
MainPower Request For Information

Title	Non-Network Capacity Support for: <ol style="list-style-type: none">1. Ludstone Zone Substation (Kaikoura)2. Cheviot Point Zone Substation3. Hanmer Zone Substation
MainPower contact person	AJ Akhtar - aj.akhtar@mainpower.co.nz
Opening date	
Closing date	

1 Request for Information

MainPower New Zealand Limited (**Mainpower**) invites proposals for the provision of non-network capacity solutions.

1.1 Background

MainPower New Zealand Limited owns and operates the electricity distribution system throughout the North Canterbury and Kaikōura regions and supplies line services to over 44,000 customers.

MainPower’s strategic framework, the MPowered Future reflects the changing needs of our customers and the energy sector. MainPower needs to evolve and be prepared for changes across the sector, such as; growth in renewable energy, new technology, electrification and changing customer needs and expectations. MPowered Future delivers the future of energy to our region through four strategic pillars; An engaged community, customer focused organisation, decarbonising our place and creating a sustainable future.

For more information on MainPower please visit our website www.MainPower.co.nz

2 Introduction

2.1 Purpose of RFI

The purpose of this RFI is to:

- (a) Assist MainPower in gathering information that may lead to the identification of potential non-network capacity solution suppliers or may lead it to enter into an RFP process
- (b) Determine the likely costs that would be associated with a proposed non-network capacity solution. (These costs are required for planning and budgeting purposes only at this time)
- (c) Determine the timeline and those milestones required to see a non-network capacity solution available for activation.
- (d) Understand your capability and capacity to perform the tasks required to deliver a new non-network capacity solution.
- (e) Understand any likely risks that would cause any delay to the delivery or use of a non-network capacity solution.

The following documents (**RFI Documents**) form part of this RFI:

(All RFI documentation is Confidential and remains the property of MainPower)

Schedules (part of this document)	
RFI	This Request for Information (This document)
Appendix 1	Scope of Works – Ludstone Zone Substation <i>Kaikoura</i> (page 6 of this RFI)
Appendix 2	Scope of Works – Cheviot Point Zone Substation (page 10 of this RFI)
Appendix 3	Scope of Works – Hamner Zone Substation (page 14 of this RFI)
Appendix 4	Supplier Information Sought (page 18 of this RFI)

3 Proposal Process

3.1 Supplier Response Format:

Any submitted information must include:

- (a) All information that is requested in **Appendix 4** under the headings provided;

3.2 Evaluation:

Responses sought as detailed in Appendix 4: Supplier Information Sought will be evaluated by MainPower based on the ability to respond to MainPower’s Scope of Works detailed in Appendix 1, and a shortlist of Respondents will be established.

MainPower intends to invite shortlisted Respondents to participate in a Request for Proposal (RFP).

All responses to this RFI will be acknowledged by e-mail and respondents will be notified of any decision MainPower makes.

3.3 Response to RFI Timelines:

The timeframe of this RFI process is as follows (and may change at the discretion of MainPower):

Action	By Date
RFI issued	29th October
Respondents to confirm intention to participate	1st November
Final date for Respondents Queries to be received by MainPower	15th November
Closing date for submission of information (“Closure Date”)	22nd November
Evaluation of information (“ Proposals ”) by MainPower	29th November
Respondent(s) notified of any supply decisions and/or next steps in the proposal process	6th December

4 Information

4.1 MainPower information

MainPower company information may be found by visiting the website: <http://www.mainpower.co.nz>

4.2 Health and Safety

MainPower is committed to managing its business to prevent harm to its employee's; contractors or the general public by integrating health and safety requirements into supplier agreement management activities.

The engagement of a supplier establishes an important partnership with an objective to achieve specific health and safety performance outcomes by

- a) Working with MainPower to identify and act on opportunities to eliminate or control health and safety risks.
- b) Demonstrate shared values with regards to health and safety management through Suppliers internal policies and procedures.

5 Contact Details

5.1 Contact details for all Communications and Submission:

All communications in relation to this RFI including requests for further information, submission and any other should be directed in writing to the contacts below:

Closing date for submission of queries is 4 pm 22 November 2024. MainPower reserves the right to communicate the substance of any queries received along with replies given to all proposing suppliers, at its discretion.

Suppliers are requested to submit their response to this RFI by email to the following contacts:

Name: AJ Akhtar
Procurement and Property Manager
Email: aj.akhtar@mainpower.co.nz

MainPower requires the subject line to be clearly labelled as "RFI MainPower – Non-Network Capacity Solution – Respondent business name". Submission to be provided in a .ZIP format containing all applicable documentation.

MainPower's mail server has a file size limit of 20MB, proposals exceeding this limit may be provided via email link to an online storage service such as Google OneDrive or Dropbox.

6 Additional Terms and Conditions

6.1 General

The submission of a response to this RFI will constitute a Supplier acceptance of the terms and conditions set out in in Schedule 1 this RFI. Nothing in this RFI (other than in section 6.2), or any document referred to in this RFI, shall be construed as creating any legal or other obligation between MainPower and a Supplier in relation to the conduct or outcome of this RFI.

6.2 Confidentiality

It is a condition of this RFI that information contained in this document is for the purpose of allowing Suppliers to submit information to MainPower and is not to be used for any other purpose.

This RFI and all other information, documents or materials provided by MainPower must be considered confidential. This RFI may not be forwarded to any third party for evaluation or for any other purpose or reproduced without the prior written consent of MainPower. This RFI and any copies will remain the property of MainPower and MainPower reserves the right to recall all copies and reproductions of the RFI at any time.

No organisation or individual shall, without the prior written consent of MainPower, make any public statements to third parties, or advertise in any manner; information relating to this RFI, the evaluation process that follows the submission of information, or the establishment of any business relationship.

6.3 Verbal Representations

No representations or statements made by MainPower staff or its agents shall constitute an official expression on its behalf unless such representations are made in a written communication from an appropriate MainPower officer or a duly authorised agent.

