Regulatory Investment Test for Distribution (RIT-D)

Reliability Corrective Action in the Jimboomba - North Maclean Network Area

Notice of No Non-network or SAPS Options

29 September 2025

energex
Part of Energy Queensland

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INTRODUCTION

Purpose

Energex Limited (Energex) has determined on reasonable grounds, in accordance with clause 5.17.4(c) of the National Electricity Rules (NER), that there is no non-network option or a stand-alone power-system (SAPS) option that is a potential credible option, or that forms a significant part of a potential credible option, for this RIT-D project to address the identified need.

This notice sets out the reasons for this determination, including any methodologies and assumptions used in making the determination. Energex publishes this notice in accordance with clause 5.17.4(d) of the NER.

About Energex

Energex Limited (Energex) is a subsidiary of Energy Queensland Limited and manages the electricity distribution network in the growing region of South East Queensland which includes the major urban areas of Brisbane, Gold Coast, Sunshine Coast, Logan, Ipswich, Redlands and Moreton Bay. Our electricity distribution area runs from the NSW border north to Gympie and west to the base of the Great Dividing Range.

Our electricity network consists of approximately 57,000 kilometres of powerlines and 450,000 power poles, along with associated infrastructure such as major substations and power transformers.

Today, we provide distribution services to more than 1.5 million domestic and business connections, delivering electricity to a population base of around 4 million people.

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1 IDENTIFIED NEED

1.1 Reliability Corrective Action

Energex's has identified that the load at North Maclean zone substation and Jimboomba Bulk Supply substation will exceed their capacities in the coming years.

Jimboomba zone substation and North Maclean zone substation currently supplies the Greater Flagstone Priority Development Area (PDA), located west of Jimboomba and Mount Lindsay Highway. The Greater Flagstone PDA is one of the largest urban growth areas in Australia, covering an area of 7,188 hectares, it will potentially develop to have over 50,000 dwellings to house a population of 138,000 people as stated by the Queensland Government.

The identified need is for reliability corrective action to ensure that reliability of supply and service obligations are maintained to customers in the Jimboomba and North Maclean network area. Under applicable regulatory instruments, Energex is required to connect new customers and maintain the reliability of supply to these customers. To ensure that Energex can continue to meet these requirements, reliability corrective action is required by 2029.

Investment in Energex's network is required to continue to meet the following service standards and regulatory requirements.

- National Energy Retail Law (Queensland) – Under Part 3, Division 2, Energex has an obligation to provide customers connection service for the premises of a customer who requests those services to be connected to the distribution system.
- Energex's Distribution Authority issued under the *Electricity Act 1994* – Under Clause 10, Energex is required to design, plan and operate its network to meet the service safety net, which aims to mitigate the risk of low probability-high consequence network outages to avoid unexpected customer hardship and/or significant community or economic disruption. The safety net has specific outage restoration timeframe targets that Energex is required to achieve. Details of the safety net targets are shown in Appendix B.

If Energex did not invest to address this identified need, it may result in a breach of these regulatory obligations, due to:

- Insufficient capacities at Jimboomba bulk supply substation (SSJBB BS) and North Maclean zone substation (SSNMC), which limits Energex's ability to connect new customers to the distribution system.
- The failure of a transformer at SSJBB BS can result in approximately 23,000 customers without power and supply cannot be restored within the timeframes stipulated under the safety net targets in the Distribution Authority.
- The failure of a transformer at SSNMC can result in approximately 6,000 customers without power and supply cannot be restored within the timeframes stipulated under the safety net targets in the Distribution Authority.

Therefore, Energex considers that reliability corrective actions in the Jimboomba and North Maclean area are necessary.

The background and technical characteristics of the identified need are described in detail in the following sections. Further information on load characteristics are shown in Appendix C.

1.2 Background

1.2.1 Geographic Region

Jimboomba 110/33kV Bulk Supply substation (SSJBB BS) is located approximately 38km south of Brisbane CBD, it supplies three zone substations via 33kV feeders: North Maclean (SSNMC), Jimboomba (SSJBB) and Logan Village (SSLGV). Jimboomba bulk supply substation provides electricity supply to approximately 26,000 predominantly residential customers in the Jimboomba, South Maclean, Tamborine, Cedar Grove Kagaru, North Maclean, Greenbank, New Beith, Logan Village, Yarrabilba and Flagstone areas.

Browns Plains 110/33kV bulk supply substation (SSBPN BS) is located approximately 21km south of Brisbane CBD, it supplies four zone substations via 33kV feeders: Heathwood (SSHWD), Crestmead (SSCRM), Browns Plains (SSBPN) and North Maclean (SSNMC). Browns Plains bulk supply substation provides electricity supply to approximately 38,000 predominantly residential customers in the Crestmead, Heritage Park, Browns Plain, Boronia Heights, Forestdale, Hilcrest, Regent Park and Heathwood areas.

1.2.1.1 Location where network support is required

The location where network support and load restoration capability will be measured / referenced is on the 11kV bus at Jimboomba and North Maclean Zone Substations and 33kV bus at Jimboomba and Browns Plains Bulk Supply Substation; however alternative options may be located downstream of the reference buses.

The geographical location of Energex's sub-transmission network and substations in the area is shown in Figure 1.

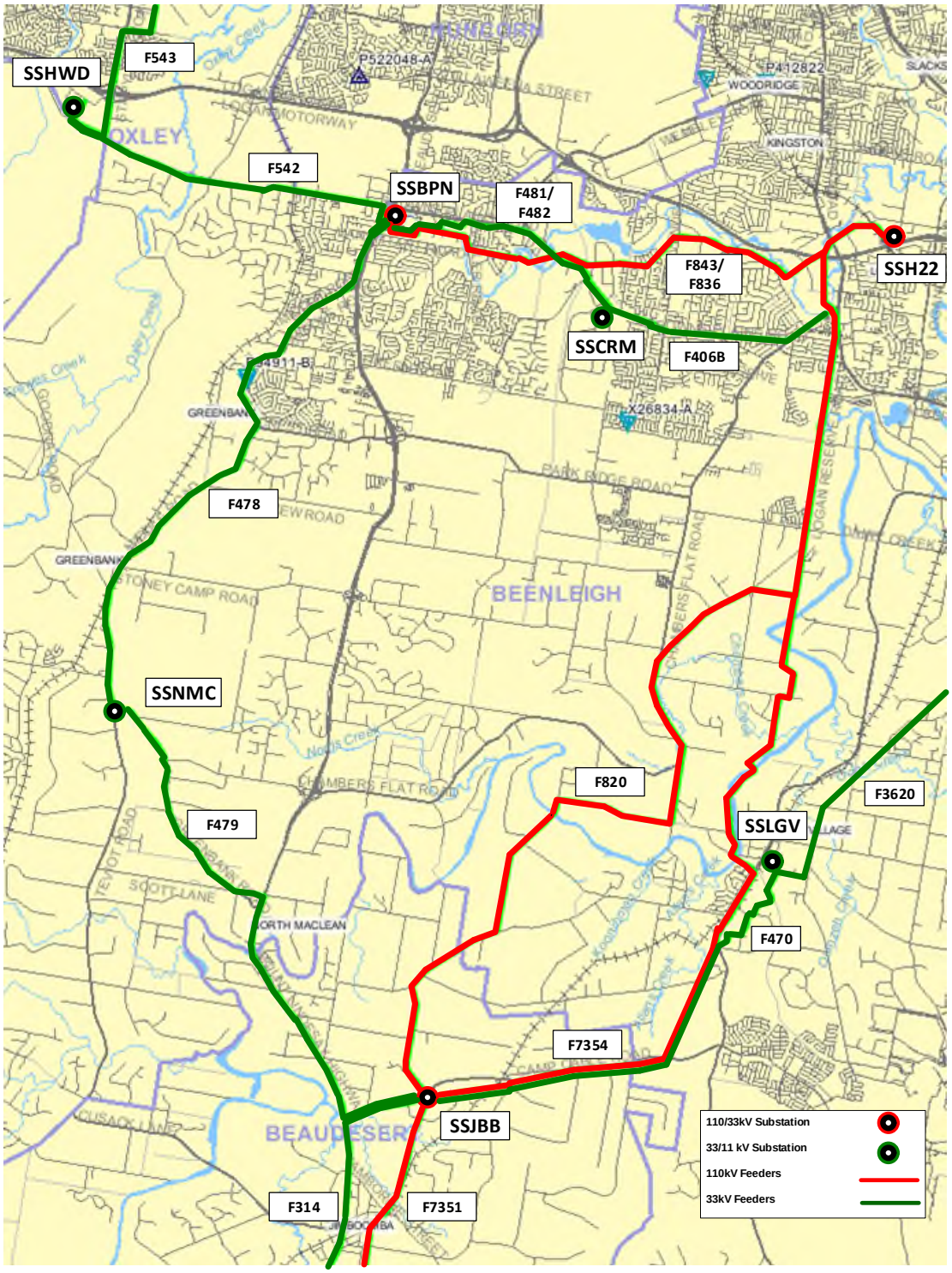


Figure 1: Existing network arrangement (geographic view)

1.2.2 Existing Supply System

Jimboomba Bulk Supply substation (SSJBB BS) is equipped with one 80 MVA, 110/33 kV transformer (TR7), two 33 kV buses comprising seven circuit breakers and one 110 kV bus comprising four 110 kV circuit breakers. It supplies North Maclean (SSNMC), Jimboomba (SSJBB) and Logan Village (SSLGV) zone substations via 33 kV feeders. The peak load at Jimboomba bulk supply has exceeded the transformer capacity in recent years and has been managed by transferring part of SSNMC to Browns Plain (SSBPN BS) bulk supply via 33 kV feeder F478. The peak load was 85.1 MVA in 2024/25 with the transfers effected.

Jimboomba zone substation has two indoor 33 kV and 11 kV bus arrangement and one 15 MVA, 33/11 kV transformer and one 25 MVA, 33/11kV transformer. The 2 x 11 kV bus has seven (7) active feeders which supply a total of approximately 10,000 residential, industrial and commercial customers, with a peak of 37.8 MVA in 2024/25.

North Maclean has two indoor 33kV and 11kV bus arrangement and two 25 MVA, 33/11kV transformers. The 2 x 11kV bus has eight (8) active feeders which supply a total of approximately 13,500 residential, industrial and commercial customers, with a peak of 44.9 MVA in 2024/25.

Browns Plain bulk supply substation (SSBPN BS) is equipped with one 120 MVA, 110/33 kV transformer (TR6), one 80 MVA, 110/33kV transformer (TR5), four 33 kV buses comprising 19 circuit breakers and two 110kV circuit breakers. It supplies Heathwood (SSHWD), Crestmead (SSCRM), Browns Plains (SSBPN) and part of North Maclean (SSNMC) zone substations via 33 kV feeders. The peak load at SSBPN was 183.4 MVA in 2024/25 including part of SSNMC substation load.

A schematic view of the existing sub-transmission network arrangement is shown in Figure 2.

