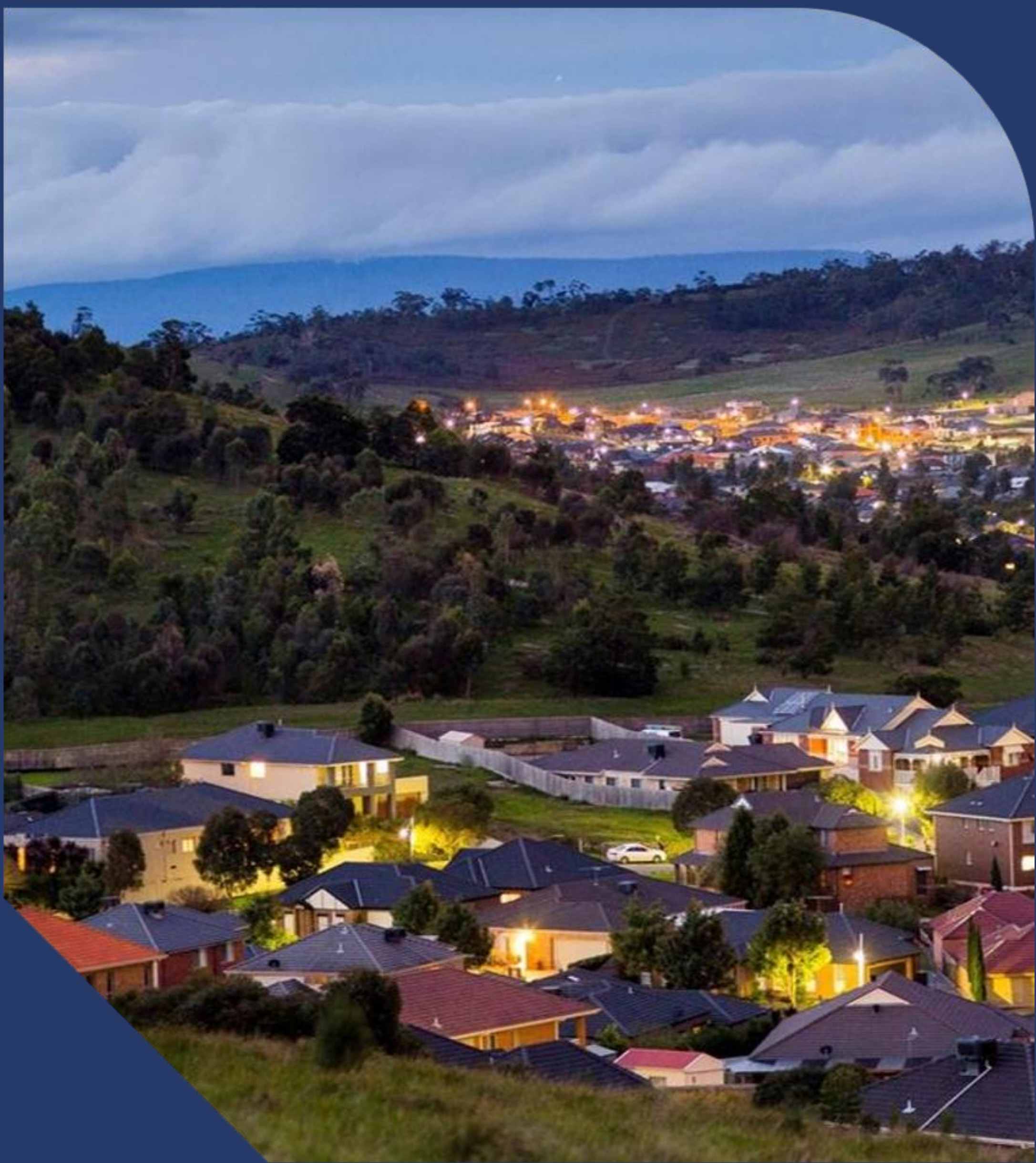
AusNet

Secure supply and enable connections: Beveridge

Regulatory Investment Test for Distribution (RIT-D)

Final Project Assessment Report

4th June 2026



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1. Executive summary

AusNet is a regulated Victorian electricity Distribution Network Service Provider (**DNSP**) that provides electricity distribution services to approximately 845,000 customers. Our electricity distribution network covers eastern rural Victoria and the outer northern and eastern Melbourne metropolitan areas.

The Regulatory Investment Test for Distribution (**RIT-D**) is an economic cost-benefit assessment and consultation process designed to identify the credible option that maximises net economic benefits for stakeholders in the National Electricity Market (**NEM**), for an identified need on the electricity network – the preferred option.

This RIT-D is being undertaken by AusNet to identify the preferred option to address the supply security limitations of the Beveridge supply area within the Mitchell local government area (**LGA**) of the Victorian Planning Authority's (**VPA**) North Growth Corridor[1], a rapidly developing region covering northern greater metropolitan Melbourne.

Identified need

The Beveridge supply area on the urban fringes of Melbourne's northern suburbs is a vast greenfield development area experiencing a significant increase in population. According to the 2016 census[2], there were 1,874 people living in Beveridge and by 2021[3], this increased to 4,642, an average annual growth rate of approximately 30% per annum.

It is expected that growth is likely to continue with the most recent forecast produced by Victoria's Department of Transport and Planning[4] forecasting the population of the Mitchell LGA (which contains Beveridge), to grow from 49,460 to 69,600 from 2021 to 2026. This is an overall annual growth rate for the whole LGA of 8.1% per annum.

The Beveridge supply area is currently serviced in part by AusNet's existing Kalkallo zone substation (**KLO**) through a rural network of 22 kV distribution feeders. KLO supplies over 17,439 AusNet customers (via five 22 kV distribution feeders), and over 13,448 Jemena Electricity Network customers (via four 22 kV distribution feeders). AusNet has identified increasing energy at risk in parts of this network, due to rapid demand growth in the North Growth Corridor. Of particular concern is the forecast growth on the two AusNet 22 kV distribution feeders - KLO14 and KLO24 - supplying the satellite suburbs of Beveridge, Wallan, parts of Wandong and Whittlesea, and their surrounds. Bushfire mitigation technology has been deployed on both feeders[5].

AusNet has developed electricity demand forecasts for the supply area, updated to reflect the demands of recent summers, electrification activity, solar panels and battery installations, and the abovementioned developments. AusNet has identified from these forecast maximum demands, increasing levels of load-at-risk for the Beveridge supply area, where the demand is exceeding the capacity of some parts of the network.

The actual maximum demand on KLO14 and KLO24 22 kV distribution feeders has already exceeded their asset ratings of 14.5 MVA (each) and is expected to exceed the KLO zone substation rating of 97.5 MVA in FY29. The level of overload is shown in Table 1 and Table 2.

Table 1: Zone substation forecast PoE10 overload (MVA)[6]

Load-at-risk (MVA)	FY26	FY27	FY28	FY29	FY30	FY31	FY32
KLO (N-1)	14.7	32.7	40.9	56.8	64.8	74.1	87.0
KLO (N)	**0.0**	**0.0**	**0.0**	**8.4**	**16.4**	**25.7**	**38.7**

Table 2: Distribution feeder forecast PoE10 overload (MVA)[6]

Load-at-risk (MVA)	FY26	FY27	FY28	FY29	FY30	FY31	FY32
KLO14 (N)	3.0	9.3	13.5	25.3	29.6	35.4	42.7
KLO24 (N)	2.7	4.9	6.6	8.4	10.2	12.1	14.8
TOTAL (N)	**5.7**	**14.2**	**20.1**	**33.7**	**39.8**	**47.5**	**57.5**

[1] Victorian Planning Authority – The North Growth Corridor Plan, Victorian Planning Authority (VPA).
[2] 2016 Beveridge, Census, Australian Bureau of Statistics (ABS), 2016
[3] 2021 Beveridge, Census, Australian Bureau of Statistics (ABS), 2021.
[4] Victoria in Future, Victorian Department of Transport & Planning, 2023
[5] Specifically, remote rapid earth fault current limiter (REFCL) technology.
[6] Including available transfers and demand management.

Approximately 57.5 MVA of additional capacity or demand reduction is required by 2032, rising from a present need of 5.7 MVA, through network augmentation or alternative non-network approaches such as demand management, embedded generation, and/or storage, to maintain a reliable electricity supply to the Beveridge supply area. All available load transfers have now been exhausted and there is no further opportunity to offload the KLO14 and KLO24 feeders using the existing distribution network to remove the overload.

AusNet is currently managing this overload with temporary diesel generators. During the 2024–25 summer period, approximately 11.4 MWh of load was shed across KLO14 and KLO24 to prevent thermal overload. This was supplemented by the deployment of mobile generators, providing 4.9 MW at KLO14 and 3 MW at KLO24. For the 2025–26 summer, 12 MW of temporary generation has been installed at sites at Wallan area. They supports both KLO14 and KLO24 feeders with 6 MW allocated to each feeder. The constrained land size restricts any future expansion or installation of additional generation units.

To quantify the energy at risk, AusNet uses a probabilistic planning approach to calculate the expected unserved energy (**EUE**), assuming no mitigation action is taken (i.e., Do nothing base case). This is used to assess whether it is economic to invest in risk mitigation to avoid the forecast deterioration in electricity supply reliability.

