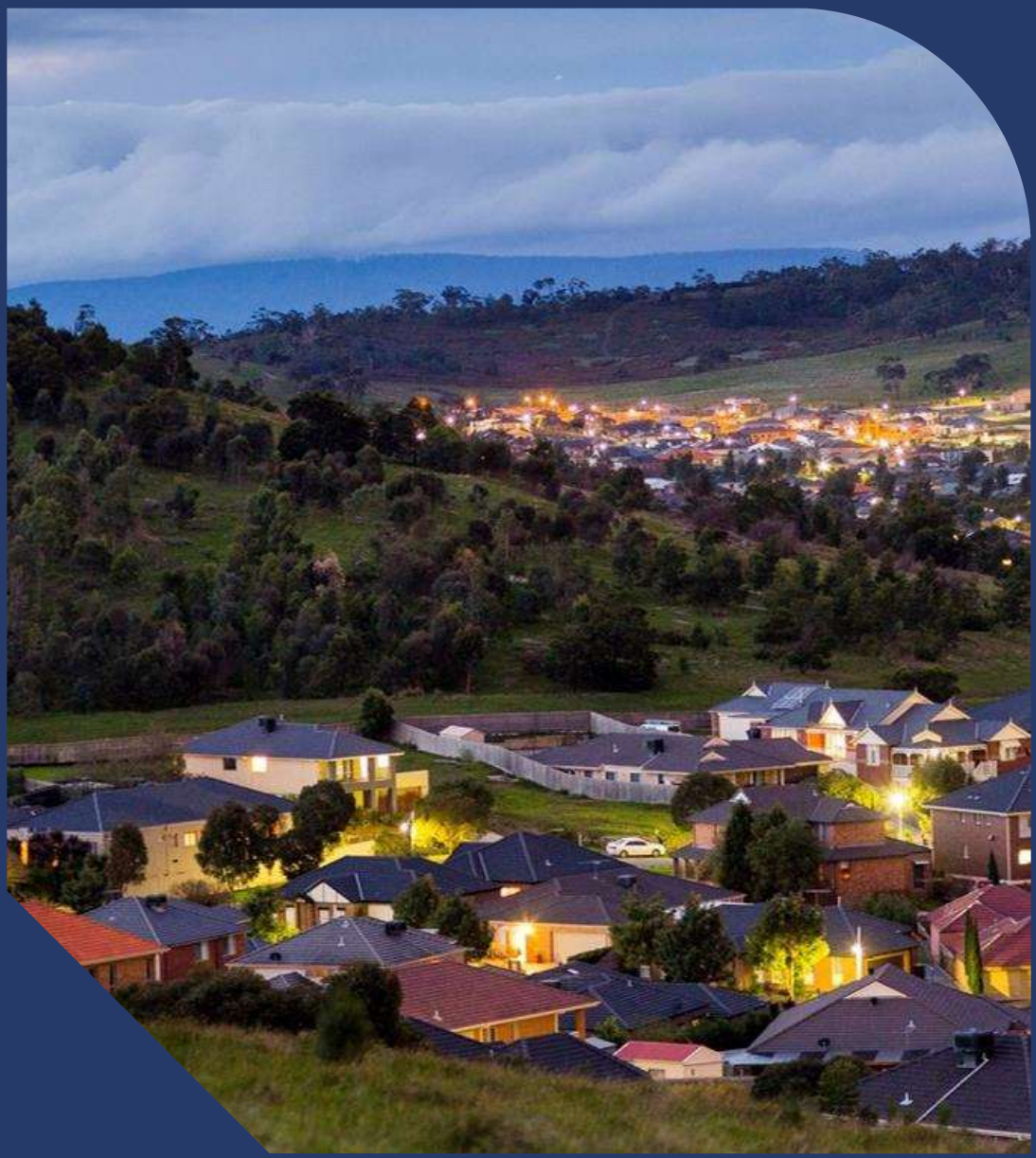

Table of contents

1. Executive summary

The aim of this program is to prepare AusNet Services' electricity distribution HV network for the expected peak demand during the summer period from November to March and winter period from May to August.

This is a pro-active program undertaken each year before start of the summer and winter seasons.

This program requests **$5.2M CAPEX** for minor network upgrades that are identified at the end of the preceding summer/winter. It is common for small customer connections to be connected without consultation, and also for customers to increase their loads without advising AusNet. Analysing Explore data and LV fuse fault statistics enables substations and LV circuits to be upgraded in a timely manner. The feeder forecast is also used to determine if new feeder ties are required to allow transfers to be carried out.

