EVOENERGY FINAL PROJECT ASSESSMENT REPORT FOR GUNGAHLIN FEEDERS RIT-D

FINAL PROJECT ASSESSMENT REPORT FOR GUNGAHLIN DISTRICT FEEDER LIMITATIONS UNDER THE REGULATORY INVESTMENT TEST-DISTRIBUTION (RIT-D)

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Note

Printed versions of this document are “uncontrolled copies” - the latest version is available on the Evoenergy Website[1]

[1] https://www.evoenergy.com.au/Your-Energy/Demand-Management/Engagement-opportunities

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EXECUTIVE SUMMARY

Background

This Final Project Assessment Report (FPAR) represents the final stage in the Regulatory Test for Distribution (RIT-D) to address network constraints in the Gungahlin district. This FPAR has been prepared following the conclusion of the consultation period for the Draft Project Assessment Report (DPAR) that was published on 20 October 2025, for the project originally identified through the Gungahlin Feeder Capacity Non-Network Options Report (NNOR) published on 25 July 2025.

The National Electricity Rules (NER) requires a Regulatory Investment Test for Distribution (RIT-D) be completed for capital expenditure (capex) projects with a value greater than $7 million. The RIT-D requires a FPAR where Evoenergy wishes to proceed with a RIT-D project following the publication of the DPAR and consultation, having regard to submissions received on the matters that were set out within the DPAR including the proposed preferred option.

Gungahlin is the northernmost district of Canberra and is divided into sixteen suburbs constructed gradually since 1991. The district is predominantly residential, supporting a population of >87,000 people based on the 2021 census. The town centre is located in the suburb of Gungahlin and contains a mix of medium and high-density residential dwellings, retail and office space. The town centre is also the origin point of the Canberra light rail system. The district includes the light industrial suburb of Mitchell.

Electricity is distributed to the Gungahlin region predominantly from the Gold Creek Zone Substation (ZSS) located in Ngunnawal. The number of dwellings in the district has steadily risen in recent years due to greenfield land releases, high-density mixed-use developments, coupled with a range of commercial developments. Following a RIT-D, Evoenergy determined that installing a third transformer at the Gold Creek ZSS would be the preferred option to address forecast capacity constraints at the Zone Substation. The construction for this transformer is scheduled for completion and commissioning before the summer of 2025/26.

Load growth in the Gungahlin district is forecast to continue primarily due to additional greenfield residential development, mixed-use urban infill, expansion of light commercial/industrial facilities, government land release programs and decarbonisation of the transport sector, specifically electric vehicle (EV) charging loads.

Identified Need

The Gungahlin town centre, along with its surrounding suburbs located within the broader Gungahlin district, are anticipated to experience significant growth in electricity demand due to a number of new high-density mixed-use developments, as well as government land release programs over the next ten years. Additional load growth is also anticipated in the district from increasing EV charging demand.

These new large customer connections in addition to forecasted underlying demand load growth associated with the uptake of EVs and charging infrastructure will result in the 11kV distribution networks in Gungahlin exceeding its thermal capacity in its normal operating state by 2026. Evoenergy has identified capacity limitations on nine (9) 11 kV distribution feeders into the Gungahlin district with firm and thermal ratings forecasted to be exceeded on most feeders in the coming years based on a 50% Probability of Exceedance (50POE) probabilistic assessment. The identified need was published in Evoenergy's Annual Planning Report.[2]

Preferred Network Option

The preferred network option to address these network limitations is the construction of three (3) additional 11 kV feeders from the Gold Creek ZSS to three (3) switching stations. Two (2) new switching stations will be established as part of this preferred network option, with the third switching station already established. The new feeders will address the constraints and be capable of meeting the anticipated additional demand for Gungahlin and the surrounding area.

The scope of these projects includes constructing new 11 kV underground feeders supplied from the Gold Creek ZSS, and installing two new switching stations (SW). This will involve constructing new conduit banks along the identified trench routes, the laying of cable for those feeders and required work within the substations to establish the new feeder connections. This identified network option has an estimated capital

[2] Evoenergy Annual Planning Report: Annual Planning Report

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cost exceeding the $7 million threshold under the NER and the proposed investment is therefore subject to a RIT-D.

Summary of DPAR Submissions

Evoenergy received no submissions in response to the DPAR, which identified that no non-network options had been proposed through submissions to the NNOR.

Hence, no non-network options are considered to be credible to meet the identified need.

Recommended Option

The FPAR recommends no change to the preferred option from the DPAR.

The recommended option is to proceed with the preferred network option to install and commission the additional three new 11kV feeders to supply the Gungahlin region, connected via the 132/11kV Gold Creek ZSS.

The scope of works includes construction of conduit banks, the bulk laying of feeder cables and commissioning switches and modifications required at the ZSS to support the updates. These upgrades will be delivered as a package, with the first part of the package expected to be completed and commissioned prior to November 2026.

The total project cost of this recommended option for Evoenergy is estimated to be $13.32m in FY24/25 dollar terms.

Next Steps

Any queries in relation to this RIT-D should be lodged via email to: RIT@evoenergy.com.au

In accordance with the provisions of NER Clause 5.17.5, Registered Participants, Australian Energy Market Operator (AEMO), interested parties, non-network providers and persons registered on Evoenergy's demand side engagement register may, within 30 days after publication of this report, dispute the conclusions made by Evoenergy in this report with the Australian Energy Regulator (AER) based on a manifest error in calculations or application of the RIT-D. Dispute notification should be sent via email to: RIT@evoenergy.com.au by 31 Dec 2025 at 5pm. If no formal dispute is raised, Evoenergy will proceed with the preferred option (network option).

An overview of the timeline, from the publication of this FPAR to when the preferred option is required to be operational, is provided in **Table 1Table 1**.

TABLE 1: TIMELINE

ACTIVITIES	DATES	STATUS
Publish NNOR and request for submissions	25 July 2025	Completed
Consultation period for non-network providers to provide submissions	25 Jul 2025 to 17 Oct 2025	Completed
Public briefing session during consultation period	26 Aug 2025	Completed
Evoenergy review of submissions received (non-network proposals)	17 Oct 2025	Completed
Publish Draft Project Assessment Report (DPAR)	20 Oct 2025	Completed
Consultation period for DPAR	20 Oct 2025 to 01 Dec 2025	Completed
Publish Final Project Assessment Report (FPAR)	02 Dec 2025	Completed
Preferred option operational	Nov 2026	Planned

1. INTRODUCTION

1.1 Scope and Purpose

Under the Regulatory Investment Test for Distribution (RIT-D) process, Evoenergy is required to consider all credible network and non-network options to meet future electricity demand. The RIT-D process involves the following key stages:

Stage 1: Screen for non-network options and publish a NNOR

Stage 2: Undertake consultation on non-network options

Stage 3: Assess credible options

Stage 4: Publish draft project assessment and undertake consultation on the preferred option

Stage 5: Publish the final project assessment report (this report).

This report is the fifth and final stage of the RIT-D process to address the identified need for this study area. This report outlines the need for the proposed investment, the description of submissions received to the NNOR, the assessment of non-network options to resolve the identified need, and the recommendation on the preferred option to progress. This report identifies that no submissions were received on the DPAR (and therefore that no material changes from the DPAR are proposed).

The FPAR further ensures that stakeholders are informed of the preferred option to proceed with network augmentation. Evoenergy has developed this FPAR in accordance with the requirements of Clause 5.17.4 of the National Electricity Rules (NER).

