

HVDC INTER-ISLAND LINK POLE 3 PROJECT FACT SHEET 2

MAY 2009



The HVDC inter-island link is the high voltage transmission link between Benmore substation in the South Island and Haywards substation just north of Wellington. It enables the transportation of power between the South and North Islands.

The link consists of two separate circuits, with major converter systems at each end. These converter systems are called Pole 1 and Pole 2. They convert electricity from alternating current (AC), which runs through most transmission lines in New Zealand including the lines that run into Haywards and Benmore substations, to direct current (DC), which is more effective for transporting power over long distances and is used over the HVDC link.

The HVDC link also includes three undersea cables across Cook Strait, two of which are connected to Pole 2 and one connected to Pole 1. These cables are in good condition.

The HVDC link is critical for New Zealand as it balances the distribution of energy between islands, helping to carry electricity from where it is generated to where it is needed.

What is happening at the Benmore and Haywards substations?

Transpower will be replacing the 44-year-old Pole 1 equipment at Haywards substation in the North Island and Benmore substation in the South Island with new state-of-the-art thyristor valve units. The new units will be called Pole 3, and once built, the old Pole 1 will be fully decommissioned and removed (half of Pole 1 has already been decommissioned). The project will be completed in two stages, resulting in an increase in the capacity of the overall HVDC link to 1000 MW from 2012 and to 1200 MW from 2014.

What will this involve?

The work required to replace the existing Pole 1 will be largely confined to work at or near Benmore substation and at Haywards substation. Specifically, the substation work will involve extension and further seismic strengthening of the existing switchyards at Benmore and Haywards, construction of an additional switchyard at Haywards and new Pole 3 converters and associated equipment at each location. The control systems for the existing Pole 2 will be replaced once Pole 3 is fully commissioned and operational.

Will the works change how the substation sites currently look?

Yes. There will be some site changes at both Haywards and Benmore substations.

The Haywards substation site will be the most affected due to the limited amount of space presently available to house the new equipment needed to operate Pole 3.

Site work undertaken so far has identified areas at both Benmore and Haywards that can be developed to accommodate Pole 3. These are marked on the photos inside.

Who is Transpower? Transpower is the owner and operator of the National Grid – the high voltage transmission network made up of lines and substations connecting areas of generation with towns and cities across New Zealand.

TRANSPOWER



Transpower New Zealand Ltd The National Grid

What will the substations look like?

We're still in the planning stages for this project and looking at a number of options for both Benmore and Haywards. We expect to have the preferred site plans later this year, once a contractor has been appointed to deliver and install the equipment.

What's the timeline for the project?

The Pole 3 project will take a number of years to deliver, and an indicative timeline is included below. Site works are expected to start in early 2010 and Pole 3 commissioned in 2012. A second stage of the project will increase the capacity of the overall HVDC link, and this is expected to be completed in 2014.



Pole 3 timeline

KEY ACTIVITIES	2009			2010			
	Q2	Q3	Q4	Q1	Q2	Q3	Q4
POLE 3 STAGE I							
Consenting	June		Dec				
Pole 3 contract awarded		Sept					
Civil/building/construction works at Haywards				Jan			
Major equipment delivery and installation							
Pole 3 commissioned							
POLE 3 STAGE II							
Civil/building/construction works							
Equipment delivery and installation							
Commissioning							
POLE 1 DECOMMISSIONING							
Pole 1 switched off							
Pole 1 mercury arc valve removal							
Pole 1 building demolition							

Existing Haywards substation and potential areas for development →



2011				2012				2013				2014		
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
		July												
	May			March										
					April									
								Feb			Nov			
												Jan	June	Aug
		Sept												
	Sept				April									
					April			Feb						

What approvals are needed for these works?

The project has already been approved by the Electricity Commission.

Both the Haywards and Benmore substation sites are already designated for use as substations in the District Plans of Hutt City Council (Haywards) and Waitaki District Council (Benmore).

Outline plans will need to be submitted to the district councils for works within the designated substation sites. In addition, resource consents from the relevant regional councils are likely to be required for earthworks and drainage-related activities.

Are any properties affected by these works?

All works will be contained within the existing substation site owned by Transpower at Haywards. At Benmore, some work may be required on adjacent land bordering the Benmore substation.

However, we recognise that there are some properties near the site boundary at Haywards substation that may experience some visual or noise impact due to the changes at the substation site. We will be talking directly to those landowners about our works and discussing any concerns that they may have throughout the project.

Will the works result in increased traffic and/or heavy machinery movements?

There will be times throughout the project where large pieces of equipment (e.g. transformers) will need to be transported to both Benmore and Haywards substation sites. There may also be increased traffic at certain times during the construction period.

We will keep communities updated on this as we move through the project, and ensure that advance notice is given of any possible traffic delays that may be experienced by the public due to our construction movements.

Will there be any further updates?

Yes. We will continue to keep people informed throughout the project. Further information like this fact sheet will be released on a regular basis to keep you updated. Information will also be updated frequently on our Grid New Zealand website www.gridnewzealand.co.nz.

For more information on the HVDC inter-island link Pole 3 project, please call 0800 33 88 66 or visit www.gridnewzealand.co.nz

