EVOENERGY NON-NETWORK OPTIONS REPORT FOR CANBERRA CBD FEEDERS RIT-D

NON-NETWORK OPTIONS REPORT FOR CANBERRA CENTRAL BUSINESS 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

CONTENTS

FIGURES

TABLES

EXECUTIVE SUMMARY

About Evoenergy

Evoenergy owns and operates electricity and gas networks and is licensed by the Independent Competition and Regulatory Commission (ICRC) to provide distribution, and connection services in the ACT. Evoenergy is a Distribution Network Service Provider (DNSP) registered with the Australian Energy Market Operator (AEMO). We are a regulated service provider subject to commonwealth and jurisdictional laws and statutory instruments including National Electricity Law (NEL), National Electricity Rules (NER), Utilities Act 2000, Utilities (Technical Regulation) Act 2014, industry codes, technical codes, and regulations. Our "poles and wires" network is supplied predominantly by power imported from interstate. Evoenergy's primary focus is on the provision of a safe, reliable, and quality electricity supply. We are asset management certified for compliance with ISO 55001 Asset Management Standard. Safety and risk management are key considerations of our business decisions. Risk management is integrated with investment decisions and considers the life cycle of assets and least cost solutions.

Background

This Non-Network Options Report (NNOR) has been prepared to inform non-network providers that may be able to provide services to defer or avoid a network augmentation project. The NER requires a Regulatory Investment Test for Distribution (RIT-D) be completed for augmentation capex projects with a value greater than $7 million in 2025. The RIT-D requires a NNOR where an initial assessment has identified potentially credible non-network options that may defer or avoid the augmentation project being considered.

Canberra's Central Business District (CBD), referred to as "Civic", is the central hub of the city and hosts the highest density of business, residential and commercial buildings in the ACT. The city centre is predominately a business centre with large retail and office spaces, and some high-density residential apartment buildings. Civic is currently the origin point of Canberra's light rail system and is the central hub for the city's public transport network.

Electricity is distributed to Civic from the Civic Zone Substation (Civic ZSS) and the City East Zone Substation (City East ZSS). The demand for power has steadily increased in Civic and surrounds in recent years predominately due to new mixed use property developments and increasing density of those developments.

Identified Need

The Canberra CBD is experiencing significant growing electricity demand in the city centre due to the ACT Government's City Precinct Renewal Program. The associated development plan will deliver major residential and commercial building developments over the next ten years. These new large customer connections, plus forecasted underlying demand load growth and uptake of electric vehicles and charging infrastructure, will result in the 11 kV distribution network in Canberra CBD exceeding its thermal capacity in its normal operating state. Evoenergy has identified capacity limitations on fifteen (15) 11 kV distribution feeders into the CBD. 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 five (5) new 11 kV feeders to supply the anticipated additional demand for the Canberra CBD and surrounding area. The scope of these projects includes constructing new 11 kV underground feeders supplied via the 132/11 kV Civic ZSS and City East ZSS. This will involve construction of new conduit banks along the identified trench routes, the laying of cable for those feeders and required work within the substations to establish new feeder connections. This identified network option has an estimated capital cost exceeding the $7 million threshold under the NER and the investment is therefore subject to a RIT-D.

Non-Network Options

Several potential non-network options have been identified, including batteries (both centralised and distributed), Virtual Power Plants (VPPs) and demand management. From a technical perspective, the ability of these non-network options to address the identified need and become a preferred option will be a function of their power demand reduction, duration (peak shifting capability), reliability and response times.

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[2] Evoenergy Annual Planning Report 2023: Annual-Planning-Report-2023.pdf

Economically, the non-network option must provide a higher Net Present Value (NPV) over the full lifecycle compared to an equivalent level of service provided by the preferred network option. This will include valuing the capital expenditure deferral of the network upgrade in the NPV model. Non-network options will also need to meet the applicable delivery timings.

Next Steps

Evoenergy is seeking proposals from any non-network provider that is able to provide services which meet or partially meet the identified network need. Submissions will be required to provide detail about the type, scale and cost of non-network solutions offered by providers.

Submissions can be lodged via email to: RIT@evoenergy.com.au

Submissions must be received by 5pm, 20 of March 2025.

Evoenergy will review each non-network option proposal and may seek further information from the non-network provider to better understand the design of the proposed solution and its impacts on the network and other network users.

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

TABLE 1: TIMELINE FROM NNOR PUBLICATION

ACTIVITIES	DATES
Publish NNOR and request for submissions	20 Dec 2024
Consultation period for non-network providers to provide submissions	20 Dec 2024 to 20 Mar 2025
Public briefing session during consultation period (details to be confirmed)	Jan 2025
Evoenergy review of submissions received (non-network proposals)	Mar 2025
Publish Draft Project Assessment Report (DPAR)	Apr 2025
Consultation period for DPAR	Apr 2025 to May 2025
Publish Final Project Assessment Report (FPAR)	Jun 2025
Preferred option operational	Nov 2026

1. INTRODUCTION

1.1 Scope and Purpose

This document is a Non-Network Options Report (NNOR) requesting stakeholders' submissions for credible options to address the identified need in Evoenergy's network. 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 (this report)

Stage 2: Undertake consultation on non-network options

Stage 3: Assess credible options

Stage 4: Publish draft and final project assessment reports

This report is the first stage of the consultation process in the application of the RIT-D on credible options to address the identified need for this study area. The report includes background information about the limitations in this area, highlights the identified need, outlines credible network options, provides the requirements that a non-network proponent would need to meet and specifies the process for interested stakeholder submissions.

Evoenergy has developed this NNOR in accordance with the requirements of Clause 5.17.4 of the National Electricity Rules (NER). The information contained within this report should enable third parties to provide informed submissions to supply non-network solutions to Evoenergy to defer and/or avoid the requirement for a significant network augmentation.

1.2 Evoenergy's Obligations

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

- Publish the NNOR in a timely manner having regard to the ability of parties to identify the scope for, and develop, alternative potential credible options or variants to the potential credible options.
- Notify persons registered on its industry engagement register of the report's publication.
- Provide interested parties at least three months in which to make submissions on the NNOR from the date that the RIT-D proponent publishes the report.

Further, under the Australian Energy Regulator (AER) RIT-D guidelines,[3] Evoenergy will also pay particular attention when considering the risk, value of optionality and expenditure timing of non-network options. In particular, modelling, forecasts and assumptions should be consistent, open and transparent to help effectively explore non-network options.

1.3 General Terms and Conditions

1. By issuing this NNOR, Evoenergy is under no obligation whatsoever to review, discuss, select or enter into any agreement with any proponent who may submit a proposal.
2. Proponents will be responsible for all costs associated with the preparation and assessment of providing a proposal in response to this NNOR including but not limited to any site visits and responding to further information requests made by Evoenergy in order to assist Evoenergy in its assessment of the proposal.
3. When evaluating a proposal, Evoenergy will act in accordance with the NER and AER RIT-D Guidelines.
4. Evoenergy will follow the process as described in Evoenergy's Demand Side Engagement Strategy (DSES).[4]
5. Evoenergy may combine all or parts of separate proposals for the purposes of evaluation where this may lead to a more efficient outcome than the separate proposal or option. Proponents should indicate in

[3] Australian Energy Regulator, AER - RIT-D application guidelines - August 2022, available at: https://www.aer.gov.au/documents/aer-rit-d-application-guidelines-august-2022 [accessed 16/12/2024]

[4] Evoenergy, Demand side engagement strategy (DSES), v3 2020, available at: https://www.evoenergy.com.au/-/media/Project/Evoenergy/EVO/Documents/Demand-management/Demand-side-engagement-strategy.pdf

their proposal whether they wish to have their proposals or options considered in isolation or in combination with other proponents' proposals.

6. Evoenergy will publicly announce the outcome of the evaluation process. This announcement will be published on Evoenergy's website and unless otherwise agreed in writing at the commencement of the assessment process, all details of proposals including cost information will be treated as public information.

