

Asset Management Plan

2019–2029 SUMMARY DOCUMENT



Planning and investing in the network we need for the future

Every year Network Tasman reviews the capital development, renewals, and maintenance sections of its Asset Management plan. The annual review considers:

- Recent network performance (safety and reliability)
- An updated demand forecast
- The current status of capital and network renewal projects

This summary provides you with the key information from our review and identifies the key steps Network Tasman is taking to ensure our network is well placed to support changes in electricity usage and increased demand for electricity supply.

DEMAND FORECAST

Demand in the industrial sector continued to increase throughout 2018 and is expected to continue for the next few years. This is driven by supply requirements for cold storage, shell fish processing/extraction, rest homes, hop processing, and dairy irrigation.

There is also strong demand due to land subdivision to support growth in residential housing developments. The impact of electric vehicle charging is likely to become a consideration later in the timeframe covered by this plan. Work is underway to identify the LV networks in our system that will require investment to accommodate this.



\$120m

Over the next 10 years, we plan to invest \$120 million in our network.

Where do we fit in the electricity industry?

Generation

In New Zealand electricity is created in several ways, using water, wind, geo-thermal, gas and coal.

Transmission

High-voltage electricity is moved around the country using pylons and the national grid, which are owned and managed by Transpower.

Distribution

High voltage electricity is stepped down at substations, then **Network Tasman** distributes it safely to local residential and business consumers via our network of poles, lines and underground cables.

Retail

Your electricity retailer (the company that sends you a power bill) measures how much electricity you use. The generation, transmission and distribution companies receive their share of what you pay your retailer.

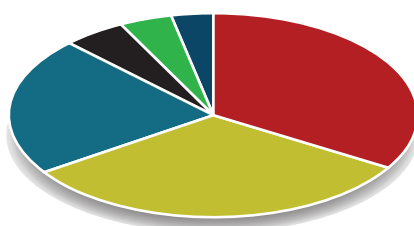
Planning for future demand — capital investment

For the 2019/20 year, Network Tasman's spending on capital projects will primarily fall into one of three areas:

- System growth
- Reliability, safety and environment
- Asset replacement and renewal

Spending on these three areas is forecast to account for almost 90 per cent of Network Tasman's capital expenditure for the coming year.

Planned network investment for 2019/20



- System growth
- Reliability, safety and environment
- Asset replacement and renewal
- Undergrounding
- Consumer connection
- Expenditure on non-network assets

Key Insights

1. Increases in the industrial sector continued throughout 2018 and are expected to continue for the next few years. This is driven by cold storage, shell fish processing/extraction, rest homes, hop processing and dairy irrigation.
2. In the domestic area, land subdivision for residential growth is strong. The impact of electric vehicle charging is also likely to become a consideration later in the plan. Work is underway to identify the low voltage networks in our system that will require investment to accommodate this.

UNDERGROUND CONVERSION

The last major underground conversion project in the AMP is Ellis St, Brightwater. This is planned to be implemented during the 2019-2020 year. In addition, a sum of \$500k is budgeted in the AMP for general and as yet unidentified underground conversion projects.

NETWORK MAINTENANCE

Network Maintenance will continue into 2019-2020 albeit with slightly lower expenditure levels. This change reflects the very good state of network condition that has been achieved during the past 10-year maintenance period and is also the result of Network Tasman redirecting

contractor resource into renewals projects (light copper conductor replacement and platform substation replacements).

Network maintenance will continue to focus on timber cross arm replacements, iron rail pole replacements, and some targeted line hardware replacements such as two-piece Dominion Dropout fuses (DDO).

VEGETATION MANAGEMENT

Vegetation management will continue throughout 2019 with a small increase in expenditure level. This is the flow on effect of a clearance catch-up that follows a notification catch-up in 2018.

