AUGMENTATION

NORTHERN FEEDER THERMAL AUGMENTATION PROGRAM

PAL BUS 3.04 – PUBLIC

2026–31 REGULATORY PROPOSAL

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1. Overview

Residential, commercial and industrial load in rural towns and regional cities across the Northern distribution area of our network are forecast to grow over the 2026–31 regulatory period. The region extends from Mildura and the South Australian border, across the Murray and down through the Malley.

Demand growth is forecast to lead to feeders in Shepparton, Bendigo and Wemen exceeding thermal capacity over the period. To mitigate resulting energy at risk and ensure reliability of supply for customers in the area, this business case considers options to augment the following feeders:

- EHK033 from the Eaglehawk (EHK) zone substation
- MDA023 from the Mildura (MDA) zone substation
- STN012 from the Shepparton (STN) zone substation
- WMN014 from the Wemen (WMN) zone substation.

Expenditure to deliver the preferred option for each feeder is summarised in table 1 below.

TABLE 1 PREFERRED OPTIONS EXPENDITURE ($M, 2026)

FEEDER	FY27	FY28	FY29	FY30	FY31	TOTAL
EHK033 – Split EHK033 to create a new feeder	-	-	-	0.8	0.8	1.7
MDA023 – construct a new feeder from MDA	-	-	-	-	1.0	1.0
STN012 – STN012 feeder exit cable upgrade	-	-	-	0.3	0.3	0.6
WMN014 – augment WMN014 and utilise load transfers	1.1	-	-	-	-	1.1

Each of these proposed investments is supported by our attached detailed economic modelling.[1]

[1] See PAL MOD 3.04 - Eaglehawk new feeder - Jan 2025 – Public, PAL MOD 3.05 - Mildura new feeder - Jan 2025 – Public, PAL MOD 3.09 - Shepparton feeder works - Jan 2025 – Public and PAL MOD 3.08 - Wemen feeder works - Jan 2025 - Public

2. EHK033 feeder

EHK033 is a high-capacity feeder with a thermal capacity of 14.5 MVA. This feeder provides electricity to residential and commercial customers in Eaglehawk, a suburb within the City of Greater Bendigo and is supplied from the Eaglehawk zone substation (EHK).