A material level of EUE is being experienced in the Beveridge supply area as shown in Table 3. The calculated EUE considers available load transfers[7] and the unavailability of network asset capacity, weighted using the industry practice of 30% contribution from the 1-in-10 year (**PoE10**) and 70% from the 1-in-2 year (**PoE50**) forecast maximum demand, and monetised using a locational Value of Customer Reliability (**VCR**).

Table 3: Do nothing base case forecast expected unserved energy (EUE)

EUE (MWh p.a.)	FY26	FY27	FY28	FY29	FY30	FY31	FY32
KLO	0.7	13.8	32.3	133.2	470.5	2,101	7,327
KLO14	10.3	280.7	3,093	24,246	42,693	69,353	102,521
KLO24	4.9	52.9	380.6	1,045	2,223	3,925	6,927
TOTAL (MWh p.a.)	**15.9**	**347.4**	**3506**	**25,425**	**45,386**	**75,379**	**116,775**
Total ($m, 2025 p.a.)	**0.7**	**15.8**	**159.7**	**1,159**	**2,069**	**3,433**	**5,312**

By 2032, EUE and its financial impact on customers are forecast to be 116,775 MWh per annum and $5,312 million (real, $2025) respectively. This presents a forecast deterioration in electricity supply reliability.

The identified need is to efficiently maintain a reliable supply of power to the customers in the Beveridge supply area as the forecast demand exceeds the capacity of KLO, KLO14 and KLO24.

Credible options considered

For this RIT-D, AusNet has investigated and evaluated the following network options to address the identified need:

1. Option 1: Beveridge new zone substation, and two new distribution feeders
2. Option 2: Third transformer and bus at Kalkallo zone substation, and two new distribution feeders

AusNet received no submissions or alternative, non-network or SAPS proposals during the consultation period on the Options Screening Report (**OSR**) published in October 2025 and no submissions on the Draft Project Assessment Report (**DPAR**) published in March 2026. Hence alternative, non-network or stand-alone power system (**SAPS**) solutions are not considered credible for the purposes of addressing the identified need of this RIT-D.

[7] AusNet has evaluated the feasibility of feeder transfers and concluded that this option is not viable. At peak demand, the transfer capacity between feeders KLO14 and KLO24 is effectively zero, with both feeders operating in an overloaded state throughout the assessment period. As a result, they cannot provide mutual backup. The remaining adjacent tie options for KLO14 are DRN22 and KMS12. DRN22 is a non-REFCL feeder, rendering it unsuitable for transfer, particularly on Total Fire Ban (TFB) days when REFCL compliance is critical. KMS12, while technically available, is a capacity constrained feeder. Forecasts indicate that its PoE10 demand threshold will be exceeded by 2027. In summary, all adjacent rural feeders present limitations - either due to REFCL-related restrictions or insufficient spare capacity, making feeder transfer an impractical solution. As a result, both feeders were subjected to load shedding during the 2024-25 summer period.

Preferred option

The preferred option is that option which maximises the present value (**PV**) of the net economic benefit. Table 4 summarises the cost-benefit analysis undertaken for each option.

Table 4: **Summary of cost-benefit analysis ($ million, 2025)**

Option	PV gross economic benefit	Project capital cost	O&M cost per annum	PV capital and O&M cost	PV net economic benefit	Ranking
Do nothing	0.0	0.0	0.0	0.0	0.0	3
Option 1	105,150	92.7	1.0	94.0	105,056	1
Option 2	91,731	72.4	0.7	73.4	91,657	2

The option that has been found to maximise the present value of net economic benefit, is Option 1. The robustness of this conclusion has been tested under a range of sensitivities. In each case, Option 1 was confirmed to provide positive economic benefits and is the highest ranked option. Option 1 therefore satisfies the requirements of the RIT-D and is the preferred option at this final stage.

The scope of the preferred option involves establishing a new zone substation in Beveridge, and two new distribution feeders.

The capital cost of the preferred option is approximately $92.7 million[8] (real, $2025) with an ongoing operating and maintenance (**O&M**) cost of $1.0 million per annum. The assessment finds that the optimal completion date for the entire option is by 2028.

Next steps

The publication of this Final Project Assessment Report (**FPAR**) marks the final step in the RIT-D process, in line with clause 5.17.4(o) of the National Electricity Rules (**NER**)[9] version 243 published by the Australian Energy Market Commission (**AEMC**), and section 4.4 of the RIT-D Application Guidelines[10], published by the Australian Energy Regulator (**AER**).

In accordance with the provisions set out in clause 5.17.5(c) of the NER, Registered Participants or interested parties may, within 30 days after the publication of this report, dispute the conclusions made by AusNet in this report with the AER.

Accordingly, Registered Participants and interested parties who wish to dispute the recommendation outlined in this report must do so by 4th July 2026. Any parties raising such a dispute are also required to notify to AusNet at ritdconsultations@ausnetservices.com.au. In the subject field, please reference '**RIT-D FPAR Beveridge**'.

If no formal dispute is raised, AusNet will commence with the investment activities necessary to proceed with the implementation of the preferred option.

[8] Total cost comprises of $62.2 million for the zone substation, $30.2 million for sub-transmission and distribution lines, and $2.5 million for land.
[9] National Electricity Rules (NER), Australian Energy Market Commission (AEMC), 2026
[10] Regulatory Investment Test for Distribution application guidelines , version 6, Australian Energy Regulator (AER), 2024

2. Introduction

AusNet is a regulated Victorian electricity Distribution Network Service Provider (**DNSP**) that provides electricity distribution services to approximately 845,000 customers. Our electricity distribution network covers eastern rural Victoria and the outer northern and eastern Melbourne metropolitan areas.

The Regulatory Investment Test for Distribution (**RIT-D**) is an economic cost-benefit assessment and consultation process designed to identify the credible option that maximises net economic benefits for stakeholders in the National Electricity Market (**NEM**), for an identified need on the electricity network – the preferred option.

This RIT-D is being undertaken by AusNet to identify the preferred option to address the supply security limitations of the Beveridge supply area within the Mitchell local government area (**LGA**) of the Victorian Planning Authority's (**VPA**) North Growth Corridor[11], a rapidly developing region covering northern greater metropolitan Melbourne.

On the 24th October 2025, AusNet published an Options Screening Report (**OSR**) marking the first step in the RIT-D consultation process, in line with clause 5.17.4(b) of the National Electricity Rules (**NER**)[12] published by the Australian Energy Market Commission (**AEMC**), and section 4.2 of the RIT-D Application Guidelines[13], published by the Australian Energy Regulator (**AER**). AusNet received no submissions or alternative, non-network or SAPS proposals during the consultation period on the OSR.

On the 24th March 2026, AusNet published a Draft Project Assessment Report (**DPAR**) marking the second step in the RIT-D consultation process, in line with clause 5.17.4(i) of the NER, and section 4.3 of the RIT-D Application Guidelines. AusNet received no submissions during the consultation period on the DPAR.

AusNet is now publishing this Final Project Assessment Report (**FPAR**) marking the final step in the RIT-D consultation process, in line with clause 5.17.4(o) of the NER version 243, and section 4.4 of the RIT-D Application Guidelines.

In accordance with those requirements, this document sets out:

- background information on the network servicing the supply area;
- the identified need that AusNet is seeking to address, together with the assumptions used in identifying this need;
- a summary of submissions received in response to the DPAR;
- a description of the credible options that address the identified need including their costs and lead times;
- the assessment approach and assumptions applied in this RIT-D assessment, including quantification of market benefits and identifying categories of market benefits deemed unlikely to be material; and
- the net present value assessment and identification of the preferred option and its characteristics.

The appendices provide an overview of the RIT-D assessment and consultation process, and an NER compliance checklist.