This is a program for individual sites that have not been identified. As such, network planning will identify the sites at the completion of each summer/winter, and they will be sent to our service provider to validate, scope and estimate each solution. The service provider will produce a scope document for each site that will be sent back to Network Planning for approval prior to issue to the Project Manager for design/construction.

Our capex forecast of **$5.2M CAPEX** was based on historic spend for summer/winter preparation capex work. The business case assumes some overloaded small pole type substations (~11-12 units), some overloaded larger pole type substations (~11-12 units), some LV circuits (~35 units) and some feeders (7-8 units) upgrades over 2026-31. The list of overloaded substations and LV circuits would be assessed and limited to the available budget.

The items below will be addressed with this program:

- Overloaded distribution transformers
- Overloaded LV circuits
- HV feeder ties to allow transfers from overloaded feeders

Table 1: Capex forecast for 2026-31 ($thousand, undiscounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Total FY27-31
Network Readiness Program	$1,040	$1,040	$1,040	$1,040	$1,040	**$5,200**

Source: AusNet analysis

Table 2: Summary of cost and benefits relative to do-nothing ($thousands, 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 – Summer and Winter Network Readiness	5,200	500.0	5,700	3,040	17,649	14,609	This is the preferred option as it maximises the NPV, and a technically feasible problem

Source: AusNet analysis

2. Background

AusNet operates and manages an electricity distribution network serving the fringe of the northern and eastern Melbourne metropolitan area and the eastern half of rural Victoria (see Figure 1) delivering electricity to over 809,000 consumers. Some parts of the network in the Northern and Eastern regions are affected by flooding hazards. Approximately 35% of all network feeders have some parts in flood hazardous areas. Approximately two-thirds of the distribution network is in areas designated as Bushfire Prone. AusNet also services the alpine areas including all the major ski resorts in Victoria.