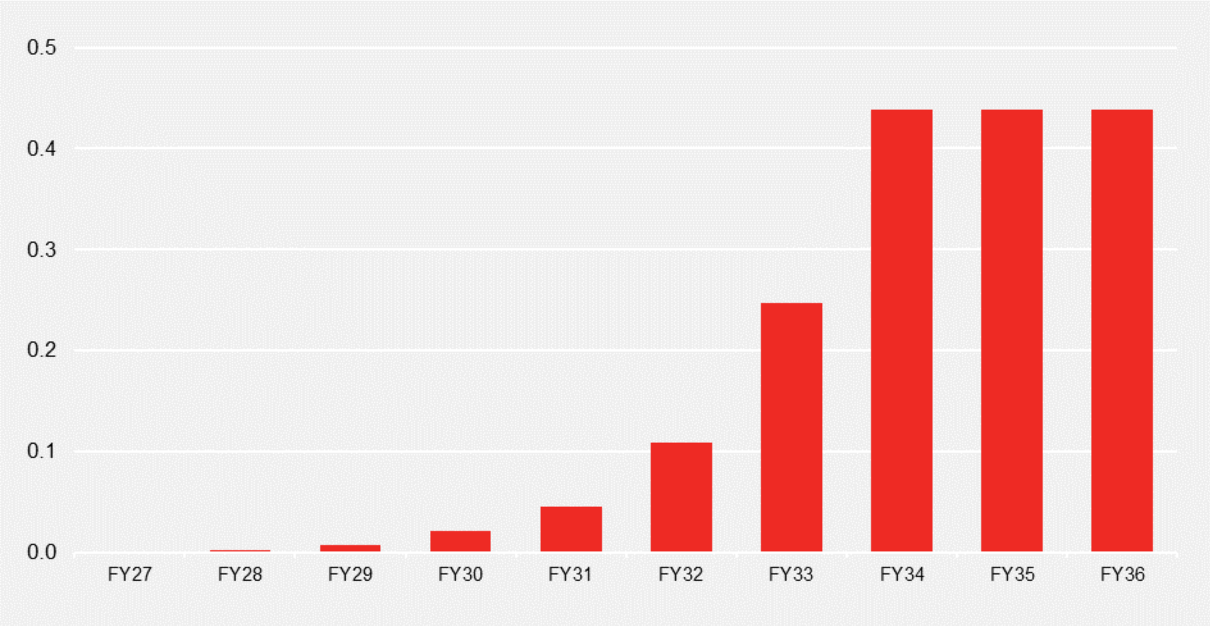
2.1 Identified need

Eaglehawk is growing, driven by the development of new residential estates that will sustain approximately 17 percent growth in population between 2026 and 2036. Demand from growing population will add materially to peak demand across the 2026–31 regulatory period.

Without intervention, demand is expected to exceed the capacity of EHK033 in 2030. Exceeding the thermal capacity rating of EHK033 will result in deteriorating reliability of supply.

The corresponding total value of energy at risk supplied by EHK033 is shown in figure 1 below.

FIGURE 1 EHK033 VALUE OF EXPECTED UNSERVED ENERGY ($M, 2026)



2.2 Assessment of credible options

Several credible options were considered to meet the identified need. A summary of the cost and net benefit of each credible option are described in table 2 below. Further detail is provided in our attached cost-benefit modelling.

TABLE 2 SUMMARY OF OPTIONS CONSIDERED ($M, 2026)

DESCRIPTION OF WORKS	ASSESSMENT	PV COST	NET BENEFIT
Option one (base case): no capital investment or change to existing practices	The forecast loads on feeder EHK033 will result in maximum demand on the feeder exceeding thermal rating in the 2026–31 regulatory period. Option one fails to address the identified need to maintain reliability of supply to customers	-	-
Option two: split EHK033 to create a new feeder	Option two splits EHK033 outside EHK and connects cable to a new circuit breaker position to create EHK011. Approximately 9MVA of load will be transferred from EHK033 to EHK011, which will create sufficient capacity to mitigate energy at risk on EHK033 and maintain a reliability of supply	-0.8	4.2

2.3 Preferred option

The preferred option to address the identified need is option two. It provides sufficient capacity to manage growing demand and results in the highest net economic benefit for customers.

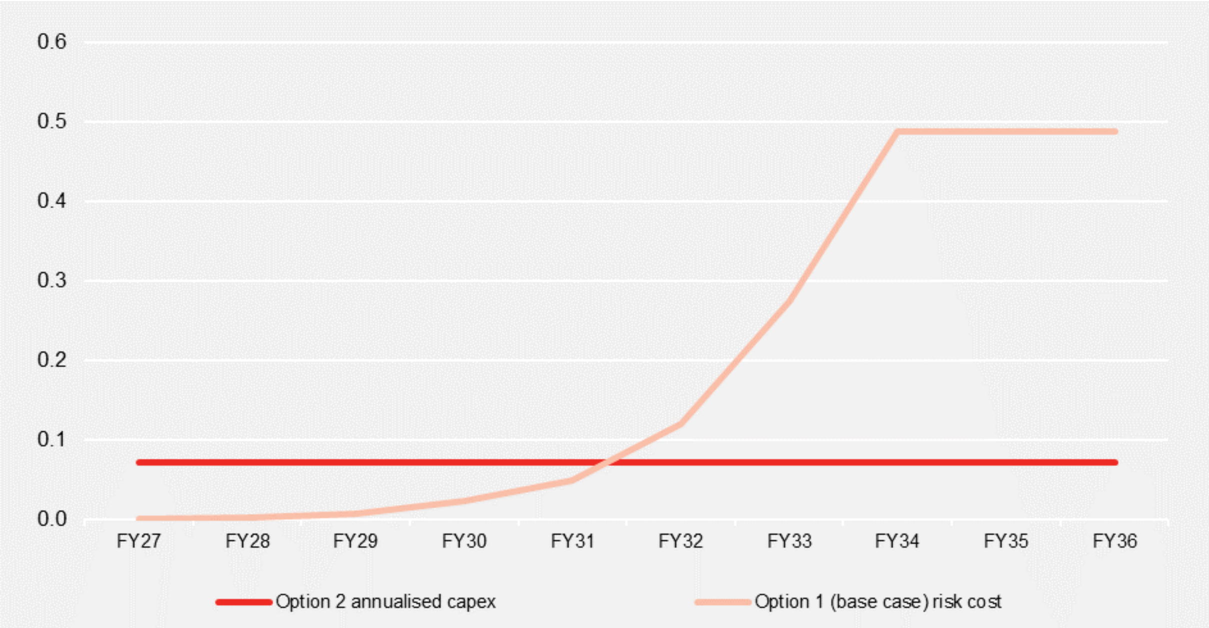
The forecast expenditure for option two is shown in table 3 below.