As the consultation on the preferred option outlined in the DPAR concluded on 1 December 2025, this FPAR has been prepared to inform all stakeholders on the recommended option for the provision of services to address the identified need.

1.2 Evoenergy's Obligations

Under Clause 5.17.4 of the NER, Evoenergy has obligations relating to this FPAR, including:

- Ensure that the FPAR gives regard to any submissions received on the DPAR[3].
- Ensure that the FPAR is published as soon as practicable after the end of the consultation period on the DPAR.
- Ensure the FPAR contains matters as detailed in the DPAR
- Ensure the FPAR contains a summary of submissions received on the DPAR[4],
- Notify persons registered on its industry demand side engagement register of the report's publication[5].

1.3 Structure of Report

The rest of this FPAR is structured into the following sections:

Section 2: Provides background information on the network location and the associated infrastructure.
Section 3: Describes the identified need that is to be addressed, and applicable service standards.
Section 4: Provides the analysis of the credible options reviewed as part of this RIT-D.
Section 5: Summarises the planning methodology and assumptions used in Evoenergy's assessment.
Section 6: Details recommendations on the preferred option.
Section 7: Summarises submissions to the DPAR and provides guidance on next steps.

[3] As per NER clause 5.17.4(o)
[4] As per NER clause 5.17.4 (r)(1)(ii)
[5] As per NER clause 5.17.4(q)

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2. BACKGROUND

2.1 Existing Network

2.1.1 Geographic Overview

Gungahlin is the northernmost district of Canberra and is divided into sixteen suburbs constructed since 1991. The district is predominantly residential, supporting a growing population of more than 87,000 people based on the 2021 census. The town centre is located in the suburb of Gungahlin and contains a mix of medium and high-density residential dwellings, retail and office spaces. The town centre is also the origin point of the Canberra light rail system, and surrounding suburbs are predominately low to medium density residential areas.

Electricity is distributed to Gungahlin from the 132/11 kV Gold Creek Zone Substation located in the suburb of Ngunnawal. The substation was commissioned in 1994 with two 57 MVA power transformers. The zone substation supplies an extensive 11 kV network throughout the Gungahlin area and surrounds which is predominantly via underground conduits that supply high density commercial and residential loads. Nine (9) 11 kV feeders are forecast to exceed capacity ratings over the coming years.

A geographic diagram marking the location of the Gold Creek Zone Substation and the existing 11 kV networks is shown in **Figure 1Figure 1**. The map of Evoenergy's ZSS locations is publicly accessible from Evoenergy's Rosetta Data Portal.[6]

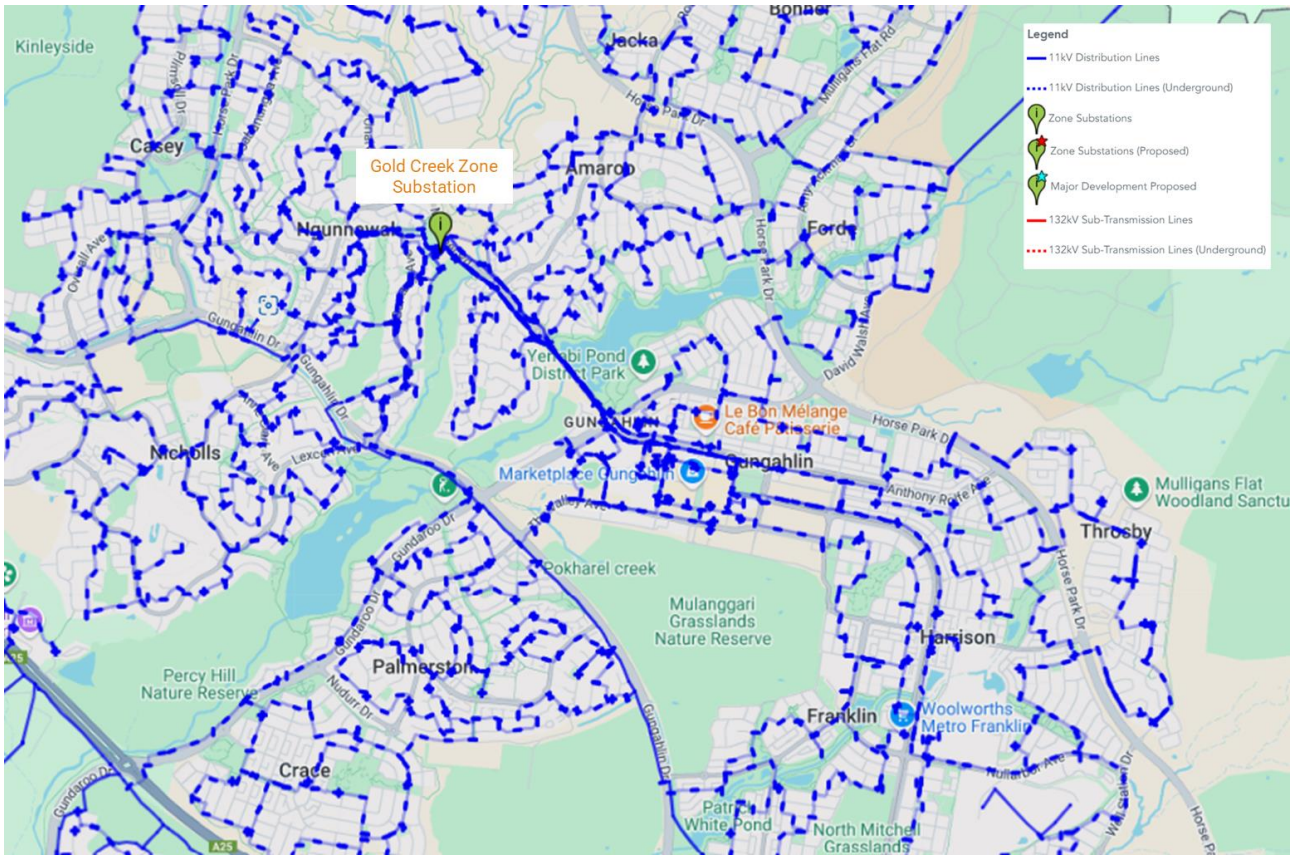

FIGURE 1: GEOGRAPHIC OVERVIEW OF THE AREA, SHOWING THE GOLD CREEK ZSS AND 11 KV NETWORK

2.1.2 11 kV Feeders

Evoenergy's 11 kV feeders are typically interconnected through multiple normally open ties. Under contingency conditions, selected open points are closed to enable load transfers and supply restoration.

[6] Evoenergy's Rosetta Data Portal is available from the following weblink: https://apr.evoenergy.com.au/

Each 11 kV feeder in Evoenergy's network is assigned a thermal rating and a firm rating. The ratings are assigned for Summer and Winter operating conditions. The thermal rating accounts for the feeder installation method (e.g. directly buried), cable configuration and thermal capacity.

The firm capacity depends on feeder grouping and configuration including feeder ties. The typical firm rating assumes one feeder of a group of four feeders is out of service. The feeder firm capacity is based on the ability to restore supply through switching after a credible contingency event.

The 11 kV feeders included in the RIT-D study are presented in **Table 2****Table 2** along with the Summer and Winter firm and thermal rating, and recent demand characteristics such as maximum demand and the season, peak day type and time the maximum demand has occurred in the recent past.

