

Committed to Future-Proofing Our Region's Power Supply

Invercargill – Awarua 66kV Line Upgrade Project

At PowerNet, we take our responsibility seriously to ensure the communities we serve can rely on a safe, efficient and reliable power supply – now, and into the future.

To do this, it is important that our network can meet our customers' growing electricity demands so they can do the things they want to do, when they want to do them. That's why PowerNet is constructing a new 66kV distribution line in the Awarua region to support the decarbonisation efforts of our industrial customers and to increase electricity capacity as part of future-proofing supply in the area.

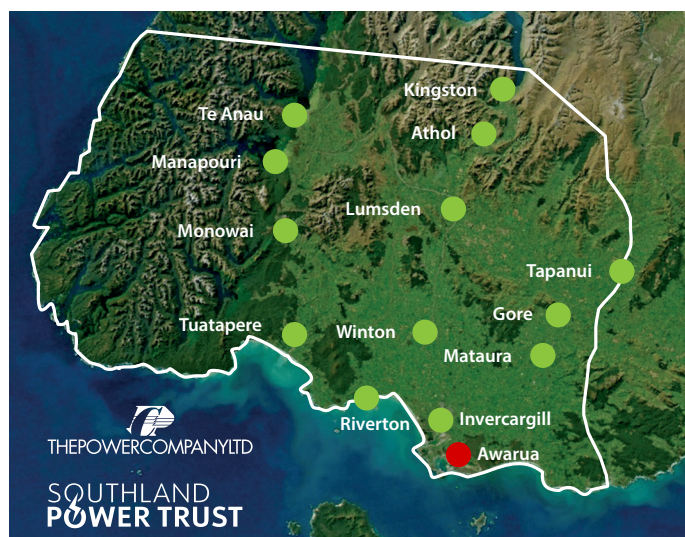
We recognise that this new line will result in changes to the network visible to some customers in the southern region. We are committed to improving your power supply for the future and ensuring our plans are understood. We are also committed to working with you during the project.

Here we outline details of our upgrade project - why we're doing it, what it means for customers in the region, and what to do if you would like further information.

The Awarua Network Overview

Customers in the Awarua region are part of The Power Company (TPCL) network. TPCL is owned by the Southland Electric Power Supply Consumer Trust, which contracts PowerNet to manage the network on its behalf.

This line upgrade project will service the power supply needs of customers in the region south of Invercargill, Awarua and Bluff for the next 50 years.



Want to know more?

Contact us at awarualine@powernet.co.nz



Why We're Upgrading the Awarua Network

To Enable Decarbonisation

In response to customers in the Awarua region who are decarbonising their industrial operations by switching from coal to electricity, PowerNet is planning to build a new 66kV distribution line from the Invercargill Transpower substation (near Findlay Road) to Awarua in spring 2024. The new line will cover a 19.5-kilometre route.

As the region's electricity distributor, TPCL and PowerNet are committed to facilitating the transition path for decarbonisation. The New Zealand Government's target to remove carbon from the country to meet our international commitments (the Paris Accord) is resulting in several industries phasing out coal and other fossil fuels (such as petrol and diesel) and powering their operations with electric energy. This means that by 2050, the forecast electricity use is set to have doubled in New Zealand and will require more power stations, transmission and distribution line assets to power our country.

Southland is moving fast to decarbonise, reflected by the number of industries in our region that are actively removing coal from operations, with transport and heating to follow. PowerNet is currently working with a variety of customers to enable 300MW of new electricity use, so we need to ensure we have the infrastructure in place to meet our customers' needs and support them in their decarbonisation efforts. When upgrading or building new electricity infrastructure, we take a long-term view (50 years) to ensure the assets required will meet the future needs of our communities, and the anticipated growth for the region.

To Ensure Reliable Supply for All Customers

The existing electricity lines in Awarua do not currently have the capacity to transmit the increased volumes required for our industrial customers who are decarbonising their operations. Using the existing lines would have resulted in network constraints on the current 33kV sub-transmission circuit to Bluff.