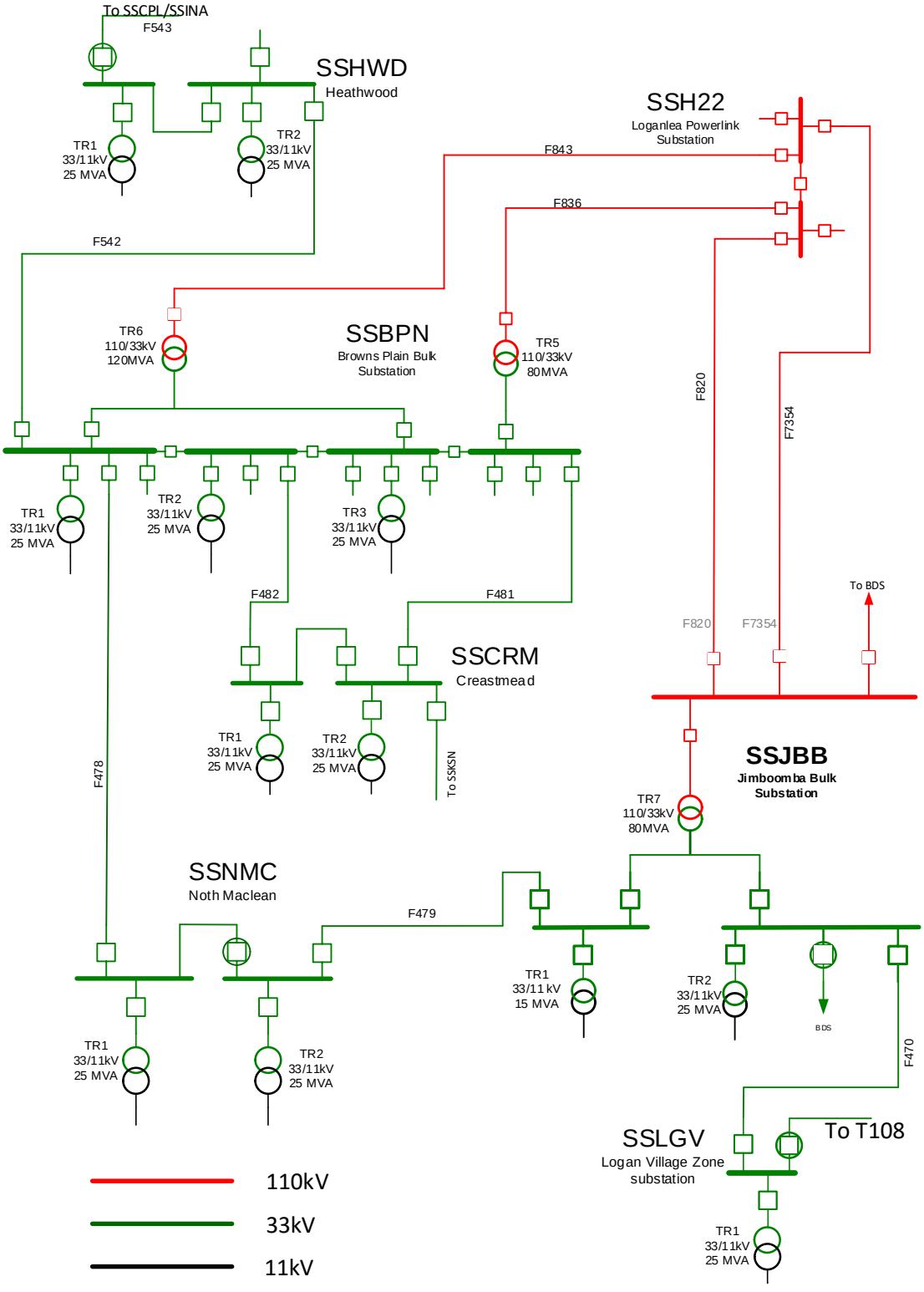


Figure 2: Existing network arrangement (schematic view)

1.2.3 Load Forecast

The 10 PoE and 50 PoE load forecasts for the base case load growth scenario for Jimboomba zone substation, North Maclean zone substation, Jimboomba bulk supply substation and Browns Plains bulk supply substation are illustrated in Figure 3, Figure 4, Figure 5 and Figure 6. The historical peak load for the past six years has also been included in the graph.

It should be noted that 4 MVA load is proposed to be transferred from SSJBB to SSLGV in 2028. Significant load growth is expected at SSNMC and SSJBB BS mainly due to proposed new customer connections in the Flagstone PDA starting from 2025 to 2030.