6.4 No Offer

This RFI is not an offer, but an invitation to respondents to submit information in the form of a proposal so MainPower may understand the opportunity and clarify supply for the provision of the Relevant Supplies. It is not intended to directly enter into negotiations based on results from this RFI. However, MainPower reserves the right to move into an RFP process, pursue a contract or enter into further discussions with a Supplier or Suppliers following the RFI.

Appendix 1- Scope of Works Ludstone Zone Substation (Kaikoura)

Non-Network Capacity Solution

This RFI is focussed on the provision of non-network capacity support for the Kaikoura region to allow MainPower to maintain N-1 security of supply at Ludstone zone substation.

Prospective suppliers are invited to submit a response even if the solution cannot fully meet the specific requirements that have been outlined for Ludstone zone substation.

MainPower has identified other areas of the network which could benefit from non-network support. MainPower welcomes submissions on part of all of the:

- Mouse Point (Culverden) – RFI completed in September 2024
- Hanmer Springs township – RFI focuses on supporting security of supply constraints
- Cheviot – RFI focuses on capacity support

MainPower anticipates issuing further RFIs for non-network support to identify and progress viable alternatives to traditional network solutions.

1. Technical Requirements

The following technical requirements will be used by MainPower to assess responses to this RFI:

Table 1: Flexibility Capacity Requirements for Ludstone Zone Substation.

Metric	Demand (MVA)	
	2025-2027 ¹	2028-2035 ¹
Requested Peak Capacity	Nil	Approx. 300kW per year starting in 2028 up to a total of 2.4MW by 2035.
Daily Duration	7:30 am to 8:30 pm	
Availability	Start of May to End of September	

¹ Note: Years in the table above are calendar years.

- a) Capacity support will be sought to reduce peak loads and maintain security of supply on the existing zone substation, allowing further growth in the Kaikoura area.
- b) Any capacity solution will need to be in service and either providing load reduction during the identified period, or available to deploy during a network outage. It is preferable to match capacity to the projected demand profile rather than meeting the full maximum demand requirements over the entire day.
- c) Variations in the technical scope can be made to achieve a cost-effective outcome. Examples of this may include:
 - a. Reduced availability of capacity during the early morning or evening hours.
- d) MainPower is open to all available technologies, but preference will be given to low carbon solutions which meet MainPower's decarbonisation goals.
- e) Different techniques, or technologies may be employed together to achieve the specified capacity requirements. This may include modification of consumption patterns, or introduction of new storage or generation into the network.
- f) The additional capacity provided by the respondent should not include ripple control which is already accounted for within MainPower's demand peak control methodology.

- g) Any option to improve the reliability of the specified zone substation by providing capacity in response to planned or unplanned outages will be favourably viewed but is not the primary focus of this request.
- h) Preference will be given to solutions that can provide a comparable level of reliability to traditional network investments during the defined period of agreed supply.
- i) Preference will be given to communication interfaces that are recognised industry standard and can be developed in coordination with MainPower’s technical team to ensure efficient and reliable operation.
- j) If the non-network solution includes the incorporation of aggregated distributed resources, then MainPower will seek to ensure that the impact of demand reduction can be quantified on the network.

2. Background Information – Ludstone Zone Substation

Ludstone zone substation supplies Kaikoura township and the surrounding rural region, including north to Mangamaunu and inland towards Mount Lyford. Ludstone zone substation is supplied from Culverden GXP via MainPower’s 66 kV and 33kV sub-transmission network and contains two 6 MVA, 33/11 kV transformers. We are currently in the process of developing a dynamic rating for these transformers, lifting the short-term rating to approximately 7.2 MVA for each transformer, providing 7.2MVA of N-1 capacity.



Figure 1: Ludstone zone substation (red dot), and 11 kV distribution network (navy).

3. Electricity Demand at Ludstone Zone Substation

Ludstone zone substation supplies Kaikoura township. Kaikoura peaks during winter, typically on holiday weekends or weekends with local events. The demand profile is primarily derived from urban township (residential and commercial) loads.