TABLE 3 EXPENDITURE FORECASTS FOR PREFERRED OPTION ($M, 2026)

PROJECT	FY27	FY28	FY29	FY30	FY31	TOTAL
Split EHK033 to create a new feeder	-	-	-	0.8	0.8	1.7

Assessment of optimum timing found the economic benefits of option two are maximised if it is commissioned no later than FY31, when the value of energy at risk exceeds the annualised project cost. This assessment is shown in figure 2 below.

FIGURE 2 TIMING OF PREFERRED OPTION ($M, 2026)



2.4 Sensitivity analysis

Sensitivity analysis was undertaken to understand the impact of increasing and decreasing both the cost and the value of energy at risk mitigated on the net economic benefits of each option in different scenarios. Option two provides the highest net economic benefit under all scenarios and remains the preferred option. Further information on our sensitivity analysis can be found in our attached cost benefit modelling.

3. MDA023 feeder

MDA023 is a high-capacity feeder with a thermal capacity of 15.6MVA. This feeder provides electricity supply to residential and commercial customers in the southeast area of Mildura, Including the suburbs of Irymple and Cardross. It is supplied from the Mildura zone substation (MDA).

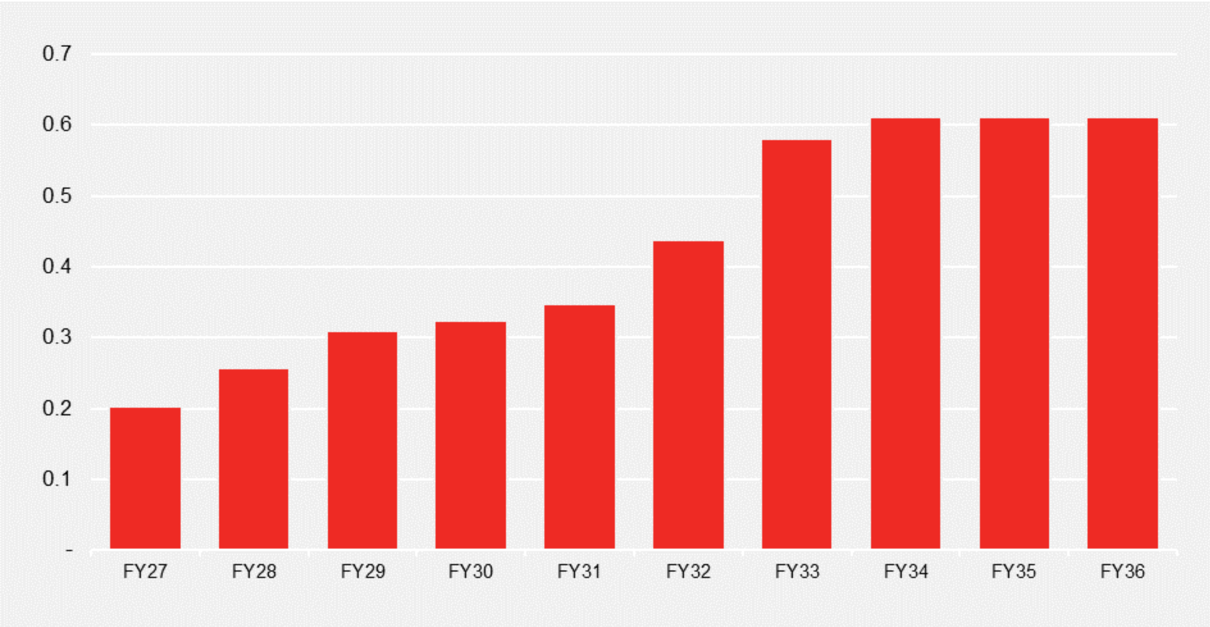
3.1 Identified need

The south east area of Mildura is growing, driven by commercial and residential growth in the region. Mildura South's population is forecast to grow by 14 percent between 2026 and 2031 which will drive demand growth on MDA023.