TABLE 2: 11 KV FEEDER CAPACITY RATINGS AND HISTORICAL MAX DEMAND CHARACTERISTICS

11 KV FEEDER	SUMMER RATING (MVA)		WINTER RATING (MVA)		MAX DEMAND (MVA)	PEAK SEASON	PEAK DAY	TIME
	FIRM	THERMAL	FIRM	THERMAL				
Valley	5.2	6.9	5.6	7.5	**2.5**	Winter	7/06	19:00
Gribble	4.9	6.5	5.3	7.1	**2.2**	Winter	3/06	9:00
Riley	5.5	7.3	6.2	8.2	**6.0**	Winter	7/06	18:00
Gungahlin	5.0	6.7	5.6	7.5	**4.0**	Winter	14/06	9:00
Nona	4.5	6.0	4.5	6.0	**4.7**	Winter	7/06	18:00
West Street	5.5	7.3	6.2	8.2	**6.3**	Winter	14/06	18:00
Hamer	5.2	6.9	5.6	7.5	**7.6**	Winter	7/06	18:00
Anthony Rolfe	5.0	6.7	5.4	7.3	**6.7**	Winter	14/06	18:00
Flemington	5.2	6.9	5.6	7.5	**3.7**	Winter	21/09	7:00

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2.2 Load Profiles

2.2.1 Annual Load Profiles

The aggregated load profile for the nine (9) feeders supplying the Gungahlin district is shown in **Figure 2Figure 2**. The aggregated load profile is shown for illustration purposes only as solutions for network constraints need to be solved on an individual feeder basis[7]. The demand profile plotted for each individual feeder is plotted in **Figure 3Figure 3** for the day when the maximum demand occurred (the chart legend shows the feeder's name and day of maximum demand).

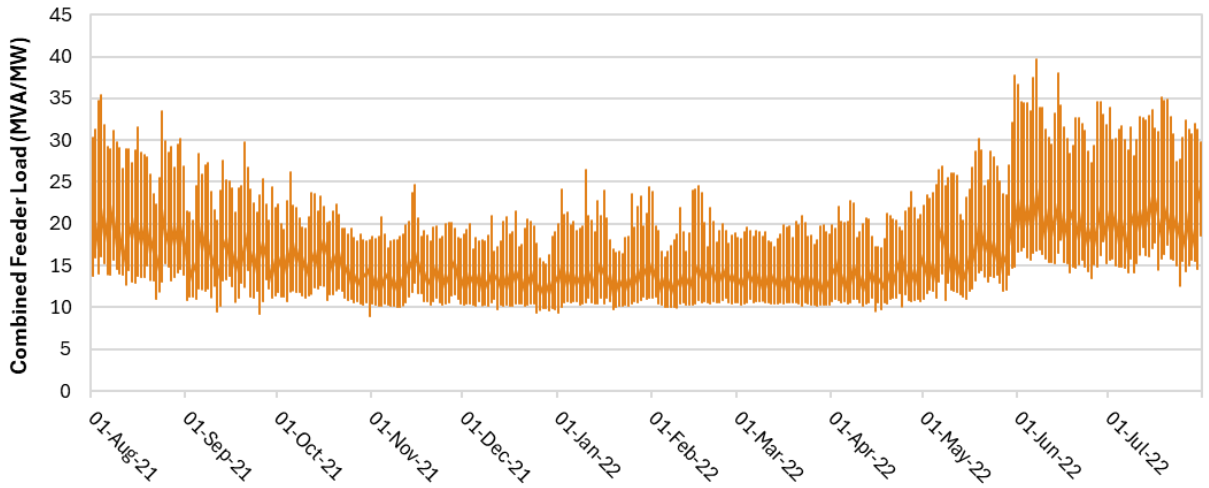

FIGURE 2: AGGREGATED 2021-2022 HISTORICAL LOAD PROFILE ACROSS 11 KV FEEDERS

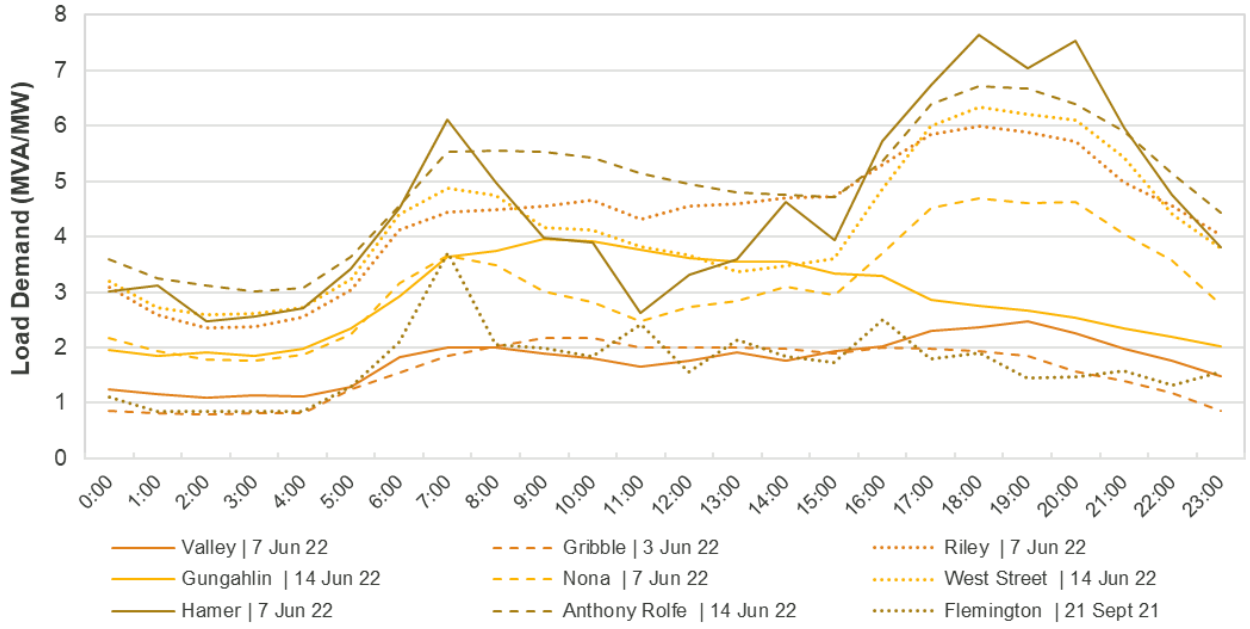

FIGURE 3: DEMAND PROFILE FOR EACH 11 KV FEEDER ON DAY-MONTH OF MAXIMUM DEMAND OCCURANCE

2.2.2 Load Duration Curves

Figure 4Figure 4 shows the load duration curves for the nine (9) feeders supplying the Gungahlin district. This is based on the historical 12-month period.