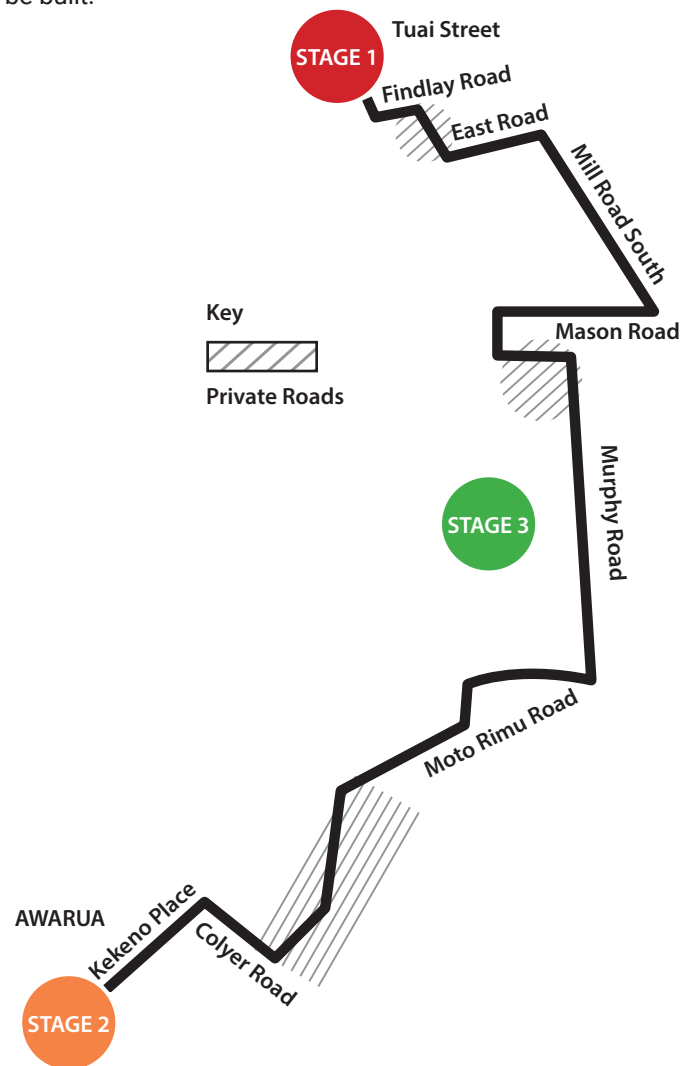
This would have affected the reliability of power supply for a broader range of customers in the region too.

The 66kV upgrade will accommodate the electrification goals of our region's industrial customers, while also relieving and providing additional capacity for regional development in the future. For example, planning is underway for the residential subdivision development Te Puāwai, which will increase demand on the network and require more electricity capacity.

Therefore, the new distribution line proved to be the optimal solution to ensure we can support our customers wanting to decarbonise, meet our service standards, and continue to deliver a reliable power supply for our Awarua customers for the next 50 years.

The Project Details

PowerNet has identified the below route for the new line to be built.



There are three stages to the project:

Stage 1

Upgrade the Transpower Grid Exit Point (GXP) Substation (off Findlay Road)

Stage 2

Build a new substation at Awarua (Kekenno Substation)

Stage 3

Build a new 66kV distribution line (from Findlay Road to Awarua)

In some areas where the new distribution line will be constructed, there is an existing power line. Where this is the case, the existing line, which carries 11,000 volts (11kV), will share the new 66kV poles (with the exception of Findlay Road and East Road) and the old network equipment will be removed.

The Project Details

The Rationale for the Line Route and Asset Type Selected

As part of our planning process to increase electricity capacity for Awarua, multiple line routes and design options were considered.

The new line route was selected over the below alternative options (which have been queried by customers) for the following reasons:

Alternative Option 1: Utilise the existing Transpower 220kV line to Tiwai. This would have required a new GXP to be constructed under the 220kV line, which was estimated to cost over \$40 million and therefore determined not feasible for economic reasons.

Alternative Option 2: Route the new line down Racecourse and Rockdale Roads. This alternative line route already supplies power to several customers, so it was determined not feasible for congestion reasons.