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[11] Victorian Planning Authority – The North Growth Corridor Plan, Victorian Planning Authority (VPA).
[12] National Electricity Rules (NER), Australian Energy Market Commission (AEMC), 2026
[13] Regulatory Investment Test for Distribution application guidelines , version 6, Australian Energy Regulator (AER), 2024

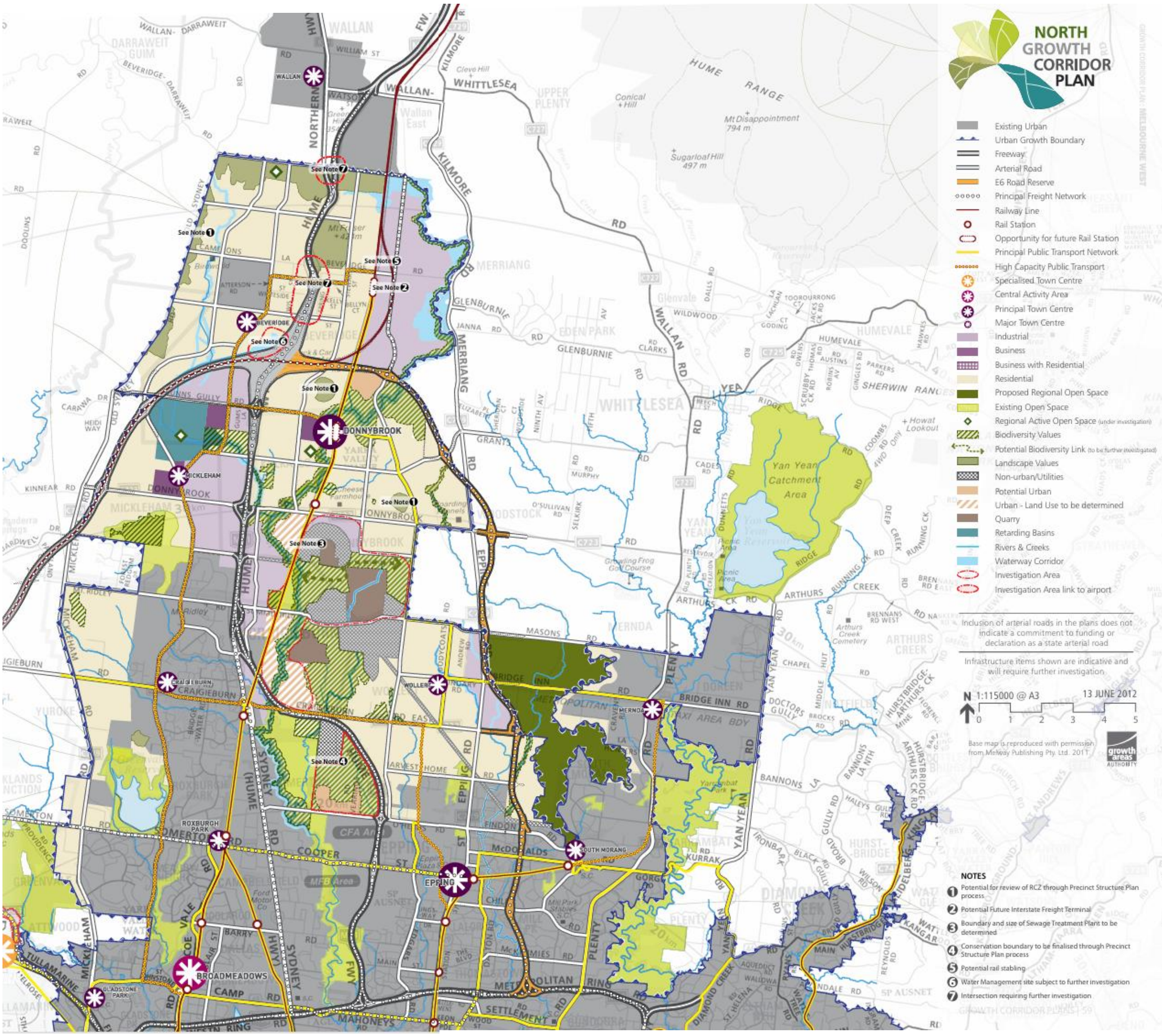
3. Background

The Beveridge supply area on the urban fringes of Melbourne's northern suburbs is a vast greenfield development area experiencing a significant increase in population. According to the 2016 census[14], there were 1,874 people living in Beveridge and by 2021[15], this increased to 4,642, an average annual growth rate of approximately 30% per annum.

It is expected that growth is likely to continue with the most recent forecast produced by Victoria's Department of Transport and Planning[16] forecasting the population of the Mitchell LGA (which contains Beveridge), to grow from 49,460 to 69,600 from 2021 to 2026. This is an overall annual growth rate for the whole LGA of 8.1% per annum.

This area is within the broader North Growth Corridor[17] illustrated in Figure 1.

Figure 1: North Growth Corridor



Source: VPA

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[14] 2016 Beveridge, Census, Australian Bureau of Statistics (ABS), 2016

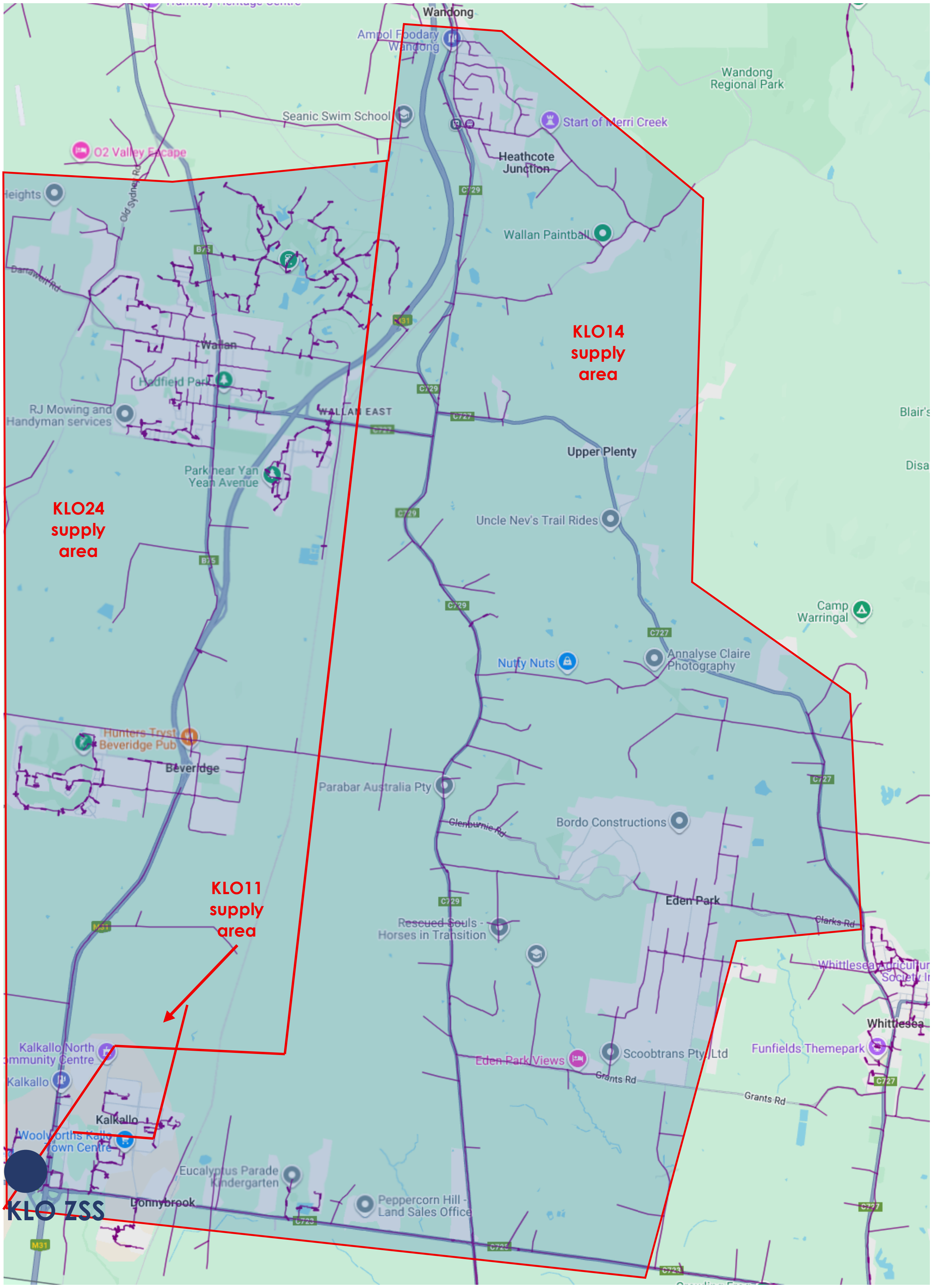
[15] 2021 Beveridge, Census, Australian Bureau of Statistics (ABS), 2021.

[16] Victoria in Future, Victorian Department of Transport & Planning, 2023

[17] Victorian Planning Authority – The North Growth Corridor Plan, Victorian Planning Authority (VPA).

The Beveridge supply area (shown in Figure 2) is currently supplied in part by AusNet's existing Kalkallo zone substation (**KLO**) through a rural network of 22 kV distribution feeders. KLO supplies over 17,439 AusNet customers (via five 22 kV distribution feeders), and over 13,448 Jemena Electricity Network customers (via four 22 kV distribution feeders).

Figure 2: KLO 22 kV network supplying Beveridge, Wallan, parts of Wandong and Whittlesea, and surrounds



AusNet has observed substantial growth in population in these areas and this growth is expected to continue, particularly with the announcement of the Victorian Government's approval of the Beveridge North West Precinct Structure Plan (**PSP**)[18]. This new precinct defined by the Beveridge North West PSP[19] will ultimately comprise of 15,000 new homes for approximately 47,000 people, eight schools and four town centres and will be a new suburb located within the Mitchell Shire, just north-west of Beveridge, 40km north of Melbourne CBD. In August 2025, the Victorian Government also approved the Beveridge Interstate Freight Terminal (**BIFT**) Stage 1a Planning Scheme Amendment (**PSA**), which enables construction to begin[20].

Mitchell Shire currently has an estimated population of 49,000 but is expected to grow to more than 170,000 people by 2041. This, coupled with the existing Beveridge Central PSP[21] and other adjacent approved and proposed PSPs, is part of the Victorian Government's long-term Greenfields plan to unlock land right across the state to deliver more than 180,000 new homes over the next decade.