[7] Load profile details available at: https://www.evoenergy.com.au/Your-Energy/Demand-Management/Engagement-opportunities

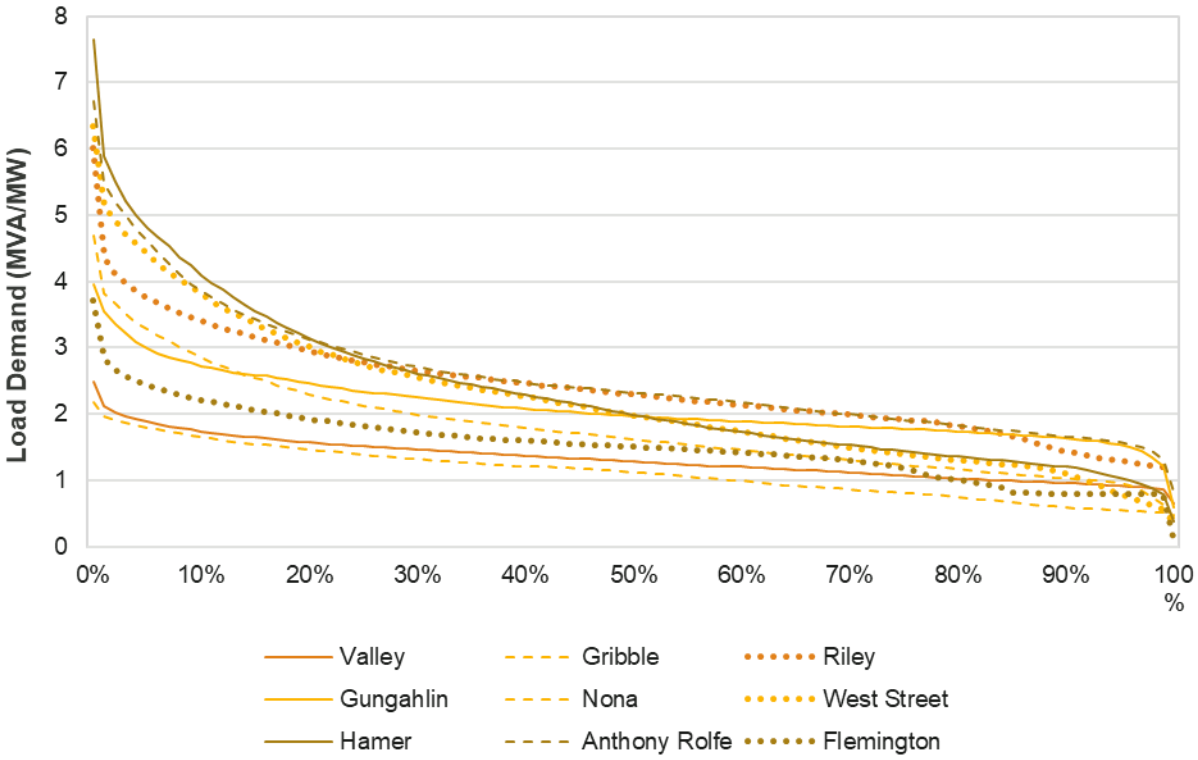

FIGURE 4: HISTORICAL 11 KV FEEDER LOAD DURATION CURVES

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3. IDENTIFIED NEED

3.1 Overview

In the assessment of network needs for 11 kV feeders, Evoenergy employs probabilistic methods to analyse the risk cost to customers of capacity constraints and evaluate alternative solutions (options) to address the specific network need.

Demand growth in the study area is forecast to exceed the firm capacity of nine (9) of the existing 11 kV feeders that supply the Gungahlin district with increasing occurrence in both Summer and Winter.

There are two key drivers for demand growth causing forecast capacity limitations with the Gungahlin district 11 kV distribution network which include:

1. Major new customer loads
2. The proliferation of EV charging equipment and general demand growth

The specific network needs associated with these two drivers are presented in detail in the sections below.

3.2 Geographic Overlay

Over the next ten years, new high-density residential developments and government land release programs are planned for the Gungahlin area. The associated single-point customer loads are expected to be geographically located with the Gungahlin district. **Figure 5Figure 5** shows the approximate load growth areas (orange circles) mapped to the two network constraint groups for the 11kV feeders (refer to section 3.3 on feeder groups).

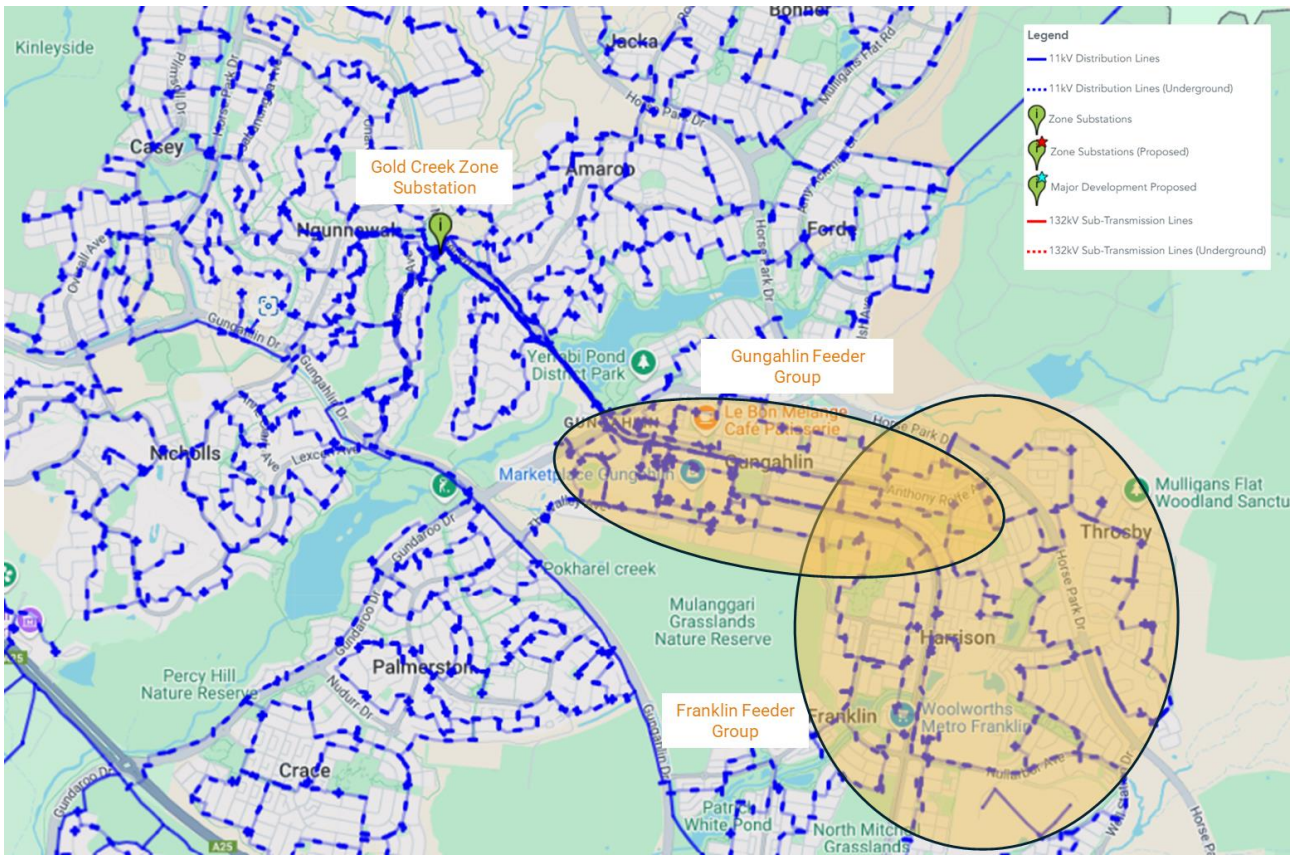

FIGURE 5: GEOGRAPHIC LOCATION OF THE GOLD CREEK ZONE SUBSTATION AND NEW MAJOR CUSTOMER LOADS

The Gungahlin feeder groups represent new major single-point customer loads associated with specific developments. The Franklin feeder group represents the constrained 11kV feeder area associated with demand growth from different major single-point customer loads as well as EV charging infrastructure uptake in the medium density suburban areas of the Gungahlin district.

