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The Trustees
Auckland Energy Consumer Trust
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AECT SKM letter 100311.docx

Dear Trustees

State of the Network Report 2010

Under the terms of the Deed Recording Essential Operating Requirements (DREOR) between Vector Limited (Vector) and Auckland Energy Consumer Trust (AECT), Vector is required to undertake annually an independent review of its electricity network in the Auckland District (as defined in the DREOR), and to provide the report on the outcome of this review to the AECT.

The scope of the review is required to cover the following areas in respect of the Auckland District:

- the state of the electricity network with regard to maintenance programs and the appropriateness of expenditure levels;
- any need for upgrading the electricity network;
- the capacity of the electricity network, in relation to forecast demand; and
- any security risks to the electricity network.

The Australian office of Sinclair Knight Pty Ltd (SKM) was engaged by Vector Limited to undertake the review, and to prepare a detailed report on its findings.

SKM has extensive and recent experience in developing, applying, reviewing and auditing transmission and distribution network planning, asset management, maintenance, and operating criteria and practices internationally, including New Zealand, Australia, South Africa, South East Asia, and the UK. This experience encompasses system planning and security criteria, forecasting methodologies, planning and governance processes, operating and maintenance practices, capital and operating expenditure reviews, reliability analysis, and regulatory compliance requirements.

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The 2010 State of the Network Review was conducted primarily by Mr Cliff Jones of SKM's Power and Energy Business Unit, Brisbane (Aust.), with the assistance of various SKM technical specialists. Mr Jones has approximately 30 years engineering and management experience with a number of Australian electricity distribution companies, and approximately 12 years consulting experience in the benchmarking and performance assessment of transmission and distribution companies in various countries, including New Zealand.

The key findings and conclusions of the State of the Network Report, 2010 can be summarised as follows:

- Vector has a well developed and comprehensive approach to asset management of its electricity infrastructure assets. The plans, processes documentation and asset management strategies are consistent with those of leading Australian utilities.
- Vector's asset management planning documentation is comprehensive both by NZ standards and also in comparison with peer utilities in Australia. We would describe these as reflecting leading industry practice.
- It is appropriate and prudent of Vector to be independently studying and evaluating strategically the potential impacts of new and emerging technologies, including "Smart Grids".
- Vector's Auckland electricity assets were found to be in good condition, and the assets as a whole appear well maintained in accordance with sound electricity industry practices;
- Vector's electricity assets are young by international standards, and the future budgetary provisions (over the next 5 - 10 years) for maintenance and refurbishment are appropriate;
- After reviewing the overall magnitude of proposed capital works funding for growth and augmentation works, and a sample of individual projects, it was found that Vector's processes for planning and implementing new capital works projects to upgrade the system are sound.
- Overall, SKM considers that Vector's security of supply and planning standards are appropriate, and consistent with customer expectations of quality and reliability of supply in a western industrialised country such as New Zealand.
- Vector's security of supply and planning standards are similar to those currently in use in the Eastern States of Australia (although these are in themselves different from each other).
- The reliability of supply of Vector's Auckland system, as measured by the international standards SAIDI (minutes off supply) and SAIFI (frequency of interruptions) compares very favourably with peer Australian utilities. SAIDI (minutes off supply) is the second



best of thirteen distributors in the study, after CitiPower (Melbourne) and better than ActewAGL (Canberra), EnergyAustralia (Sydney), and Energex (Brisbane).

- Based on the existing forecasts of growth in maximum demand, Vector's planned capital works program, and corresponding budget allocations appear adequate. SKM has recommended some refinements to the forecasting methodology.
- It is SKM's assessment that there is no material risk to Vector's electricity distribution system, or to the quality and reliability of supply to Vector's customers, other than the normal intrinsic risks associated with the management and operation of an electricity distribution system. These intrinsic risks include damage from storms and other severe weather patterns, wildlife, third party damage, and occasional equipment failure.

SKM and the Project Team would like to thank Auckland Energy Consumer Trust (AECT) for the opportunity to conduct this consultancy assignment, and to Vector and staff for the cooperation and assistance in providing complete and timely information.

We look forward to the opportunity of being of any further assistance.

Yours faithfully

Cliff Jones
Project Manager

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