1.4 Further Information

Further information to assist non-network providers wishing to present alternative potential credible options, including details of how to submit a non-network proposal for consideration by Evoenergy, is provided towards the end of this NNOR (Section 6).

1.5 Structure of Report

The rest of this NNOR 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: Summarises the planning methodology and assumptions used in Evoenergy's assessment.

Section 5: Details the credible network options and potentially credible non-network options.

Section 6: Presents the submission guidelines for non-network providers.

2. BACKGROUND

2.1 Existing Network

2.1.1 Geographic Overview

The Canberra Central Business District (CBD), also known as Civic, contains a mix of high-density commercial and office space, as well as residential apartment buildings. The CBD is also the origin point of the Canberra light rail system and the central hub of Canberra's bus network. The CBD incorporates the City as well as parts of Acton, Turner, Braddon, Reid and Parkes.

Electricity is distributed to the CBD from two 132/11 kV Zone Substations:

- Civic Zone Substation located next to Mount Ainslie
- City East Zone Substation located next to Black Mountain

The zone substations supply an extensive 11 kV network throughout the CBD and surrounds which is predominantly via underground conduits that supplies Low Voltage (LV) high density commercial and residential loads. Fifteen (15) 11 kV CBD feeders are forecast to exceed capacity ratings over the coming years. There is some rooftop photovoltaic (PV) connected in the CBD area, but due to the high-density nature of the area, the generation typically is 100% self-consumed within the buildings they are installed on.

A geographic diagram marking the location of the two zone substations and the existing 11 kV network is provided in as shown in **Figure 1**. This map is publicly accessible from Evoenergy's Rosetta Data Portal.[5]

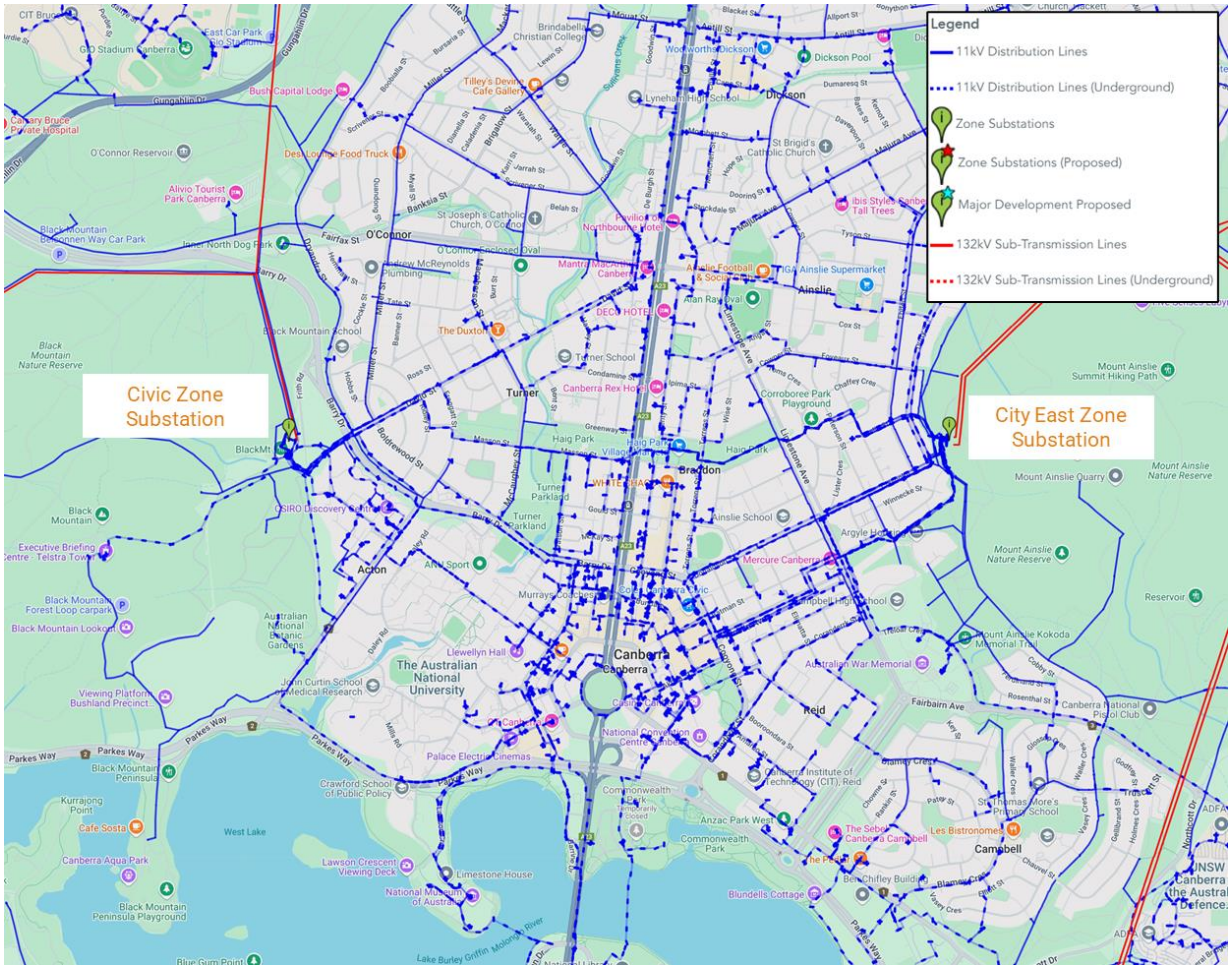

FIGURE 1: GEOGRAPHIC OVERVIEW OF THE EXISTING 132 KV AND 11 KV NETWORK

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

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.

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** (overleaf) 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				
Akuna	4.4	5.9	4.9	6.6	1.87	Summer	Weekday	5:00 PM
Binara	4.9	6.5	5.4	7.2	3.27	Summer	Weekday	12:00 PM
Bowen	5.5	7.3	6.2	8.2	3.14	Summer	Weekday	4:00 PM
Bunda	4.5	5.9	4.9	6.6	1.75	Summer	Weekday	4:00 PM
Chisholm	5.2	6.9	5.8	7.7	3.18	Winter	Weekday	8:00 AM
Cooyong	4.7	6.3	5.3	7.1	3.00	Summer	Weekday	1:00 PM
Edinburgh	5.0	6.8	5.5	7.4	4.40	Winter	Weekday	10:00 PM
Edmund Barton	3.4	4.5	3.8	5.0	1.56	Summer	Weekday	4:00 PM
Electricity House	4.7	6.3	5.3	7.0	1.61	Winter	Weekday	8:00 AM
Hobart Long	4.4	5.8	4.9	6.5	4.95	Summer	Weekend	1:00 PM
Hobart Short	4.8	6.4	5.4	7.1	3.07	Summer	Weekday	2:00 PM
Lonsdale	5.4	7.3	6.0	8.0	3.45	Summer	Weekend	2:00 PM
King Edward + Belmore	3.4	4.6	3.9	5.1	3.08	Summer	Weekend	11:00 AM
Quick	3.6	4.8	4.4	5.8	2.83	Winter	Weekday	6:00 PM
Wolseley	4.4	5.9	5.0	6.7	5.07	Winter	Weekend	8:00 AM

2.2 Load Profiles

2.2.1 Annual Load Profiles

The aggregated load profile for the 15 feeders is shown in **Figure 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[6]. The demand profile plotted for each individual feeder is plotted in **Figure 3** for the day when the maximum demand occurred (the chart legend shows the feeder's name and day of maximum demand).