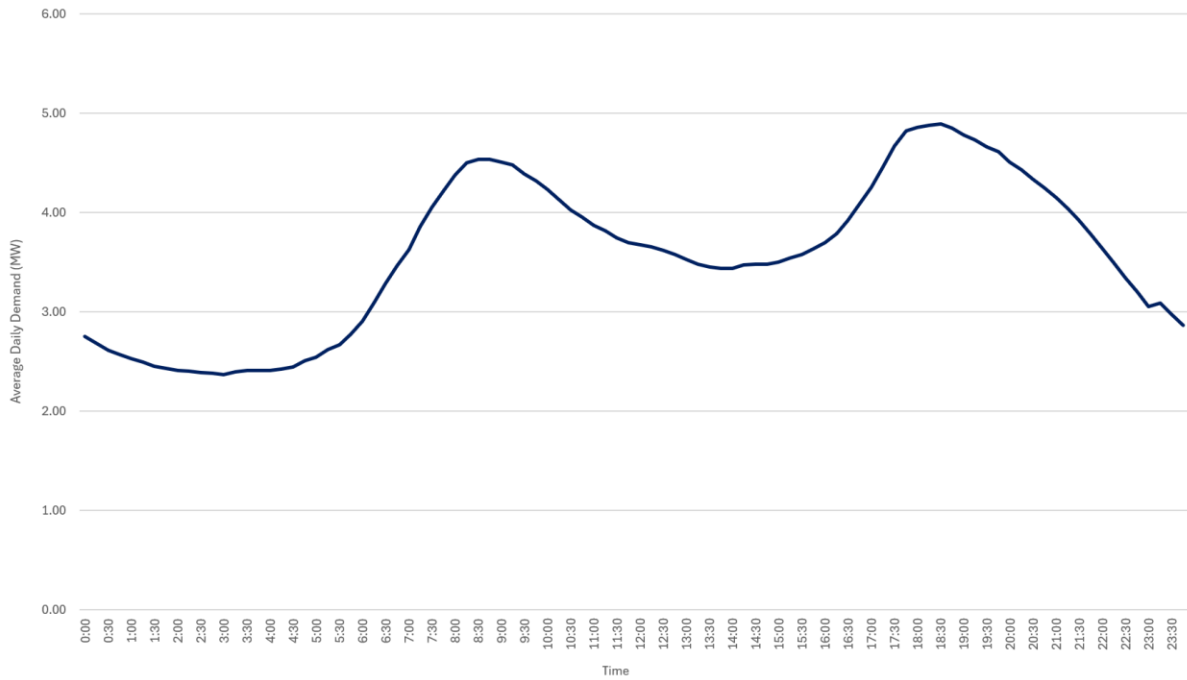


Figure 2: Average Daily Demand Profile at Ludstone Zone Substation During Winter.

The morning demand peak at Ludstone zone substation has grown over the past 3 years, from 4.5 MW to almost 6 MW, however the evening peak has been relatively stable. The mid-day load was noticeably higher in FY24 (2023 winter’s day) due to sustained cold temperatures throughout the day. The peak demand growth increase is projected to continue year-on-year due to subdivision growth and electric vehicle charging, with projections indicating peak demand at Ludstone will be approximately 8 MVA by 2030.

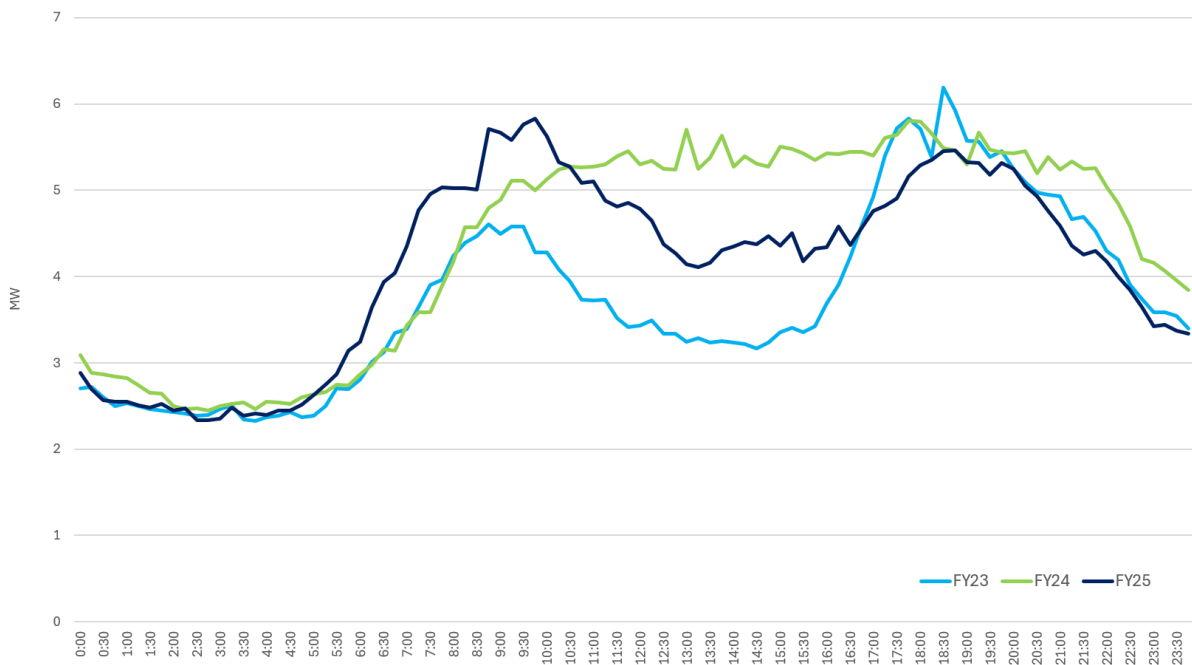


Figure 3: Demand Profile at Ludstone Zone Substation on for Each **Worst-Case Day** from FY24 - FY25.

MainPower is exploring options to provide the required capacity support at Ludstone zone substation, which may be either:

- a) Traditional network upgrades which increase the site capacity and security of supply; or
- b) Non-network flexible solutions which provide either an alternative supply or reduction in demand when called, that allows for deferral of traditional network investment; or
- c) A combination of a) and b).

Preference will be given to non-network solutions that provide a comparable level of reliability to a traditional network solution during the defined period of agreed supply.

The security of supply capacity at Ludstone Zone Substation is limited by the 33/11 kV power transformers (7.2 MVA after utilising short-term dynamic ratings). The transformers have more than 25 years of remaining service life. Replacement of these assets, in time, may be deferred if non-network solutions provide alternative capacity and security of supply options.

4. Reliability and Capacity of the Non-Network Solution

As this is capacity support, any solution will ideally be activated without prior advanced notice, and so be able to respond in real time. If this is not possible, respondents should specify what lead time for notice of operation is required.

The solution should respond with expected capacity when required.

5. Other MainPower ROI considerations

MainPower will also consider the following when assessing ROI responses:

Reputation / track record	Respondent's experience in delivering similar solutions and capacity to deliver.
Price	Assessing how the total payable, terms of payment and structure impact on MainPower.
Integration	How the response will integrate with MainPower's existing physical and digital infrastructure.
Other factors	How the response provides ancillary benefits to MainPower and its customer base.

Appendix 2- Scope of Works Cheviot Zone Substation

Non-Network Capacity Solution

This RFI is focussed on the provision of non-network capacity support for Cheviot Zone Substation.

Prospective suppliers are invited to submit a response even if the solution cannot fully meet the specific requirements that have been outlined for Cheviot Zone Substation.

