

Murihiku Southland Regional Development Plan

Transpower and PowerNet are committed to facilitating an optimised transition path for decarbonisation in the Southland region. As the grid owner and operator, Transpower's role is to understand how the transmission network might need to change to accommodate and enable this new energy future and support electrification at pace. PowerNet as the distribution network operator for the region works together with Transpower to ensure the delivery of a safe, efficient and reliable supply of electricity the homes and businesses of the Southland region.

The Southland region is primed for decarbonisation. Various businesses, community groups, iwi, local and central government are looking to capitalise on the region's abundant renewable energy resources, both to increase renewable generation and support the decarbonisation of existing industries, alongside supporting potential new growth.

Given the amount of change and the ongoing negotiations by the New Zealand Aluminium Smelter (NZAS) on its longer-term electricity requirements, we are scoping a Regional Development Plan for Southland. This approach will allow Transpower and PowerNet to take a broader planning perspective and will result in a more efficient approach to required grid and distribution network investments than a reactive, project-by-project approach. As a result, the Regional Development Plan will seek to encapsulate the latest demand drivers, forecasts and potential new generation opportunities in the area, and will therefore need to be developed with input from a broad range of Southland stakeholders.

The outcome of the engagement process will be a transmission plan that firstly identifies a range of low-cost, short-term upgrades that can be undertaken to support additional capacity on the distribution and transmission networks, supporting active new generation connection requests. Distribution network upgrades will also be considered during this process. It is also anticipated that the engagement will identify any larger transmission network augmentations that are required in future to meet longer term development needs in Southland and how these can be progressed.



Map 1: The transmission network in Southland and Southern Otago; the yellow lines illustrate the 220 kV network, and the red lines illustrate the 110 kV network. It includes our Grid Injection Points and Grid Exit Points in Southland; (Manapouri (MAN), North Makarewa (NMA), Invercargill (INV), Tiwai (TWI), Edendale (EDN), Brydone (BDE), Gore (GOR) and the Gore Tee (GOT).

Government funding and partnerships are accelerating Southland's decarbonisation

Transpower and PowerNet are working with the Energy Efficiency and Conservation Authority (EECA) as it drives industrial decarbonisation through process heat electrification in Southland:

- EECA has developed a Regional Energy Transition Accelerator (RETA) to develop and share a well-informed and coordinated approach for regional decarbonisation.. The Southland RETA programme has identified that Southland has one of the highest potentials for decarbonising process heat, with 31 sites that could replace coal with electricity – a potential energy conversion of 274 MW.¹
- The Government recently announced a new policy statement and standards which ban the installation of new coal boilers, with existing units to be phased out by 2037.²
- EECA also administers the Government Investment in Decarbonising Industry Fund (GIDI Fund), issuing a total of \$650m (\$1bn over 7 years) that was allocated as part of Budget 2022. Over the four funding rounds to date, Southland has received over \$15m of EECA co-investment across 11 electrification projects.³ The fifth round of GIDI Fund proposals closed in March 2023 and EECA has recently announced that the GIDI: Industrial (the fund for medium to large industrial businesses) is now 'always-on', so applicants can apply for funding at any time.

Central Government has also been funding a Just Transition programme in Southland following the New Zealand Aluminium Smelter's (NZAS) 2020 announcement that it would exit the country. In 2021 NZAS signed a new electricity contract that is due to expire in December 2024. Recent commentary from the electricity industry and NZAS suggests NZAS is seeking a new electricity contract for a longer term, possibly by underwriting or [partnering with renewable energy projects](#) via Power Purchase Agreements. As the consumer of ~14 per cent of New Zealand's electricity, NZAS's movements have significant ramifications for the electricity sector as well the Southland region.

As part of the Southland Just Transition programme, the Government has provided \$100m to deliver a Regional Hydrogen Transition. Meridian Energy has announced a large-scale Southern Green Hydrogen project in Southland.⁴ The Government recently committed a further \$8m to support other high-impact projects identified through the Just Transition process.

The Southland Just Transition aligns with the development of the Southland Murihiku Regional Energy Strategy 2022-2050,⁵ a strategy commissioned by Southland Regional Development Agency (Great South) and Murihiku Regeneration; an initiative co-led by four Papatipu Rūnanga of Ngāi Tahu. The vision for the Strategy is that *"Energy in Southland Murihiku is clean, resilient and affordable, supporting a thriving community"*. The Strategy notes some concerns around the scale of the current transmission and distribution electricity networks, and that additional capacity would be beneficial to the region to support ongoing decarbonisation of industry.

¹ <https://www.eeca.govt.nz/insights/data-tools/regional-heat-demand-database/>

² <https://www.beehive.govt.nz/release/government-ban-new-coal-boilers-place>

³ GIDI Fund results: In Round 1, Alliance's Lorneville site received \$1.59m for energy optimisation and electrification opportunities. In Round 2, Alliance's Lorneville site received \$5m for a 16 MW electrode steam boiler. Its Mataura sites received \$750k for an electric heat pump system. Mataura Valley Milk's Gore site received \$5m for New Zealand's first high-pressure electrode boiler (15 MW) to make the site 100% electrified. In Round 3, Blue Sky Meats received \$377k for a new high-temperature electric heat pump. In Round 4, Downer received \$279k for an innovative hybrid electric model for providing manufacturing bitumen. Alliance's Lorneville site received \$885k for the installation of a third high-temperature heat pump.