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3.3 11 kV Feeder Groups

The Gungahlin district's electricity is distributed by nine (9) feeders that are supplied by Gold Creek Zone Substation, these feeders have been grouped as per Table 3Table 3. The feeders have been grouped based on the demand growth driver and load transfers that would occur to manage constraints as part of a 'no investment' option (base case). Analysis was performed to develop individual load forecasts for the impacted feeders within each group. For feeders that are impacted by multiple growth drivers, these feeders appear in both feeder groups (Nona, Hamer and Anthony Rolfe). The analysis for an individual feeder group was completed assuming the preferred network option identified with the other feeder group has already been implemented to alleviate the forecasted constraints in the other feeder group.

It is important to note that while Evoenergy would have considered non-network proposals for any feeders, for a non-network solution to be considered a credible option for a single feeder group, the non-network solution needed to address the capacity constraints within a given year for all feeders within the feeder group. This is necessary to provide a more economical alternative to the identified preferred network option, through deferring or avoiding the need for the corresponding network option.

TABLE 3: LOAD CENTRE AND 11KV FEEDER LIMITS (MVA)

FEEDER GROUPS	11 KV FEEDER	SUMMER RATING (MVA)		WINTER RATING (MVA)	
		FIRM	THERMAL	FIRM	THERMAL
Gungahlin	Valley	5.2	6.9	5.6	7.5
	Gribble	4.9	6.5	5.3	7.1
	Riley	5.5	7.3	6.2	8.2
	Gungahlin	5.0	6.7	5.6	7.5
	Nona	4.5	6.0	4.5	6.0
	West Street	5.5	7.3	6.2	8.2
	Hamer	5.2	6.9	5.6	7.5
	Anthony Rolfe	5.0	6.7	5.4	7.3
	Flemington	5.2	6.9	5.6	7.5
Franklin	Nona	4.5	6.0	4.5	6.0
	Hamer	5.1	6.9	5.6	7.5
	Anthony Rolfe	5.0	6.7	5.4	7.2

3.3.1 Demand Forecast and Capacity Limits

Evoenergy's existing network supplying the area will be unable to service the expected load growth during the 2024-29 regulatory period, even with optimised load allocations among the existing 11 kV feeder network. If no action is taken, the gap between the demand forecast and existing feeder capacity is expected to arise from 2026 as shown in Table 4Table 4 for each feeder group. The maximum firm and thermal capacities of each feeder is shown for Summer and Winter. Capacity limits are expected to be breached without intervention:

- Yellow denotes load above the firm rating

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- Red denotes load above the thermal rating

While thermal constraints are forecasted to occur as early as 2026, Evoenergy will manage these constraints on a case-by-case basis as part of operations in advance of the delivery of the preferred option which will need to be available no later than November 2026.

TABLE 4: FORECAST DEMAND FOR AFFECTED 11 KV FEEDERS DUE TO NEW MAJOR CUSTOMER LOADS (MW)

11KV FEEDERS		FY2026		FY2027		FY2028		FY2029	
		Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
GUNGAHLIN	Valley	7.7	8.0	8.0	8.3	8.4	8.7	8.4	8.7
	Gribble	5.6	5.7	5.6	5.7	5.6	5.7	5.6	5.7
	Riley	5.2	7.9	6.6	9.7	6.6	9.7	6.6	9.7
	Gungahlin	6.5	6.9	6.5	6.9	6.5	6.9	6.5	6.9
	Nona	4.2	5.5	4.2	5.5	4.2	5.5	4.2	5.5
	West Street	4.7	7.1	4.7	7.1	4.7	7.1	4.7	7.1
	Hamer	5.5	8.7	5.5	8.7	5.5	8.7	5.8	9.1
	Anthony Rolfe	4.8	8.2	4.8	8.2	4.8	8.2	4.8	8.2
	Flemington	6.2	6.9	6.2	6.9	6.2	6.9	6.2	6.9
FRANKLIN	Nona	4.5	5.6	4.5	5.6	4.5	5.7	4.6	5.8
	Hamer	5.7	8.6	5.7	8.6	5.8	8.6	6.3	9.1
	Anthony Rolfe	4.5	7.3	4.6	7.4	4.6	7.4	4.7	7.5

	Above Firm
	Above Thermal

3.3.2 Unserved Energy

Unserved Energy (USE) provides an economic indicator of the reliability impact associated with network constraints, helping to optimise and prioritise investment in feeder augmentation. Augmentation decisions consider the economic cost of USE compared to the cost of augmentation. A cost-benefit analysis ensures investments are economically justified and proportional to the economic impact of unreliability.

Table 5Table 5 provides the expected amount and value of USE based on all energy above thermal ratings, and a proportion of energy above firm ratings utilising assumed feeder outage statistics (i.e., probability of unavailability). This represents all energy at risk after all possible load transfers under system intact conditions. All USE must be met by the network or non-network solution to be considered credible. As noted

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previously, Evoenergy is managing forecast thermal constraints and resulting USE on a case-by-case basis in advance of the delivery of the preferred option.

TABLE 5: ANNUAL UNSERVED ENERGY (MWH)

11KV FEEDERS		USE EXCEEDING	FY2026	FY2027	FY2028	FY2029
GUNGAHLIN	Valley	Firm	0.1	0.1	0.1	0.1
		Thermal	5.5	17.4	59.0	59.0
	Gribble	Firm	0.0	0.0	0.0	0.0
		Thermal	0.0	0.0	0.0	0.0
	Riley	Firm	0.0	0.0	0.0	0.0
		Thermal	0.0	9.9	9.9	9.9
	Gungahlin	Firm	0.0	0.0	0.0	0.0
		Thermal	0.0	0.0	0.0	0.0
	Nona	Firm	0.0	0.0	0.0	0.0
		Thermal	0.0	0.0	0.0	0.0
	West	Firm	0.0	0.0	0.0	0.0
		Thermal	0.0	0.0	0.0	0.0
	Hamer	Firm	0.0	0.0	0.0	0.0
		Thermal	9.1	9.1	9.1	19.5
	Anthony Rolfe	Firm	0.0	0.0	0.0	0.0
		Thermal	7.2	7.2	7.2	7.2
	Flemington	Firm	0.0	0.0	0.0	0.0
		Thermal	0.0	0.0	0.0	0.0
	Total USE (MWh)		21.9	43.8	85.4	95.8
FRANKLIN	Anthony Rolfe	Firm	0.01	0.01	0.01	0.01
		Thermal	0.06	0.14	0.24	0.42
	Nona	Firm	0.00	0.00	0.00	0.00
		Thermal	0.00	0.00	0.00	0.00
	Hamer	Firm	0.01	0.01	0.02	0.02
		Thermal	7.54	7.96	8.55	20.36
	Total USE (MWh)		7.63	8.12	8.82	20.81

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3.3.3 Minimum Energy Capacity Requirements

Table 6Table 6 shows the minimum energy capacity (MWh) required each day that the constraints occur to reduce the expected amount of unserved energy associated with capacity constraints.