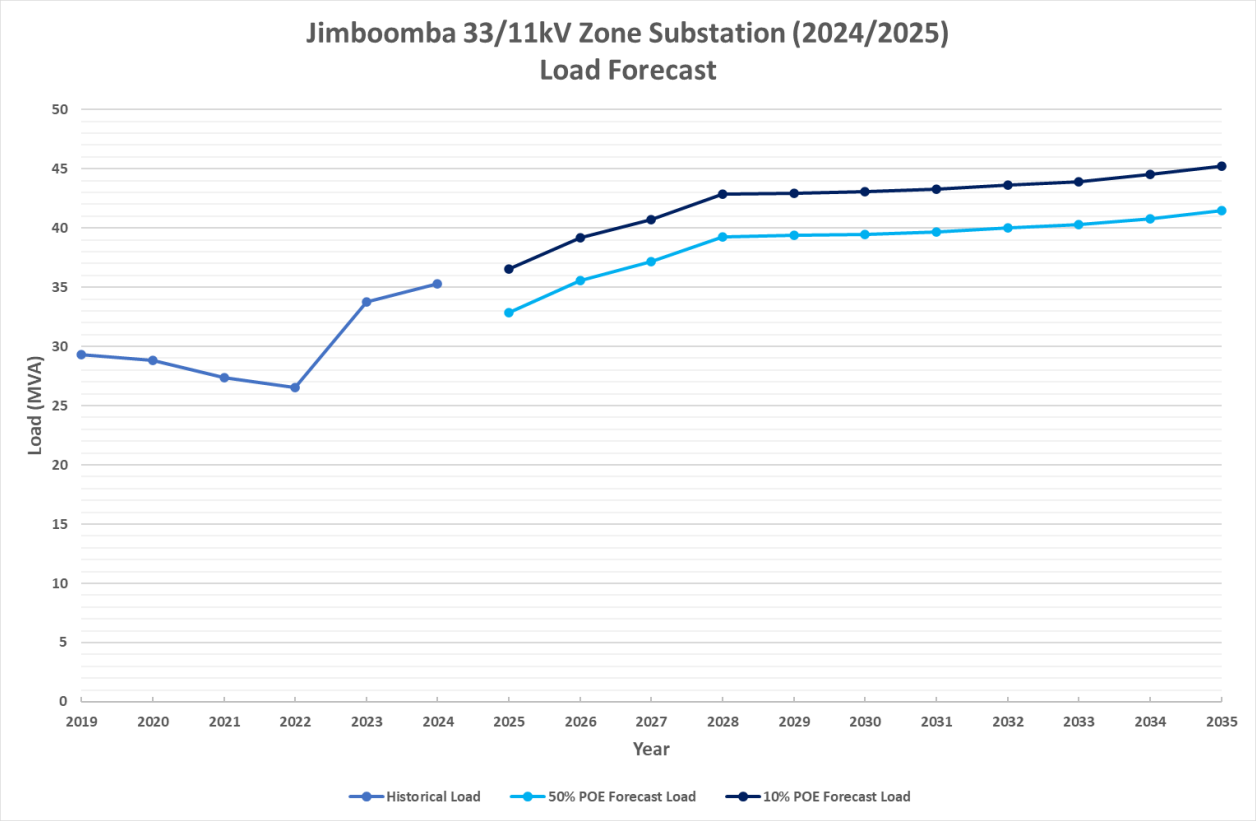


Figure 3: Jimboomba Zone Substation load forecast

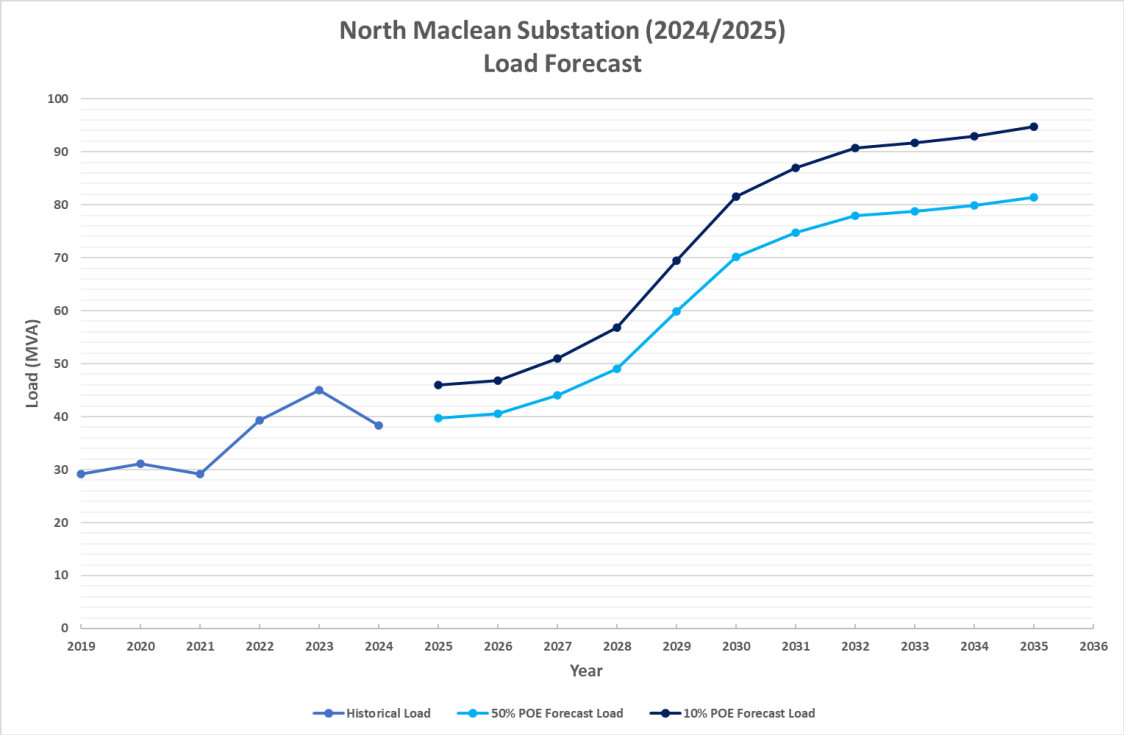


Figure 4: North Maclean Substation load forecast

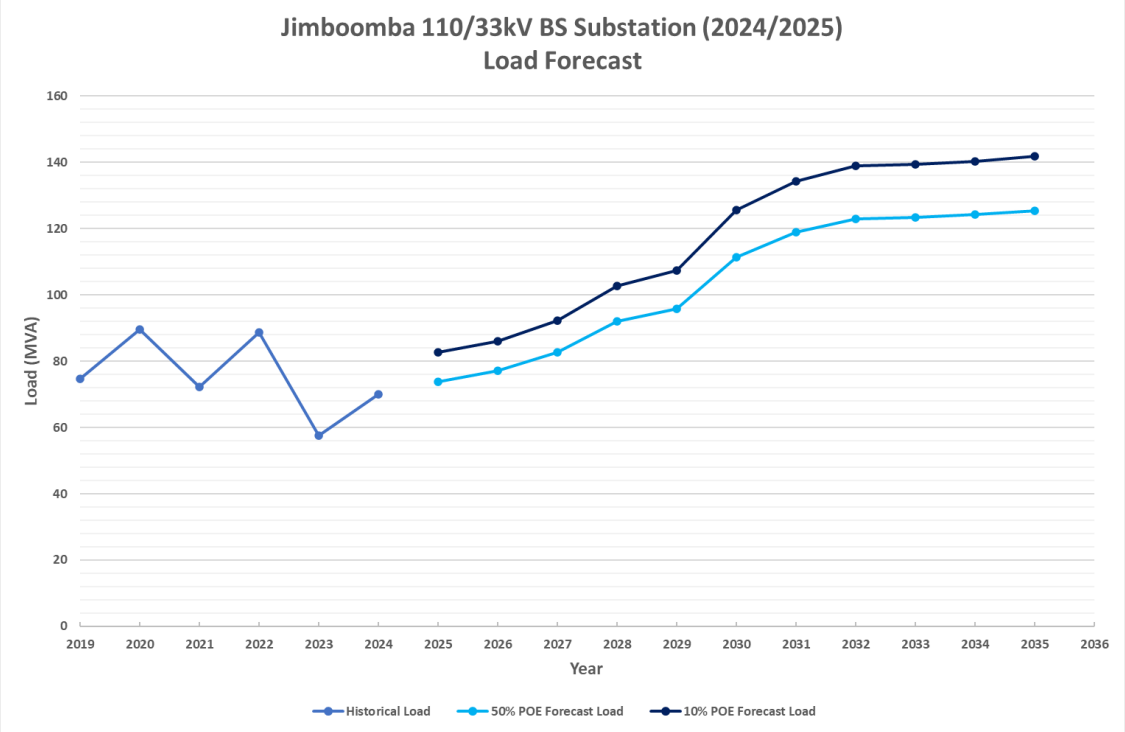


Figure 5: Jimboomba Bulk Supply Substation load forecast

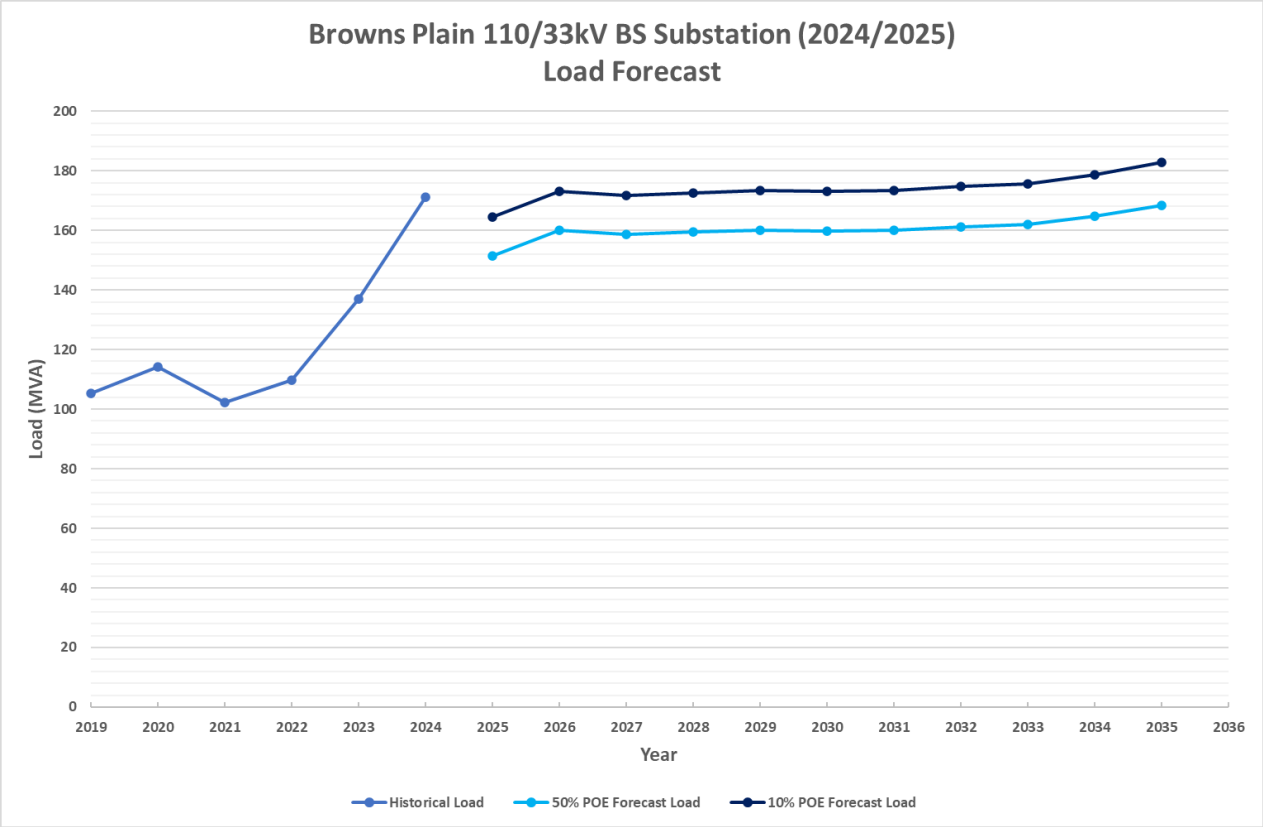


Figure 6: Browns Plain Bulk Supply Substation load forecast

1.3 Technical Characteristics of the Identified Need

This section describes the technical characteristics of the identified need that a non-network option would be required to comply with.

1.4 Size of load reduction or additional supply

To meet Energex's ongoing operational needs, it is expected that any alternate solution must provide capacity or demand reduction to the distribution network up to the values listed in the table below.

As measured at Jimboomba zone substation 11kV bus:

Year	Dispatch within 30 minutes any time of the year following a contingency (N 1)		
	Forecast required capacity (MVA)	Estimated number of days where capacity may be requested following a contingency	Estimated number of hours where capacity may be required per 24 hour period
2029	6.7	3	6
2030	6.8	3	6
2031	7.0	3	6
2032	7.3	3	6
2033	7.6	3	6
2034	8.1	3	6
2035	8.8	3	6

As measured at North Maclean zone substation 11kV bus:

Year	Dispatch within 30 minutes during peak load seasons (between 1st December and 30th May)		
	Forecast required capacity (MVA)	Estimated number of days where capacity may be requested	Estimated number of hours where capacity may be required per 24 hour period
2029	11.4	12	6
2030	24.1	37	6
2031	30.2	60	6
2032	34.8	78	7
2033	36.2	85	7
2034	38.2	95	8
2035	40.6	105	8

Year	Dispatch within 30 minutes any time of the year following a contingency (N 1)		
	Forecast required capacity (MVA)	Estimated number of days where capacity may be requested following a contingency	Estimated number of hours where capacity may be required per 24 hour period
2029	16.7	3	6
2030	27.6	3	6
2031	32.8	3	6
2032	36.7	3	7
2033	38.0	3	7
2034	39.7	3	8
2035	41.7	3	8

As measured at Jimboomba bulk supply substation 33kV bus:

Year	Dispatch within 30 minutes during peak load seasons (between 1st December and 30th May)		
	Forecast required capacity (MVA)	Estimated number of days where capacity may be requested	Estimated number of hours where capacity may be required per 24 hour period
2029	17.0	6	6
2030	29.4	19	7
2031	35.8	30	7
2032	39.8	39	8
2033	40.9	41	8
2034	42.5	43	8
2035	44.5	46	8

Year	Dispatch within 30 minutes any time of the year following a contingency (N 1)		
	Forecast required capacity (MVA)	Estimated number of days where capacity may be requested following a contingency	Estimated number of hours where capacity may be required per 24 hour period
2029	30.1	3	24
2030	41.7	3	24
2031	48.3	3	24
2032	53.0	3	24
2033	55.0	3	24
2034	57.9	3	24
2035	62.8	3	24

As measured at Browns Plains bulk supply substation 33kV bus:

Year	Dispatch within 30 minutes any time of the year following a contingency (N 1)		
	Forecast required capacity (MVA)	Estimated number of days where capacity may be requested following a contingency	Estimated number of hours where capacity may be required per 24 hour period
2029	20.7	3	6
2030	20.8	3	6
2031	21.3	3	6
2032	22.4	3	6
2033	23.4	3	6
2034	26.0	3	6
2035	29.5	3	6

1.5 Contribution to power system security or reliability

The solution needs to assist Energex in complying with the safety net targets as required under its Distribution Authority to provide the level of security and reliability required. The solution must be available for the full duration required when called upon.

1.6 Contribution to power system fault levels

The solution must consider the fault level contribution to the network and include any mitigation works that are required due to a change in fault level. The maximum fault level on 11kV and 33kV network should not exceed 13.1kA and 25kA, respectively.

2 POTENTIAL CREDIBLE OPTIONS

Energex has considered all options that could reasonably be classified as a credible option without bias to energy source, technology, ownership and whether it is a network option, a non-network option or a SAPS option.

Energex has not identified any viable non-network solutions that will provide a complete or a hybrid (combined network and non-network) solution to address the identified need. Further reasoning as to how Energex came to this determination is provided below.

2.1 Credible Options Identified

Energex has identified two credible network options that will address the identified need and are commercially and technically feasible and can be implemented in sufficient time to meet the identified need.

2.1.1 Option A: Establish Jimboomba West (SSJBW) Zone Substation, Install 2nd 110/33kV Transformer & Replace 33kV bus at SSJBB BS and Establish Jimboomba North Zone Substation

This option involves:

Jimboomba West zone substation (SSJBW) works:

- Establish new Jimboomba West zone substation with two 33/11kV 25MVA transformers, 33kV buses and 11kV buses.
- Utilise existing 33kV feeder energised at 11kV (JBB15B) as 33kV feeder between SSJBW and P552312-B. Construct a new section of 33kV feeder and connect to existing 33kV feeder F314 (Tee connection).
- Utilise existing 33kV feeder energised at 11kV (NMC13A) as 33kV feeder between NMC and P2052491.
- Install cable tails for the 33kV feeders into SSJBW.
- Establish new 11kV feeders from SSJBW.

Jimboomba bulk supply substation (SSJBB BS) works:

- Extend substation yard, electric perimeter fence and earth grid to suit new installations.
- Install 2 new 110kV circuit breakers and reconfigure existing 110kV bus configuration.
- Install 33kV switchgear with 4 x 2000A transformer CBs, 12 x 1250A transformer/feeder CBs, 2 x 2000A feeder CBs and 1 x 2000A bus section CB.
- Install a new 120 MVA, 110/33kV transformer with 33kV NEX.
- Cutover 33kV feeders, 33/11kV transformers and 110/33 transformer to new switchboard.
- Recover existing 33kV switchgear in Modular 1 and Modular 2 for spares.
- Cutover protection panels to new switchboard.

North Maclean zone substation (SSNMC) works:

- Install 33kV cable tail for 33kV feeder NMC – JBW currently energise at 11kV.

Jimboomba North zone substation works: (requirement depending on customer load)

- Establish new Jimboomba North zone substation with two 33/11kV 25MVA transformers, single 33kV bus and 11kV bus.
- Establish two 33kV feeders from Jimboomba bulk supply substation to Jimboomba North zone substation.
- Establish new 11kV feeders from Jimboomba North zone substation.