AusNet has developed electricity demand forecasts for the supply area, updated to reflect the demands of recent summers, electrification activity, solar panels and battery installations, and the abovementioned developments. AusNet has identified from these forecast maximum demands, increasing levels of load-at-risk for the Beveridge supply area, where the demand is exceeding the capacity of some parts of the network.

Of particular relevance to this RIT-D are the parts of AusNet's distribution network that supply the satellite suburbs of Beveridge, Wallan, parts of Wandong and Whittlesea, and their surrounds, which are a part or adjacent to the North Growth Corridor. The existing 22 kV AusNet KLO14 and KLO24 distribution feeders supply these areas. Bushfire mitigation technology has been deployed on both feeders[22].

[18] New Melbourne Mega-Suburb Gets Development Go-Ahead, Realestate.com.au, 5th August 2025.
[19] Beveridge North West Precinct Structure Plan , Victorian Planning Authority (VPA), 5th August 2025.
[20] Project Status Update – September 2025, Victorian Planning Authority (VPA), Northern Freight Precinct.
[21] Beveridge Central Precinct Structure Plan - VPA, Victorian Planning Authority (VPA), 17th January 2019.
[22] Specifically, remote rapid earth fault current limiter (REFCL) technology.

4. Identified need

This section provides information regarding the identified need of this RIT-D, and the assumptions used in quantifying the identified need.

4.1. Description of the need

The identified need is to efficiently maintain a reliable supply of power to the customers in the Beveridge supply area as the forecast demand exceeds the capacity of KLO, KLO14 and KLO24.

The actual maximum demand on KLO14 and KLO24 has already exceeded their asset ratings of 14.5 MVA (each) and is expected to exceed the KLO zone substation rating of 97.5 MVA in FY29. The level of overload is shown in Table 5 and Table 6.

Table 5: Zone substation forecast PoE10 overload (MVA)[23]

Load-at-risk (MVA)	FY26	FY27	FY28	FY29	FY30	FY31	FY32
KLO (N-1)	14.7	32.7	40.9	56.8	64.8	74.1	87.0
KLO (N)	**0.0**	**0.0**	**0.0**	**8.4**	**16.4**	**25.7**	**38.7**

Table 6: Distribution feeder forecast PoE10 overload (MVA)[23]

Load-at-risk (MVA)	FY26	FY27	FY28	FY29	FY30	FY31	FY32
KLO14 (N)	3.0	9.3	13.5	25.3	29.6	35.4	42.7
KLO24 (N)	2.7	4.9	6.6	8.4	10.2	12.1	14.8
TOTAL (N)	**5.7**	**14.2**	**20.1**	**33.7**	**39.8**	**47.5**	**57.5**

The forecast overload in the Beveridge study area shows that there is currently no capacity available within the distribution feeder network with a shortfall of 5.7 MVA in FY26, forecast to rise to 57.5 MVA by FY32. In addition, the forecasted overload for the KLO zone substation with respect to its system normal (**N**) and single contingency (**N-1**) rating is also shown. All available load transfers have now been exhausted and there is no further opportunity to offload these feeders using the existing distribution network to remove the overload.

AusNet is currently managing this overload with temporary diesel generators. During the 2024–25 summer period, approximately 11.4 MWh of load was shed across KLO14 and KLO24 to prevent thermal overload. This was supplemented by the deployment of mobile generators, providing 4.9 MW at KLO14 and 3 MW at KLO24. For the 2025–26 summer, 12 MW of temporary generation has been installed at site at Wallan. This site supports both KLO14 and KLO24 feeders with 6 MW allocated to each feeder. The constrained land size restricts any future expansion or installation of additional generation units.

4.2. Quantification of the need

To quantify the energy at risk, AusNet uses a probabilistic planning approach to calculate the expected unserved energy (**EUE**), assuming no mitigation action is taken (i.e., Do nothing base case). This is used to assess whether it is economic to invest in risk mitigation to avoid the forecast deterioration in electricity supply reliability.

We have calculated the EUE by determining the amount of energy that would not be able to be supplied by the KLO14 and KLO24 distribution feeders and the KLO zone substation under system normal conditions. We calculate the EUE by using the maximum demand forecast of the feeder or zone substation and multiplying it by its normalised load

[23] Including available transfers and demand management.

duration curve to determine the energy at risk based on the amount of time that the forecast load is above the (N) rating, taking into account load transfer capacity[24].

We have also calculated the EUE by determining the amount of energy that would not be able to be supplied by the KLO zone substation under single contingency conditions. The calculation differs from that of the above by instead using the (N-1) rating and multiplying the overall result by the transformer unavailability, which considers its failure rate and restoration time. The total EUE is weighted according to 30% of the EUE calculated using a 1-in-10 year (**PoE10**) maximum demand, and 70% of the EUE calculated using a 1-in-2 year (**PoE50**) maximum demand.

The cost of deteriorating reliability to the community is determined by multiplying the total EUE by the Value of Customer Reliability (**VCR**). We have calculated the locational VCR by adopting the Australian Energy Regulator's (**AER**) 2024 VCRs[25] for the different customer segments, weighting them by the mix of customers' annual energy consumption localised, for each relevant network asset.

A material level of EUE is calculated for the Beveridge supply area, as shown in Table 7.

Table 7: Do nothing base case forecast expected unserved energy (EUE)

EUE (MWh p.a.)	FY26	FY27	FY28	FY29	FY30	FY31	FY32
KLO	0.7	13.8	32.3	133.2	470.5	2,101	7,327
KLO14	10.3	280.7	3,093	24,246	42,693	69,353	102,521
KLO24	4.9	52.9	380.6	1,045	2,223	3,925	6,927
TOTAL (MWh p.a.)	**15.9**	**347.4**	**3506**	**25,425**	**45,386**	**75,379**	**116,775**
Total ($m, 2025 p.a.)	**0.7**	**15.8**	**159.7**	**1,159**	**2,069**	**3,433**	**5,312**

By 2032, EUE and its financial impact on customers are forecast to be 116,775 MWh per annum and $5,312 million (real, $2025) respectively. This presents a forecast deterioration in electricity supply reliability.

4.3. Summary

AusNet has identified that approximately 57.5 MVA of additional capacity or demand reduction is required by 2032, rising from a present need of 5.7 MVA, through network augmentation or alternative non-network approaches such as demand management, embedded generation, and/or storage to ensure a reliable electricity supply to the Beveridge supply area is maintained.

If left unaddressed, these network capacity shortfalls could:

- increase the risk of involuntary load shedding;
- inhibit new customer connections; and
- risk non-compliance with AusNet's regulatory obligations.

Addressing these network capacity limitations will help to ensure that AusNet is able to prudently and efficiently meet forecast electricity demand growth for our customers within the Beveridge supply area to:

- support economic growth anticipated for this region;
- support the electrification of homes, businesses and transport[26]; and
- maintain electricity supply reliability and facilitate new customer connections.

[24] AusNet has evaluated the feasibility of feeder transfers and concluded that this option is not viable. At peak demand, the transfer capacity between feeders KLO14 and KLO24 is effectively zero, with both feeders operating in an overloaded state throughout the assessment period. As a result, they cannot provide mutual backup. The remaining adjacent tie options for KLO14 are DRN22 and KMS12. DRN22 is a non-REFCL feeder, rendering it unsuitable for transfer, particularly on Total Fire Ban (TFB) days when REFCL compliance is critical. KMS12, while technically available, is a capacity constrained feeder. Forecasts indicate that its PoE10 demand threshold will be exceeded by 2027. In summary, all adjacent rural feeders present limitations -either due to REFCL-related restrictions or insufficient spare capacity, making feeder transfer an impractical solution. As a result, both feeders were subjected to load shedding during the 2024-25 summer period.
[25] Values of Customer Reliability - Final report, Australian Energy Regulator (AER), 2024
[26] Refer to Victoria State Government, 'Gas Substitution Roadmap – Update: Victoria's Electrification Pathway.'

4.4. Assumptions underpinning the identified need

Key factors underpinning the quantification of the identified need in this RIT-D include:

- Forecast maximum demand;
- Load duration curves;
- Asset ratings;
- Asset unavailability;
- Load transfer capacity; and
- Demand management.

4.4.1. Forecast maximum demand

The forecast maximum demands for the existing 22 kV distribution feeders supplying the developing part of the Beveridge supply area, being KLO14 and KLO24, were developed by AusNet in 2025 and are summarised in Table 8 through to Table 10 respectively.

Table 8: Do nothing base case forecast KLO14 maximum demand (MVA)

KLO22	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Summer PoE10	23.6	29.9	34.1	45.9	50.3	56.0	63.3
Summer PoE50	19.6	25.3	29.3	40.1	43.8	50.3	57.3
Winter PoE10	17.4	25.8	33.6	46.8	55.1	64.2	74.9
Winter PoE50	12.1	20.2	27.8	40.8	48.3	57.5	67.8

Table 9: Do nothing base case forecast KLO24 maximum demand (MVA)

KLO23	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Summer PoE10	23.5	25.7	27.4	29.2	31.0	32.9	35.6
Summer PoE50	20.8	22.7	24.2	25.7	27.4	29.2	31.3
Winter PoE10	20.6	22.8	24.9	26.6	28.7	30.8	33.6
Winter PoE50	19.4	21.6	23.6	25.3	27.2	29.1	31.7

The forecast maximum demand for the 66/22 kV zone substation supplying into the Beveridge supply area being KLO, was developed by AusNet in 2025 and is summarised below in Table 10.