TABLE 6: ENERGY CAPACITY REQUIRED TO DEFER NETWORK OPTION (MWH)

11KV FEEDERS		FY2026	FY2027	FY2028	FY2029
GUNGAHLIN	Valley	1.79	3.11	5.55	5.55
	Gribble	0.00	0.00	0.00	0.00
	Riley	0.00	5.62	5.62	5.62
	Gungahlin	0.00	0.00	0.00	0.00
	Nona	0.00	0.00	0.00	0.00
	West	0.00	0.00	0.00	0.00
	Hamer	2.75	2.75	2.75	4.34
	Anthony Rolfe	2.80	2.80	2.80	2.80
	Flemington	0.00	0.00	0.00	0.00
	Feeder Capacity Required (MWh)	**7.34**	**14.28**	**16.72**	**18.31**
FRANKLIN	Anthony Rolfe	0.06	0.14	0.23	0.34
	Nona	0.00	0.00	0.00	0.00
	Hamer	2.37	2.48	2.62	4.39
	Feeder Capacity Required (MWh)	**2.43**	**2.62**	**2.85**	**4.73**

3.3.4 Operating Profile

To support the Gungahlin demand growth area with reliable and secure supply, credible network and non-network options would be required to provide network support from November 2026 at the latest during peak demand days when thermal limitations are reached, or during a contingency event such as loss of a feeder. The identified network option will be in place by the November 2026 summer peak demand. Evoenergy has provided load profile data to enable detailed review of the typical load profiles of each feeder via the data pack on the Evoenergy website.[8]

[8] https://www.evoenergy.com.au/Your-Energy/Demand-Management/Engagement-opportunities

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3.4 Applicable Service Standards

3.4.1 Overview

Evoenergy is obligated to provide a high level of supply certainty to our customers, these obligations are stipulated through mandated codes and standards. To meet these standards, Evoenergy continually reviews future network requirements and anticipated customer needs, to ensure that all expected electricity demand can be supplied within the stipulated requirements for safety, reliability, and quality. A failure to meet any or some of these standards would result in negative impacts for customers and fines payable by Evoenergy.

As described in the identified need, without action to support the anticipated growth in electricity demand in the Gungahlin and surrounding area would likely result in Evoenergy breaching its requirements under the service standards it must meet. The identified preferred option is required to ensure that Evoenergy does not breach any of the standards. Service standards applicable to the identified need as per this FPAR include the following:

Utilities Act 2000 (ACT):

- General obligation to provide safe, reliable, efficient services to all parts of the Evoenergy supply network.
- Compliance with other relevant industry and technical codes, e.g.: Consumer Protection Code

Evoenergy's Utility License (Under the Utilities Act 2000):

- Minimise network losses (Schedule 1, Clause 2)
- Adherence to planning and operating requirements for transmission services (66 kV and above)
- Incorporate reliability requirements for the transmission-distribution interface (e.g. 132 kV substations)

Electricity Distribution (Supply Standards) Code:

- Performance standards for nominal voltages, voltage variations and normal operating conditions, voltage fluctuations and flicker, harmonic voltage distortion, voltage unbalance and maximum allowable voltage dips per year.
- Reliability targets for Evoenergy's overall network are as per the Electricity Distribution Supply Standards Code and are targets over the entirety of Evoenergy's network (see below).

3.4.2 Contribution To Power System Reliability

Any proposed services must be capable of reliably meeting electricity demand under a range of conditions and must meet all the relevant NER requirements related to grid connection (if that is required as part of the solution).

Evoenergy has obligations under the NER, the Electricity Distributions (supply standards) Code and connection agreements to ensure supply reliability is maintained to customers as per **Table 7Table 7**. Failure to meet these obligations may give rise to liability. Proponents of non-network solutions must also be willing to accept any liability that may arise from its contribution to a reliability of supply failure.

TABLE 7: ELECTRICITY DISTRIBUTION STANDARDS CODE ANNUAL RELIABILITY TARGETS

PARAMETER	TARGET	UNITS
Average outage duration (SAIDI)	91.0	Minutes
Average outage frequency (SAIFI)	1.2	Number
Average outage time (CAIDI)	74.6	Minutes

Service Target Performance Incentive Scheme (STPIS) targets set by the AER incentivise performance relating to unplanned interruptions. Evoenergy's STIPS targets for the current regulatory control period are provided in **Table 8Table 8** for different network supply categories. Non-network options should have adequate availability levels to contribute to maintaining reliability performance within these target requirements.

TABLE 8: AER 2024-29 STPIS TARGETS FOR RELIABILITY

PARAMETER	SAIDI TARGET FOR UNPLANNED OUTAGES (MINUTES)	SAIFI TARGET FOR UNPLANED OUTAGES (NUMBER)	EQUIVALENT SERVICE AVAILABILITY (% OF TIME)
Urban	34.398	0.57	99.9938%
Short Rural	52.141	0.59	99.9933%
Whole Network (weighted average)	37.691	0.57	99.9936%

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4. OPTIONS ANALYSIS

In accordance with the RIT-D process outlined in section 5.17.4(j) of the NER, a description of each option including the types of non-network solution submissions received in response to the NNOR consultation, must be provided within the FPAR as it was in the DPAR.

As there were no submissions received for non-network solutions, only the network solutions will be discussed in this section.

Network options explored in the NNOR included:

- Utilising existing network capacity (not credible)
- Constructing new 11kV feeders (preferred option)

The first of these options was not considered a credible option due to demand still exceeding both firm and thermal limits in 2026 and 2027 following 11 kV transfers and network configuration. Hence, constructing new 11kV feeders is the preferred network option.

4.1 Network option

4.1.1 The Preferred Option

The preferred option for the purpose of the FPAR is the network option identified in the NNOR. The preferred option will install and commission three new underground 11 kV feeders, from the Gold Creek ZSS and transfer loads to these new feeders to alleviate network constraints. Feeders would be packaged and delivered as per the groups described in **Table 9Table 9**.

The installation of three new 11 kV feeders to supply demand growth and new connections in the Gungahlin district. The efficiency gains made by the combined delivery of these feeders, provides the highest value compared other non-network and network options considered as detailed in the NNOR.

On completion of these works, the forecast constraints on the existing 11 kV network will have been resolved for the duration of the planning window, and sufficient capacity provided to enable planned development, EV adoption and future electrification requirements. The preferred option is expected to provide the greatest reliability and benefit for customers and ensure Evoenergy meets its reliability obligations and targets.

The identified new 11 kV feeders for construction are further detailed in **Table 9Table 9**. These new feeder projects combined are expected to be completed and commissioned by November 2026, in advance of the summer peak. Evoenergy is managing the identified thermal constraints before November 2026 on a case-by-case basis in advance of the delivery of the preferred option. The total initial capital cost of these projects is $13.3m in FY24/25 dollar terms.

TABLE 9: NEW 11 KV FEEDERS AS PART OF THE PREFERRED NETWORK OPTION

FEEDER GROUP	FROM	TO	FEEDER CABLE LENGTH	COMPLETED BY	INITIAL CAPITAL COST	OPERATING COST
Gungahlin	Gold Creek Zone Substation	Corner of Anthony Rolf Ave & Hamer St	4km	November 2026	$6.45m	$0.06m/yr
	Gold Creek Zone Substation	Corner of Anthony Rolf Ave & Hamer St	4km	November 2026		
Franklin	Gold Creek Zone Substation	Corner of Anchorage St and Brumby St Harrison	5.7km	November 2026	$6.87m	$0.05m/yr

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4.1.1.1 Technical Characteristics

The feeder upgrades comprise of works to construct and install new conduits along proposed feeder routes, and the bulk cable laying of feeder lines via the new conduit banks. As these projects are being delivered as a package, it allows for the construction of the new conduit banks to support these projects and provide additional availability for future 11kV upgrades should they become necessary.