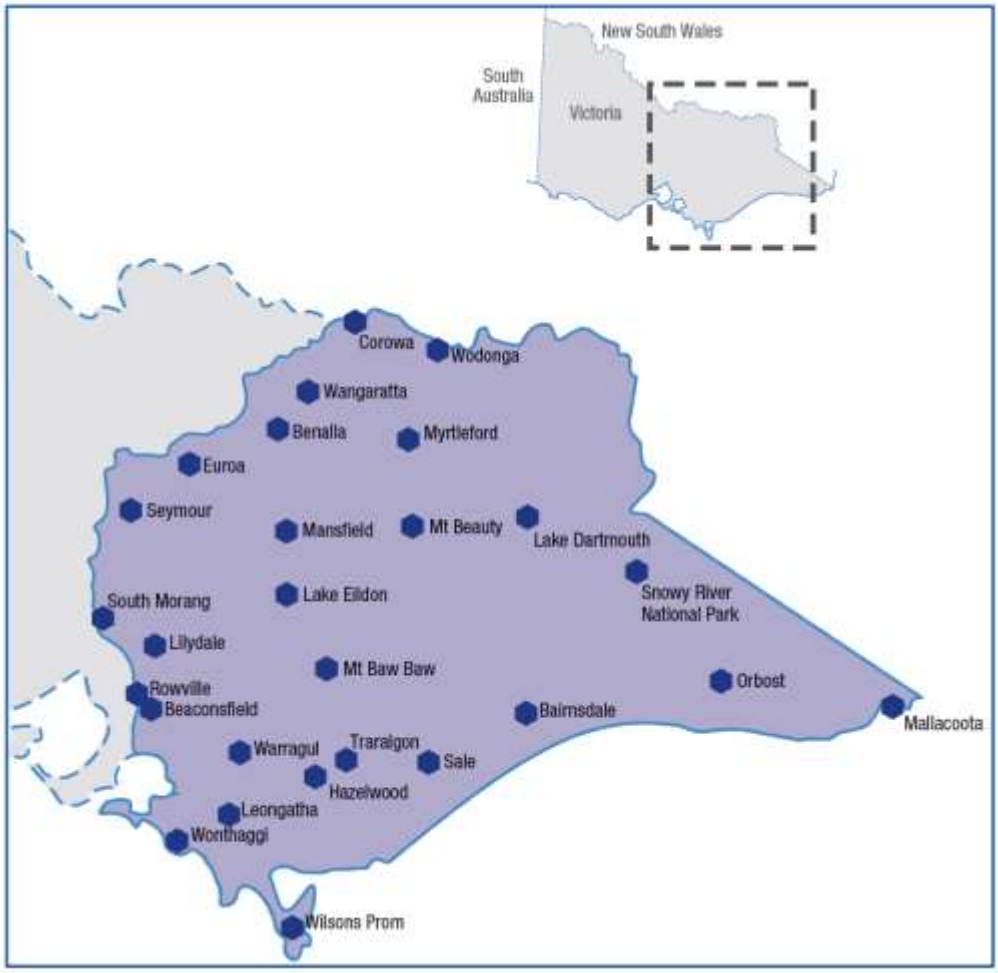

Figure 1: AusNet Electricity Distribution Network

The Summer / Winter Network Readiness program aims to prepare the network for the upcoming peak periods based on the demand forecast. It follows from a comprehensive analysis performed on the loading of network elements at the end of the summer / winter period and takes into account the forecast. This analysis identifies critical network elements where overloads are expected during the next peak period, which are not addressed by existing approved capital projects.

Predominantly, overloads are addressed within the approved capital projects; however, the dynamic nature of peak demand dictates that localised load growth can be above forecast. This occurs due to new loads imposed by major customers, the movement of summer holiday makers in regional resorts, abnormal weather patterns and delays in delivering approved projects. As a consequence, some distribution network elements can be overloaded during summer peak loading unless remedial actions are taken immediately.

This program addresses these risks and strengthens constrained elements within the network. Typical network constraints or risks identified during the Summer Preparedness include:

(1) Overloading of distribution line sections (based on forecast), for example load exceeding the thermal rating of feeder exit cables.

(2) Lack of feeder transfer opportunities during contingencies.

(3) Limited emergency capacity at zone substations.

(4) Possible network voltage issues during the peak load periods.

(5) Inadequate network firm capacity subject to AusNet Services Network Planning Guidelines.

(6) Risks to employees and public due to plant failures attributed to overload.

3. Identified need

The risk of substation failures, fuse failures and/or load shedding if we do not proceed with this program. The program was initiated a number of years ago after an extremely hot summer resulted in widespread substation failures and fuse blows due to temperature sensitive loads.

3.1. Key inputs and assumptions

It is anticipated that the majority of potential overloads will be addressed through identified capital projects under the EDPR framework. This initiative will focus on managing localised growth, as previously outlined. It is assumed that the funding required for this program will be comparable to historical expenditure.

4. Options assessed

The type of work undertaken by this program includes:

- Augmenting overhead line sections to desired thermal ratings.
- Augmenting underground cable sections to desired thermal ratings.
- Re-arranging existing feeders by establishing new line sections or switches to meet Maximum Demand loads.

4.1. Assessment approach

This is a program of work without site-specific scope of works. Sites will be selected each year based on an analysis of summer performance. Scopes for each individual site will be produced at that time, with review and sign off by Network Planning. This is a program to replace assets that are yet to be identified. The types of assets that will be replaced/upgraded are distribution transformers, LV conductor, HV/LV fuses, distribution poles etc.

Table 3: Key assumptions

	Value	Comments
WACC	5.56%	We adopted the average of 4.11) and AEMO's 2023 IASR central case (7.00%)
Evaluation period	30 years	
Value of Customer Reliability	AER's 2023 VCRs	

Source: AusNet analysis

4.2. Do nothing

If we do not implement this program, we risk significant operational consequences. Overloads on distribution transformers, LV circuit swill, lead to increased frequency of substation and fuse failures. This could result in load shedding and compromised service reliability which are undesirable to our customers. The failure to address these issues may pose safety risks to both employees and the public due to potential plant failures attributed to overloads.

The table below outlines the present value costs and benefits over the full assessment period. We note that the discounted operating costs over the full assessment period is $3m, while the value of expected unserved energy risk is $17.6m. The NPV is negative $20.7m.

Table 4: Base case or do-nothing summary over full assessment period ($thousands, discounted, real 2023-24)

	Capex	Opex	*Expected unserved energy (EUE)*	NPV
Base case	-	-3,052.4	-17,649.6	-20,702.0

Source: AusNet analysis

4.3. Option 1

As part of this proactive summer and winter readiness program, we will identify and address several key issues to enhance our network's reliability and efficiency. Specifically, the program will focus on mitigating overloaded distribution transformers, managing overloaded low-voltage (LV) circuits, and establishing high-voltage (HV) feeder ties to facilitate transfers from overloaded feeders. By addressing these critical areas, we aim to ensure the network's capacity to meet peak demand and maintain high service standards for our customers.