Table 10: Do nothing base case forecast KLO maximum demand (MVA)

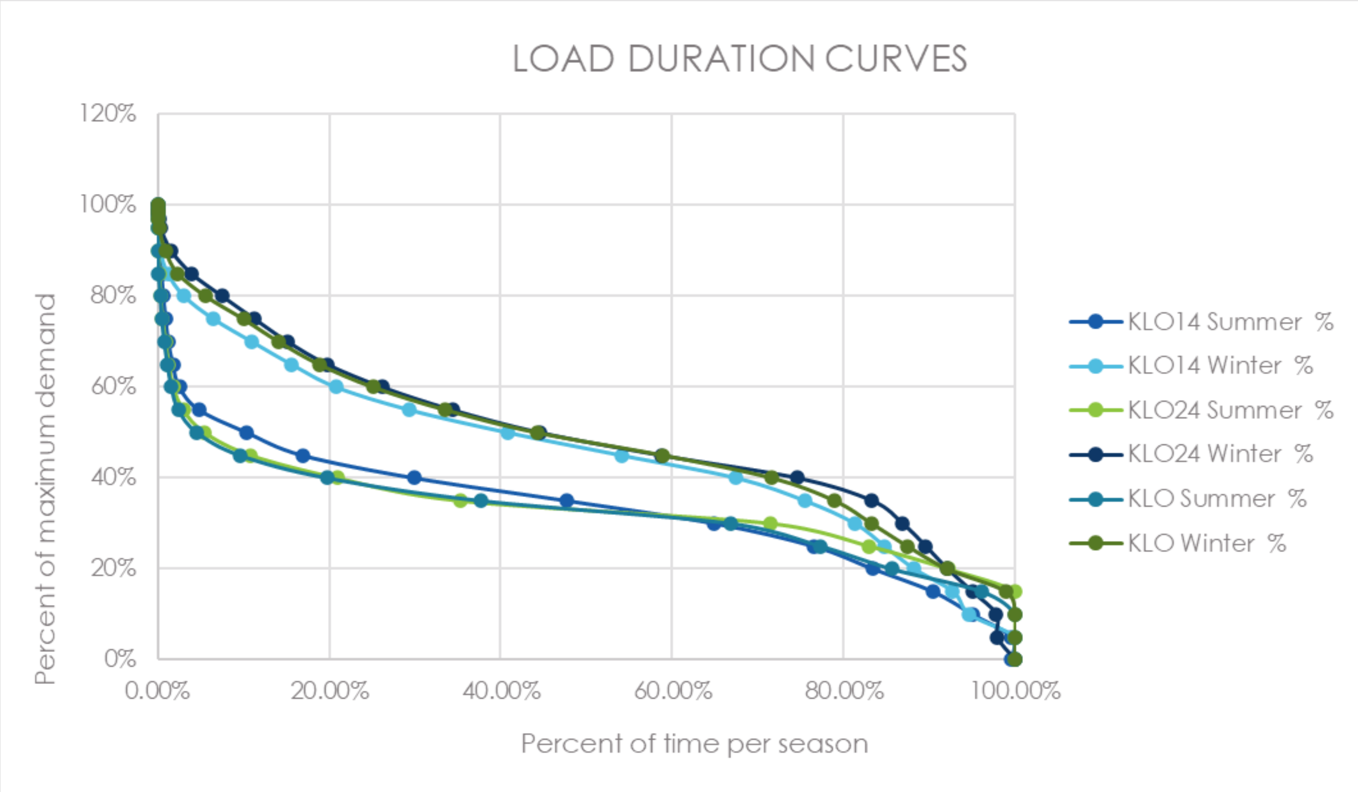
KLO	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Summer PoE10	83.7	94.2	102.4	118.3	126.3	135.6	148.6
Summer PoE50	68.3	77.9	84.7	99.7	106.9	115.6	127.0
Winter PoE10	79.9	92.4	103.0	120.4	129.7	142.6	159.4
Winter PoE50	72.3	83.8	93.4	109.8	118.6	129.8	143.8

4.4.2. Load-duration curves

Load-duration curves plot demand, normalised as a percentage of the seasonal maximum demand (for summer and winter separately), against the cumulative percentage of time within that season. Demand values are ordered in descending magnitude, such that each point on the load-duration curve represents the proportion of the season for which demand is expected to be greater than or equal to the corresponding load level. Where the product of the load-duration ordinate and the forecast seasonal maximum demand exceeds the seasonal rating, the excess portion, represented by the area above the rating, contributes to EUE.

Figure 3 shows the load-duration curves (summer and winter) for the assets at KLO.

Figure 3: KLO (and its 22 kV distribution feeders) load-duration curves



4.4.3. Asset ratings

The (N) summer and winter ratings of the distribution feeders that are currently supplying the greenfield growth area within the Beveridge supply area are presented in Table 11.

Table 11: Do nothing base case distribution feeder ratings (MVA)

Feeder	Summer	Winter
KLO14	14.5	14.5
KLO24	14.5	14.5

The (N) summer and winter ratings of the zone substation servicing the Beveridge supply area are presented in Table 12.

Table 12: Do nothing base case zone substation cyclic ratings (MVA)

Zone substation	Summer (N)	Winter (N)
KLO	97.5	97.5

4.4.4. Asset unavailability

AusNet only considers the EUE attributed to system normal operating conditions as material, that is when the asset demand exceeds the asset rating with all assets in service. By comparison, the magnitude of the EUE under single contingency conditions is considered immaterial due to the size of the asset overload under system normal conditions. Hence asset unavailability is not relevant to this RIT-D.

4.4.5. Load transfer capacity

The forecast load transfer capacity for KLO and the two 22 kV distribution feeders supplying the Beveridge supply area being KLO14 and KLO24 is presented in Table 13. The transfer capacity of both feeders at peak demand is zero, given both adjacent feeders are overloaded for the entire period providing no back up for each other. The only available transfer path is from KLO14 (REFCL) to DRN22 (Non-REFCL), which is permitted exclusively on non–Total Fire Ban (**TFB**) days. However, this transfer is prohibited during TFB days, which typically coincide with peak summer demand periods. At the zone substation level, transfer capacity is similarly constrained except for 2026 (3.8 MVA) - this includes transfers on Jemena feeders.

Table 13: Do nothing base case forecast load transfer capacity (MVA)

Transfer capacity	FY26	FY27	FY28	FY29	FY30	FY31	FY32
KLO	3.8	0.0	0.0	0.0	0.0	0.0	0.0
KLO14	0.0	0.0	0.0	0.0	0.0	0.0	0.0
KLO24	0.0	0.0	0.0	0.0	0.0	0.0	0.0

4.4.6. Demand management

The forecast demand management capacity in proximity to the greenfield growth area within the Beveridge supply area is presented in Table 14.

Table 14: Do nothing base case demand management capacity (MVA)

Demand management	FY26	FY27	FY28	FY29	FY30	FY31	FY32
KLO	0.4	0.4	0.4	0.4	0.4	0.4	0.4
KLO14	0.2	0.2	0.2	0.2	0.2	0.2	0.2
KLO24	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Although demand management can be contracted for the assets mentioned, customer participation is voluntary. As a result, the full existing demand management capacity may not be available during peak demand. However, for energy at risk modelling, we have assumed that the full existing demand management capacity is available.

5. Summary of submissions

This section summarises the consultation to date and the submissions received on the OSR and DPAR.

The OSR presented an Option 3 (Non-network or SAPS solutions) allowing interested parties to propose alternative, non-network or SAPS solutions that can credibly address the identified need. This included those that can either be combined with another solution to defer or reduce in scope credible network options being considered, and/or mitigate the EUE in the lead up to implementing a network option.

Following the publication of the OSR in October 2025, AusNet did not receive any submission proposing an alternative, non-network or SAPS solution to address the identified need in the Beveridge supply area during the consultation period. Hence Option 3 was no longer considered credible for the purposes of addressing the identified need of this RIT-D.

The DPAR identified Option 1 (Beveridge new zone substation, and two new distribution feeders) as the proposed preferred options for addressing the identified need, allowing interested parties to make submissions on this draft conclusion.

Following the publication of the DPAR in March 2026, AusNet did not receive any submissions during the consultation period.

6. Credible options

This section outlines the credible options that are able to address the identified need, including a "do nothing" counterfactual option as the base case for comparing credible options. These include all substantially differing commercially and technically credible options.

Credible options (or a group of options) are those that meet the following criteria:

- addresses the identified need,
- is (or are) commercially and technically feasible, and
- can be implemented in sufficient time to meet the identified need.