Network Development Projects

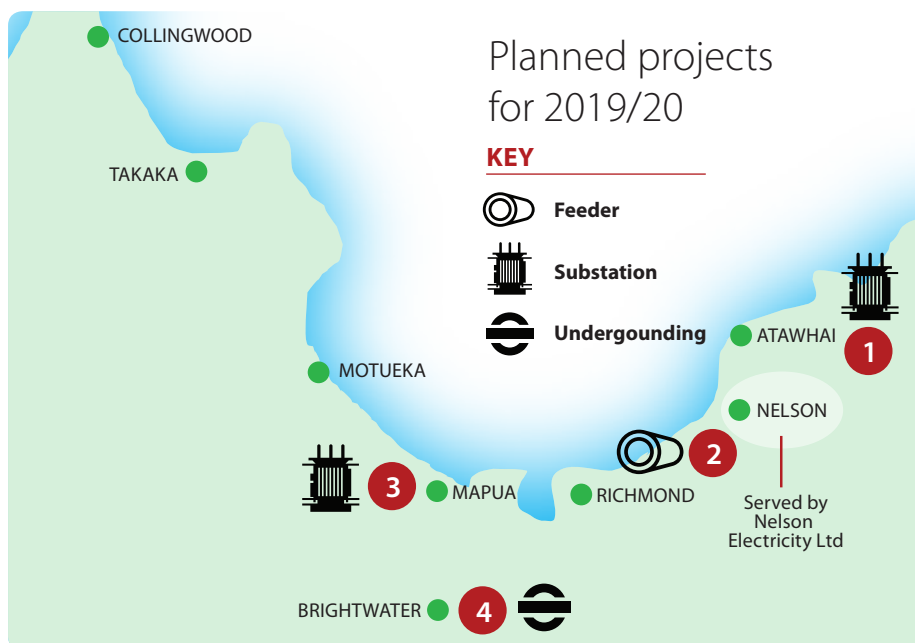
One new growth-based project has been added to our system since the last AMP summary was prepared. This is the creation of a new 11kV feeder circuit from Hope substation to boost supply to the Lower Queen St industrial area. This project is timed for 2019-2020.

The timing of other projects in the plan has been reviewed so that the network continues to accommodate growth and is also renewed in a timely fashion within the constraints of available resources.

The most important project remains the development of the new Brightwater GXP. This is a system security based

development, in that it is triggered by the firm capacity of the supply available from the Stoke GXP rather than the total supply that may be available with all supply components in service.

The timing for a development is based on a “prudent” load forecast. This is due to the fact that the load in any particular winter is dependent on how cold the winter is. There is an approximate difference in winter peak demand of 7 percent between a cold and mild winter. Mild winters mask the “latent” load that builds up, and this is accounted for in our prudent forecast.



For the 2019-2020 year, the major capital projects are:

- Completion of Wakapuaka substation and new 11kV feeder (1)
- Completion of the new feeder from Annesbrook substation into the Tahunanui industrial area (2)
- Installation of the Mapua substation 33kV supply backup cable (3)
- Undergrounding of lines in Ellis St, Brightwater (4)

For the 2020/21 – 2023/24 periods, the major growth based capital projects are:

- Motueka Substation switchboard extension and new 11kV feeders
- Hope Substation transformer capacity upgrade
- Motupipi Substation upgrade including 10MVar capacitor bank
- Rockville Feeder 22kV upgrade first stage
- Brightwater GXP and 33kV Feeder Cables

Network Renewals

We will continue the following renewals programmes over the next ten years

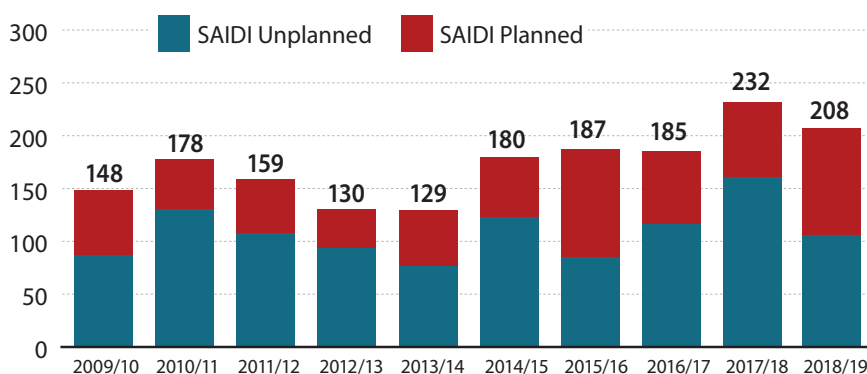
- Light copper conductor replacements on HV lines
- Platform transformer replacements
- Small copper cable replacements due to outer sheath corrosion

Network Reliability Targets

The SAIDI and SAIFI targets for planned outages have been reviewed upwards in light of our experience during the first year of the light copper conductor upgrade. Despite generators being deployed where possible, a large number of planned shutdowns have been needed to complete the work.