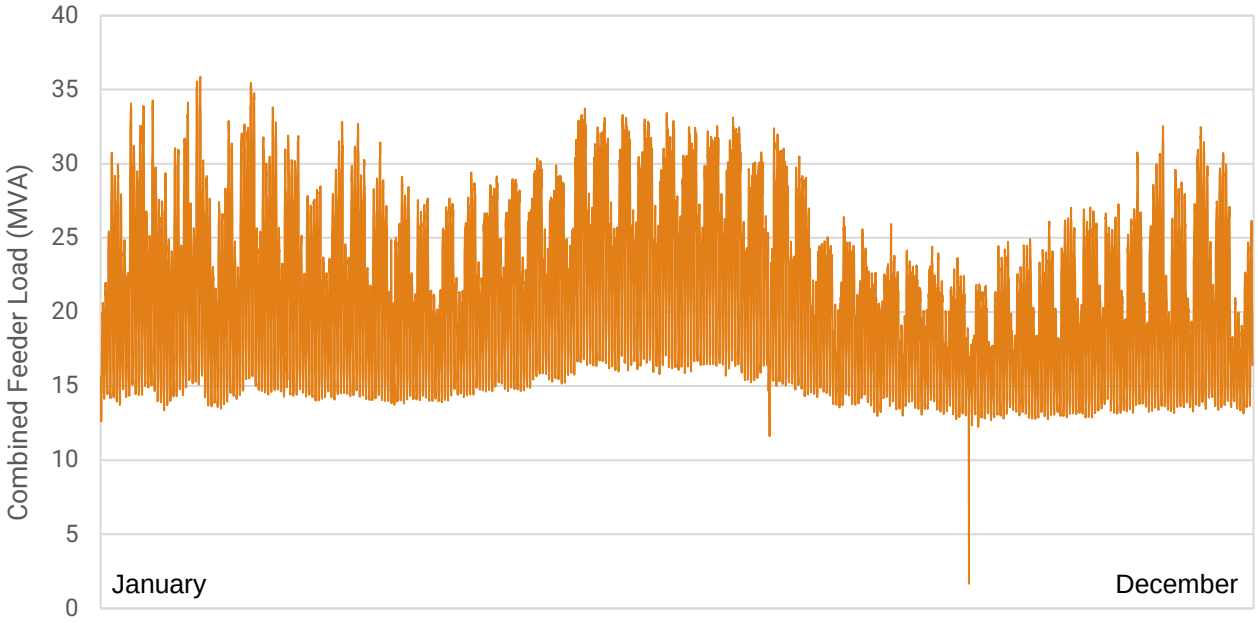

FIGURE 2: AGGREGATED LOAD PROFILE ACROSS 11 KV FEEDERS

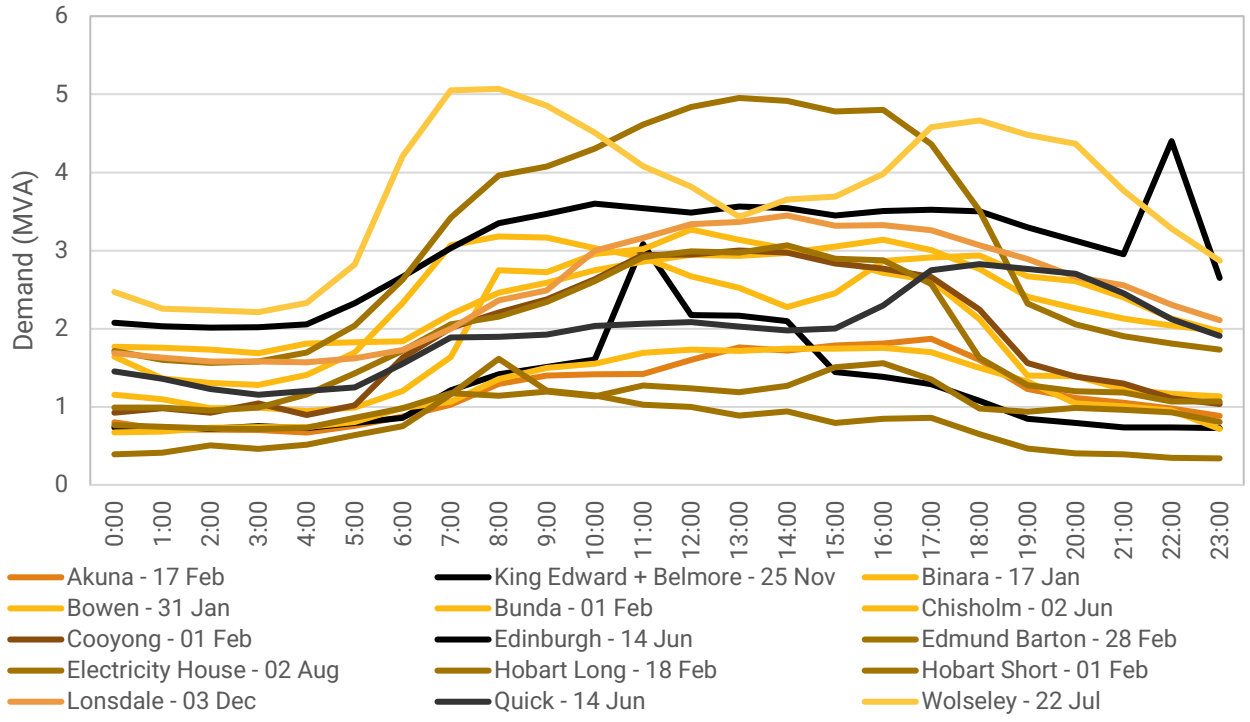

FIGURE 3: DEMAND PROFILE FOR EACH 11 KV FEEDER ON DAY-MONTH OF MAXIMUM DEMAND OCCURANCE

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

2.2.2 Load Duration Curves

Figure 4 shows the load duration curves for the 15 feeders. This is based on a recent 12-month period.