The options analysed in this RIT-D to address the identified need in the Beveridge supply area are as follows:

- Option 0: Do nothing base case - no proactive investment intervention
- Option 1: Beveridge new zone substation, and two new distribution feeders
- Option 2: Third transformer and bus at Kalkallo zone substation, and two new distribution feeders

Option 1 and 2 are credible network solutions assessed to address the identified need.

Each credible option is further elaborated in the subsequent sections.

6.1. Do nothing

The "do nothing" option assumes that AusNet would not undertake any proactive investment, outside of normal operational and planning processes for managing peak demand and thermal overloading. This option is the counterfactual to the other options considered and establishes the base level of risk (base case) and the basis for comparing other credible options.

While this option does not entail any upfront capital costs, it exposes customers to the continuing and increasing risk of network-induced electricity supply outages, as a result of demand exceeding the available network capacity. The reliability cost of this option is represented by the EUE in Table 7.

With the forecast overloads of our existing zone substations and distribution feeders in this area (presented in Table 5 and Table 6), this option does not address the identified need.

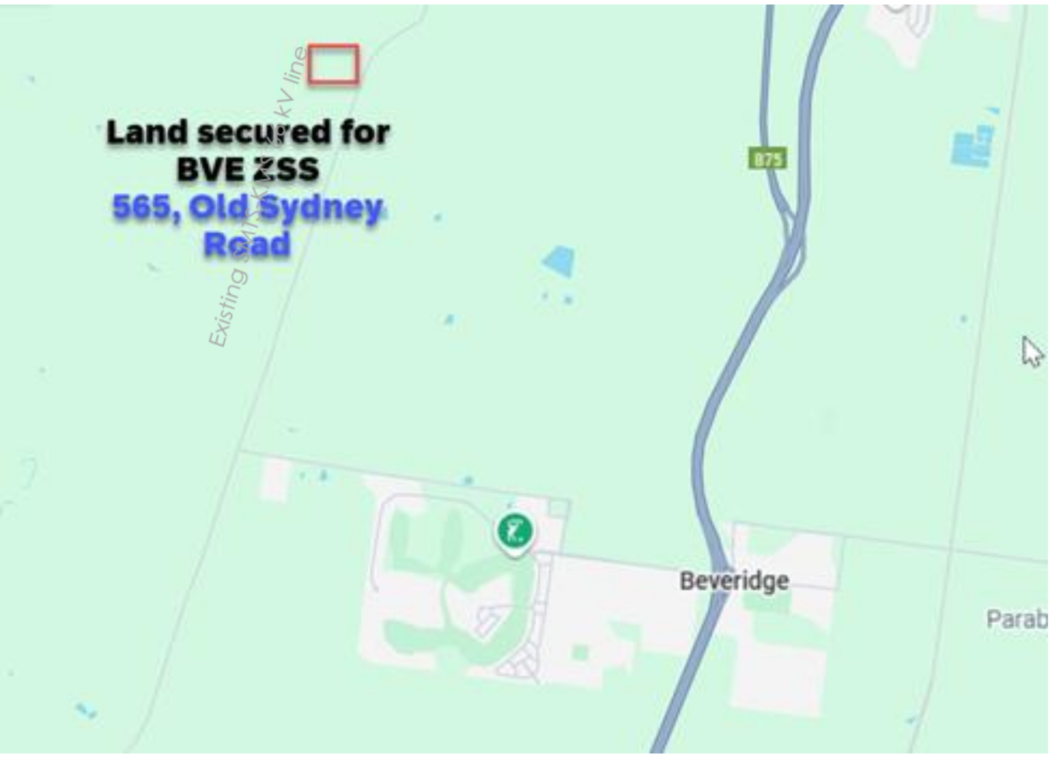
6.2. Option 1: Beveridge new zone substation, and two new distribution feeders

This option establishes a new 66/22 kV zone substation with 2 x 33 MVA transformers, two 22 kV busbars and two new 22 kV feeder exits connected into the existing 22 kV distribution network, at a site located close to the existing 66 kV sub-transmission line[27] on the western side of Beveridge. The zone substation installed would be to AusNet's standard design with provision for additional transformer and bus in the future.

This proposed option addresses the identified need by removing the existing overload on KLO14 and KLO24 and adding the forecast demand growth onto the new feeders at the Beveridge zone substation.

Figure 4 shows the land secured by Ausnet for the construction of Beveridge Zone Substation

Figure 4: Land Secured for Beveridge zone substation site



[27] SMTS-KMS 66 kV line.

The scope of this project is to:

- Complete purchase of land for the new zone substation.
- Install two new 20/33MVA, 66/22 kV power transformers. Scope includes associated civil, structural works, primary works and secondary works.
- Install two new 22 kV urban switch-room switchboards. Scope includes, associated civil, structural works, primary works and secondary works including REFCL equipment.
- Install two new 22 kV underground/overhead feeders, including associated structures and switches.
- Design, procure, install, and commission of all necessary primary, civil/structural, and secondary equipment for the new 66 kV line entry at remote ends.

The estimated total capital cost of this option including sub-transmission extension, new zone substation, new distribution feeders and site acquisition is $92.7 million[28] (real, $2025), with an ongoing operating and maintenance (**O&M**) cost of $1.0 million per annum.

The estimated construction timetable for this option is 2 years with an anticipated commissioning date of 2028.

This option will not change the transmission network configuration and is unlikely to have a material inter-regional network impact.

[28] Total cost comprises of $62.2 million for the zone substation, $30.2 million for sub-transmission and distribution lines, and $2.5 million for land.

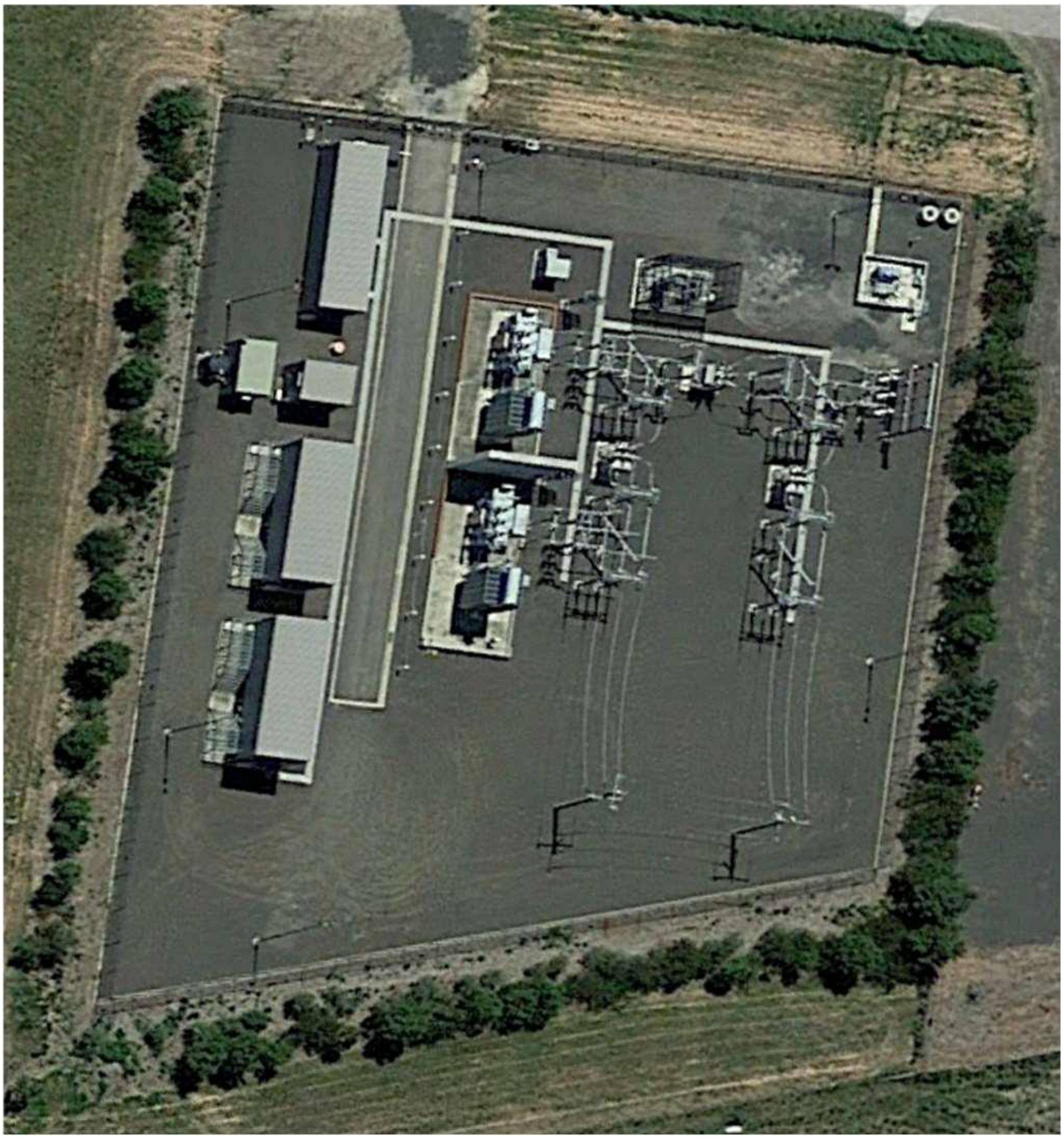
6.3. Option 2: Third transformer and bus at Kalkallo zone substation, and two new distribution feeders

This option involves installing a third 66/22 kV 33 MVA transformer and third 22 kV bus at KLO and two new 22 kV feeder exits connected into the existing 22 kV distribution network at Beveridge using underground cables from KLO to avoid overhead line constructability issues imposed by limitations within the road reserves.