MainPower has identified other areas of the network which could benefit from non-network support:

- Mouse Point (Culverden) – RFI completed in September 2024
- Hanmer Springs township – RFI focuses on supporting security of supply constraints
- Kaikoura – RFI focuses on supporting security of supply constraints

MainPower anticipates issuing further RFIs for non-network support to identify and progress viable alternatives to traditional network solutions.

1. Technical Requirements

The following technical requirements will be used by MainPower to assess responses to this RFI:

Table 2: Flexibility Capacity Requirements for Cheviot Zone Substation.

Metric	Demand (MVA)	
	2025-2030	2030-2035
Requested Peak Capacity	300kVA	800kVA (pending review in 2029)
Daily Duration	9:00 am – 17:00 pm	
Availability	Mid-November – Mid-April	

- a) Capacity support will be sought to reduce peak loads on the existing zone substation and allow further growth in the Cheviot area.
- b) Any capacity solution will need to be in service and providing load reduction during the identified period, with preference to matching capacity to the projected demand profile rather than meeting the full maximum demand requirements over the entire day.
- c) Variations in the technical scope can be made to achieve a cost-effective outcome. An example of this may include reduced availability of capacity during the early morning or evening hours.
- d) MainPower is open to all available technologies, but preference will be given to low carbon solutions which meet MainPower's decarbonisation goals.
- e) Different techniques, or technologies may be employed together to achieve the specified capacity requirements. This may include modification of consumption patterns, or introduction of new storage or generation into the network.
- f) The additional capacity provided by the respondent should not include ripple control which is already accounted for within MainPower's demand peak control methodology.
- g) Any option to improve the reliability of the specified zone substation by providing capacity in response to planned or unplanned outages will be favourably viewed but is not the primary focus of this request.
- h) Preference will be given to solutions that can provide a comparable level of reliability to traditional network investments during the defined period of agreed supply.

- i) Preference will be given to communication interfaces that are recognised industry standard and can be developed in coordination with MainPower’s technical team to ensure efficient and reliable operation.
- j) If the non-network solution includes the incorporation of aggregated distributed resources, then MainPower will seek to ensure that the impact of demand reduction can be quantified on the network.

2. Background Information – Cheviot Zone Substation

Cheviot Zone Substation supplies Cheviot township and the surrounding rural region, including Spotswood and Domett, in the Hurunui District via an 11 kV distribution network. Cheviot zone substation is supplied from the Waipara GXP via MainPower’s 66 kV sub-transmission network and contains a single 2/4MVA, 66/11 kV transformer.

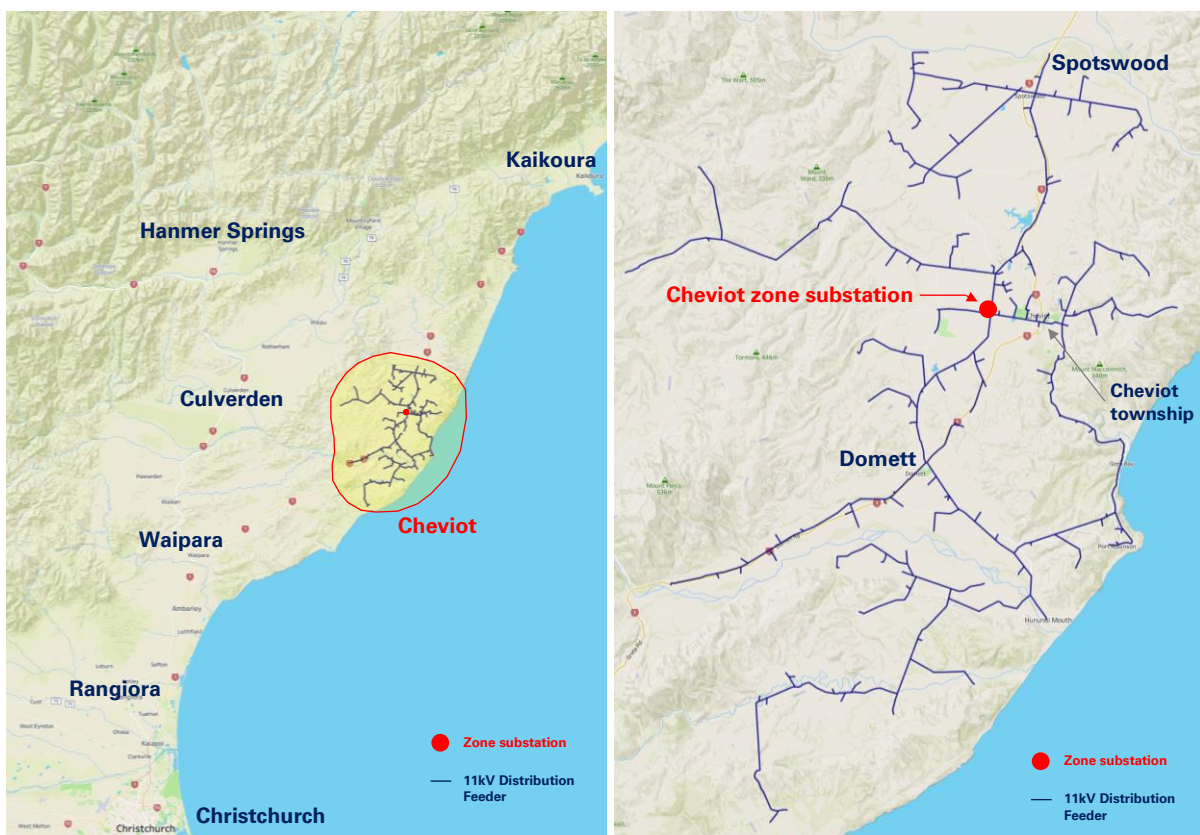


Figure 4: Cheviot Zone Substation (red dot), with area of supply (shaded yellow) and 11 kV distribution network (navy).