Without intervention, demand is expected to exceed available capacity at MDA023. Exceeding the thermal capacity rating of MDA023 will result in deteriorating reliability of supply.

The corresponding total value of energy at risk supplied by MDA033 is shown in figure 3 below.

FIGURE 3 MDA023 VALUE OF EXPECTED UNSERVED ENERGY ($M, 2026)



3.2 Assessment of credible options

Several credible options were considered to meet the identified need. A summary of the cost and net benefit of each credible option are described in table 4 below. Further detail is provided in our attached cost-benefit modelling.

TABLE 4 OPTIONS CONSIDERED AND BENEFIT SUMMARY ($M, 2026)

DESCRIPTION OF WORKS	ASSESSMENT	PV COST	NET BENEFIT
Option one (base case): no capital investment or change to existing practices	The forecast loads on MDA023 will result in maximum demand on the feeder exceeding its thermal rating before the 2026–31 regulatory period. This option fails to address the identified need to maintain reliability of supply to customers	-	-
Option two: construct a new feeder from MDA	Option two constructs a new feeder from MDA and offloads a portion of MDA023's load to the new feeder. This option will open capacity on MDA023 to support demand growth by mitigating forecast energy at risk to maintaining a reliable supply	-1.0	6.3

3.3 Preferred option

The preferred option to address the identified need is option two. It provides sufficient capacity to manage growing demand and results in the highest net economic benefit for customers.

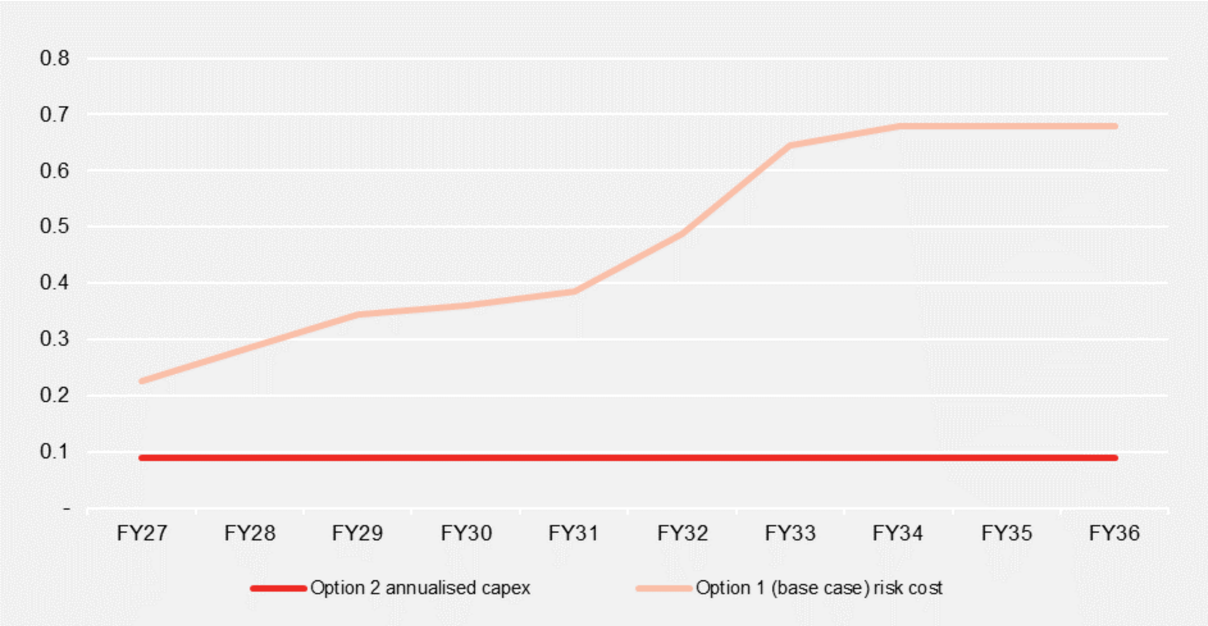
The forecast expenditure for option two is shown in table 5.

