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Auckland Electricity Networks - Status and Performance Report 2008

Dear Trustees,

Vector Limited is required to execute an independent annual review of its electricity network in Auckland according to the "New Deed Recording Essential Operating Requirements" and to provide this review to the AECT. The thematic areas to be addressed are:

- The state of the electricity network with regard to maintenance programs and expenditure;
- Any need for upgrading the electricity network;
- The capacity of the electricity network; and
- Any security risks to the electricity network.

Siemens PTI (Germany) was asked by Vector to prepare this report and gladly accepted this assignment. Siemens PTI is active in the network consulting business for more than 30 years and has significant international experience in several hundred projects. In previous assignments for Vector, Siemens PTI (Germany) has successfully completed a comprehensive consulting project on the reliability of supply of Auckland in 2007, and compiled the similar Status and Performance Report for the Auckland electricity networks for 2006 and 2007. The Status and Performance Report 2008 for the Auckland electricity network was carried out mainly by Dr. Michael Schwan.

The key findings and statements of the Status and Performance Report 2008 are summarized as follows:

- The extent and structure of the electricity supply networks in the Auckland Region are considered to be appropriate in the actual situation. The network and the installed equipment are well-managed and in overall good condition.
- The capital and operational expenditures are considered to be appropriate.
- Vector has defined and implemented explicit and comprehensive processes for network planning and asset management, which are considered to be highly appropriate.
- The major driver for network development continues to be load growth – even though load growth has slowed down in the current economic situation. Vector is well aware of this situation and the plans incorporate appropriate network reinforcement projects, keeping a strong focus on strategic system development and quality improvement.

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- While the age structure of network components is quite equally distributed in general, several assets are of an advanced age – in some cases already exceeding the expected technical service life. This is considered especially important for 22 kV sub-transmission cables and also a large number of protection devices. These assets represent a small subset of the overall network assets and Vector has underway appropriate asset replacement programs.
- Several equipment or equipment types feature poor reliability performance due to either increased equipment age or specific technical aspects. Appropriate measures – ranging from close performance monitoring to preventive replacement of all similar equipment – are actively taken by Vector for identified equipment. Nevertheless, Vector is encouraged to continue its efforts to improve supply reliability performance; especially the distribution automation projects or workforce management projects as already started by Vector.
- With respect to security of supply, especially the connection to and power infeed from the transmission system is of importance. Here, the situation is strongly improving with several important Transpower projects being approved by the Electricity Commission. Especially the North Island Grid Upgrade Project, the Otahuhu Substation Diversity Project and the North Auckland and Northland Grid Upgrade Project will significantly reduce supply security risks for Vector and Auckland.

In general the supply reliability performance of the electricity networks in the Auckland Region is in line with the current regulation and targets. Especially, the supply reliability performance in the Auckland Region is significantly better than the New Zealand average.

Sincerely yours,



Dr. Michael Schwan



Theodor Connor