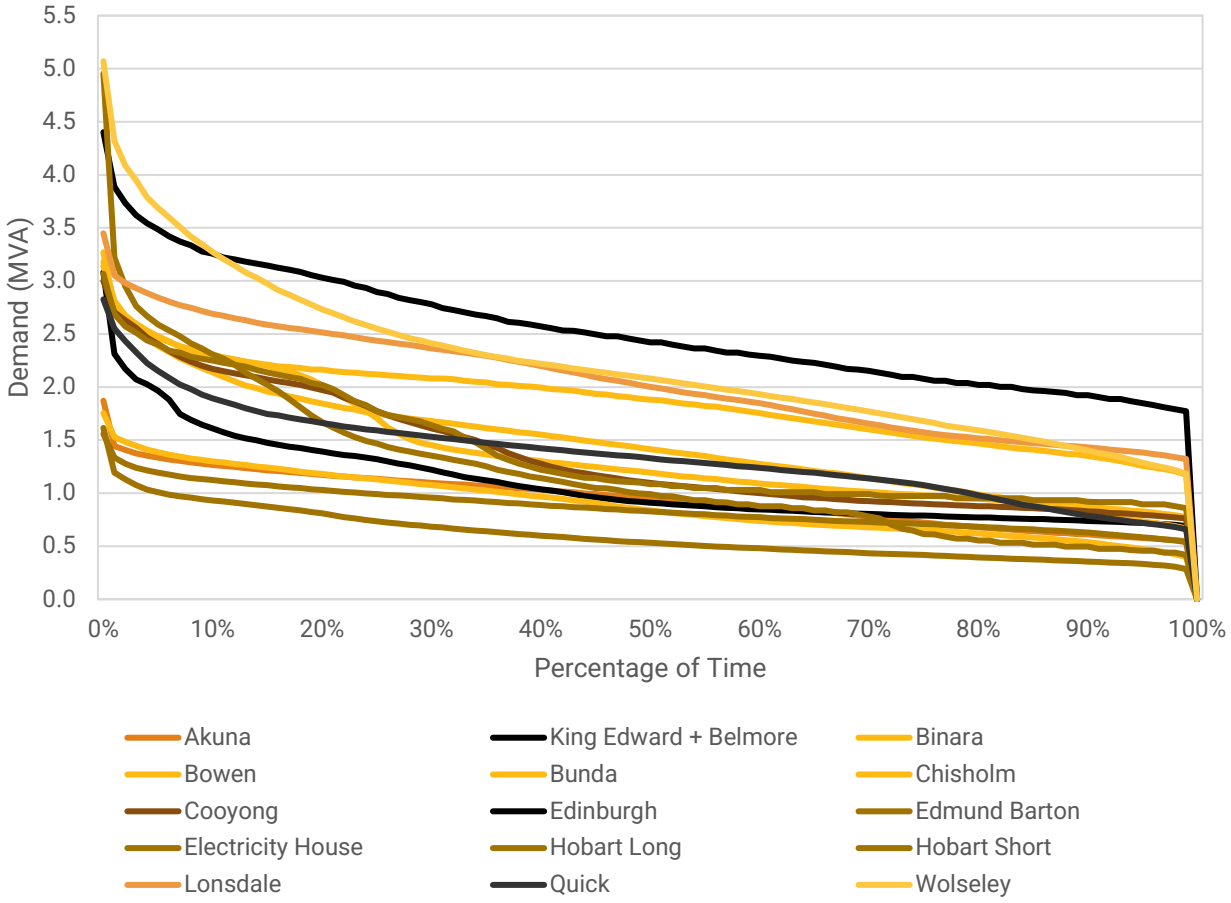

FIGURE 4: HISTORICAL 11 KV FEEDER LOAD DURATION CURVES

3. IDENTIFIED NEED

3.1 Overview

In the assessment of network needs for 11 kV feeders, Evoenergy 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 15 of the existing 11 kV feeders that supply the Canberra CBD area with increasing occurrence in both Summer and Winter. As such, Evoenergy has identified capacity limitations on the 11 kV electrical supply to parts of the CBD 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.

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

1. Major new customer loads
2. General demand growth and electric vehicles

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

3.2 Geographic Overlay

As part of the ACT Government's City Precinct Renewable Program, major residential and commercial buildings are planned to be constructed over the next ten years in the Canberra CBD area. **Figure 5** shows the approximate load growth areas (orange circles) mapped to groups of identified constrained 11 kV feeders assigned to 'Feeder Groups' (refer to Section 3.3 for further details on Feeder Groups).

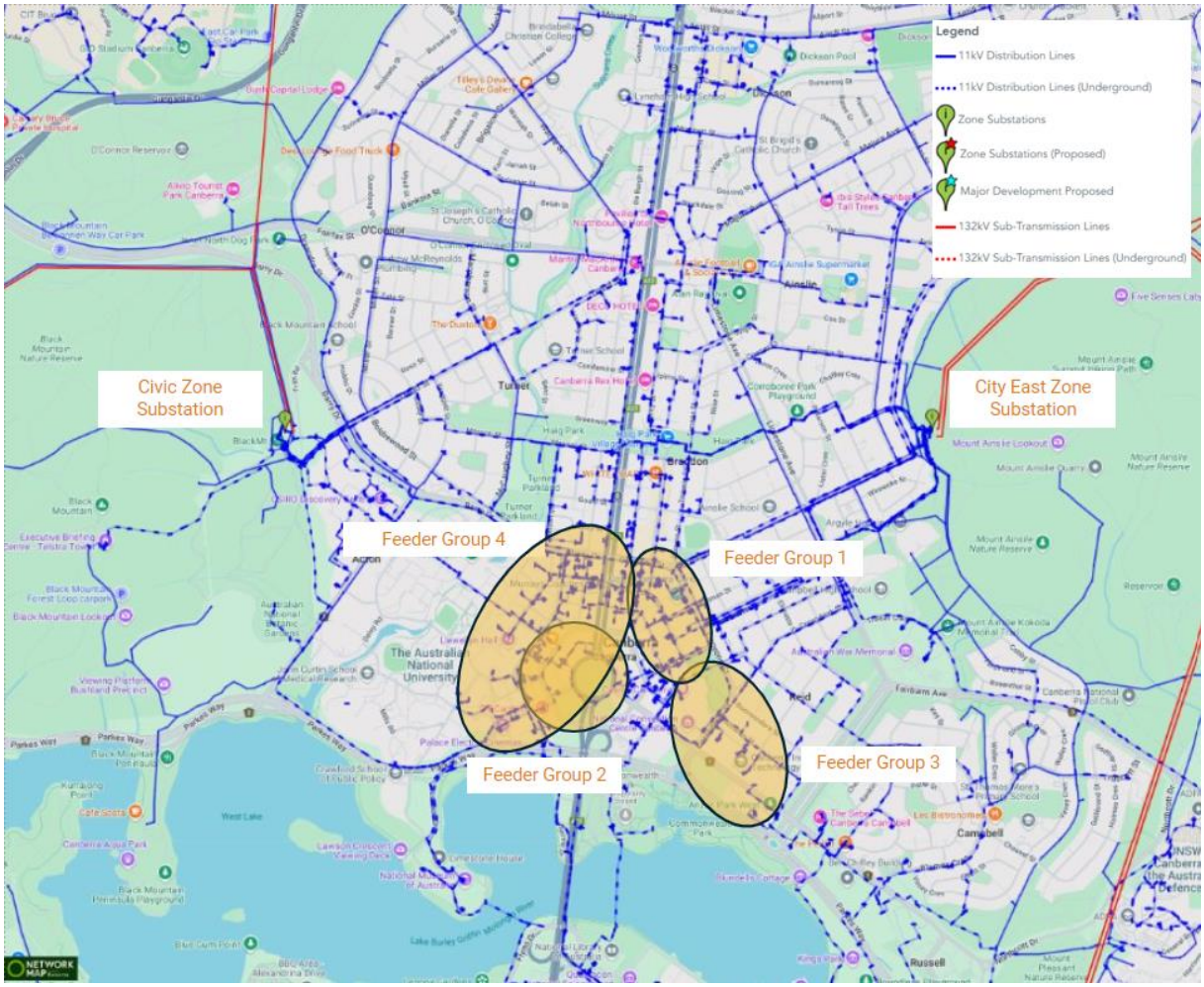

FIGURE 5: GEOGRAPHIC LOCATION OF NEW MAJOR CUSTOMER LOADS

Feeder Groups 1 to 3 represent new major single-point customer loads associated with specific developments. Feeder Group 4 represents demand growth associated with multiple smaller commercial and residential developments.

In addition, the ACT Government's net zero carbon emissions goal by 2045 will help drive the uptake of Electric Vehicles (EV). As a result, EV charging demand is forecast to grow substantially. EV charging requirements have a high demand impact in the city due to the high density of residential apartment blocks and anticipated commercial/public EV charging infrastructure.

Predicted load growth from EV charging are represented is suburb-based forecast with the higher demand growth impact from each suburb represented by darker shading (red sections) in **Figure 6** below. EV charger uptake will increase demand on the 11 kV feeder network in the CBD area as detailed at a suburb level in **Table 3**. The demand impact from EV charging has been allocated to Feeder Group 4.