TABLE 5 EXPENDITURE FORECASTS FOR PREFERRED OPTION ($M, 2026)

PROJECT	FY27	FY28	FY29	FY30	FY31	TOTAL
Construct a new feeder from MDA	-	-	-	-	1.0	1.0

Assessment of optimal timing found the economic benefits of option two is maximised if it is commissioned no later than FY31 given the construction timelines for the proposed scope, as the value of energy at risk exceeds the annualised project cost at the beginning of the 2026–31 regulatory period. This assessment is shown in figure 4 below.

FIGURE 4 TIMING OF PREFERRED OPTION ($M, 2026)



3.4 Sensitivity analysis

Sensitivity analysis was undertaken to understand the impact of increasing and decreasing both the cost and the value of energy at risk mitigated on the net economic benefits of each option in different scenarios. Option two provides the highest net economic benefit under all scenarios and remains the preferred option. Further information on our sensitivity analysis can be found in our attached cost benefit modelling.

4. STN012 feeder

Our STN012 feeder provides electricity supply to residential and commercial customers in the Shepparton area, with a particular focus on agricultural and industrial customers that utilise the Goulburn Valley irrigation system. It has a thermal capacity of 10.7MVA and is supplied by the Shepparton zone substation (STN).

STN021 is another feeder that is adjacent to STN012, with a thermal capacity of 7.6MVA in summer and 9.7MVA in winter.

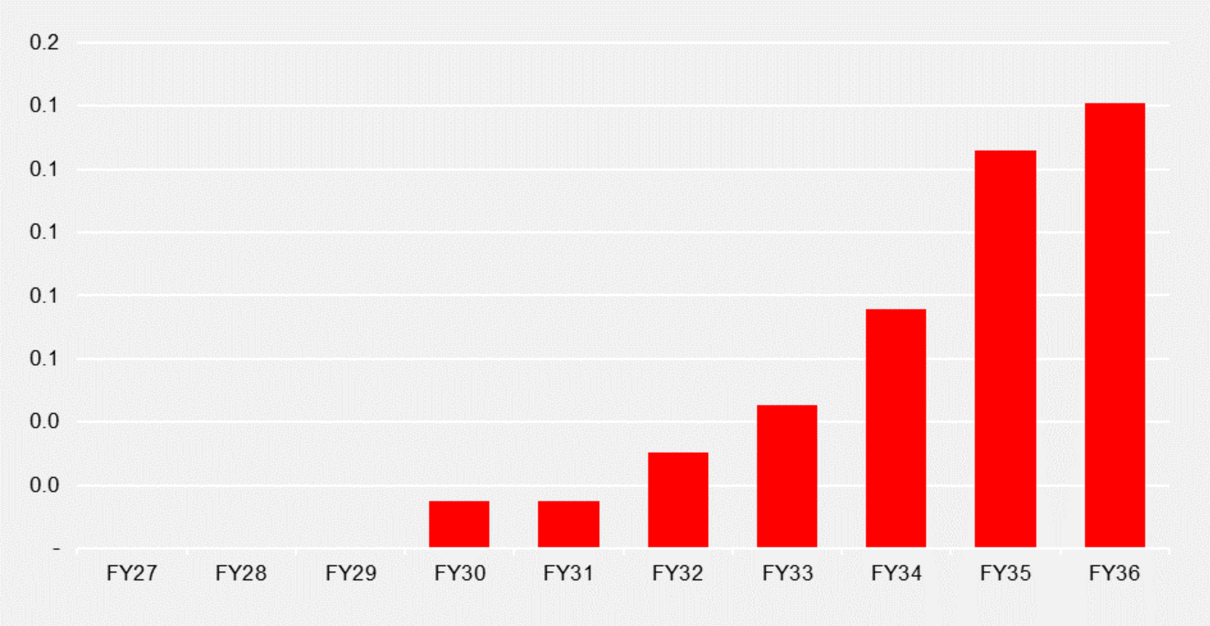
4.1 Identified need

Growth in agricultural and manufacturing industries within the Shepparton and Goulburn Valley irrigation system area will drive demand growth on STN012 over the 2026–31 regulatory period.

Without intervention, demand growth is expected to exceed the capacity at STN012 in FY31. Exceeding the thermal capacity rating of STN012 will result in deteriorating reliability of supply.

The corresponding total value of energy at risk supplied by STN012 is shown in figure 5 below.