A schematic diagram of the proposed network arrangement for Option A is shown in Figure 7.

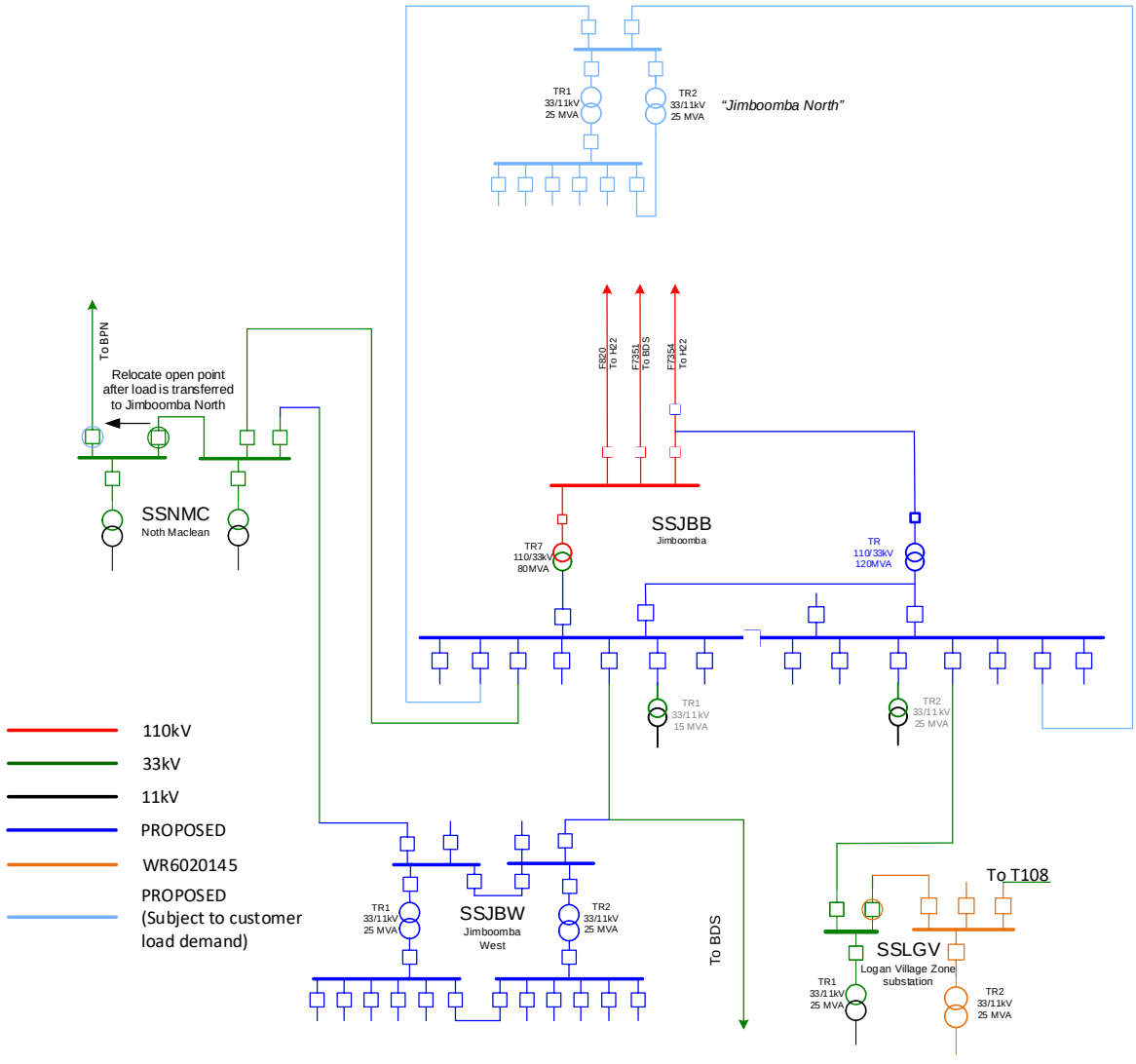


Figure 7: Option A proposed network arrangement (schematic view)

This option is commercially and technically feasible, can be implemented in the timeframe identified and would address the identified need by providing additional capacity to the Jimboomba area, which enables Energex to connect new customers to the distribution network. The additional capacity will also enable Energex to meet the reliability requirements as stipulated in Energex's Distribution Authority.

The estimated capital cost of this option would be $42.7 million, excluding the cost of the Jimboomba North substation (due to it being dependent on load development at a customer facility). The estimated operating costs of this option would be $60,000 a year. The estimated delivery timeline of this option would be staged between 2029-2030.

The scope of works at SSJBB and SSNMC are being contained within the existing sites, and the feeders to the new SSJBW are mostly existing feeders energised at 11kV. New feeders proposed are along road reserve and new substation site for SSJBW has been acquired. The potential Jimboomba North zone substation will be located in an industrial estate. Community consultations will be held at the early stage of implementation. Given the reliability and economic benefits of this option to the local community, there are not expected to be social licence issues with this option. No additional costs to manage or increase the delivery timeline have been considered in the evaluation of this option.

2.1.2 Option B: Install 80 MVA 110/33kV Transformer & 110kV GIS at SSBPN, Upgrade 110kV Feeders F843/F836, Establish Jimboomba West (SSJBW) Zone Substation, Replace 33kV bus at SSJBB BS, Establish new SSJBB-SSBDS 33kV feeder, Establish Jimboomba North Zone Substation

This option involves:

Browns Plains bulk supply substation works:

- Extend substation yard, electric perimeter fence and earth grid to suit new installations.
- Install 6 x 110kV outdoor circuit breakers comprising 2 x 110kV feeder CB, 3 x 110kV transformer CB and 1 x 110kV bus section CB.
- Install standard 80 MVA, 110/33kV transformer with 33kV NEX.
- Upgrade 110kV feeders F843/F836 between SSBPN and SSH22 for summer normal cyclic rating of 240 MVA.

Jimboomba West zone substation works:

- Establish new Jimboomba West zone substation with two 33/11kV 25MVA transformers, 33kV buses and 11kV buses.
- Utilise existing 33kV feeder energised at 11kV (JBB15B) as 33kV feeder between SSJBW and P552312-B. Construct a new section of 33kV feeder and connect to existing 33kV feeder F314 (Tee connection).

- Utilise existing 33kV feeder energised at 11kV (NMC13A) as 33kV feeder between NMC and P2052491.
- Establish new 11kV feeders from SSJBW.

Jimboomba bulk supply substation works:

- Install 33kV switchgear modular building (or equivalent) consist of 4 x 2000A transformer CBs, 12 x 1250A transformer/feeder CBs, 2 x 2000A feeder CBs and 1 x 2000A bus section CB.
- Cutover 33kV feeders, 33/11kV transformers to new switchboard.
- Connect new Jimboomba to Beaudesert 33kV feeder to the new switchboard.
- Recover existing 33kV switchgear in Modular 1 and Modular 2 for spares.

New 33kV Feeder from Jimboomba to Beaudesert (SSJBB - SSBDS)

- Establish a new 33kV feeder from SSJBB to SSBDS.

Beaudesert bulk supply substation works:

- Connect new Jimboomba to Beaudesert 33kV feeder to spare 33kV CB.

33kV Feeder F3620 (SSLGV – SST108) works:

- Upgrade F3620 to supply SSLGV load from SST108 Beenleigh BS.

North Maclean zone substation (SSNMC) works:

- Revise protection for new JBB-NMC-JBW 33kV feeder.

Jimboomba North zone substation works: (requirement depending on customer load)

- Establish new Jimboomba North zone substation with two 33/11kV 25MVA transformers, single 33kV bus and 11kV bus.
- Establish two 33kV feeders from Jimboomba bulk supply substation to Jimboomba North zone substation.
- Establish new 11kV feeders from Jimboomba North zone substation.

A schematic diagram with the proposed network arrangement for Option B is shown in Figure 8.

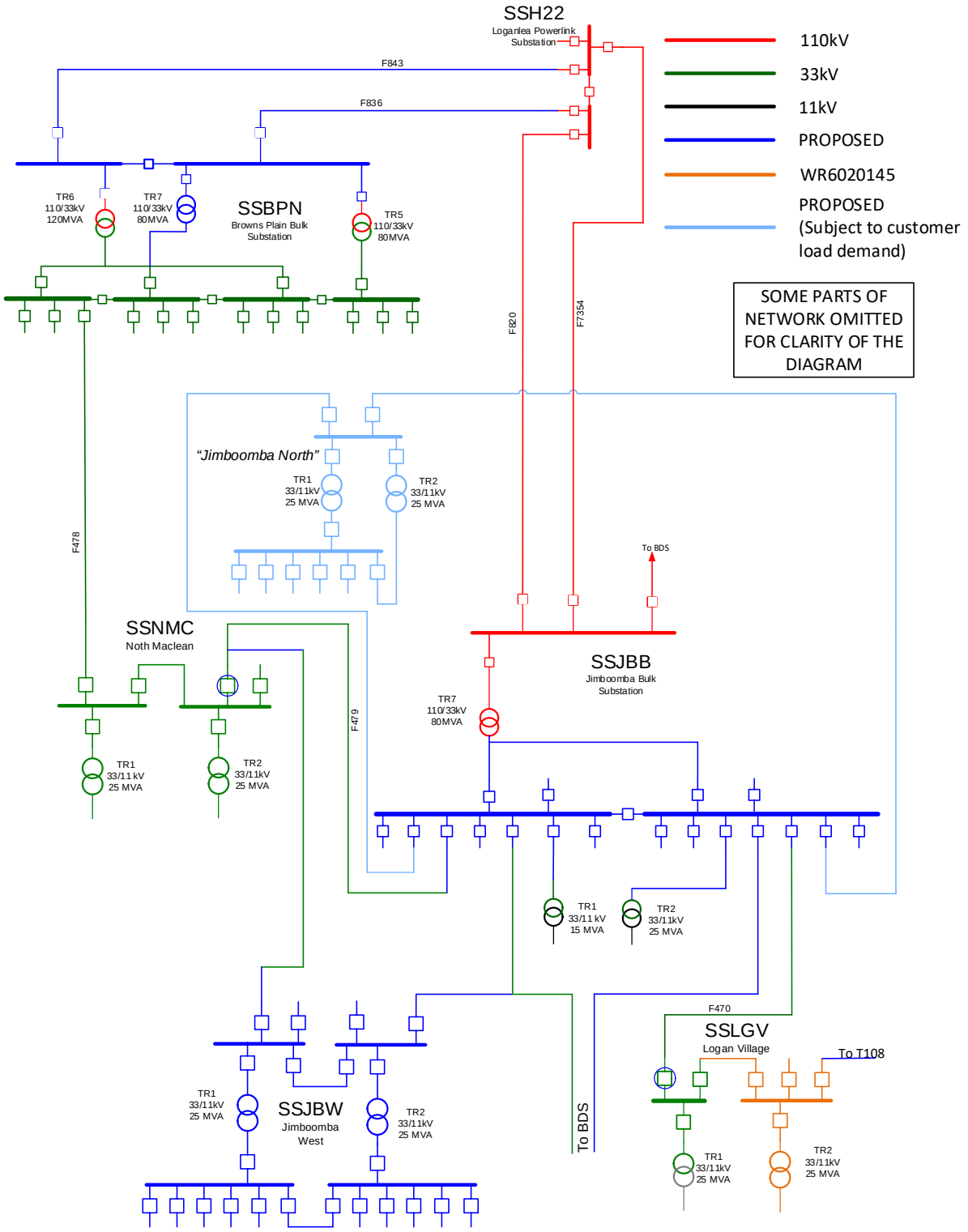


Figure 8: Option B proposed network arrangement (schematic view)

This option is commercially and technically feasible, can be implemented in the timeframe identified and would address the identified need by increasing capacity at the Browns Plains and Jimboomba areas, which enables Energex to connect new customers to the distribution network. The additional capacity will also enable Energex to meet the reliability requirements as stipulated in Energex's Distribution Authority.