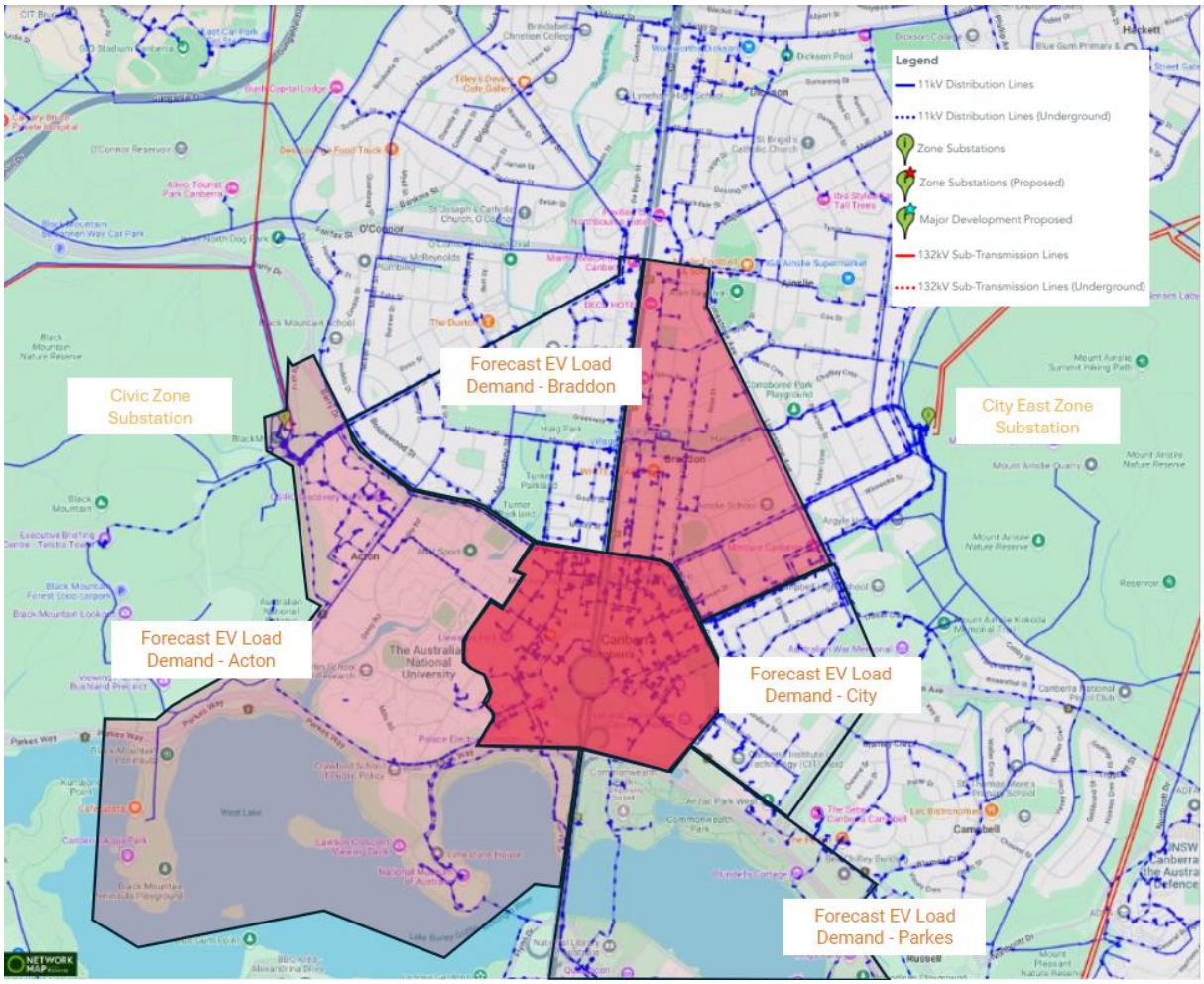

FIGURE 6: GEOGRAPHIC CONCENTRATION OF EXPECTED EV LOAD GROWTH IN CBD AND SURROUNDS

TABLE 3: PREDICTED LOAD GROWTH FROM EVS (MVA)

SUBURB	2025	2026	2027	2028	2029	2030	2031	2032
Acton	0.07	0.12	0.18	0.27	0.4	0.61	0.83	1.11
Braddon	0.23	0.39	0.56	0.82	1.14	1.60	2.00	2.42
Civic	1.24	2.06	3.00	4.35	6.06	8.44	10.52	12.71
Parkes (ACT) – North	0.01	0.01	0.01	0.01	0.02	0.03	0.04	0.04
Parkes (ACT) – South (not shown)	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01

3.3 11 kV Feeder Groups

The individual feeders impacted by the new loads have been grouped as per **Table 4**. Grouping is generally based on geographical proximity and the load transfers which would occur to manage the constraints as part of a 'no investment' option (i.e. Base Case). Each feeder grouping is based on a distinct growth driver and analysis was performed to develop individual load forecasts for the impacted feeders. For feeders that are impacted by multiple growth drivers, these feeders appear in more than one feeder group (these feeders include Edinburgh, Edmund Barton, Electric House, Hobart Short and Lonsdale and Quick). The analysis for an individual feeder group was completed assuming the preferred network options identified with the remaining feeder groups have already been implemented to alleviate the forecasted constraints in those other feeder groups.

It is important to note that while Evoenergy will accept non-network proposals for any number of feeder groups, for a non-network solution to be considered a credible option for a single feeder group, the non-network solution must 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 4: FEEDER GROUPS AND 11 KV FEEDERS

FEEDER GROUP	11 KV FEEDERS
Feeder Group 1	Bunda, Cooyong, Chisholm, Lonsdale, Quick
Feeder Group 2	Edinburgh, Edmund Barton, Electricity House, Hobart Long, Hobart Short
Feeder Group 3	Bowen, Wolseley, Quick
Feeder Group 4	Akuna, Binara, Edinburgh, Edmund Barton, Electricity House, Hobart Short, King Edward + Belmore, Lonsdale

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 2025 as shown in **Table 5** (overleaf) 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
- Red denotes load above the thermal rating

While thermal constraints are forecasted to occur as early as 2025, 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 5: FORECAST DEMAND INCREASE FOR AFFECTED 11 KV FEEDERS DUE TO NEW MAJOR CUSTOMER LOADS (MW)

FEEDER	2025		2026		2027		2028		2029		2030		2031		2032	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Feeder Group 1																
Bunda	6.1	5.9	6.7	6.5	6.7	6.5	6.7	6.5	6.7	6.5	-	-	-	-	-	-
Chisholm	5.9	7.5	6.6	8.3	6.6	8.3	6.6	8.3	6.6	8.3	-	-	-	-	-	-
Cooyong	6.0	4.6	6.0	5.6	6.0	5.6	6.0	5.6	6.0	5.6	-	-	-	-	-	-
Lonsdale	7.5	5.8	7.5	7.3	7.5	7.3	7.5	7.3	7.5	7.3	-	-	-	-	-	-
Quick	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8	5.0	5.8	-	-	-	-	-	-
Feeder Group 2																
Edinburgh	5.0	6.8	5.5	7.4	6.4	4.7	7.4	5.7	7.9	6.2	-	-	-	-	-	-
Edmund Barton	3.4	4.5	3.8	5.0	3.8	3.0	4.5	3.7	4.5	3.7	-	-	-	-	-	-
Electricity House	4.7	6.3	5.3	7.0	6.5	4.9	6.5	4.9	6.5	4.9	-	-	-	-	-	-
Hobart Long	4.4	5.8	4.9	6.5	5.7	3.7	5.7	3.7	5.7	3.7	-	-	-	-	-	-
Hobart Short	4.8	6.4	5.4	7.1	6.6	5.7	9.5	8.6	9.5	8.6	-	-	-	-	-	-
Feeder Group 3																
Bowen	5.1	4.6	8.4	7.7	8.4	7.7	8.4	7.7	8.4	7.7	8.4	7.7	8.4	7.7	8.4	7.7
Quick[7]	3.8	4.7	4.7	5.6	4.7	5.6	5.3	6.2	5.3	6.2	5.3	6.2	5.3	6.2	5.3	6.2
Wolseley	4.6	6.3	4.5	6.4	4.9	6.8	4.6	6.6	5.0	7.1	5.3	7.5	5.7	7.9	6.0	8.3
Feeder Group 4																
Akuna	3.1	2.9	3.2	3.1	3.4	3.2	3.6	3.4	3.8	3.7	4.2	4.0	4.5	4.4	4.9	4.7
Binara	5.2	4.7	6.5	5.8	6.5	5.9	6.6	6.0	6.7	6.0	6.8	6.2	6.9	6.3	7	7.4
Edinburgh	5.4	5.7	6.0	6.3	6.2	6.5	6.4	6.7	6.7	7.0	7.2	7.5	7.5	7.8	7.9	8.3
Edmund Barton	2.6	2.5	3.6	3.5	4.4	4.3	5.2	5.1	5.2	5.1	5.3	5.2	5.4	5.2	5.4	5.3
Electricity House	2.0	2.1	4.6	4.7	6.8	6.9	6.8	6.9	6.8	7.0	6.9	7.0	6.9	7.0	6.9	7.1
Hobart Short	3.1	3.0	3.1	3.0	5.1	5.0	6.1	6.1	6.1	6.1	6.2	6.1	6.2	6.2	6.2	6.2
King Edward + Belmore	3.8	3.8	5.2	5.1	5.7	5.6	6.2	6.2	6.2	6.2	6.2	6.2	6.3	6.2	6.3	6.3
Lonsdale	3.6	3.4	4.0	3.9	5.1	5.0	5.3	5.1	5.5	5.3	5.7	5.5	6.0	5.8	6.2	6.1

Above Firm
Above Thermal

[7] Note that feeder forecasts in more than one Feeder Group assumes network configuration and load transfer changes associated with constraint alleviation through other feeder group feeder construction, hence the different demand forecasts. This applies for feeders Edinburgh, Edmund Barton, Electric House, Hobart Short and Lonsdale and Quick.