This proposed option addresses the identified need by removing the existing overload on KLO14 and KLO24 and adding the forecast demand growth onto the new feeders at KLO. This option would allow the EUE to be removed completely until around 2030, after which the viability of augmentation closer to the Beveridge supply area could be considered at that time.

Figure 5 shows a satellite view of KLO with the available space for a third transformer and bus.

Figure 5: Existing Kalkallo (KLO) zone substation site



The new longer 22 kV distribution feeders will be required in this option as KLO zone substation is located approximately 11 km from the Beveridge area. The distribution feeder lengths in this option will be significantly longer as compared to the average feeder lengths required from the proposed new Beveridge zone substation as proposed in Option 1. Furthermore, the new feeders from KLO will need to be underground cables. Previous proposals for overhead infrastructure along the Hume Freeway have been declined by relevant authorities, citing alignment issues with their long-term expansion plans.

The estimated capital cost of this option including zone substation augmentation and new distribution feeders is $72.4 million (real, $2025), with an ongoing O&M cost of $0.7 million per annum.

Although the capital expenditure for Option 2, which involves installing a third transformer and switchboard at KLO and constructing two feeders to Beveridge is lower than Option 1, Option 2 comes with significant execution challenges. The primary challenge in executing this option lies in the requirement to utilise the Hume Freeway corridor as the easement. Relevant road management authority does not permit overhead infrastructure along this route, necessitating underground installation. Furthermore, the project timeline is materially impacted by the protracted and multifaceted approval processes mandated by the road and rail management authorities. In addition, there are considerable risks associated with securing easements from private landowners across a corridor exceeding ~11 kilometres, which may introduce further delays and legal complexities.

The estimated construction timetable for this option is 2 years with an anticipated commissioning date of 2028.

This option will not change the transmission network configuration and is unlikely to have a material inter-regional network impact.

7. Assessment approach

Consistent with the AER's RIT-D requirements and RIT-D Application guidelines, AusNet undertook a cost-benefit analysis to evaluate and rank the net economic benefits of the credible options over a 30-year period while assuming a 45-year asset life for network options.

All options considered have been assessed against a business-as-usual or base case where no proactive capital investment to address the identified need is made using the assumptions and methodology detailed in this section.

7.1. Key variables and assumptions

Table 15 lists the key variables applied in the economic assessment, which are essential inputs to our methodology for the purpose of this RIT-D. It also sets out the upper and lower bounds of the range of sensitivities adopted for each of these variables. The detailed results of this modelling are provided in the next section.

In relation to the discount rate, we have adopted central, upper and lower bound estimates that are consistent with the guidance provided by AEMO and the AER. We note that discount rates are subject to change, particularly in the current economic climate. As such, the rates employed in this RIT-D are considered reasonable in exploring the impact of different rates on the cost-benefit assessment of the competing options to address the identified need.

Table 15: Input assumptions used for sensitivity studies

Parameter	Lower bound	Central (base) case	Upper bound
Project cost	70%	100%	130%
VCR	80%	100%	120%
Discount rate[29]	5.56%	7.00%	10.00%
Maximum demand	90%	100%	110%

7.2. Methodology

The purpose of this section is to provide a high-level explanation of AusNet's methodology for identifying the preferred option. As a general principle, it is important that the methodology takes account of the identified need and the factors that are likely to influence the choice of the preferred option. As such, the methodology is not a 'one size fits all' approach, but one that is tailored to the circumstances under consideration.

For this RIT-D, there is a significant market benefit component which is mainly generated by reducing the risk of involuntary load shedding and customer interruptions, quantified using EUE and valued using the VCR. The preferred option is the one that delivers the highest net present value (**NPV**), which is the present value of the sum of the net benefits of implementing that option. The identification of the preferred option is complicated by the fact that the future is uncertain and that various input parameters are 'best estimates' rather than known values. Therefore, the RIT-D analysis must be conducted to test the robustness of the economic analysis to future uncertainty.

To address uncertainty in our assessment of the credible options, we use sensitivity analysis in our cost benefit assessment. Furthermore, as recommended by the AER's application guidelines, we often use sensitivity analysis to also inform a set of reasonable state-of-the-world scenarios.

In our choice of sensitivities and scenarios to our cost benefit assessment, we have regard to the different circumstances that may eventuate that would affect the choice of the preferred option. Where our analysis shows that a preferred option is not vulnerable to changes in circumstances and is clearly preferred, we will not undertake

[29] We have used the discount rate in AEMO 2025 Inputs, Assumptions and Scenarios Report for the central and upper bound values. For the lower bound value we have used AusNet's regulatory WACC.

scenario analysis. This approach is consistent with clause 5.17.1(c)(2) of the NER, which states that the RIT–D must not require a level of analysis that is disproportionate to the scale and likely impact of each credible option considered.

7.3. Approach to estimating option costs

The total capital costs presented in this RIT-D are fully loaded, with 25% added to the direct costs to include escalations, overheads, finance charges and risk costs.

The costs for each option have been calculated by our cost estimation team based on recent similar project costs and scope. Costs are expected to be within ±30% of the actual cost.

Ongoing operating and maintenance costs are included in the assessment annually from the year after the capital investment, based on 1% of the total capital cost per annum.

Land procurement cost is based on:

- actual costs from recently acquired properties (including transaction costs), or
- estimated market valuation of potential (or existing held) properties in the supply area,

All cost estimates are prepared in real 2025 dollars based on the information available at the time of preparing this DPAR.

7.4. Material classes of market benefits

Clause 5.17.4 (j)(5) of the NER requires the RIT-D proponent to consider whether each credible option provides the classes of market benefits described in clause 5.17.1(d). The class of market benefit quantified for this RIT-D include changes in involuntary load shedding and customer interruption.

7.4.1. Involuntary load shedding and customer interruptions

Involuntary load shedding is where a customer's load is interrupted (switched off or disconnected) from the network without their agreement or prior warning. Involuntary load shedding can occur unexpectedly due to a network outage event, or pre-emptively to maintain network loading to within asset capabilities. The aim of implementing a credible option for the options considered in this RIT-D, is to address the identified need by reducing the amount of involuntary load shedding expected.

A reduction in involuntary load shedding, relative to the base case, results in a positive contribution to the market benefits of the credible option being assessed. The avoided involuntary load shedding benefits of a credible option are estimated by multiplying the avoided EUE (in MWh) of involuntary load shedding avoided, assuming the credible option is in place, with the locational VCR (in $/MWh).

AusNet has captured the reduction in involuntary load shedding as a market benefit for the credible options assessed in this RIT-D.

7.4.2. Market benefit classes not relevant to this RIT-D

This section outlines the classes of market benefits that AusNet considers immaterial to this RIT-D assessment, and our reasoning for their omission from this RIT-D assessment. The market benefits that AusNet considers will not materially impact the outcome of this RIT-D assessment include changes in:

- load transfer capacity – the benefits of load transfer capacity are implicitly included in the benefits of avoided Involuntary load shedding and customer interruptions;
- embedded generation - existing generation profiles are not expected to change as a result of the options considered in this RIT-D. Furthermore, AusNet received no market responses for embedded generation or

storage solutions as part of the RIT-D consultation process on the OSR. This market benefit is therefore not relevant to this RIT-D;

- voluntary load curtailment – existing network support agreements for demand management is not expected to change for this RIT-D. Furthermore, AusNet received no market responses for demand management solutions as part of the RIT-D consultation process on the OSR. This market benefit is therefore not relevant to this RIT-D;
- timing of expenditure - there are no expected significant differences between the credible options;
- costs to other parties - there are no expected significant differences between the credible options;
- electrical energy losses – the difference in electricity losses between the options is considered negligible compared to the value of the reduction in involuntary load shedding;
- option value - there will be no impact on the option value in respect of the likely future investment needs;
- safety – there is no difference in network asset safety outcomes between the different options; and
- greenhouse gas emissions – the differences in SF_6 emissions from network plant or distributed generation curtailment is considered negligible between the different options.

8. Economic assessment

This section summarises the results of the economic assessment using cost-benefit analysis and sensitivity analysis to identify the preferred option.

8.1. Cost-benefit analysis

The economic analysis allows comparison of the economic cost and market benefits of each option to rank the options and to determine the optimal timing of the preferred option. It quantifies the PV capital and O&M costs for each option. The PV Net Economic benefits for each credible option is the PV of Gross Economic benefits minus the PV of costs, relative to the "do nothing" option.

Table 16: Summary of cost-benefit analysis ($ million, 2025)

Option	PV gross economic benefit	Project capital cost	O&M cost per annum	PV capital and O&M cost	PV net economic benefit	Ranking
Do nothing	0.0	0.0	0.0	0.0	0.0	3
Option 1	105,150	92.7	1.0	94.0	105,056	1
Option 2	91,731	72.4	0.7	73.4	91,657	2

The option that has been found to maximise the present value of net economic benefit, is Option 1, delivering a PV net economic benefit of $105,056 million over the analysis period.