FIGURE 5 STN012 VALUE OF EXPECTED UNSERVED ENERGY ($M, 2026)



4.2 Assessment of credible options

Several credible options were considered to meet the identified need. A summary of the cost and net benefit of each credible option are described in table 6 below. Further detail is provided in our attached cost-benefit modelling.

TABLE 6 OPTIONS CONSIDERED AND BENEFIT SUMMARY ($M, 2026)

DESCRIPTION OF WORKS	ASSESSMENT	PV COST	NET BENEFIT
Option one (base case): no capital investment or change to existing practices	The forecast loads on feeder STN012 will result in maximum demand on the feeder exceeding its thermal rating in the 2026–31 regulatory period. Option one fails to address the identified need to maintain reliability of supply to customers	-	-
Option two: augment Chanel Road spur and transfer load to STN021	Option two reconductors sections of feeder conductors along STN021 to mitigate thermal overload on the feeder. This will be followed by load transfers STN012 to STN021 to provide sufficient capacity to mitigate energy at risk on STN012 and maintain reliability of supply	-0.2	8.7
Option three: STN012 feeder exit cable upgrade	Option three upgrades 220m of STN012 exit cable and upgrades 1.1km of line to increase STN012's capacity. The upgraded capacity will be sufficient to mitigate forecast energy at risk and maintain reliability of supply	-0.3	17.0

4.3 Preferred option

The preferred option to address the identified need is option three. It provides sufficient capacity to manage growing demand and results in the highest net economic benefit for customers.

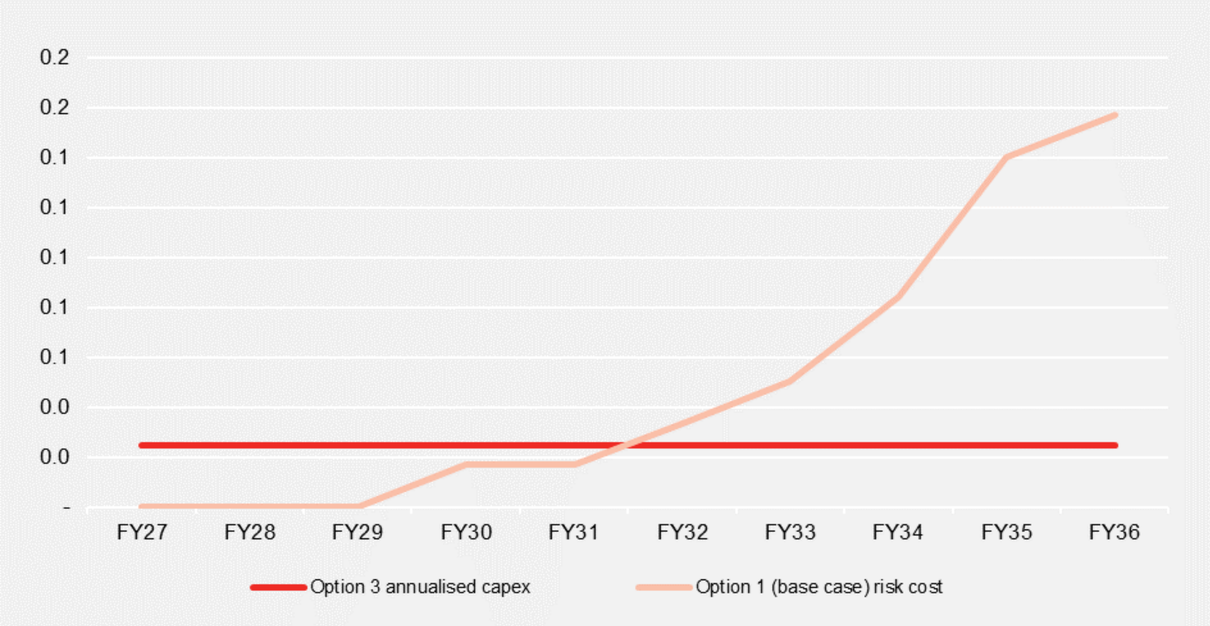
The forecast expenditure for option three is shown in table 7 below.

TABLE 7 EXPENDITURE FORECASTS FOR PREFERRED OPTION ($M, 2026)

OPTION	FY27	FY28	FY29	FY30	FY31	TOTAL
STN012 feeder exit cable upgrade	-	-	-	0.3	0.3	**0.6**

Assessment of optimum project delivery timing found that the economic benefits of option two are maximised if it is commissioned during FY31. This assessment is shown in figure 6 below.