Alternative Option 3: Build multiple line routes across private land. This would have posed challenges with access issues for construction and ongoing maintenance (such as planned and unplanned fault response). Therefore, it was determined not feasible for construction practicality, maintenance ease, and future reliability reasons.

Alternative Option 4: Use underground cables instead of overhead lines along the proposed route. For this project, undergrounding is estimated at \$23 million more than the cost of overhead lines (as at November 2024). Also, underground 66kV cables provide more technical challenges than above ground lines during construction, and for future repairs and maintenance. Therefore, this option was determined not feasible for economic, maintenance and future reliability reasons.

To deliver a safe, efficient and reliable supply, PowerNet needs to balance the electricity demand needs of all customers, with the ability to maintain and repair our assets to ensure a safe and reliable supply, alongside the cost of delivering our service. Power users pay the cost of electricity assets over the life of those assets and, therefore, this line upgrade was the optimal solution that considered the long-term interests of all electricity users in the region.

Land Access and Roadside Power Line Approvals

In some places along the planned route, the line needs to cross and access private land. To enable this, easement agreements have been (or are currently being) reached with affected landowners.

For the remainder of the new line route, PowerNet has obtained approval to use the roadside for the new line. Utility companies like PowerNet can apply to the road owner (which is either the local authority or the New Zealand Transport Agency (NZTA)/Waka Kotahi) to use the road reserve to route utilities. The road reserve is the roadside area between the edge of a road and the private property boundary area.

Whether the land is owned by the roading authority or a private landowner, approval is required. PowerNet will not place any electricity assets on land without landowner approval.

There are many reasons why roadside lines are preferable to those that traverse private rural land, including the ability to access the lines more easily for maintenance. It is common for private landowners to restrict access due to their seasonal requirements (such as during lambing or cropping seasons).

In addition, roadside assets mean the lines can be accessed any time throughout the year, which is important for planned maintenance as well as for repairing faults (such as during unplanned power outages). Roadside lines were therefore determined preferable for this upgrade project to ensure we could continue providing a reliable service to our customers in the region.

What the Upgrade Means for Customers in the Area

PowerNet recognises that some residents will now have either a new power pole and line going down the side of the road, or a replacement pole that is higher than existing poles. The new poles are 21 metres high, but when installed along the route, they will vary in height (from 16 to 21 metres, dependant on the terrain).

We know that this new upgrade will result in visual amenity changes in the area. PowerNet has held customer meetings with some of the affected residents (predominantly those who live in proximity to the new line route that uses the road reserve between Findlay Road and Awarua) to listen to their feedback, provide our rationale for the upgrade, and outline the line-build plans. We acknowledge these customers have homes and lifestyle blocks that adjoin the road reserve and would prefer the line was not built in this area. We are committed to working with these customers and have offered to meet with residents at their property to address their feedback around avoiding issues such as blind spots when exiting driveways. PowerNet will liaise with these residents and can make adjustments to exact pole locations to accommodate this.

We are committed to continued engagement and urge customers to get in touch if they would like any further information. In addition, we will continue to liaise with customers throughout the project and be available for any questions residents may have along the way.

Construction of the new line will start in 2024 and is due to be completed by early 2025. Residents will be advised in advance of when line construction activity will occur in their area.

Keeping our Community Safe

At PowerNet, safety is paramount and is our number one priority. As an electricity distribution business, PowerNet is required to ensure all upgraded and new distribution network lines comply with national standards, such as AS/NZS 7000, NZECP34 and the Electricity Act 1992.

In addition, as part of our planning process, we worked with the road owner (NZTA and the local authority) to ensure the placement of the line and poles will meet all safety standards and minimise any public safety risks. In response to customer feedback, we have also committed to meeting with residents at their property to consider adjusting the placement of poles to address issues such as blind spots when exiting driveways.

To ensure the safety of our teams and the public during the commissioning process, a number of planned outages will be required. PowerNet will ensure all affected customers are notified in advance of any required planned outages.

Want to know more?

Visit our website

www.powernet.co.nz/current-projects

Register for updates, ask questions & send us your feedback.

Contact us at awarualine@powernet.co.nz