The estimated capital cost of this option would be $67.4 million, excluding the cost of the Jimboomba North substation (due to it being dependent on load development at a customer facility). The estimated operating costs of this option would be $70,000 a year. The estimated delivery timeline of this option is staged between 2029-2030.

The scope of works at SSBPN, SSJBB and SSNMC are being contained within the existing sites, and the feeders to the new SSJBW are mostly existing feeders energised at 11kV. New feeders proposed are along road reserve and new substation site for SSJBW has been acquired. The potential Jimboomba North zone substation will be located in an industrial estate. Community consultations will be held at the early stage of implementation. Given the reliability and economic benefits of this option to the local community, there are not expected to be social licence issues with this option. No additional costs to manage or increase the delivery timeline have been considered in the evaluation of this option.

2.2 Associated Relevant Annual Deferred Augmentation Cost

A present value analysis of the costs associated with the lowest cost potential credible option show that there is a saving of approximately $1.5 million for each year the proposed augmentation cost is deferred.

3 SOICIAL LICENCE AND COMMUNITY ENGAGEMENT

3.1 Social Licence

Energex has not identified any social licence considerations that have affected the identification and selection of credible options to address the identified need. The scope of works at SSBPN, SSJBB and SSNMC are being contained within the existing sites, and the feeders to the new SSJBW are mostly existing feeders energised at 11kV. New feeders proposed are along road reserve or existing easement and new substation site for SSJBW has been acquired. The potential Jimboomba North zone substation will be located in an industrial estate. Given the reliability and economic benefits to the local community, there are not expected to be social licence issues.

3.2 Community Engagement

Community consultations will be held at the early stage of project implementation. As discussed above, the scope of works for this project is not expected to cause any disruption to the community at large. At this stage we have not identified any community stakeholders who might reasonably be expected to be affected by the development of this project. While Energex does not anticipate any community stakeholder concerns, should any be identified, these would be addressed as part of the Energex Community Engagement Framework which is integrated into the project workflow.

4 RATIONALE THAT THERE IS NO VIABLE NON-NETWORK OR SAPS OPTIONS

Energex's Demand & Energy Management (DEM) team has assessed the potential non network alternative (NNA) options required to defer the network option and determine if there is a viable demand management (DM) option to replace or reduce the need for the network options proposed. Following a review of the customer base in the Jimboomba and surrounding areas and consideration of a number of demand management technologies, it has been determined that there are no non-network or SAPS options that are technically and commercially viable and be able to be implemented in sufficient time to address the asset capacity and reliability risks identified.

Energex has considered the following demand-side and SAPS solutions to determine their feasibility to meet the identified need. Each of these are described below.

4.1 Consideration of SAPS Options

Stand-alone Power Systems are off-grid systems that operate independently from the main network. It typically includes solar panels for electricity generation, a battery energy storage system (BESS) to store excess energy, and a backup generator (often a diesel generator).

Energex considers there is no SAPS option that could form a potential credible option on a standalone basis, or that could form a significant part of the credible option. In particular the reliability and load requirements in the Jimboomba and North Maclean region could not be supported by a network that is not part of the interconnected national electricity system. Furthermore, the capital and ongoing operating cost of such system is uneconomical. Therefore, a SAPS option is not technically and commercially viable.

4.2 Consideration of Generation and Storage Options

Generation and storage such as renewable energy generation, solar or wind farms of multiple MW's capacity with BESS constitute an opportunity to support substation investment by reducing demand on, and potentially providing reactive power support for substation assets.

This option could potentially be part of a hybrid network/non-network solution to address the identified need, however, there is no known existing or proposed generation and storage system available in the area. Furthermore, a screening test conducted by Energex shows that the capital and ongoing operating cost of such system is not economical.

4.3 Consideration of Non-network Options

Energex has assessed potential non-network options to address the identified need. Credible options must be technically and commercially viable and must be able to be implemented in sufficient time to address the identified need. It has been determined, for the following reasons, that no non-network options would be suitable to address the identified need or form part of the identified need.

4.3.1 Network Load Control

The residential customers appear to drive the daily peak demand which generally occurs between 4:00pm and 8:00pm.

There are 3113 customers at SSJBB and 3712 customers at SSNMC on tariff T31 and T33 hot water load control (LC). An estimated demand reduction value of 1152kVA[1] and 1373kVA[1] is available at SSJBB and SSNMC, respectively.

Therefore, network load control would not sufficiently address the identified need.

4.3.2 Demand Management Programs

The DEM team has completed a review of the Jimboomba customer base and considered a number of demand management technologies. Reliability corrective actions are the key project drivers (i.e. the need) at Jimboomba bulk supply substation, Jimboomba zone substation and North Maclean zone substation. It has been determined that most demand management options will not be viable propositions and have been explored in the following sections.

4.3.3 Demand Response Arrangement with Customers

Four methods utilising demand response technology for deferring network investment are: Call Off Load (COL), Customer Embedded Generation (CEG), Large Scale Customer Generation (LSG) and customer solar power systems.

4.3.4 Customer Call Off Load (COL)

COL is an effective technique for deferring network investment where the need is for a short time period. However, in this instance, the need is required on a long-term permanent basis. There are a small number of large customers in the catchment area but the $/kVA funding available for demand reduction is low therefore customer call off load has been assessed as not a viable proposition as it will not address the identified need, nor benefit the community.

4.3.5 Customer Embedded Generation (CEG)

CEG is an effective technique for deferring network investment where the need is for a short time period. The primary driver for investment in this instance is asset safety and performance. A short-term deferral of network investment by using CEG is not a technically or financially feasible option (due to the number of contracts required to be negotiated and managed).

This option has been assessed as technically not viable as it will not address the identified network requirement.

[1] Hot water diversified demand saving estimated at 0.6kVA per system

4.3.6 Large-Scale Customer Generation (LSG)

There is no known existing or proposed LSG demand response available within the area.

4.3.7 Customer Solar Power Systems

The daily peak demand is driven by residential customer demand and the peak generally occurs between 4:00pm and 8:00pm. As such customer solar generation does not coincide with the peak load period. The impact of the customer solar power systems is already included in the load profile and forecast.

Business customers with large solar arrays are deemed to present a significant opportunity for targeted load control or load curtailment if coupled with a BESS. Contracting such customers is attractive as they represent a larger load across fewer customers and therefore are cheaper and easier to engage and contract.

However, only a small percentage of business customers in this supply area have solar PV systems and possibly none have a BESS. PV systems with BESS present a future portfolio opportunity for potential demand response but currently this supply area has a very limited solar/BESS. Solar customers without a BESS will not meet the technical needs of the demand reduction as their solar contribution may not be available when the network un-met need is required.

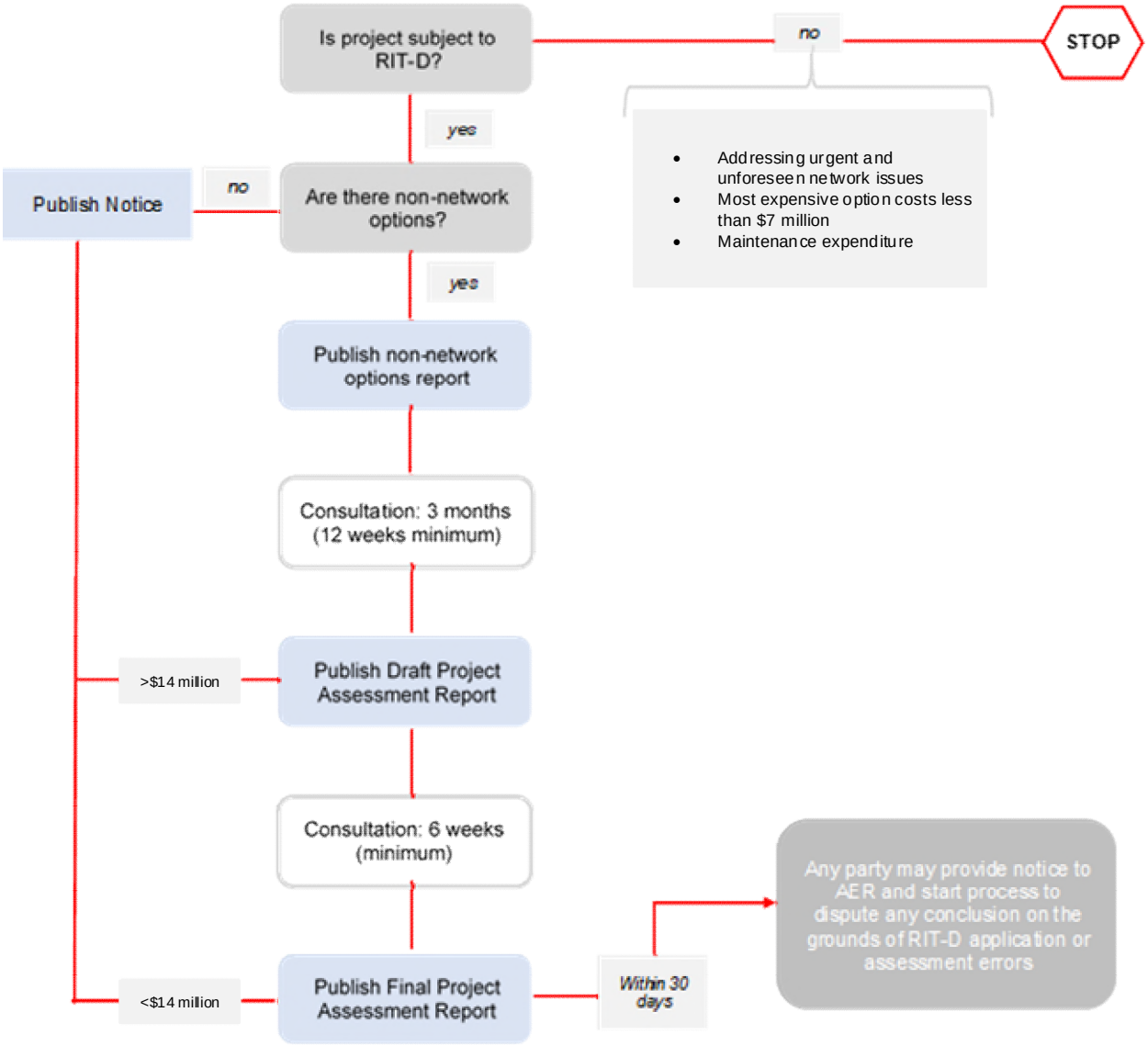
5 CONCLUSION AND NEXT STEPS

Energex has determined that there would not be a complete non-network solution or a hybrid (combined network and non-network) solution to provide the magnitude of network support required in the Jimboomba and North Maclean areas to address the identified need.