⁴ <https://www.southerngreenhydrogen.co.nz/downloads/49051/1626846656-southern-green-hydrogen-roi-document.pdf>

⁵ [Southland Murihiku Regional Energy Strategy 2022-2050](#)

Transpower and PowerNet are receiving connection requests and supporting development activities

Transpower has received 23 enquiries for new generation projects in the Southland and Southern Otago regions totalling over 4,400 MW. Almost 1,200MW has progressed beyond the enquiry stage.⁶ We have also received 18 enquiries for potential non-generation connections, such as load connections for new electrified process heat 10 of these are embedded within PowerNet's network. We are also having ongoing conversations with significant new industrial customers about their electricity load requirements for projects covering data centres, hydrogen production and process heat.

Transpower and PowerNet have recently collaborated to enable added capacity at Transpower's Gore Substation to enable electrification at Mataura Valley Milk and connection of the first stage of Kaiwera Downs windfarm.

There is enough new load and generation that we know of that is looking to connect to the national grid in Southland for us to need an integrated Regional Development Plan. The lead times associated with electricity transmission and distribution investment can be significant and, considering the accelerating decarbonisation within this region, we want to increase our understanding and visibility of regional goals and aspirations.

Transpower and PowerNet are also keen to understand what other projects may be contemplated for the region over the next 10 years. Insight about new development plans requiring an increase in electricity load and renewable generation investments is key to charting the right pathway forward for a Regional Development Plan that best serves Southland now and into the future.

By announcing our intention to create a Regional Development Plan, we are seeking to confirm our understanding of known projects for electrification, new developments, and renewable generation, as well as future expected growth and investment in the region. This will feed into Transpower's longer term planning for new transmission requirements and PowerNet's distribution planning.

Our priority is to improve Southland's capability to enable and accelerate new load and renewable generation connections

As national grid owner and system operator, Transpower is aware of existing transmission grid reliability issues that could constrain current load growth in the short term, as well as act as a barrier to future investment in new load growth and renewable generation in the longer-term.⁷ There are also grid stability and capacity issues that will impact new load and generation connections. For example, we anticipate that increased load growth may eventually lead to system constraints when there is low hydro and wind generation in the Southland region to meet the existing and growing base and peak load.

There are a range of potential investment options available to resolve these issues before they occur, ranging from short-term tactical upgrades to longer-term, major capital investments. The timing of short-term upgrades needs to be aligned with new load and generation connections while the path to take for the longer-term is currently not clear.

⁶ [Connection enquiry information | Transpower](#)

⁷ [Power system operational impact assessment – Tiwai smelter closure](#)

To anticipate investment requirements, we want to hear your plans for development in Southland

We want to ensure we hear from a wide range of stakeholders and customers as we create our shared Southland Development Plan.

Early discussions

Over the coming month we will be seeking input and engaging in discussions with parties who are investing or who we know are planning to invest in the region.

We encourage you to reach out to us at southland@transpower.co.nz to register your interest in being part of these discussions, and to share this document with others you know who may have an interest.

We are broadly inviting input around:

- a. committed projects, or projects in advanced stages of planning, to help us confirm the need for short-term tactical upgrades to resolve transmission capacity constraints; and,
- b. medium- to long-term plans or projects with a higher degree of uncertainty, to help us develop a longer-term pathway for transmission network development in the Southland region.

Inviting submissions on potential upgrades - a draft Regional Development Plan

In September, we will publish any short-term tactical upgrade options we have identified and invite input into our Regional Development Plan. Written submissions on this document will be welcomed and we will provide more information about this process at the time. This information be utilised by both PowerNet and Transpower in planning discussions.

Engaging further on options and feedback

Based on your input, we will assess the need for transmission and distribution investment in the region, including the potential for some tactical upgrades to support load and generation projects that are ready to progress. This will set the foundation for further engagement with you on the approach to developing the longer-term solution to support projects still currently in a scoping phase or not yet committed.

Publishing our Regional Development Plan

In December, we aim to deliver our Regional Development Plan. This will include low-cost, tactical upgrades required to unlock capacity in the short term, and a timeline for construction. Should your input show that major transmission upgrades are required, we will begin work on a Major Capex Proposal – the form of investment decision proposal required by the Commerce Commission for transmission projects over \$30M - and will communicate further the process and timings around this.

The table below sets out our planned engagement activities and timeframes.

Timeframe	Activity
July 2023	Notice to stakeholders and commence discussions
September 2023	Publish short-term tactical options and invite input into our draft Regional Development Plan
October/November 2023	Engage further on options, assess feedback and consider electricity network implications
December 2023	Publish our findings for the Regional Development Plan and provide an update on next steps

Contact us

We would like an opportunity to discuss these matters with you, both now and over the rest of 2023 as our work on a Murihiku Southland Regional Development Plan continues.

To organise a meeting, contact us at Southland@transpower.co.nz and our team will be in touch. If you have something else to talk about, or just want more information, please reach out to Tania or Kavi.

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