CARISBROOK SUBSTATION

Aurora Energy is building a new substation at this site to ensure future reliable electricity supply to more than 18,500 South Dunedin homes and businesses.

The Carisbrook substation is planned to be commissioned by mid-2018. It will replace the nearby Neville Street substation which was built in the 1940s and 1950s, making it the oldest in Aurora Energy's network.

The project also involves the installation of two kilometres of new high-voltage underground cabling, which will replace the existing gas-insulated cables. The cabling, which will supply the new substation from the South Dunedin grid exit point located off Portsmouth Drive, will take approximately four months to complete.

The substation and cabling project are valued at a combined $13 million.

What is a substation?

A substation is a part of the electricity supply system that carries electricity from generation sources (such as wind farms and hydro power stations) across the national grid transmission system to the local distribution system then onto consumers. A distribution substation takes high voltage electricity and converts it to a lower voltage.

The new Carisbrook substation is designed to take electricity at 33,000 volts (or 33kV) and convert it to 6,600 volts (6.6kV) for distribution via feeders to local transformers that convert it further to 230 volts for use in the home and businesses. The 33/6.6kV substation is designed with two 17/24 megavolt ampere (MVA) transformers. It will be supplied from the South Dunedin grid exit point by new 33 kV underground cables. When commissioned, the substation will supply electricity at 6.6kV, but with the capability to operate at 11kV in future.

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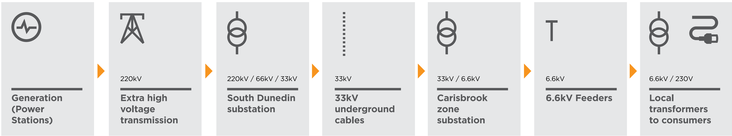

Why is the upgrade is needed?

The new Carisbrook substation replaces the nearby Neville Street substation, which dates back to the 1950s and is the oldest Aurora Energy substation still in use on the network. The new substation will cater for increasing levels of electricity demand, enhance network reliability, minimise failure risks of the older station and improve modern functionality and safety features.

MORE INFORMATION AND FEEDBACK

We welcome your feedback.
For more information, please contact Aurora Energy at **0800 22 00 05**
or go to **www.auroraenergy.co.nz**

Programme manager Rhys Stickings
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UPGRADE PROJECTS

The Carisbrook upgrade consists of two projects constructed from July 2017 to August 2018: a new substation and the underground cabling to connect it to South Dunedin grid exit point. The combined project value is estimated at $13 million.

1. Subtransmission cables upgrade

PLANNED CONSTRUCTION
JULY - OCTOBER 2017

To supply power to the Carisbrook substation, Aurora Energy is installing new 33 kV (33,000 volt) underground cables from the South Dunedin grid exit point to the Carisbrook substation. (The existing Neville Street substation is supplied from the Halfway Bush grid exit point.)

The first stage of the project involves the installation of two kilometres of new cross-linked polyethylene (XLPE) cables to supply the new substation from the South Dunedin grid exit point (GXP). The cable route runs along Otaki Street, Strathallan Street, under the railway line, along Bridgman Street, Wilkie Road to Neville Street.

The trench digging and cabling work will take approximately four months and our contractors will work to minimise potential disruption to local residents and businesses. Businesses and property owners will be notified if construction work is likely to directly affect them.

There is likely to be some temporary disruption to parking and pedestrian access while the work is being carried out. Traffic management will be in place to ensure the safety of you and our contractors. No power outages are required for this work.

The existing 33kV gas-insulated cables supplying the Neville Street substation from the Halfway Bush GXP will be decommissioned. The cables supplying Neville Street will not be removed but will remain in place for possible future re-use as low voltage supply.

2. New Carisbrook Substation

PLANNED CONSTRUCTION
AUGUST 2017 – AUGUST 2018

The new Carisbrook zone substation is being constructed at a cost of around $9 million on Aurora Energy-owned land at the intersection of Neville, Murrayfield and Samuel Streets. It will replace the Neville Street substation, which sits just opposite this site. At more than 60 years of age, Neville Street is the oldest substation on the Aurora Energy network.

The upgrade will include the installation of zone station transformers, 33kV and 11kV switchgear and transformer neutral earthing resistors.

Substation construction will be contained within the fenced substation site, so we do not expect any disruption to local residents. No power outages are required for this work.

Are any power outages required for this work?

There are no power outages planned for this work. In the unlikely event that planned power outages are required to ensure the safety of our contractors you will receive individual notification from the contractor or your electricity retailer advising the specific date and time in advance.

CABLE ROUTE AND CARISBROOK SUBSTATION

OVERVIEW

SUBSTATION LOCATION

KEY
- New 33kV line
- Existing substation
- New substation

Thank you

We thank the local community for their understanding as we carry out this improvement work and apologise in advance for any inconvenience and disruption that may be caused.

Indicative project timeline

	JUN 2017	JUL	AUG	SEP	OCT	NOV	DEC	JAN 2018	FEB	MAR	APR	MAY	JUN	JUL	AUG
1. Underground cabling		Trenching and civil works													
2. New substation	Detailed design			Construction of substation										Commissioning	