The feeder cables themselves will be made up of 2 or 3 sections each, comprising of different cable diameters and conductor materials (aluminium and copper), depending on the constraints and requirements of each section. The feeders have been designed to support the existing network in the Gungahlin district, fully alleviate the forecast constraints and meet future anticipated demand growth.

TABLE 10: TECHNICAL CHARACTERISTICS OF FEEDERS

FEEDER GROUP	FROM	TO	FEEDER CABLE LENGTH	CABLE TYPE	ADDITIONAL CONDUIT
Gungahlin	Gold Creek Zone Substation	Corner of Anthony Rolf Ave & Hamer St	4km	Aluminium and Copper three-core XLPE Cable	2.4km
	Gold Creek Zone Substation	Corner of Anthony Rolf Ave & Hamer St	4km	Aluminium and Copper three-core XLPE Cable	
Franklin	Gold Creek Zone Substation	Corner of Anchorage St and Brumby St Harrison	5.7km	Aluminium and Copper three-core XLPE Cable	4km

4.1.1.2 Construction timeframe

The new feeder upgrades will begin preliminary works in early 2026, with all works completed and new feeders commissioned by November 2026, in advance of the summer demand peak.

4.1.1.3 Costs

The total capex cost estimate for this option is $13.3m in FY24/25 dollars, exclusive of contingency and GST.

4.2 Non-Network options:

4.2.1 Summary of Submissions Received on the NNOR

As part of the RIT-D process, Evoenergy issued a request for non-network solution submissions on the NNOR. Evoenergy engaged with the registered parties in the demand register and coordinated consultation including a public briefing session with potential non-network options providers that was held virtually in August 2025.

Evoenergy received no submissions from non-network providers in response to the NNOR.

4.2.2 Credible Non-Network Options

In order to be considered a credible option, the non-network option must meet the following criteria:

1. The option is able to meet the identified network need.

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2. The costs are well defined such that the option can be compared to the network option.
3. The option does not present any material or commercial or technical risks that cannot be managed.

Given that there were no non-network options submitted, no non-network option can be considered as a credible option.

5. ECONOMIC ASSESSMENT OF CREDIBLE OPTIONS

This section outlines the methodology and assumptions used by Evoenergy to complete the economic assessment of all credible options that address the identified need. This includes where applicable; the approach to estimating project costs, market benefits, and modelling scenarios to address uncertainty.

5.1 Methodology

Evoenergy applies a probabilistic planning methodology where the costs and benefits for each credible option is measured against a “no investment” base case.

As outlined in the RIT-D documentation, Evoenergy has shown that the preferred network option to build additional feeders to support load growth in the Gungahlin district has a higher NPC than the ‘no investment’ base case. The “do nothing” option results in thermal limits of existing network assets being breached and the potential for large amounts of involuntary load-shedding, which drives large unserved energy costs that will be borne by customers (and Evoenergy through the Service Target Performance Incentive Scheme (STPIS) mechanism).

The NNOR outlined a methodology to assess non-network options against to meet the demand growth forecast expected in the Gungahlin district. Under this methodology the costs and risks (predominantly the risk of unserved energy) are calculated for each scenario and weighted by the probability assigned to the scenario.

5.2 Economic Assessment Timeframe

Evoenergy's planning considers scheduled new customer connections and forecast EV load growth for 2024–2029. Due to the uncertainty in long-term forecasts for new point loads, a 5-year horizon is used using the period out until 2029. Non-network options that defer network investments may also delay future stages, however Evoenergy cannot commit to upfront costs for uncertain future deferral benefits.

5.3 Electrical Demand

The following summarises Evoenergy’s planning assumptions relating to electrical demand and details how the identified need is defined.

5.3.1 Scenarios

Evoenergy plans its distribution network with 50% Probability of Exceedance (POE) demand forecasts. Maximum demand forecasts include new block loads from annual developments, using approved and pending developer applications to estimate new connections in the Gungahlin district as well as EV load projections developed at the suburb level.

5.3.2 Load Profile

When evaluating the financial costs and USE implications of non-network submissions, Evoenergy will use historical feeder load profiles. These profiles reflect customer electricity usage in the area and are reasonable for forecasting, as new developments are expected to mirror existing load patterns. Details of the feeder load profiles for the proposed network options are provided as an additional attachment found on Evoenergy’s website.[9]

5.4 Load Transfer Capability and Supply Restoration

A significant number of feeders were assessed to address the identified constraints, with varying capabilities for load transfer and restoration following network failures. The maximum demand forecast for the Gungahlin district incorporates all feasible load transfers to prevent exceeding power rating limits in the existing 11 kV network. Evoenergy will manage thermal constraints forecast for 2026 on a case-by-case basis through operational management. However, from summer 2026 onwards thermal constraints peak, and some supporting feeders are projected to exceed their thermal limits with large USE costs associated with those limits being exceeded.

[9] Available at: https://www.evoenergy.com.au/Your-Energy/Demand-Management/Engagement-opportunities

Given the existing constraints and the lack of additional load transfer options beyond 2026, additional capacity or significant demand reduction will be required.

5.5 Value of Customer Reliability

Evoenergy has applied a Value of Customer Reliability (VCR) of $42.55/kWh of USE. This value has been chosen to stay consistent with the figures provided in the NNOR which are based on the AER's 2024 VCR Annual Adjustment Summary, using the following:

- ACT residential VCR of $50.70/kWh ($2024) and commercial VCR of $34.39/kWh ($2024).
- A residential weighting of 50%.
- A commercial weighting of 50%.

This aligns with Evoenergy's Risk Value Framework and the regional characteristics.

As Evoenergy's assessment is in real terms, VCR values remain constant over the assessment period.

5.6 Cost Estimates

Evoenergy estimated capital costs for the preferred network option has an accuracy of ±30%. Operating costs for new distribution assets were assumed as 1% of capital costs. Non-network providers were requested to include their own operating cost estimates in their submissions.

5.6.1 Market Benefits

In the absence of a credible non-network option to assess, Evoenergy has determined that there are no relevant market benefits to include in the assessment. As the primary consideration for the identified need is unserved energy cost, additional market benefit considerations, such as avoided emissions is considered negligible when compared with the cost of unserved energy.

5.6.2 Discount Rate

A discount rate of 5.85%[10] has been applied in the initial assessment of options considered in this report. This corresponds to the rate in Evoenergy's 2024-2029 regulatory approval from the AER. This is the regulated (nominal vanilla) WACC and all values discounted using this rate are in nominal FY24/25 dollar terms.

[10] https://www.aer.gov.au/system/files/2024-04/AER%20-%20Final%20Decision%20-%20Overview%20-%20Evoenergy%20-%202024-29%20Distribution%20revenue%20proposal%20-%20April%202024.pdf

5.6.3 Results of Net Present Value Analysis

Table 11Table 11 below, shows the summary of results of the net present value analysis for the preferred option in real terms. The net present value of only the network option is summarised as it is the only option considered in this report.

TABLE 11: NET PRESENT VALUE RESULTS SUMMARY

Credible Option	PV - Capex	PV - Opex	NPC	PV – Benefits	NPV
Network option – Feeder upgrade (real 2025 $m)	-$12.72	-$0.38	**-$13.1**	$39.7	**$26.6**

The preferred option to address the identified need has a Net Present Cost (NPC) of $13.1m, as the solution will be constructed in calendar year 2026, covering the 2026 and 2027 financial years, this option provides the lowest NPC option. The assessment considered the value of relevant network benefits, including the value of avoided unserved energy as a result of the investment including benefits that accrue post the potential deferral period, and has an NPV of $26.6m, this is the option with the greatest NPV and lowest NPC that was assessed and delivers the required reliability improvements.