As required, Energex publishes this Notice of No Non-Network or SAPS Options in accordance with NER clause 5.17.4(d).

Energex will be publishing a Draft Project Assessment Report shortly, consultation on that report will be open for a period of at least 6 weeks.

6 APPENDIX A – THE RIT-D PROCESS



7 APPENDIX B – SAFETY NET TARGETS

Energex has an obligation to meet the Safety Net Targets under its Distribution Authority. The Safety Net targets are defined by the load impacted and the duration of this impact. The table below shows the specific requirements that Energex needs to achieve.

SCHEDULE 3

Service Safety Net Targets

Feeder Type	Targets *(for restoration of supply following an N-1 event)*
CBD	• Any interruption in customer supply resulting from an N – 1 event at the sub-transmission level is restored with 1 minute
Urban – Following an N – 1 event	• No greater than 40MVA (16,000 customers) is without supply for more than 30 minutes • No greater than 12MVA (5,000 customers) is without supply for more than 3 hours and • No greater than 4MVA (1,600 customers) is without supply for more than 8 hours
Short Rural – Following an N – 1 event	• No greater than 40MVA (16,000 customers) is without supply for more than 30 minutes • No greater than 15MVA (6,000 customers) is without supply for more than 4 hours and • No greater than 10MVA (4,000 customers) is without supply for more than 12 hours

Note: All modelling and analysis will be benchmarked against 50PoE loads and based on credible contingencies

8 APPENDIX C – LOAD CHARACTERISTICS

8.1.1 Existing Load Profiles

The load at Jimboomba, North Maclean and Browns Plain Substations comprises a mix of residential and commercial/industrial customers.

The full annual load profile for Jimboomba zone substation, North Maclean zone substation, Jimboomba bulk supply substation and Browns Plain bulk supply substation over the 2024/25 financial year is shown in Figure 9, Figure 10, Figure 11 and Figure 12. It can be noted that the peak load occurs during summer.

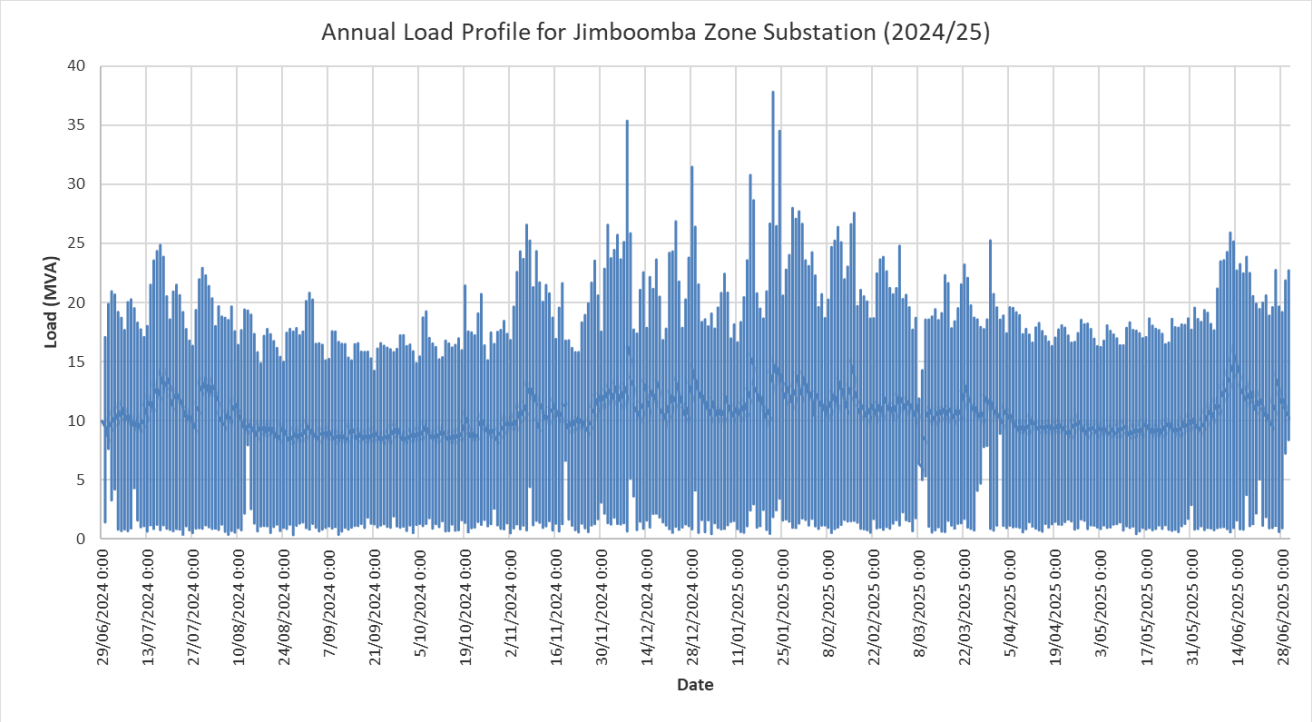


Figure 9: Jimboomba Zone Substation actual annual load profile

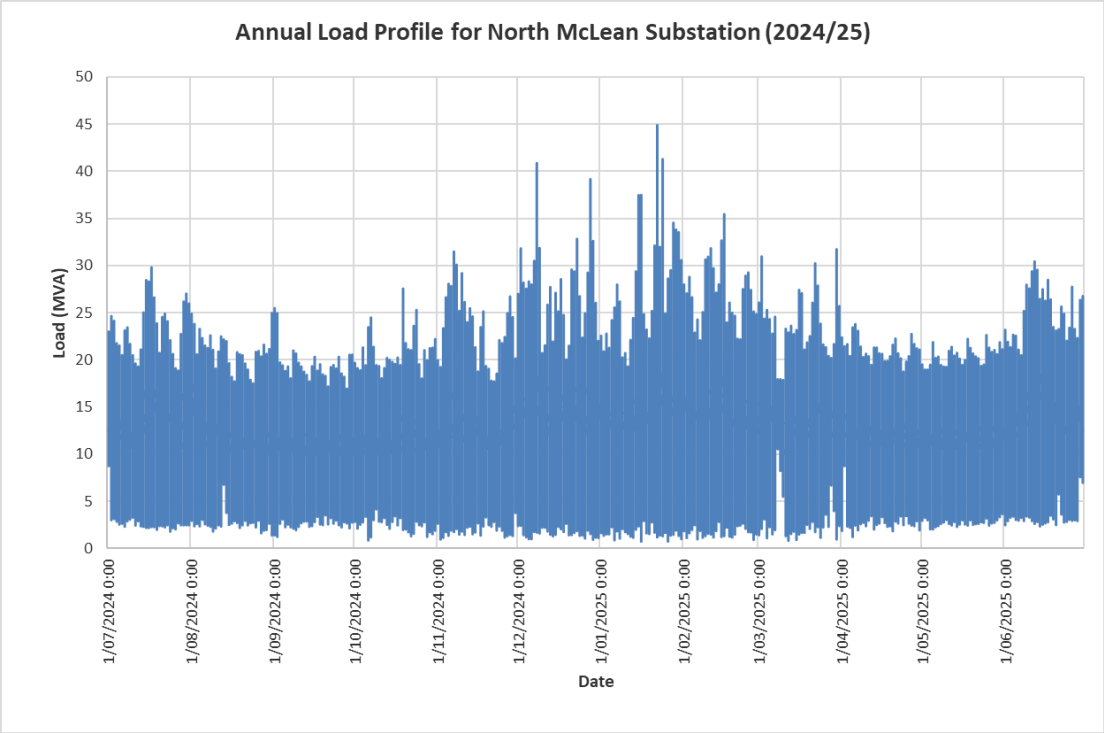


Figure 10: North Maclean Substation actual annual load profile.

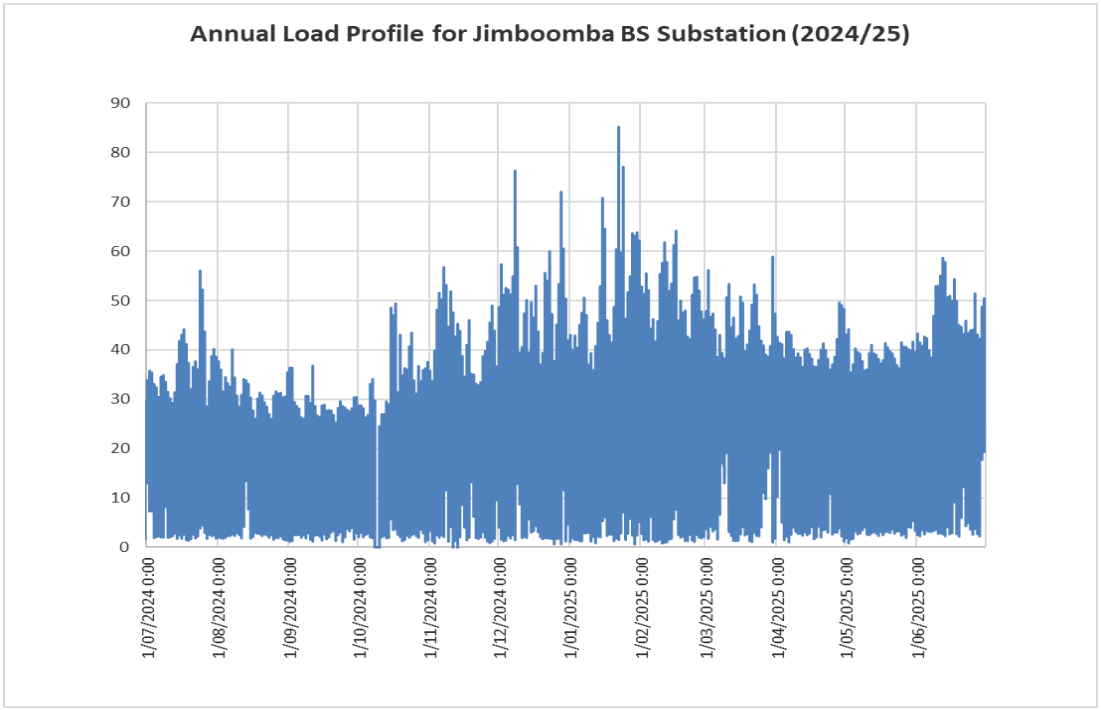


Figure 11: Jimboomba BS Substation actual annual load profile.