3. Electricity Demand at Cheviot Zone Substation

Cheviot zone substation supplies a primarily rural load which peaks in summer and has a relatively stable demand profile throughout the day. The demand profile appears to be primarily derived from irrigation, rural and commercial loads.

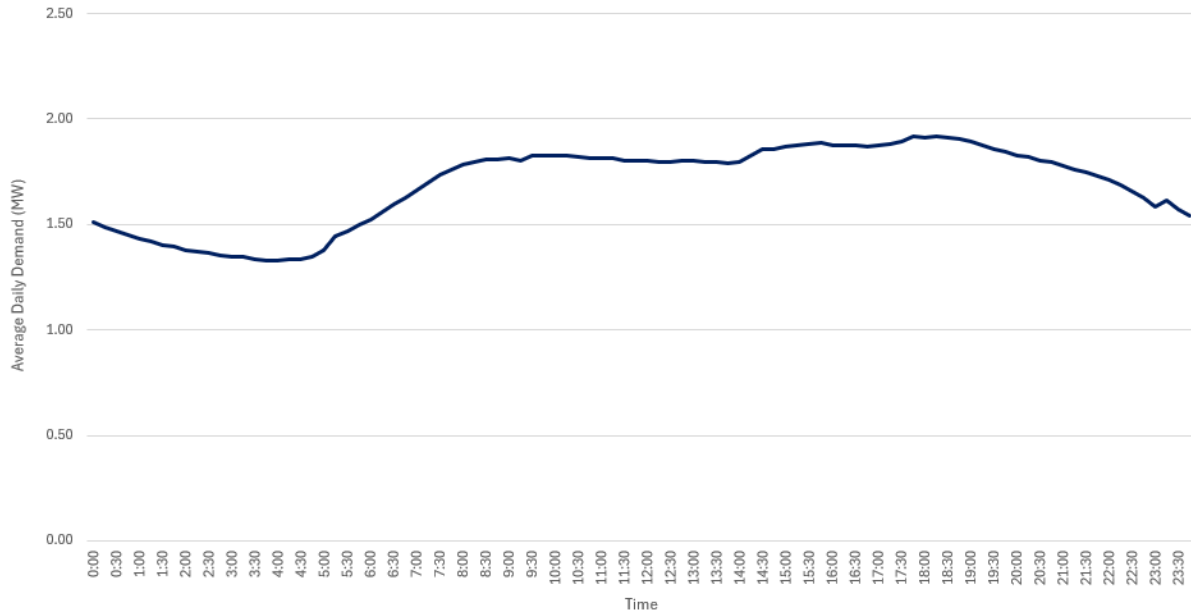


Figure 5: Average Daily Demand Profile at Cheviot Zone Substation During the Summer.

Peak demand growth at Cheviot zone substation has been relatively stable, however during the summer of 2023-2024, there was an increase in daytime temperatures, resulting in an increase in peak demand at Cheviot. This increase is not projected to further increase year-on-year continuously, and projections indicate that peak demand at Cheviot will be approximately 4.2 MVA by 2030.

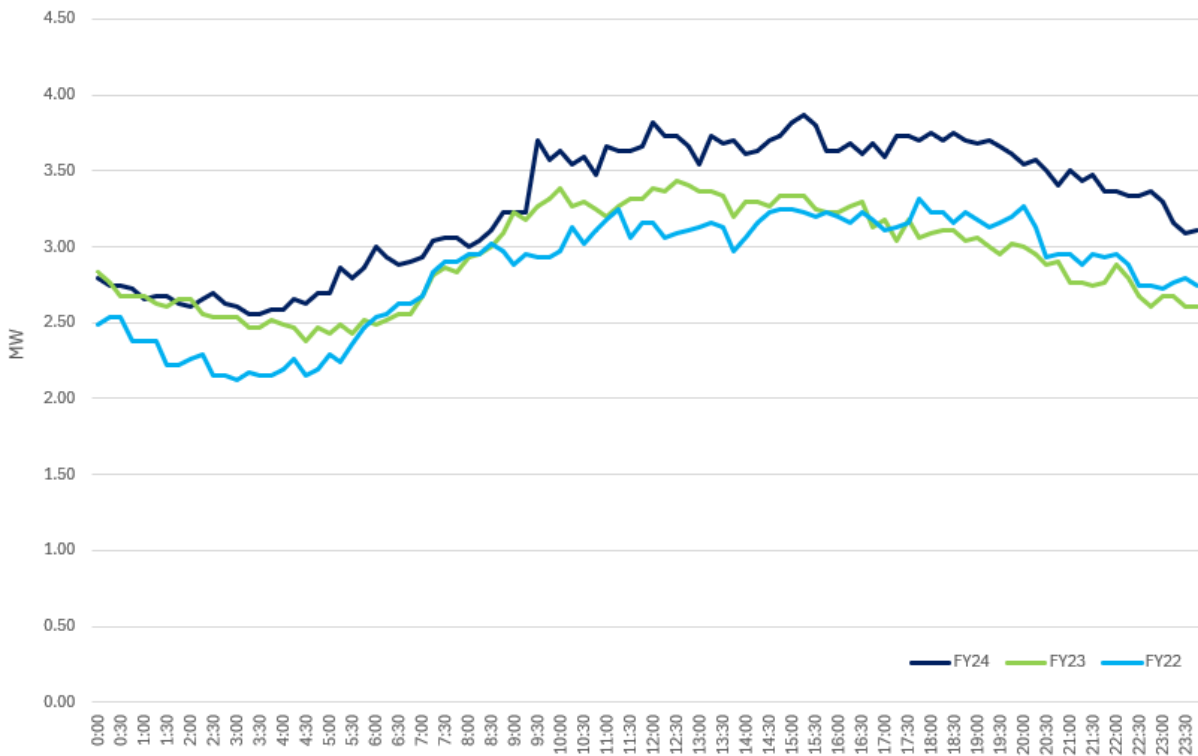


Figure 6: Demand Profile at Cheviot Zone Substation on for Each **Worst-Case Day** from FY22 - FY24.