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 6 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). All USE must be met by the network or non-network solution to be considered credible. As noted 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 6: ANNUAL UNSERVED ENERGY (MWH)

FEEDER	USE EXCEEDING	2025	2026	2027	2028	2029
Feeder Group 1						
Bunda	Firm	0.06	0.12	0.12	0.12	0.12
	Thermal	17.97	211.92	211.92	211.92	211.92
Chisholm	Firm	0.01	0.04	0.04	0.04	0.04
	Thermal	0.00	5.44	5.44	5.44	5.44
Cooyong	Firm	0.04	0.04	0.04	0.04	0.04
	Thermal	0.00	0.00	0.00	0.00	0.00
Lonsdale	Firm	0.04	0.05	0.05	0.05	0.05
	Thermal	1.97	1.97	1.97	1.97	1.97
Quick	Firm	0.03	0.03	0.03	0.03	0.03
	Thermal	0.32	0.32	0.32	0.32	0.32
Feeder Group 1 Total USE (MWh)		**20.44**	**219.92**	**219.92**	**219.92**	**219.92**
Feeder Group 2						
Edinburgh	Firm	0.00	0.02	0.03	0.07	0.18
	Thermal	0.00	7.40	22.45	107.26	320.70
Edmund Barton	Firm	0.00	0.00	0.00	0.00	0.00
	Thermal	0.00	0.00	0.00	0.00	0.00
Electricity House	Firm	0.00	0.00	0.00	0.44	0.44
	Thermal	0.41	0.41	0.41	0.41	0.41
Hobart Short	Firm	0.00	0.02	0.02	0.02	0.02
	Thermal	0.19	28.89	28.89	28.89	28.89
Feeder Group 2 Total USE (MWh)		**0.60**	**36.74**	**51.80**	**137.10**	**350.65**
Feeder Group 3						
Bowen	Firm	0.00	0.09	0.09	0.07	0.07
	Thermal	0.00	53.06	53.06	53.06	53.06
Quick	Firm	0.00	0.01	0.01	0.01	0.01
	Thermal	0.00	0.00	0.00	2.77	2.77
Wolseley	Firm	0.00	0.01	0.01	0.00	0.00
	Thermal	0.00	0.00	0.23	0.00	1.33
Feeder Group 3 Total USE (MWh)		**0.00**	**53.16**	**53.39**	**55.91**	**57.24**
Feeder Group 4						
Akuna	Firm	0.00	0.00	0.00	0.00	0.00
	Thermal	0.00	0.00	0.00	0.00	0.00
Binara	Firm	0.00	0.01	0.01	0.01	0.01
	Thermal	0.00	0.01	0.05	0.10	0.17
Edinburgh	Firm	0.00	0.00	0.01	0.01	0.02
	Thermal	0.00	0.00	0.00	0.00	0.00
Edmund Barton	Firm	0.00	0.00	0.01	0.03	0.04
	Thermal	0.00	0.00	0.00	11.79	14.16
Electricity House	Firm	0.00	0.00	0.00	0.00	0.00
	Thermal	0.00	0.00	0.05	0.09	0.13
Hobart Short	Firm	0.00	0.00	0.00	0.01	0.01
	Thermal	0.00	0.00	0.00	0.00	0.00
King Edward + Belmore	Firm	0.00	0.01	0.01	0.02	0.02
	Thermal	0.00	3.44	12.32	36.34	38.16
Lonsdale	Firm	0.00	0.00	0.00	0.00	0.00
	Thermal	0.00	0.00	0.00	0.00	0.00
Feeder Group 4 Total USE (MWh)		**0.00**	**3.46**	**12.46**	**48.41**	**52.72**

3.3.3 Minimum Energy Capacity Requirements

Table 7 shows the minimum energy capacity (MWh) required to reduce the expected amount of unserved energy associated with capacity constraints.

TABLE 7: ENERGY CAPACITY REQUIRED TO DEFFER NETWORK OPTION (MWH)

FEEDER	2025	2026	2027	2028	2029	2030	2031	2032
Feeder Group 1								
Bunda	1.47	7.99	7.99	7.99	7.99	-	-	-
Chisholm	0.00	1.38	1.38	1.38	1.38	-	-	-
Cooyong	0.00	0.00	0.00	0.00	0.00	-	-	-
Lonsdale	1.14	1.14	1.14	1.14	1.14	-	-	-
Quick	0.24	0.24	0.24	0.24	0.24	-	-	-
Feeder Group 1 Capacity Required	**2.85**	**10.75**	**10.75**	**10.75**	**10.75**			
Feeder Group 2								
Edinburgh	4.10	8.40	18.72	41.11	4.10	-	-	-
Edmund Barton	0.00	0.00	0.00	0.00	0.00	-	-	-
Electric House	0.41	0.41	0.41	0.41	0.41	-	-	-
Hobart Long	0.00	0.00	0.00	0.00	0.00	-	-	-
Hobart Short	7.76	7.76	7.76	7.76	7.76	-	-	-
Feeder Group 2 Capacity Required	**12.27**	**16.57**	**26.90**	**49.29**	**12.27**			
Feeder Group 3								
Bowen	0.00	5.22	5.22	5.22	5.22	5.22	5.22	5.22
Quick	0.00	0.00	0.00	1.68	1.68	1.68	1.68	1.68
Wolseley	0.00	0.00	0.23	0.00	0.82	2.09	3.93	8.79
Feeder Group 3 Capacity Required	**0.00**	**5.22**	**5.45**	**6.90**	**7.73**	**8.99**	**10.84**	**15.70**
Feeder Group 4								
Akuna	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Binara	0.00	0.01	0.05	0.1	0.17	0.27	0.43	0.61
Edinburgh	0.00	0.00	0.00	0.00	0.00	0.03	0.59	1.63
Edmund Barton	0.00	0.00	0.00	2.56	2.82	3.19	3.52	3.95
Electric House	0.00	0.00	0.05	0.06	0.08	0.11	0.14	0.2
Hobart Short	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
King Edward + Belmore	0.00	0.58	1.55	3.57	3.63	3.73	3.81	3.89
Lonsdale	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feeder Group 4 Capacity Required	**0.00**	**5.22**	**5.45**	**6.90**	**7.73**	**8.99**	**10.84**	**15.70**

3.3.4 Operating Profile

To support the Canberra CBD demand growth area with reliable and secure supply, a non-network option would be required to provide network support from November 2026 during peak demand days when thermal limitations are reached, or during a contingency event such as loss of a feeder. As each feeder as distinct load profiles, Evoenergy has provided load profile data which can be downloaded from our website to assist proponents in assessing the required operating profile of their non-network solution.[8]

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

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 CBD and surrounding area would likely result in Evoenergy breaching its requirements under the service standards it must meet. Any non-network option proposal will be required to ensure that Evoenergy does not breach any of the standards. Service standards applicable to the identified need as per this NNOR 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 8**. 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 8: 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 9** for different network supply categories. Non-network options should have adequate availability levels to contribute to maintaining reliability performance within these target requirements.