The table below summarises the economic outcome of Option 1, specifically the present value costs of the program is $3m over the full assessment period (relative to do-nothing), yet it is forecast to reduce the value of expected unserved energy by $17.6m (relative to do-nothing).

Table 5: Option 1 summary relative to do-nothing ($thousand, discounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Full assessment period
Totex	841.8	797.5	755.5	715.8	678.1	3,040.3
Benefits (reduction in the Value of Expected Unserved Energy	846.5	801.9	759.7	719.8	681.9	17,649.6
NPV	**14,609.3**					

Source: AusNet analysis

4.3.1. Cost

4.3.1.1. Capex

The business case assumes some overloaded small pole type substations (~11-12 units), some overloaded larger pole type substations (~11-12 units), some LV circuits (~35 units) and some feeders (7-8 units) over the life of the project.

We have adopted the following unit rates:

- C-I-C
- C-I-C
- C-I-C
- C-I-C

Table 6: Capex forecast ($thousand, undiscounted, real 2023-24)

	FY27	FY28	FY29	FY30	FY31	Total FY27-31
Network Readiness Program	$1,040	$1,040	$1,040	$1,040	$1,040	**$5,200**

Source: AusNet analysis

4.3.1.2. Opex

We have adopted the following unit rates:

- C-I-C
- C-I-C
- C-I-C

4.3.2. Benefits

We have quantified the reduction in the value of expected unserved energy to be $17.6m.

Additionally, undertaking these upgrades is crucial for several reasons:

1. Reliability and Safety: By proactively upgrading the network, we minimise the risk of substation and fuse failures, reducing potential hazards to both our employees and the public.

2. Regulatory Compliance: Failure to address these overloads could result in regulatory penalties and increased penalties.

3. Customer Satisfaction: Ensuring a reliable electricity supply during peak periods enhances customer satisfaction and trust.

4. Future-proofing: As the adoption of electric vehicles (EVs) increases, the demand on our network will rise. By upgrading the network now, we are better prepared to handle future demand increases without compromising service quality.

5. Cost-effectiveness: Addressing potential overloads and constraints proactively can prevent more significant, costly issues from arising in the future. It is more cost-effective to make minor upgrades now than to face failures later.

6. Community support: By supporting the growth and development of the communities we serve; we reinforce our commitment to providing reliable and efficient energy solutions. This fosters goodwill and strengthens our community relationships.

The Summer/Winter Network Readiness program is essential for ensuring the continued reliability and safety of our network. By investing in these upgrades, AusNet Services demonstrates its commitment to proactive network management, regulatory compliance, and customer satisfaction.

5. Customer insights

Customers respond positively to this program in the past, as it demonstrates our commitment to maintaining reliable and efficient service. Residential customers appreciate the reduced risk of power outages and the enhanced stability of their electricity supply, particularly during peak periods. This reassurance is especially important as they increasingly rely on electric vehicles and other energy-intensive technologies.

Business customers, in particular, will value the decrease in disruptions caused by fuse blows and overloaded transformers. Fewer interruptions mean less downtime, which directly impacts their operations and profitability. They have in the past supported proactive program that addresses these issues, as it ensures their activities can continue smoothly and without unexpected interruptions.

Overall, both residential and business customers see proactive measures to improve service reliability, demonstrating that we are attentive to their needs and committed to delivering high-quality service.

6. Preferred option and sensitivity testing

Table 7: Net Present Value relative to do-nothing ($thousands, discounted, real 2023-24)

	Central Assumptions	Higher Discount Rate	Lower Discount Rate	Higher Costs	Lower Costs	Average
Base Case (do-nothing)	-	-	-	-	-	-
Option 1	14,609.3	11,749.1	18,773.9	14,153.2	15,065.3	14,870.2

Source: AusNet analysis

AusNet Services

Level 31
2 Southbank Boulevard
Southbank VIC 3006
T +613 9695 6000
F +613 9695 6666
Locked Bag 14051 Melbourne City Mail Centre Melbourne VIC 8001
www.AusNetservices.com.au

Follow us on

@AusNetServices
@AusNetServices
@AusNet.Services.Energy

AusNet