MainPower is exploring options to provide the required capacity support at Cheviot zone substation, which may be either:

- a) Traditional network upgrades which increase the site capacity; or
- b) Non-network flexible solutions which provide either an alternative supply or reduction in demand that allows for deferral of traditional network investment; or
- c) A combination of a) and b).

Preference will be given to non-network solutions that provide a comparable level of reliability to a traditional network solution during the defined period of agreed supply.

The capacity at Cheviot Zone Substation is limited by the single 4 MVA, 66/11 kV power transformer which is projected to have more than 30 years of remaining service life. Replacement of these assets, in time, may be deferred if non-network solutions provide more efficient use of MainPower financial resources.

4. Reliability and Capacity of the Non-Network Solution

As this is capacity support, any solution will ideally be activated without prior advanced notice, and so be able to respond in real time. If this is not possible, respondents should specify what lead time for notice of operation is required.

The solution should respond with expected capacity when required.

5. Other MainPower ROI considerations

MainPower will also consider the following when assessing ROI responses:

Reputation / track record	Respondent's experience in delivering similar solutions and capacity to deliver.
Price	Assessing how the total payable, terms of payment and structure impact on MainPower.
Integration	How the response will integrate with MainPower's existing physical and digital infrastructure.
Other factors	How the response provides ancillary benefits to MainPower and its customer base.

Appendix 3 – Scope of Works Hanmer Zone Substation

Non-Network Capacity Solution

This RFI is focussed on the provision of non-network capacity support for Hanmer Zone Substation. Hanmer Zone Substation is supplied from a single 33 kV sub-transmission circuit. MainPower requires an alternative flexibility solution to maintain security of supply to the Hanmer Springs township that is more cost effective than the construction of an additional 33 kV circuit. All options will be considered as the existing security of supply at Hanmer Springs is not considered economically viable.

Flexibility solutions offered do not have to meet all the demand requirements but must offer a considerable improvement on the existing security of supply at Hanmer Springs.

1. Technical Requirements

The following technical requirements will be used by MainPower to assess responses to this RFI:

Table 3: Flexibility Capacity Requirements for Hanmer Zone Substation.

Metric	Demand (MVA)	
	2025-2035	2036-2050
Requested Peak Capacity	8MVA	TBD
Duration	24 hours per day for up to 3 days	
Availability	Continuous (12 months per year)	

- a) Capacity support will be called if there is a sub-transmission outage. The non-network solution must be able to operate independent of the distribution network (islanded) to support Hanmer Springs town while the network connection is offline (faulted sub-transmission supply).
- b) When the flexibility resource is called, the response needs to be rapid – preferably without loss of supply to consumers, but up to 45 minutes is acceptable.
- c) MainPower is open to all available technologies, but preference will be given to low carbon solutions which meet MainPower’s decarbonisation goals.
- d) Variations in the technical scope can be made to achieve a cost-effective outcome. Examples of this may include:
 - a. Reduced availability of capacity during the early morning or late evening hours.
 - b. Matching capacity to the projected demand profile rather than meeting the maximum demand requirements over the entire day.
- e) Different techniques, or technologies may be employed together to achieve the specified capacity requirements. This may include modification of consumption patterns, or introduction of new storage or generation into the network.
- f) The security of supply capacity provided by the respondent should not include use of ripple control as a sub-transmission outage will prevent ripple signalling from being available.
- g) Preference will be given to solutions that can provide a comparable level of reliability to traditional network investments during the defined period of agreed supply.

- h) Preference will be given to a communication interface that is a recognised industry standard and can be developed in coordination with MainPower’s technical team to ensure efficient and reliable operation.

2. Background Information – Hanmer Zone Substation

Hanmer Zone Substation supplies the Hanmer Springs township and the surrounding areas in the Hurunui District with an 11 kV distribution network. The substation is supplied by MainPower’s single 33 kV sub-transmission circuit which is constructed from Ferret and Mink conductor and has a rating of ~12.5 MVA.

The Hanmer Zone Substation contains one 6 MVA, 33/11 kV transformer and one 2.5 MVA, 33/11 kV transformer (offline). MainPower has plans to rebuild the substation in a new location by 2029, with a new site that includes two 7.5 MVA, 33/11 kV transformers and a new 11 kV switchboard.