TABLE 9: 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%

3.4.3 Contribution To Power System Fault Levels

Non-network solutions are not required to address any existing issues in relation to fault levels as part of this RIT-D.

4. PLANNING METHODOLOGY AND ASSUMPTIONS

This section outlines the methodology and assumptions that will be used by Evoenergy to assess all credible network and non-network options that address the identified need. Submissions received for non-network solutions to defer the network option will be assessed against planning and economic criteria outlined in this report.

4.1 Planning Methodology

Evoenergy screens for potential constraints based onload forecasts exceeding firm or thermal ratings of 11kV feeders. This is followed by a probabilistic assessment considering value of customer reliability to inform an assessment of risk, an efficient investment option to address the risk, and the timing of the investment or operational response.

4.2 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, a 5-year horizon is used. Non-network options that defer network investments may also delay future stages, however Evoenergy cannot commit to upfront costs for uncertain future deferral benefits.

4.3 Electrical Demand

The following summarises Evoenergy’s planning assumptions relating to electrical demand.

4.3.1 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 CBD and surrounding areas as well as EV load projections developed at the suburb level.

4.3.2 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]

4.4 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 CBD and surrounding areas incorporates all feasible load transfers to prevent exceeding power rating limits in the existing 11 kV network. Evoenergy will manage thermal constraints forecast for 2025 and into 2026 on a case-by-case basis through operational management. However, from summer 2026 and winter 2027 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.

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

4.5 Value of Customer Reliability

Evoenergy will apply a Value of Customer Reliability (VCR) between $39.24/kWh and $44.39/kWh of USE. These values are based on the AER’s 2022 VCR Annual Adjustment Summary, using the following:

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

- ACT residential VCR of $23.79/kWh ($2022) and commercial VCR of $49.54/kWh ($2022).
- A residential weighting of between 40% and 20%.
- A commercial weight of between 60% and 80%.

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

The AER's CPI-X approach for annual VCR escalation assumes CPI (Consumer Price Index) adjustments with potential changes in customer preferences (X). Evoenergy, however, assumes no change in preferences, so VCR values will increase only by CPI. As Evoenergy's assessment is in real terms, VCR values remain constant over the assessment period.

4.6 Cost Estimates

Evoenergy estimated capital costs for the preferred network option has an accuracy of ±30%. Estimates will be refined during the RIT-D assessment phase. Operating costs for new distribution assets were assumed as 1% of capital costs. Non-network providers are to include their own operating cost estimates in their submissions.

4.7 Non-Network Option Evaluation Criteria

The following criteria will be used to assess economic and technical equivalence to network options.

TABLE 10: NON-NETWORK OPTION ASSESSMENT CRITERIA

EVALUATION CRITERIA	DESCRIPTION	ASSESSMENT METRICS
Demand Reduction (MVA)	The proposed non-network option must provide sufficient demand reduction to alleviate emerging thermal capacity constraints below identified feeder ratings.	• Magnitude of demand reduction (MVA) as per Table 5.
Timing and Availability	Demand reduction must be achieved from November 2026 up until June 2029 to address emerging constraints across critical seasons in each year.	• Required year of availability (year of completion date of preferred network option). • Seasonal availability confirmation as per Table 5.
Dispatch Duration	The non-network solution must be capable of reducing demand to within the required ratings over the required period.	• Continuous dispatch available energy (MWh). • Alignment with peak demand period of the load profiles as per Figure 4.
Dispatch Timing and Response	The non-network solution must respond within a sufficient period following a contingency or triggering event to ensure it effectively alleviates constraints, compared to the nominal equivalent network option.	• USE with VCR applied.
Reliability and Availability	The option must demonstrate a level of availability and reliability that is equivalent to or exceeds the proposed network option.	• Expected probability of availability (per hour) as per Table 8 and Table 9.
Cost and Value	The economics of the non-network option must be favourable compared to the nominal network option.	• Total cost of ownership (capex + opex). • NPV of costs versus benefits. • Benefit to cost ratio.

5. OPTIONS TO ADDRESS IDENTIFIED NEED

Evoenergy has identified network and non-network options to address the identified need in Canberra CBD and surrounding area as described below.

5.1 Base Case: Utilise Existing Network Capacity

This option would involve load-shifting through re-configuration of the existing 11 kV feeder network. This is 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.

5.2 Option 1: Construct New 11 kV Feeders (Preferred Network Option)

Install and commission five new underground 11 kV feeders, four from Civic ZSS and one from City East 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 4**.

Option 1 is currently the preferred network option, the installation of five new 11 kV feeders to supply demand growth and new connections in the CBD and surrounding area. The efficiency gains made by the combined delivery of these feeders, provides the highest value compared other network options considered.

On completion of these works, the forecast constraints on the existing 11 kV network will have been resolved, 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 summarised in **Table 11**. These new feeder projects combined are expected to be completed and commissioned in 2 separate stages, by November 2026 and April 2027, in advance of the summer peak and winter peak in year 2026 and 2027 respectively. 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.

TABLE 11: 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
1	Civic Zone Substation	Intersection of Genge St + Cooyong St	2.85km	Apr 2027	$8.6m	$0.06m/yr
	Civic Zone Substation	Intersection of Cooyong St and Scott's Crossing	2.85km	Apr 2027		
2	Civic Zone Substation	Between Northbourne Ave and Knowles Pl	2.8km	Nov 2026	$3.7m	$0.04m/yr
3	City East Zone Substation	Corner of Parkes Way and Anzac Pde	3.9km	Apr 2027	$8.2m	$0.08m/yr
4	Civic Zone Substation	Corner of London Cct and Knowles Pl	2.8km	Nov 2026	$3.7m	$0.04m/yr

5.3 Option 2: Large Battery Energy Storage Systems

This option involves one or more large batteries located within the Canberra CBD area and surrounds strategically located such that peak demand on the limiting 11 kV feeder sections can be shifted to remove the constraints. Batteries must be appropriately sized in capacity and duration to affect the required peak shift. **Table 12** provides an estimate of the required battery sizing to enable a sufficient peak demand shift (based on forecasted 2029 demand).

TABLE 12: NON-NETWORK OPTION TECHNICAL SPECIFICATION AGAINST PROPOSED FEEDER REQUIREMENTS

FEEDER GROUP		POWER (MW)	ENERGY (MWH)	STORAGE (HRS)
1	Civic ZSS to Cooyong Street between Genge Street and Scotts Crossing.	1.3	10.7	8.2
2	Civic ZSS to between Knowles Place and Northbourne	5.6	17.4	3.1
3	City East ZSS to corner of Parkes Way and Anzac Pde	1.7	7.0	4.1
4	Civic ZSS to between Knowles Place and London Circuit	2.6	6.7	2.6

5.4 Option 3: Virtual Power Plant Scheme

Distributed residential or commercial 'behind-the-meter' batteries or other Distributed Energy Resources connected to the low voltage network and aggregated via a Virtual Power Plant (VPP) scheme may also address the identified need. Such an arrangement must enable a demand response sufficient to enact the required peak shifting necessary to reduce the identified 11 kV constraints.

5.5 Option 4: Demand Management

This option involves customer aggregated voluntary demand reduction or curtailment to a magnitude and duration necessary to address the identified need. Potential methods may include direct load control, interruptible load and energy efficiency.

5.6 Option 5: Hybrid Network/Non-Network Option

Option 5 is a combination of network/non-network options to address the identified need.

Partial options for a non-network option would defer investment in one or more of the identified feeders, in conjunction with network solutions to alleviate the remaining constraints.

Proposed hybrid solutions will be assessed on a NPV basis considering the construction efficiencies (for example common conduits) planned for the network option and must therefore demonstrate favourable economics accordingly.