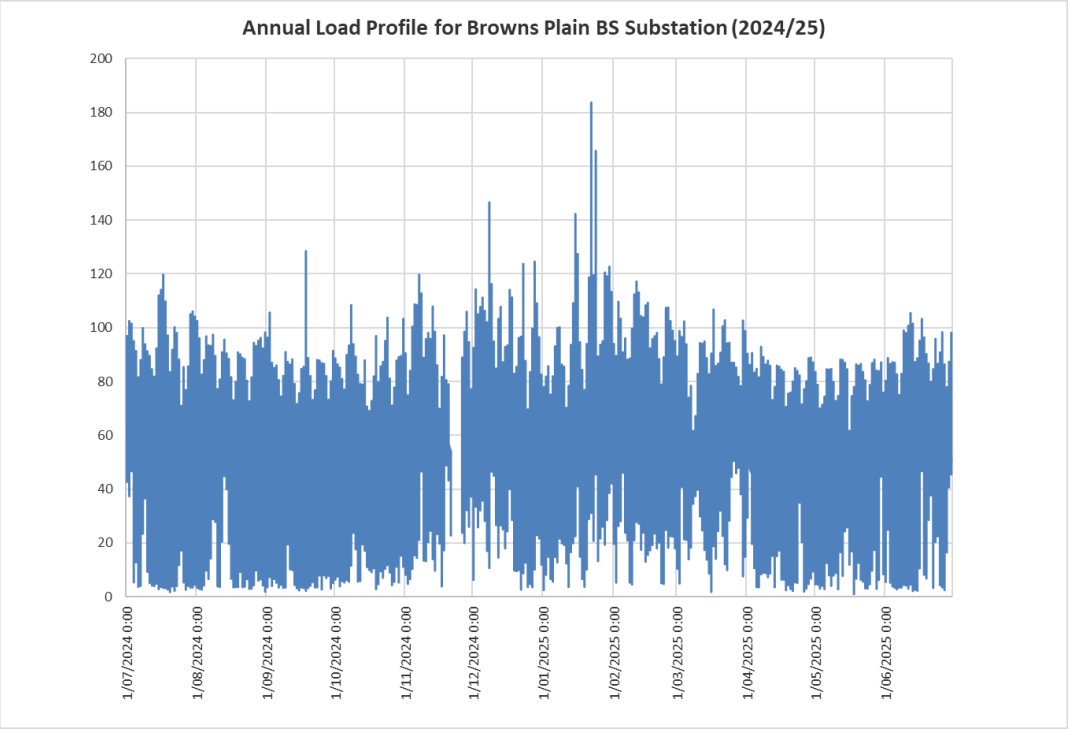


Figure 12: Browns Plain BS Substation actual annual load profile.

8.1.2 Load Duration Curve

The load duration curve for Jimboomba zone substation, North Maclean zone substation, Jimboomba bulk supply substation and Browns Plain bulk supply substation over the 2024/25 financial year is shown in Figure 13, Figure 14, Figure 15 and Figure 16.