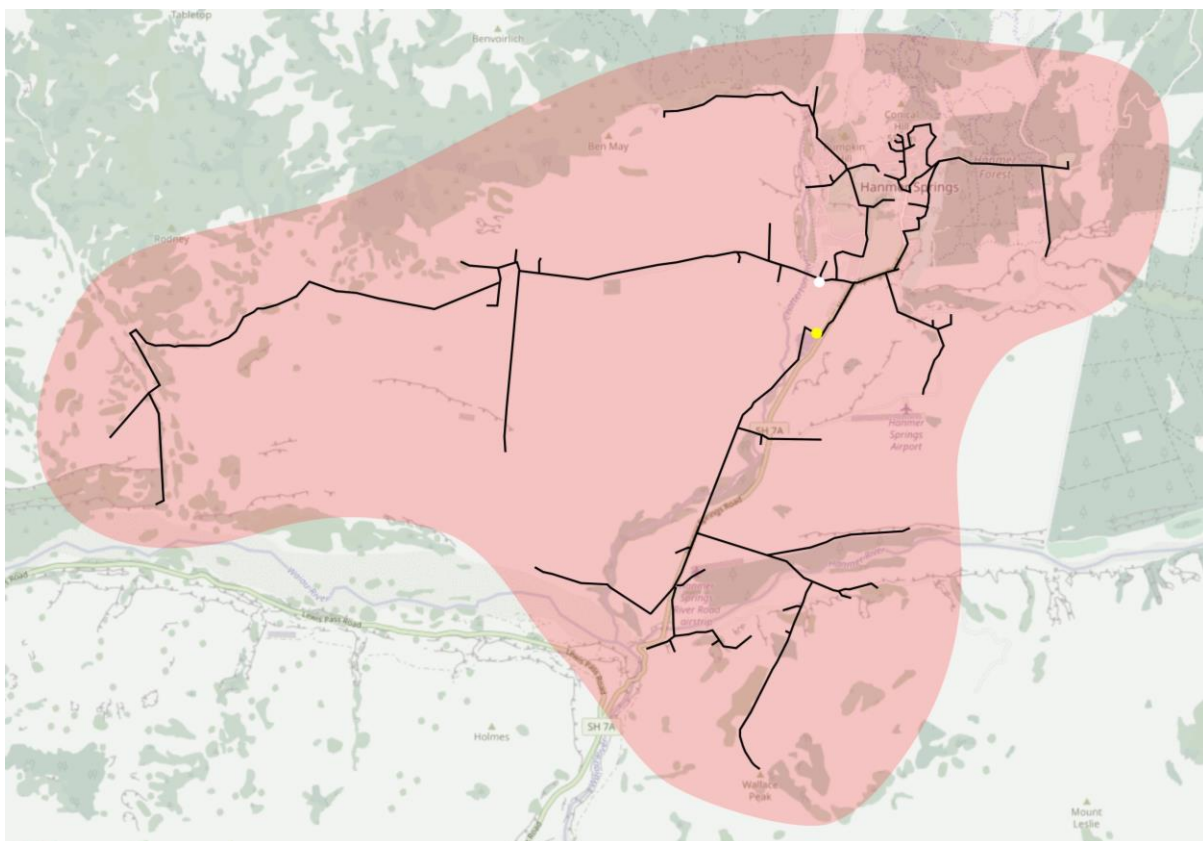


Figure 7: Hanmer Zone Substation (white), Possible Future Location for Hanmer Zone Substation (yellow), with area of supply (shaded red) and 11 kV reticulation network (black).

3. Background Information – Security of Supply

The Hanmer Zone substation is supplied via a single 33 kV circuit that connects to MainPower’s Mouse Point Zone Substation (near Culverden). Any fault or maintenance outage on this circuit (including the line conductor and circuit breakers) will result in either an outage to customers or require the deployment of costly generation to meet network demand requirements.

According to MainPower’s security of supply standard (detailed within Section 6.2.1 of MainPower’s 2024 Asset Management Plan) the Hanmer Substation is an AA Class

Substation, and the targeted duration for an outage for a transformer, line or cable fault is 45 minutes by switching at the sub-transmission or distribution level.

To meet this requirement, the Hanmer Substation must have an alternative option to supply the entire Hanmer Springs township in an 'Islanded' configuration at peak demand (currently approximately 5.0 MW).

The only identified network option to improving the security of supply of Hanmer Substation is to construct an additional 33 kV circuit, however this has been deemed uneconomic and has not been included within any of MainPower's long-term plans.

MainPower does plan to replace Hanmer Zone Substation driven by capacity demand growth and aging equipment condition within the next five years. The replacement of the Hanmer Zone Substation will not be significantly affected by the implementation of a non-network capacity solution as the Hanmer Zone Substation will remain on N-security due to the supply from a single 33 kV circuit.

4. Electricity Demand at Hanmer

The Hanmer Zone Substation supplies a small township which peaks in winter during the mornings and early evenings and experiences greatest demand during public holiday weekends. The demand profile appears to be primarily derived from residential and commercial loads – resulting in a rapid early morning and early evening increase.

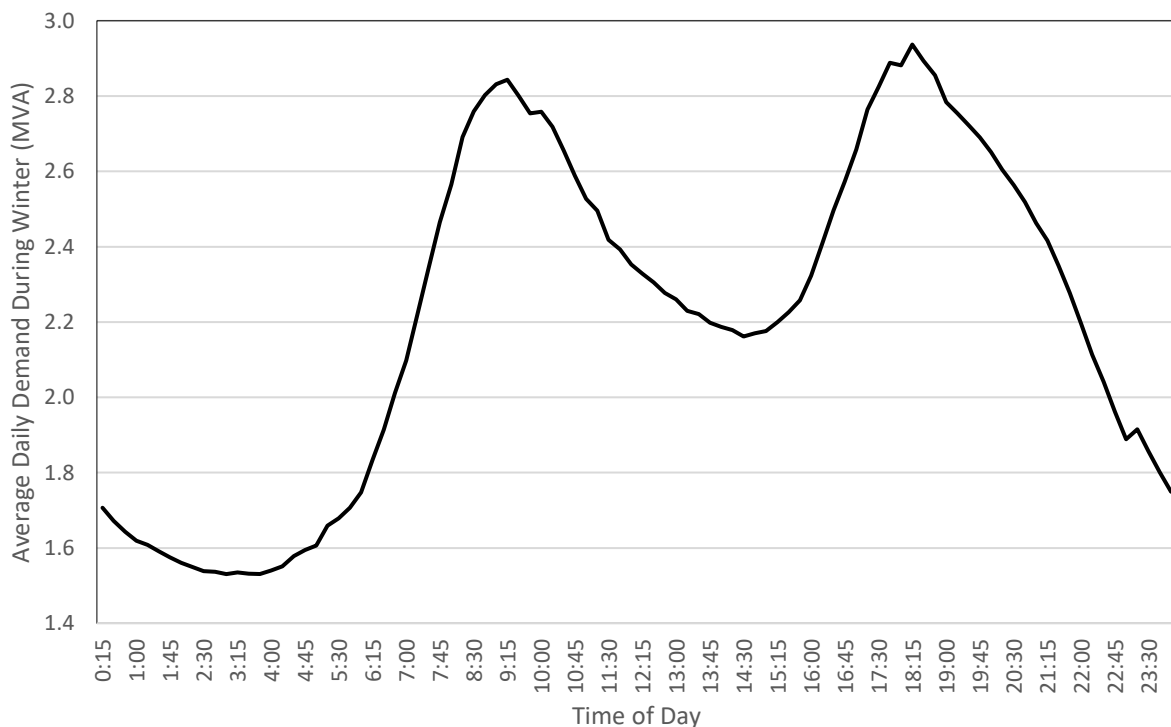


Figure 8: Average Daily Demand Profile at Hanmer Zone Substation During the Winter.