Unplanned SAIDI/SAIFI was impacted by three interference events on the Appleby highway affecting supply to 2200 Mapua customers. These events were traffic related and generated a total of 34 SAIDI points. A project to eliminate the effect of Appleby highway vehicle events on the supply to Mapua is currently underway.

Quality of service (measured in average outage duration across the year)



The changing use and generation of electricity on our network

While still in the initial stages of uptake, electric vehicle (EV) ownership is high in Nelson-Tasman relative to other regional areas.

The load emerging from EV charging is expected to affect low voltage lines initially.

Investigative work is being undertaken at present to identify the potential network impacts of this new load type. Clustered home based vehicle charging occurring in the evening in winter may impact low voltage distribution circuits in the next few years. NTL is monitoring adoption

and clustering of electric vehicles on our network.

In this environment, we are looking to apply new technologies to defer large capital projects where it is practicable and economic to do so. Opportunities may exist for cooperative use of the energy storage of the vehicle in a manner that lowers costs for all users.

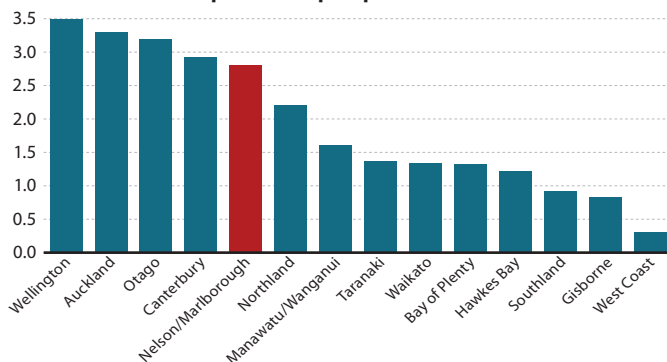
The Nelson-Tasman region also has a high level of solar photo-voltaic (PV) uptake compared with other areas of New Zealand.

The company has undertaken considerable

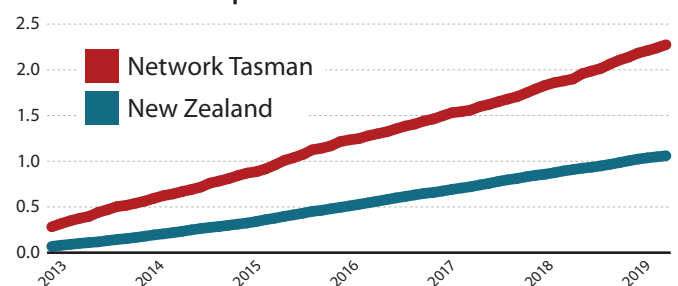
research and analysis in conjunction with industry groups to model the effects of ongoing growth in solar PV generation and to identify strategies that will maximise the hosting capacity available while maintaining equity and fairness to all users of the network.

Network Tasman has introduced standard operating settings for solar PV inverters connected to its network to avoid overvoltage conditions arising while maximising the generation that can be accommodated.

Electric Vehicles per 1000 people



Percent of solar PV uptake





For more information and how to get in touch

networktasman

Your consumer-owned electricity distributor

We are always striving to improve our service to consumers and we value your feedback and input. There are a number of ways to get in touch with us.

 Telephone 03 989 3600
  info@networktasman.co.nz

 twitter.com/networktasman
 www.networktasman.co.nz

A copy of our full Asset Management Plan can be downloaded from www.networktasman.co.nz/asset-management-plan

ABOUT NETWORK TASMAN

Network Tasman is a consumer-owned electricity distribution company servicing more than 40,000 consumers in Nelson Tasman (excluding Nelson central). Our coverage area extends from Springs Junction in the south to Golden Bay in the northwest. We do not cover Nelson City but our network does include some areas to the northeast of the city.

Network Tasman is owned by the Network Tasman Trust. The Trust holds the shares in Network Tasman on behalf of its consumers.