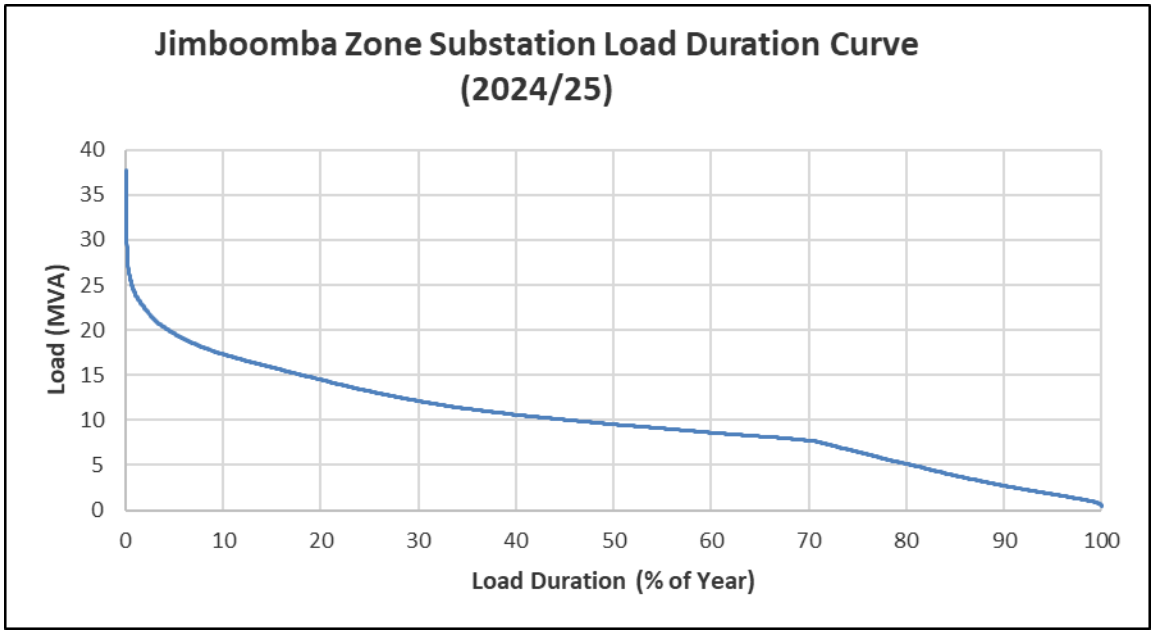


Figure 13: Jimboomba Zone Substation load duration curve

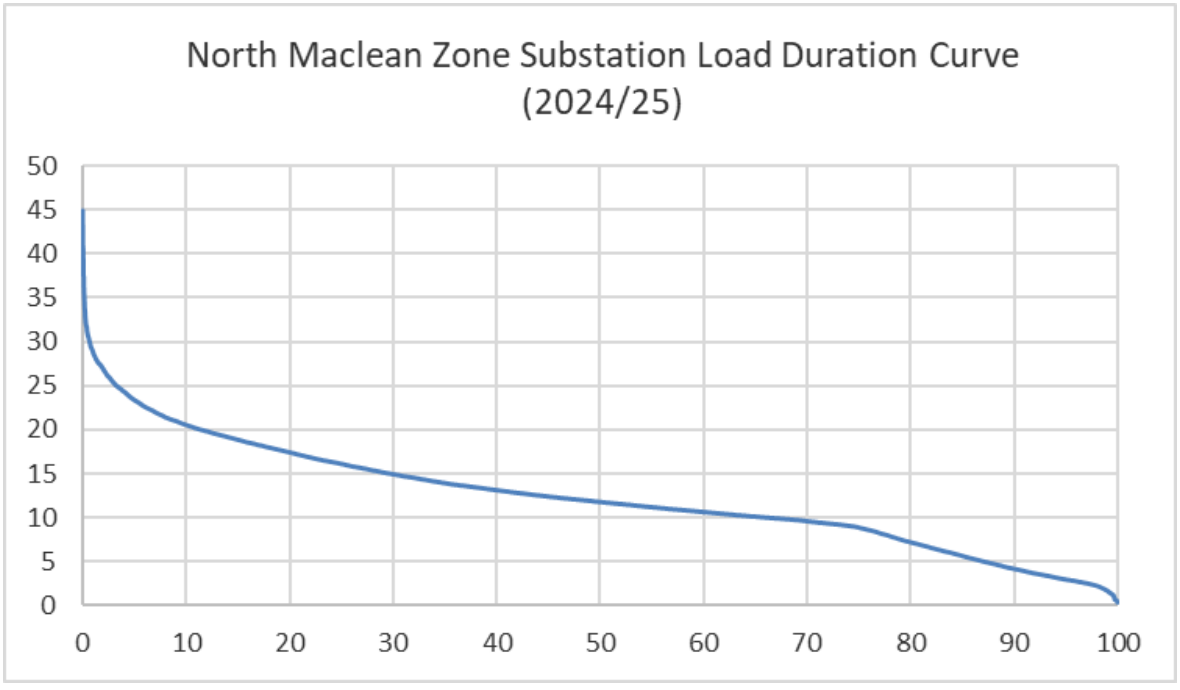


Figure 14: North Maclean Substation load duration curve

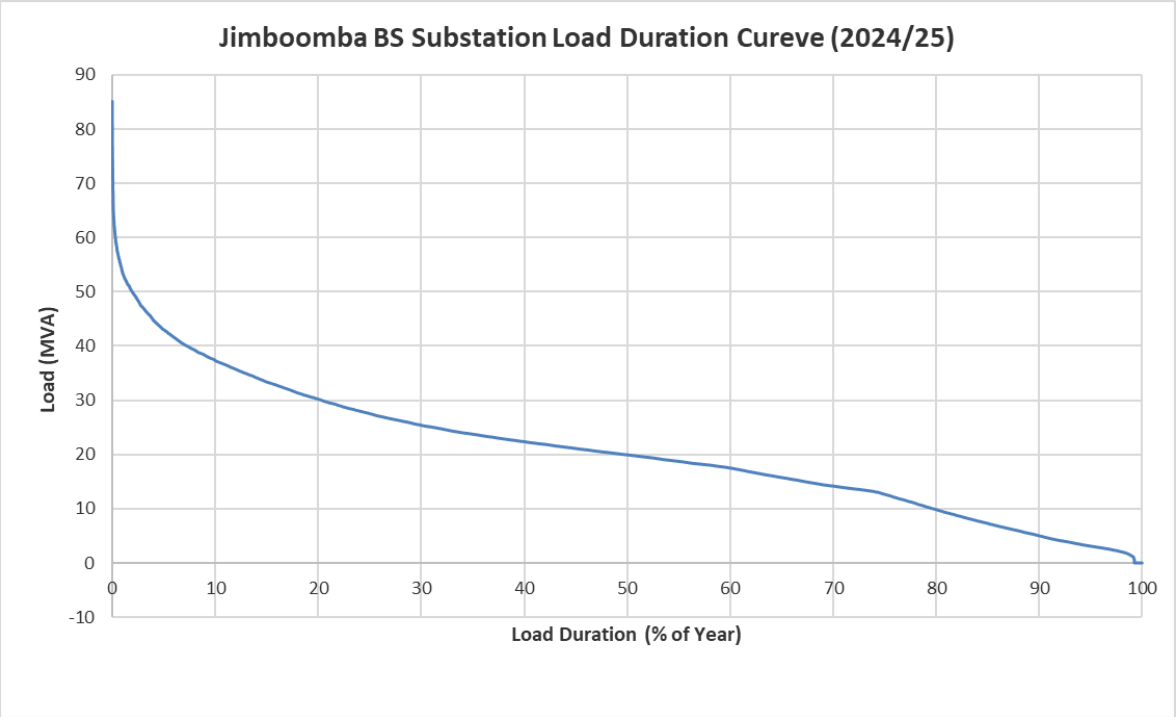


Figure 15: Jimboomba BS Substation load duration curve

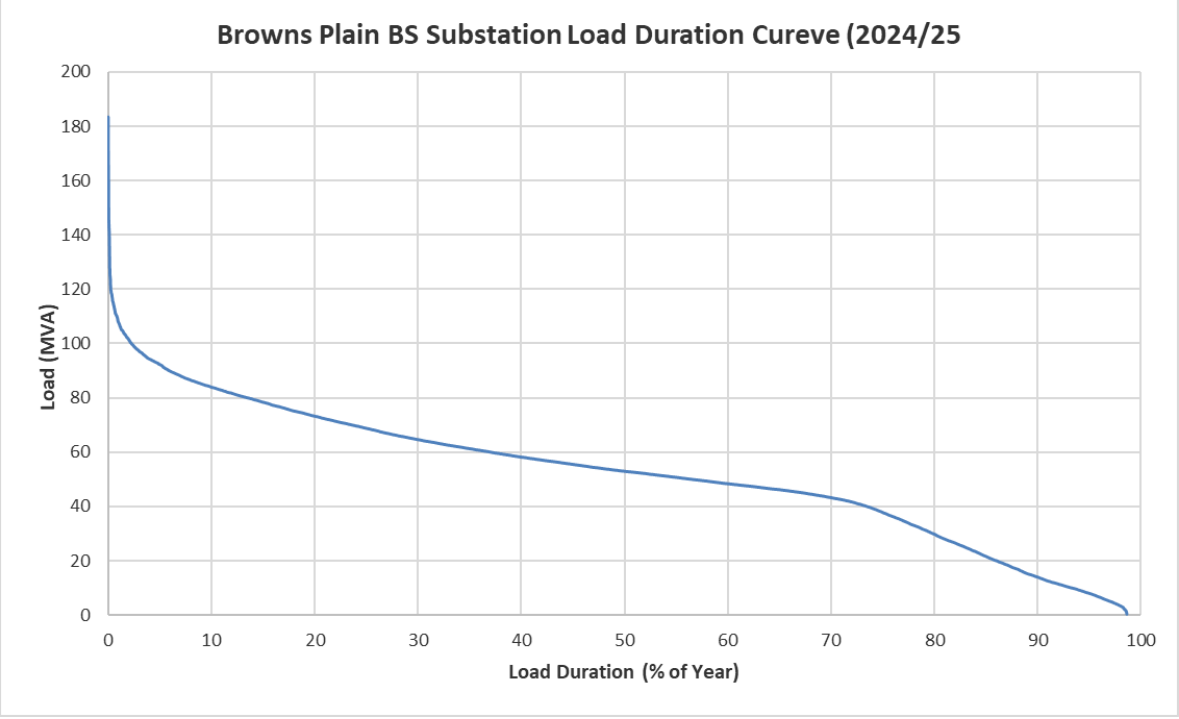


Figure 16: Browns Plain BS Substation load duration curve

8.1.3 Average Peak Weekday Load Profile (Summer)

The daily load profile for an average peak weekday during summer is illustrated below in Figure 17, Figure 18, Figure 19 and Figure 20. It can be noted that the summer peak loads at Jimboomba ZS, North Maclean, Jimboomba BS and Browns Plain BS substations are historically experienced in the late afternoon and evening.

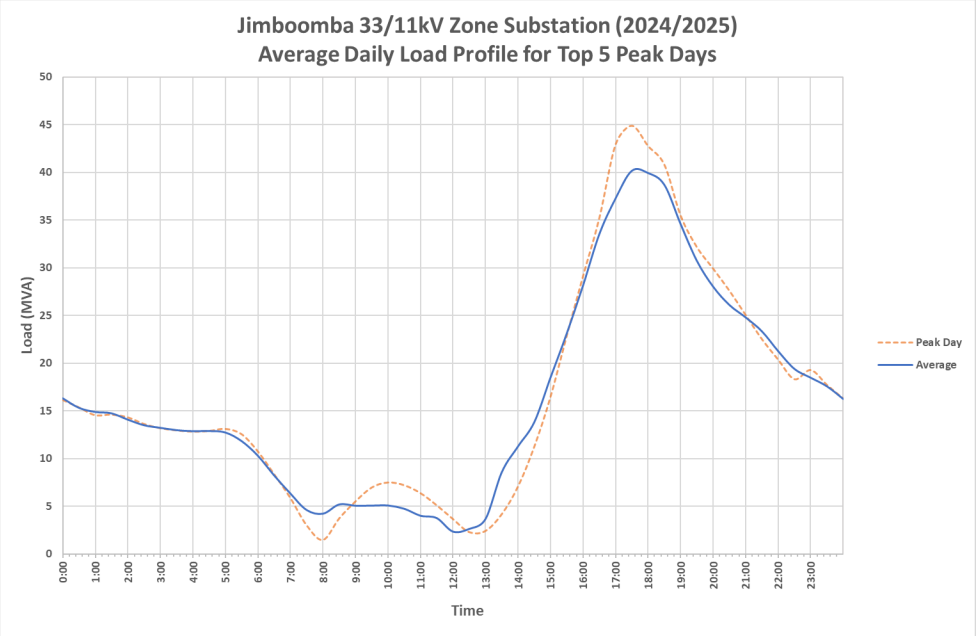


Figure 17: Jimboomba Zone Substation average peak weekday load profile (summer)

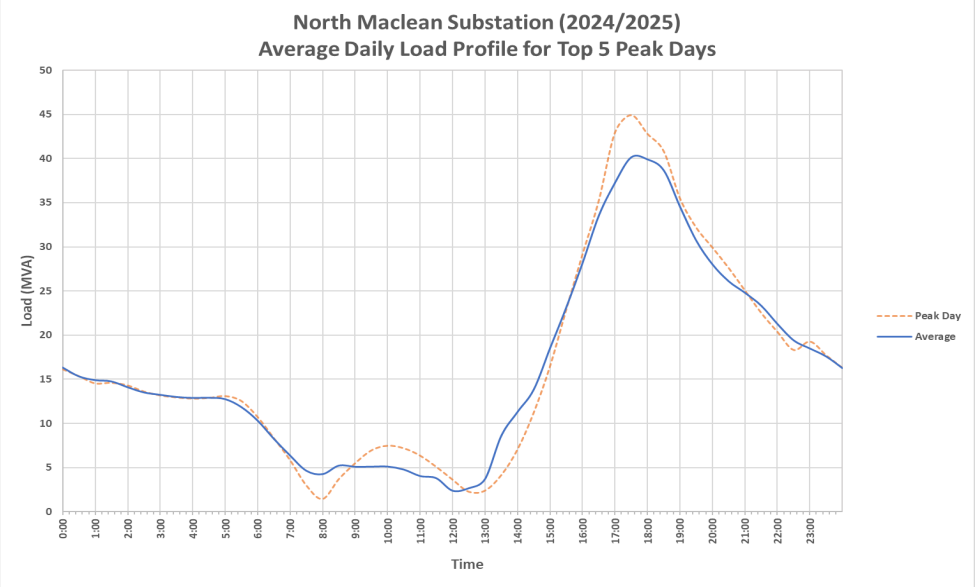


Figure 18: North Maclean Substation average peak weekday load profile (summer)

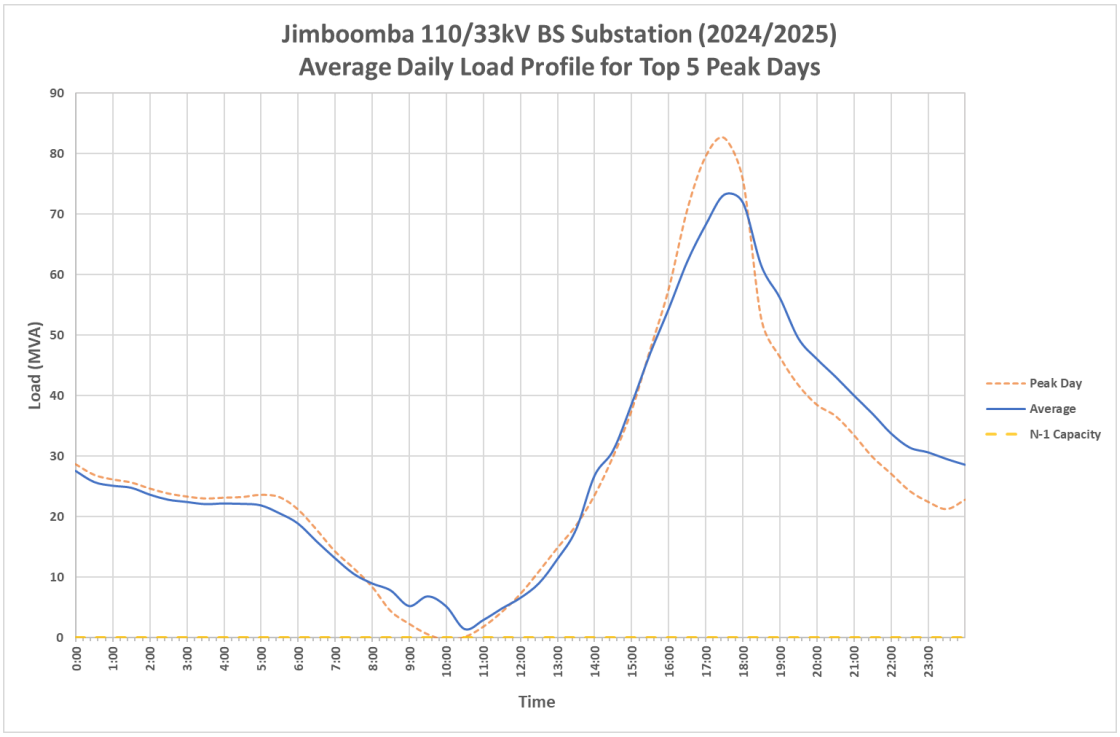


Figure 19: Jimboomba BS Substation average peak weekday load profile (summer)

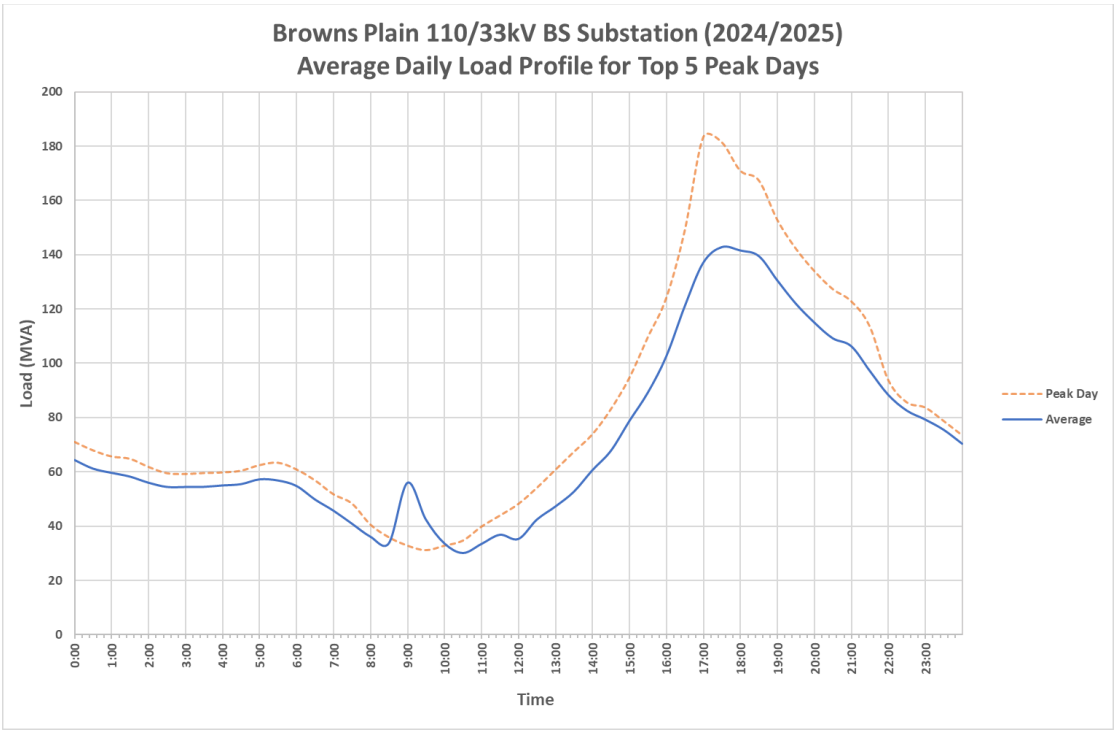


Figure 20: Browns Plain BS Substation average peak weekday load profile (summer)