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Auckland Electricity Networks - Status and Performance Report 2007

Dear Sirs,

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 Limited 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. Siemens PTI (Germany) has also successfully completed a comprehensive consulting project for Vector and Transpower New Zealand on the reliability of supply of Auckland last year – comprising the similar Status and Performance report for the Auckland electricity networks for 2006. The Status and Performance Report 2007 for the Auckland electricity network was worked out mainly by Dr. Michael Schwan.

The key findings and statements of the Status and Performance Report 2007 are summarized as follows:

- The extent and structure of the electricity supply networks in the Auckland Region are considered 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 appropriate.
- Vector has defined and implemented explicit and comprehensive processes for network planning and asset management, which are considered highly appropriate.
- As expected in areas facing dynamic growth, the major driver for network development continues to be load increase. Vector is well aware of this situation and has appropriate plans considering extension projects.

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- While the age structure of network components is generally evenly distributed, several types of equipment have achieved advanced age – in some cases having exceeded their expected technical service life. This is considered especially important for 22 kV sub-transmission cables and also a number of protection devices. These assets represent a small subset of the overall network assets and Vector has already initiated replacement programs.
- Several types of equipment have displayed poor reliability due to either increased age or specific technical aspects. Appropriate measures, ranging from close performance monitoring to preventative replacement programs, are undertaken by Vector for the identified equipment. Nevertheless, strategies to improve the supply reliability performance are important, e.g. the distribution automation projects and workforce management already started by Vector.
- With respect to security of supply, especially the connection to and power infeed from Transpower New Zealand's transmission system is of importance – where the situation has become even tighter in the last year, and which is highly critical for the Auckland Region, as the Transpower Otahuhu blackout in 2006 has clearly shown. Such aspects are beyond the direct control of Vector, and an appropriate close relationship with Transpower does exist. Also in the sub-transmission system, certain minor security-related issues are identified, and those items are appropriately addressed by Vector.

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.

Yours sincerely,



Dr. Michael Schwan



Theodor Connor