8.2. Sensitivity analysis

AusNet has tested the robustness of the option ranking by independently varying the inputs mentioned in Table 15.

Table 17: Summary of lower bound sensitivity analysis ($ million, 2025), PV Net Economic benefits

Option	Project Cost	VCR	Discount rate	Maximum demand
Do nothing	0.0	0.0	0.0	0.0
Option 1	105,085	73,511	129,162	96,297
Option 2	91,679	64,138	112,275	84,073

Table 18: Summary of upper bound sensitivity analysis ($ million, 2025), PV Net Economic benefits

Option	Project Cost	VCR	Discount rate	Maximum demand
Do nothing	0.0	0.0	0.0	0.0
Option 1	105,028	136,601	70,698	114,429
Option 2	91,635	119,176	62,163	99,772

Under all sensitivities, the present value of net economic benefit for Option 1 remains positive and is greater than all other options.

8.3. Preferred option

The option that has been found to maximise the present value of net economic benefits, is Option 1, delivering a net economic benefit of $105,056 million over the analysis period.

The robustness of this conclusion has been tested under a range of sensitivities. In each case, Option 1 was confirmed to provide positive economic benefits and is the highest ranked option. Option 1 therefore satisfies the requirements of the RIT-D and is the preferred option at this final stage.

The scope of the preferred option involves establishing a new 66/22 kV zone substation in Beveridge with two 33 MVA transformers, two 22 kV busbars and two new 22 kV feeder exits connected into the existing 22 kV distribution network, at a site located close to the existing 66 kV sub-transmission line[30] on the western side of Beveridge.

The capital cost of the preferred option is approximately $92.7 million (real, $2025) (including the land procurement) with an ongoing O&M cost of $1.0 million per annum.

8.4. Investment timing

Optimal timing occurs in the first year when the gross economic benefits become larger than the annualised cost of the preferred option. The investment timing is then set either to this optimal timing, or delayed by the construction period, whichever comes later.

Table 19: Optimum commissioning year

$ million (real, $2025)	FY27	FY28	FY29	FY30	FY31
Annualised cost	7.1	7.1	7.1	7.1	7.1
Gross economic benefit	294	858	1,672	2,627	3,787

The gross economic benefit is already well in excess of the annualised cost. Hence, the investment timing is determined by the construction period.

Given the construction period is 2 years, the completion of the project is by 2028.

[30] SMTS-KMS 66 kV line.

9. Next steps

The publication of this FPAR marks the final step in the RIT-D process, in line with clause 5.17.4(o) of the NER, and section 4.4 of the RIT-D Application Guidelines.

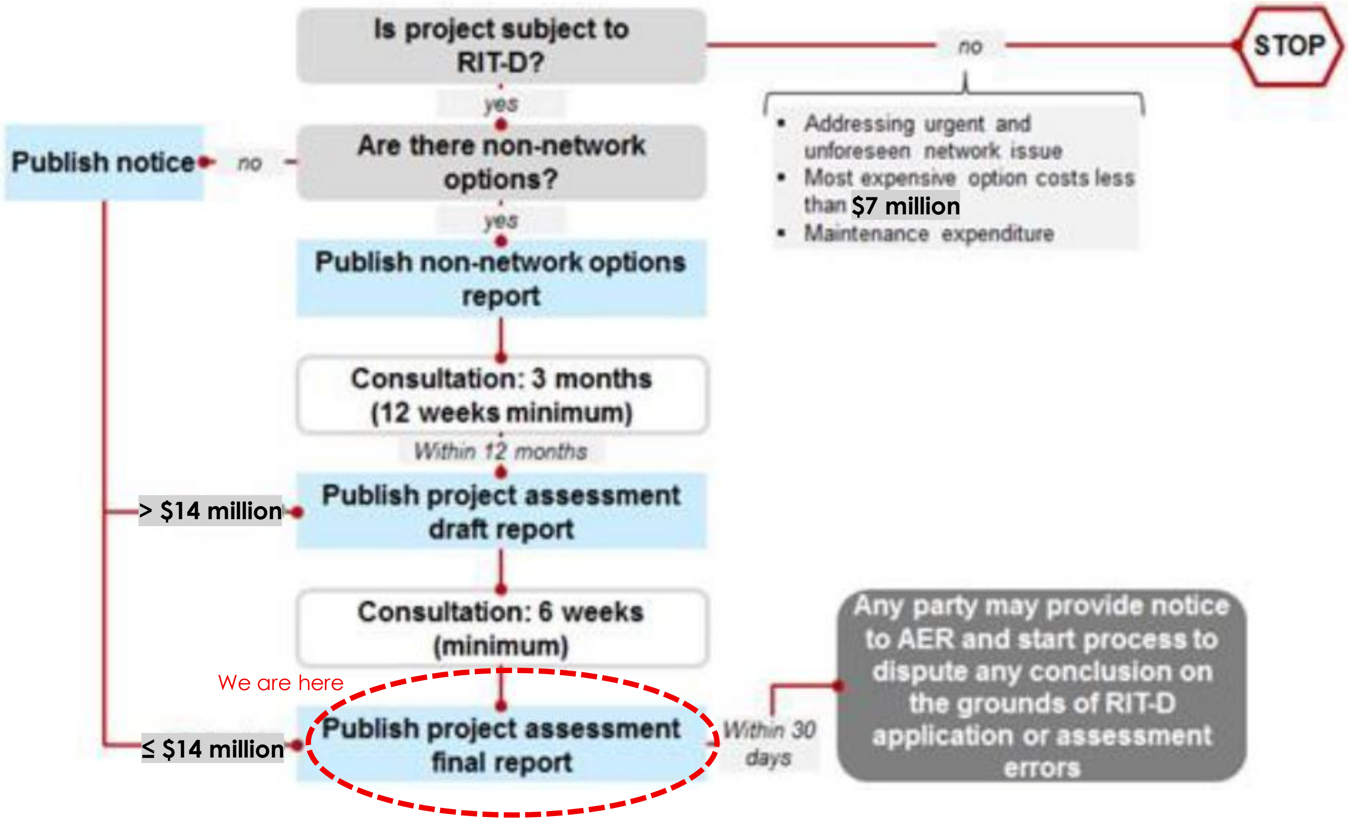
In accordance with the provisions set out in clause 5.17.5(c) of the NER, Registered Participants or interested parties may, within 30 days after the publication of this report, dispute the conclusions made by AusNet in this report with the AER.

Accordingly, Registered Participants and interested parties who wish to dispute the recommendation outlined in this report must do so by 4th July 2026. Any parties raising such a dispute are also required to notify to AusNet at ritdconsultations@ausnetservices.com.au

In the subject field, please reference '**RIT-D FPAR Beveridge**'.

If no formal dispute is raised, AusNet will commence with the investment activities necessary to proceed with the implementation of the preferred option from 4th July 2026 onwards.

A. Appendix A - RIT-D assessment and consultation process



Source: AER

B. Appendix B - Compliance with NER

In accordance with clause 5.17.4(j)(11)(iv) of the NER, we certify that the preferred option satisfies the regulatory investment test for distribution. Table 20 shows how each of these requirements have been met by the relevant section of this FPAR.

Table 20: Compliance with regulatory requirements

Requirement	Section
Clause 5.17.4(j) of the NER, the final project assessment report must include the following:	
1. a description of the identified need for the investment;	Section 4
2. the assumptions used in identifying the identified need (including, in the case of proposed reliability corrective action, why the RIT-D proponent considers reliability corrective action is necessary);	
3. if applicable, a summary of, and commentary on, the submissions on the options screening report (and draft project assessment report - clause 5.17.4(r)(1)(ii));	Section 6
4. a description of each credible option assessed;	Section 6
5. where a Distribution Network Service Provider has quantified market benefits in accordance with clause 5.17.1(d), a quantification of each applicable market benefit for each credible option;	Section 8
6. a quantification of each applicable cost for each credible option, including a breakdown of operating and capital expenditure;	
7. a detailed description of the methodologies used in quantifying each class of cost and market benefit;	Section 7
8. where relevant, the reasons why the RIT-D proponent has determined that a class or classes of market benefits or costs do not apply to a credible option;	
9. the results of a net present value analysis of each credible option and accompanying explanatory statements regarding the results;	Section 8
10. the identification of the preferred option.	
11. for the preferred option, the RIT-D proponent must provide:	
i. details of the technical characteristics;	
ii. the estimated construction timetable and commissioning date (where relevant);	
iii. the indicative capital and operating cost (where relevant);	
iv. a statement and accompanying detailed analysis that the preferred option satisfies the regulatory investment test for distribution; and	
v. if the preferred option is for reliability corrective action and that option has a proponent, the name of the proponent; and	
12. contact details for a suitably qualified staff member of the RIT-D proponent to whom queries on the draft report may be directed.	Section 9
13. if the estimated capital cost of the preferred option is greater than $103 million (as varied in accordance with a cost threshold determination), include the RIT reopening triggers applying to the RIT-D project	Not applicable

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