

Information Sheet

Central North Island
Upgrade Project



Bunnythorpe–Tokaanu Lines Thermal Upgrade

Transpower New Zealand, the owner and operator of New Zealand's high voltage transmission network is undertaking a set of projects to increase the transmission capacity of its core Central North Island transmission line routes. This mahi is part of Transpower's work to meet expected electrification of New Zealand's economy (like transport, and industrial processes).

What is a 'thermal upgrade'?

A thermal upgrade runs the lines hotter to allow more capacity to be utilised on them. However, doing that makes the conductors (ie wires) sag more which can cause us problems with safety clearances to the ground below.

So in some places we may need to increase the height of the line, and we can achieve that through a number of different ways:

- increasing the height of the supporting towers (see image overleaf)
- changing how the conductor is suspended at a tower
- doing earthworks to remove a clearance violation below the line
- cutting out a section of conductor to make it tighter (what we call 'nip and tuck'), so it doesn't sag as much.

These works will tend to increase the structural loading on the towers too, so in some places we might need to put more steel into the tower to reinforce it, or put concrete or more concrete around the buried foundations (photos of what this looks like are provided overleaf).



Why is this work needed?

As mentioned, New Zealand’s move to a zero-carbon economy has implications for our transmission network. Expected new generation around the Central North Island will require more capacity from our network to allow it to be transported to where it is needed. Similarly, electricity demand is expected to increase through increased electrification of transport (like electric vehicles), and industrial processes (like milk powder drying).

Will the transmission lines look any different after you’ve increased their capability?

No, they will continue to be lines that operate at 220 kV on the same line routes. The towers will look fairly similar to an untrained eye and the conductor will look the same.

Will your longer-term development path require a new line?

Possibly. We won’t know for sure until we’ve carefully assessed all the costs and benefits of the different options available to increase capacity. One option—known as duplexing—could be particularly effective. This involves changing the conductor configuration to a twin conductor, which may provide more than enough capacity. If that proves to be the case, the work we’re doing to bring the towers up to today’s standards will ensure they’re ready to safely carry the heavier load.

What is the timing from here?

We are planning and working to commence works for this phase in November 2025.