FIGURE 6 TIMING OF PREFERRED OPTION ($M, 2026)



4.4 Sensitivity analysis

Sensitivity analysis was undertaken to understand the impact of increasing and decreasing both the cost and the value of energy at risk mitigated on the net economic benefits of each option in different scenarios. Option three provides the highest net economic benefit under all scenarios and remains the preferred option. Further information on our sensitivity analysis can be found in our attached cost benefit modelling.

5. WMN014 feeder

WMN014 is a high-capacity feeder with a thermal capacity of 14.4 MVA. This feeder provides electricity supply to residential, agricultural and commercial customers in the Wemen, Bannerton, and Happy Valley along the northern border of Victoria. The feeder is supplied from the Wemen zone substation (WM).

5.1 Identified need

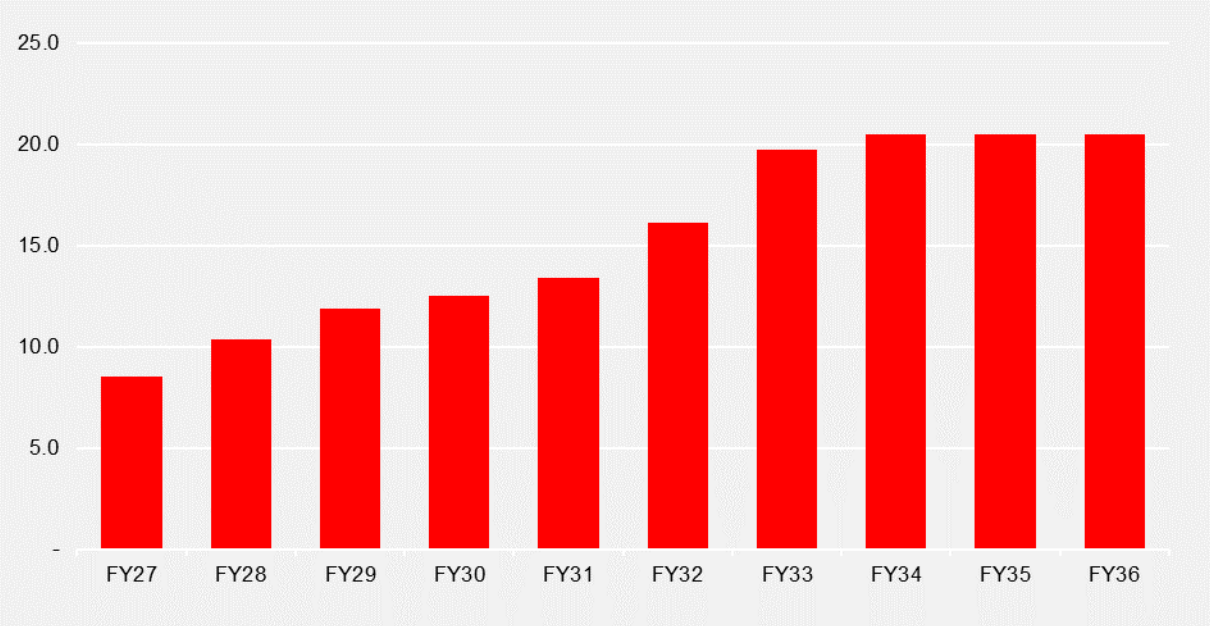
Growth in the agricultural industry and the increased pumping load from the Murray River is forecast to increase demand on WN014 through the 2026–31 regulatory period.

One section of the feeder is particularly vulnerable to demand growth as it maintains a thermal rating of 4.5MVA. Without intervention, the 4.5MVA section is forecast to breach its thermal rating at the beginning of the 2026–31 regulatory period.

Exceeding the thermal capacity rating of this section WMN014 will result in deteriorating reliability of supply.

The corresponding total value of energy at risk supplied by WMN014 is shown in figure 7 below.

FIGURE 7 VALUE OF EXPECTED UNSERVED ENERGY ($M, 2026)



5.2 Assessment of credible options

Several credible options were considered to meet the identified need. A summary of the cost and net benefit of each credible option are described in table 8 below. Further detail is provided in our attached cost-benefit modelling.