6. RECOMMENDATION ON PREFERRED OPTION

Evoenergy has identified the network option to address the identified need in Gungahlin district as described below.

6.1 Option 1: Construct New 11 kV Feeders (Preferred Option)

The recommended option is to proceed with the preferred network option to install and commission an additional three 11kV feeders to supply additional load in the Gungahlin district. The scope of work includes construction of conduit banks, bulk cable laying and the connection to the Gold Creek zone substation. The estimated construction timeline is provided in **Table 12Table 12** below, with the works required to be completed and commissioned prior to summer peak 2026.

TABLE 12: EXPECTED CONSTRUCTION TIMELINE

Feeders	Activity	Date
Gungahlin + Franklin	• Design and Development	Feb 2026
	• Build and Execute	Nov 2026

This is the preferred network solution identified in the NNOR and DPAR and meets the need to ensure stable and secure electricity supply to the Gungahlin district in order to accommodate expected demand growth. The total project cost of this recommended option for Evoenergy is estimated to be $13.3M in FY24/25 dollar terms.

Based on the economic assessment outcomes, the proposed preferred option (network option) satisfies the RIT-D.

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7. SUBMISSIONS AND NEXT STEPS

7.1 Submissions Received on the DPAR

As part of the RIT-D process outlined in Section 1.1, Evoenergy issued a request for submission on the matters set out in the DPAR, including the proposed preferred option, and carried out a consultation period that concluded 1 December 2025.

There were no submissions received on the DPAR

7.2 Next Steps

This FPAR represents the final stage of the RIT-D process. Evoenergy intends to commence work on delivering the preferred option (Network option).

Any queries in relation to this RIT-D should be lodged via email to: RIT@evoenergy.com.au

In accordance with the provisions of NER Clause 5.17.5, Registered Participants, AEMO, interested parties, non-network providers and persons registered on Evoenergy's demand side engagement register may, within 30 days after publication of this report, dispute the conclusions made by Evoenergy in this report with the AER based on a manifest error in calculations or application of the RIT-D. Dispute notifications should be sent via email to RIT@evoenergy.com.au by 1 January 2026 at 5pm. If no formal dispute is raised, Evoenergy will proceed with the preferred option (network option).

7.3 Timeline

An overview of the timeline, from the publication of this FPAR to when the preferred option is required to be operational, is provided in **Table 13Table 13** below.

TABLE 13: TIMELINE

ACTIVITIES	DATES	STATUS
Publish NNOR and request for submissions	25 Jul 2025	Completed
Consultation period for non-network providers to provide submissions	25 Jul 2025 to 17 Oct 2025	Completed
Public briefing session during consultation period	26 Aug 2025	Completed
Evoenergy review of submissions received (non-network proposals)	Oct 2025	Completed
Publish Draft Project Assessment Report (DPAR)	20 Oct 2025	Completed
Consultation period for DPAR	20 Oct 2025 to 01 Dec 2025	Completed
Publish Final Project Assessment Report (FPAR)	02 Dec 2025	Completed
Preferred option operational	Nov 2026	Planned

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APPENDIX A – DEFINITIONS AND ABBREVIATIONS

TABLE 14: DEFINITIONS

Term	Definition
ACT government – Electrical Inspectorate	The ACT Government Electrical Inspectorate is the inspecting authority in the ACT and is responsible for inspecting and approving the consumer's electrical installation
Continuous rating	Substation rating capable of continuous reliable operation (24/7)
Demand response	A change from normal mode of load operation induced by a signal triggered by a network constraint or other constraint, to reduce demand for energy or market ancillary services within a region
Embedded generating system	A system comprising of multiple embedded generating units (e.g. solar PV system with a battery storage system)
Embedded generating unit	A generating unit connected within a distribution network and not having direct access to the transmission network
Emergency rating	Substation rating above nameplate ratings capable of reliable operation for short duration. Operating assets at this rating accelerates loss of asset life thus exposure to these conditions is limited
Evoenergy	Evoenergy is the ACT's principal Distribution Network Service Provider (DNSP) and is responsible for the distribution of electricity to all customers within the ACT
Feeder	Typically, these are 11kV electricity distribution conductors / cables, for high voltage bulk electricity distribution within the network.
Firm delivery capacity	Maximum allowable output or load of a network or facility under single contingency conditions, including any short-term overload capacity having regard to external factors that may affect the capacity of the network or facility[11]
Frequency control and ancillary services	Services used by the energy market operator to maintain the frequency of the system within the normal operating band, which functions to provide a fast injection or reduction of energy to manage supply and demand, respectively
High Voltage (HV)	Any voltage greater than 1 kV AC
Load centre	Regions on the electricity distribution network close to load/centres of demand
Low Voltage (LV)	The mains voltages as most commonly used in any given network by domestic and light industrial and commercial consumers (typically 230 V)
Network	Evoenergy's distribution network
Non-network provider	A person who provides non-network solutions; proposing to become a generator (the relevant owner, operator or controller of the generating unit (or their agent))
RIT-D proponent	The Network Service Provider applying the regulatory investment test for distribution to a RIT-D project to address an identified need[12]
Thermal constraint	A thermal limitation on the capability of a network, load or generating unit such that it is unacceptable to either transfer, consume or generate the level of electrical power that would occur if the limitation was removed
Utilities Technical Regulation Team	The ACT Government team responsible for the technical administration of utility requirements and administration of the Utilities (Technical Regulation) Act 2014
Value of Unserved Energy	A quantified measure of the resource availability to continuously serve all loads at all delivery points while satisfying all planning criteria, results involve analysing all hours of a particular year and calculations are presented as units of currency
Weighted average cost of capital	Relevant weighted average cost of capital for a network service provider for a regulatory control period, being the return on capital for that network service provider for that regulatory control period calculated in accordance with National Electricity Rules

[11] As per definition from National Electricity Rules for *firm delivery capacity*
[12] As per definition from National Electricity Rules *for RIT-D proponent*

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TABLE 15: ABBREVIATIONS

AC	Alternating Current
ACT	Australian Capital Territory
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AS	Australian Standard
AS/NZS	A jointly developed Australian and New Zealand Standard
CAIDI	Customer Average Interruption Duration Index
CBD	Central Business District
CEC	Clean Energy Council
CPI	Consumer Price Index
DER	Distributed Energy Resource
DNSP	Distribution Network Service Provider
DSE-RIP	Demand Side Engagement Register of Interested Parties
EV	Electric Vehicle
FCAS	Frequency Control Ancillary Services
FAQ	Frequently Asked Question
FY	Financial Year
HV	High Voltage
LV	Low Voltage
MW	Megawatt
NEM	National Electricity Market
NER	National Electricity Rules
NNOR	Non-network options report
NPC	Net Present Cost
ODAF	Oil Directed, Air Forced
ODAN	Oil Directed, Air Natural
ONAN	Oil Natural, Air Natural
PoE	Probability of Exceedance
PV	Photovoltaics
RIT-D	Regulatory Investment Test for Distribution
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
STPIS	Service Target Performance Incentive Scheme
USE	Unserved Energy
UTR	Utilities Technical Regulator
V	Volt
VA	Volt-Ampere
VAr	Volt-ampere-reactive
VCR	Value of Customer Reliability
W	Watt
WACC	Weighted Average Cost of Capital
ZSS	Zone Substation

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