Peak demand growth at the Hanmer Zone Substation has been relatively stable, and while residential subdivision and commercial projects are in development, previous developments have not resulted in rapid growth.

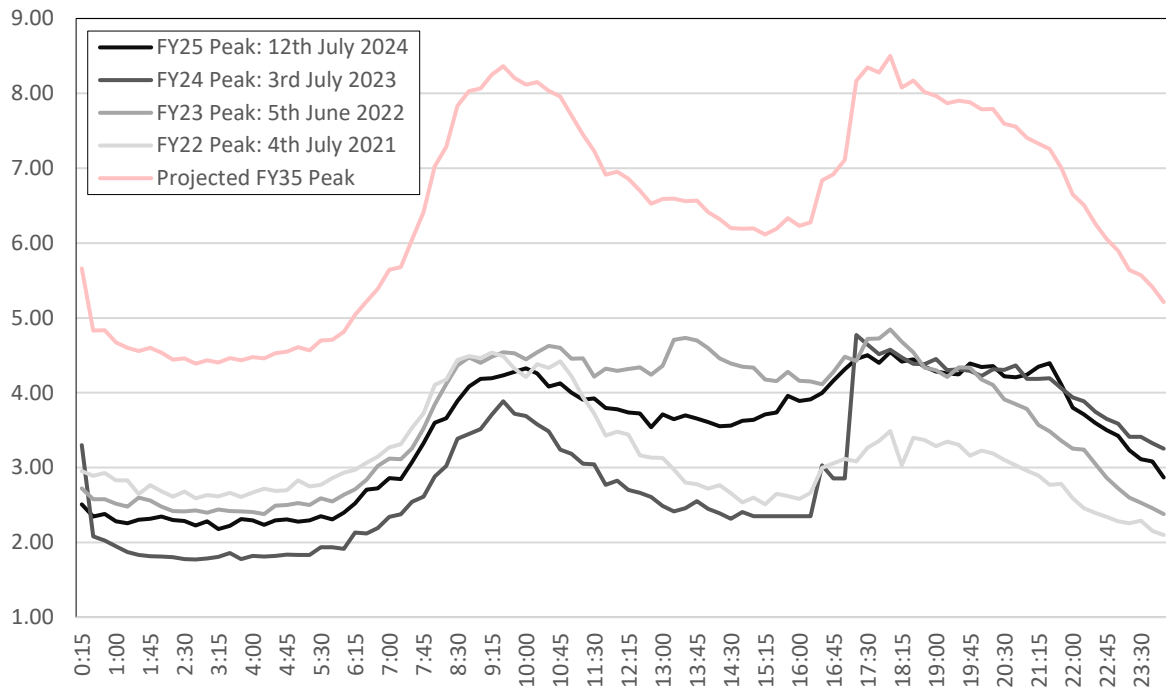


Figure 9: Demand Profile at Hanmer Zone Substation on for Each Worst-Case Day from FY22 - FY25.

5. Reliability and Capacity of the Non-Network Solution

Any solution will ideally be activated without prior advanced notice, and so be able to respond in real time. If this is not possible, respondents should specify what lead time for notice of operation is required.

The solution should respond with expected capacity when required.

6. Other MainPower ROI considerations

MainPower will also consider the following when assessing ROI responses:

Reputation / track record	Respondent's experience in delivering similar solutions and capacity to deliver.
Price	Assessing how the total payable, terms of payment and structure impact on MainPower.
Integration	How the response will integrate with MainPower's existing physical and digital infrastructure.
Other factors	How the response provides ancillary benefits to MainPower and its customer base.

Appendix 4 – Supplier Information Sought

Please respond to the following questions in your solution proposal.

1. An overview of the proposed Non-Network Solution

- a. Provide an overview of your proposed capacity support solution
- b. Provide details of the technology, infrastructure and communication modes your solution proposes to utilise.

2. Methodology

- a. Provide details of how you would intend to deliver and maintain your non-network capacity solution.
- b. A recommended implementation timeline, staged if appropriate

3. Demonstrated Capability

- a. Provide a summary of your capabilities to provide the proposed non-network capacity solution including
 - i. Resources
 - ii. Technology
 - iii. Infrastructure

4. Reliability

- a. Provide details of your expected solution reliability (levels of service).
- b. Provide samples of your Service Level Agreement and Key Performance Indicators

5. Health and Safety

- a. Please state any known health, safety or equipment risks that may be associated with the proposed flexibility solution.
- b. Identify how any risks associated with the solution will be managed.

6. Demonstrated Experience

- a. **References:** Please provide the names of two references whom we can contact

7. Pricing

Please provide indicative pricing information for

- a. The availability/deployment of the non-network solution during the period requested.
- b. Any other charges or costs associated with the proposed solution.

8. Additional Information / Value Add

Please detail any additional benefits to MainPower including potential productivity gains, cost benefits, business simplification, and end user benefits.

9. Company Background

(Please provide the following information on your Company):

- a. Geographical area covered
- b. Where is your Company Head Office?
- c. Key Personnel, who will be involved with MainPower
- d. Major Shareholders
- e. Years established
- f. Annual Financial Report
- g. Please provide a list of your key customers.
- h. Do you have any endorsement of your product from a Utilities Company or other similar business? If so, please provide details of the Customer
- i. Environmental and Social Responsibility programmes
- j. Please provide a company organisation chart