TABLE 8 OPTIONS CONSIDERED AND BENEFIT SUMMARY ($M, 2026)

DESCRIPTION OF WORKS	ASSESSMENT	PV COST	NET BENEFIT
Option one (base case): no capital investment or change to existing practices	The forecast loads on feeder WMN014 will result in maximum demand on a feeder section exceeding its thermal rating in the 2026–31 regulatory period. Option one fails to address the identified need to maintain reliability of supply to customers	-	-
Option two: augment WMN014 and utilise load transfers	Option two augments WMN014 to transfer load to RVL001, which creates sufficient capacity on WMN014 to support demand growth and maintain a reliable supply through mitigating energy at risk	0.7	248.1

5.3 Preferred option

The preferred option to address the identified need is option two. It provides sufficient capacity to manage growing demand and results in the highest net economic benefit for customers.

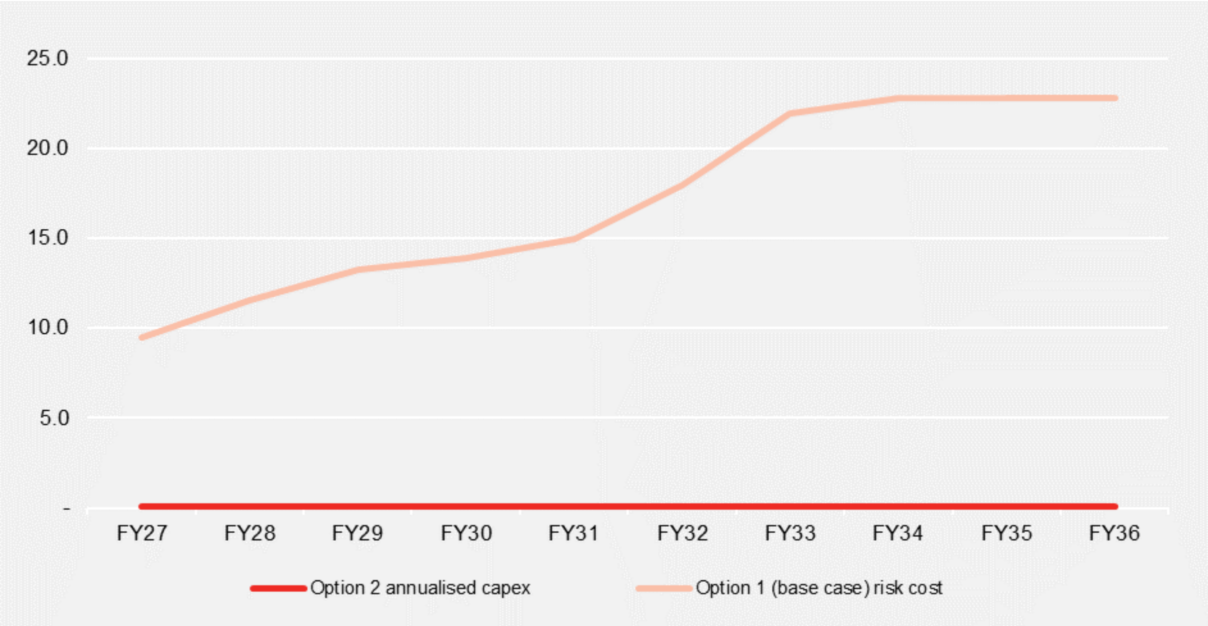
The forecast expenditure for option two is shown in table 9.

TABLE 9 EXPENDITURE FORECASTS FOR PREFERRED OPTION ($M, 2026)

PROJECT	FY27	FY28	FY29	FY30	FY31	TOTAL
Augment WMN014 and utilise load transfers	1.1	-	-	-	-	1.1

Assessment of optimum project delivery timing found that the economic benefits of option two are maximised if it is commissioned no later than FY27. This assessment is shown in Figure 8.

FIGURE 8 TIMING OF PREFERRED OPTION ($M, 2026)



5.4 Sensitivity analysis

Sensitivity analysis was undertaken to understand the impact of increasing and decreasing both the cost and the value of energy at risk mitigated on the net economic benefits of each option in different scenarios. Option two provides the highest net economic benefit under all scenarios and remains the preferred option. Further information on our sensitivity analysis can be found in our attached cost benefit modelling.

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