6. INFORMATION FOR NON-NETWORK PROVIDERS

6.1 General

Non-network providers must:

- Take responsibility for identifying and acquiring land to locate any non-network option (if required)
- Meet the timelines provided by Evoenergy in investment timing requirements
- Pay for connection costs as per the Evoenergy's connection policy[10]
- Meet the technical requirements of non-network options outlined in **Table 10** of this report.
- If selected as the preferred option, submit a Special Connection Request if applicable to their solution and proceed through Evoenergy's usual connections processes.
- If selected to deliver the non-network solution, agree to Evoenergy's commercial terms and conditions and stipulated performance targets.

6.2 Investment Timing Requirements

Evoenergy's forecast for the anticipated load growth in the CBD and surrounding areas indicates the identified network solution is to be operational by November 2026. Potential non-network solutions must enable Evoenergy to defer the preferred network option by at least one year, with full non-network solution availability from November 2026.

Where the non-network solution involves batteries or embedded generators, delivery timeframes should account for connection approval process timelines as per the National Electricity Rules.

Evoenergy will follow standard processes for approving connections and is not able to offer expedited approval timelines for submissions responding to this report.

6.3 Capacity and Connection Location

Capacity requirements have been outlined in **Table 12** of this report. Proposals should also detail the proposed connection points to enable evaluation of the identified feeder constraints.

6.4 Deferred Augmentation Charge

The annual deferred augmentation charge associated with the identified needs described in this report is unavailable due to unknowns regarding proposed non-network solutions. The combined consideration of multiple feeder constraints, as well as the co-delivery of the new feeder upgrades means the potential deferral value for a non-network option is complex and must be examined case by case. The co-delivery of the new feeders has resulted in savings gained from efficiencies, any partial non-network solution may impact the efficiency savings, and the efficiency impact will be considered against deferral savings to Evoenergy. As a result of these complex considerations the deferral value will be calculated for each proponent during the assessment of credible options (stage 3).

The available funds for deferral are determined by the financial benefits to Evoenergy of deferring network capital expenditure. This is made up of two components, avoided financing costs and avoided depreciation of capital assets.

The financing costs can be calculated using the Weighted Average Cost of Capital (WACC) approved by the AER in the 2024-2029 regulatory period. The value of reduced depreciation of the assets during the deferral period is based on the 50-year lifetime Evoenergy uses for distribution lines.

[10] Available here: https://evoenergy.com.au/-/media/Project/Evoenergy/EVO/Documents/Connection/2024-29-Connection-Policy.pdf

6.5 Submissions

This section provides non-network providers with an invitation for submissions, guidance on how to make submissions, and supporting information. Submissions are intended to provide non-network providers and interested parties with an opportunity to propose how they could address the identified need through alternative potential credible options.

6.5.1 Invitation for Submissions

Evoenergy is seeking submission from interested providers of credible non-network options that either partially or completely address the identified need outlined within this NNOR.

All submissions should completely and comprehensively address the required information listed in the below section and include information listed within Evoenergy's Demand Side Engagement Strategy.[11]

Where information is required by a non-network provider in addition to that provided in this report and accompanying attachments, it is recommended that non-network providers contact Evoenergy as early as possible to allow adequate time for response.

Requests for additional information will be anonymised and published with Evoenergy's response on the Evoenergy website. Initial responses will be provided within 10 business days. Non-network providers are encouraged to regularly check the website as it will be updated with frequently asked questions (FAQs) during the submission period.

All requests for additional information and lodgement of submissions should be directed to:

Email: RIT@Evoenergy.com.au

The period for additional information closes on 14 February 2025 at 5 pm

Submissions must be lodged by 20 March 2025 at 5 pm

All submissions will be published on the Evoenergy website unless otherwise requested. Please indicate if you do not wish to have your submission published in part or in full.

6.5.2 Information From Non-Network Providers

Each submission must provide sufficient information and detail for Evoenergy to determine that the proposed non-network solution is feasible. To be considered feasible, any non-network solution must be technically feasible, commercially feasible and able to be implemented in sufficient time for deferral of the network investment. In the absence of any viable solutions, the first instalment of the preferred network solution is to be commissioned before Summer 2026, with the final feeders in place before Winter 2027.

Evoenergy is seeking proposals that provide sufficient detail about the type and likely scale of non-network solutions offered by market providers. Respondents are not required to provide detailed costing of proposed solutions in response to this report, however, proposals should include as much information as possible.

Non-network providers must make a submission using the RIT inbox.[12] This includes the following information as a minimum:

1. Non-network provider name and contact details,
2. Overview of the proposal and the extent to which it addresses the identified need and technical description, including but not limited to:
    a. Location(s), site plan, and specifically if the non-network solution is contained within the target area,

[11] Evoenergy Demand Side Engagement Strategy, 2020 (v3), available here: Demand management and https://www.evoenergy.com.au/-/media/Project/Evoenergy/EVO/Documents/Demand-management/Demand-side-engagement-strategy.pdf

[12] RIT@Evoenergy.com.au

   b. Size of the peak load reduction (including any standards/methodologies relied upon to determine the load reductions) or additional supply capacity (temporary or permanently connected generators) offered
   c. Electrical layout schematics/single line diagram (if applicable),
   d. Network connection requirements (if applicable),
   e. Contribution to power system security or reliability,
   f. Contribution to power system fault levels and load flow and stability studies (if applicable),
   g. Operating profile,
   h. How each of these matters is consistent with applicable technical standards, and
   i. A backup plan in the event of a battery failure (if applicable).
4. Implementation timeline, estimated lifespan and key milestones,
5. Measurement and verification procedures,
6. Proposed operational and contractual commitments, including financier commitments,
7. Planning application information (where required),
8. List of services and prices to be provided which may include:
   a. Availability payment (payment which guarantees availability of the non-network option regardless of whether it is required or not)
   b. Demand reduction in terms of maximum power ($/kVA) and/or energy delivered ($/kWh); or
   c. Total cost to provide services to meet identified need
   d. Other more detailed/complex service offerings and price schedules
9. Required notice time for availability (and any impact on prices for services where this notice time is not provided),
10. Potential risks associated with the proposal and a comparison with the risks associated with the deferred network augmentation option, and any actions that can be taken to mitigate these risks. This assessment should address the risk of not meeting the demand requirement and the compensation arrangements that would apply in such circumstances, and
11. Testimonials.

Non-network providers may be invited to present their proposals to Evoenergy as part of the evaluation process. If a non-network solution is identified as the preferred option the proponent will need to submit a Special Connection Request if applicable to their solution and proceed through Evoenergy's usual connections processes.

Evoenergy will review each non-network option proposal and may seek further information from the non-network provider to better understand the design of the proposed solution and its impacts on the network and other network users.

6.6 Next Steps

Following the publication of the NNOR, non-network providers will have a period of 3 months to collate the information required and provide submissions to Evoenergy for non-network solutions to achieve or partially achieve the identified need.

The RIT-D process from this point involves the following upcoming activities:

1. A public briefing session is held for non-network providers' and to questions
2. Submissions close for non-network providers to submit non-network option proposals.
3. Consultation with the preferred non-network provider(s) is undertaken.
4. A draft project assessment report is released for public consultation.
5. A final project assessment report is published and issued to the AER.
6. Contracts with non-network provider(s) are confirmed (where applicable), or a network option is progressed.

Evoenergy strongly recommends that non-network providers also commence engaging in the connection process early, to optimise alignment of timing with the identified need as well as with processing times.

6.7 Timeline

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

TABLE 13: TIMELINE FROM NNOR PUBLICATION

ACTIVITIES	DATES
Publish NNOR and request for submissions	20 Dec 2024
Consultation period for non-network providers to provide submissions	20 Dec 2024 to 20 Mar 2025
Public briefing session during consultation period (details to be confirmed)	Jan 2025
Evoenergy review of submissions received (non-network proposals)	Mar 2025
Publish Draft Project Assessment Report (DPAR)	Apr 2025
Consultation period for DPAR	Apr 2025 to May 2025
Publish Final Project Assessment Report (FPAR)	Jun 2025
Preferred option operational	Nov 2026

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
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[13]
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[14]
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

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

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