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Simon Wakefield
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Dear Simon

NZ EDB 2023 AMP Review - IAEngg report

1. This letter is to inform you we have identified an error in the Innovate Assets Engineering (IAEngg) Stage 1 report "NZ EDB 2023 AMP Review" published 29 January 2024.

2. We request the report be reissued to correct this error. We have set out further details below.

Consideration of ageing assets in Vector's 2023 AMP

3. The IAEngg report states that Vector's 2023 AMP does not consider, or contain expenditure provisions, for ageing assets as a driver for capex or opex growth.[1]

4. This is incorrect. Vector's 2023 AMP does consider ageing assets as a driver of expenditure growth.

5. Chapter 12.2 of Vector's 2023 AMP describes Vector's forecasting methods and drivers for asset replacements. Along with Condition Based Risk Assessment (CBARM), it describes the following approaches which take into account asset age:

    - **Condition Based Assessment**: "*In instances where asset criticality information is not available, the asset fleet condition is based on various health indicators such as age, type, known defects and results of routine testing*."[2]
    - **Age and Type**: "*For some asset classes it is appropriate to use deterministic factors such as age and type information to predict asset replacement needs. In particular, where it is not efficient or possible to gather sufficient condition information to assess the health of individual assets or develop a CBARM model*."[3]
    - **Historical trends**: "*In asset classes where there is insufficient asset information available to support the use of the methods above, the number of assets replaced on an annual basis can be predicted by referring to historical trends. The historical trend rates can also be extrapolated or adjusted to account for changes in age across the fleet. This is typically applied to high volume, low value and low criticality asset type*."[4]

6. Chapter 12 of Vector's 2023 AMP describes the "population and age" of each asset fleet.[5]

[1] IAEnng, *NZ EDB 2023 AMP Review Forecasting & Planning Assessment Report* (29 January 2024) at 7.15.3
[2] Vector, *Electricity Asset Management Plan 2023* at 12.2.2
[3] Ibid, at 12.2.3
[4] Ibid, at 12.2.4
[5] For example, see 12.3.1.2 for a description of the population and age of 110KV subtransmission switchgear, and 12.3.3.2 for a description of the population of age of outdoor switchgear

7. We have set out below some specific examples in the 2023 AMP where ageing assets are described as a driver for expenditure:

    - **11 KV Distribution Cable Replacement**: "*This reliability focused replacement program of works focuses on the proactive replacement of underground 11 kV cables. Vector's CBARM model for the underground 11 kV cable fleet is fully developed and this model is used to inform the program for proactive cable replacement. The focus of the program is on the ageing PILC cable fleets that were installed between the 1950s and 1980s*."[6]
    - **Belmont 33/11 KV Transformer T3:** *"Ngataringa Bay ZSS in Stanley Point is prone to the risk of flooding in the event of a king tide, an event that has already occurred, and one that is estimated to be a 1-in-10-year or more frequent event in future. Flooding of the ZSS could result in loss of supply to all customers presently supplied from this ZSS. The ZSS is supplied by an ageing 33 kV oil-filled submarine cable crossing the bay, which poses an environmental risk of oil pollution if it fails or is mechanically damaged and the oil containment elements of its design are compromised*."[7]
    - **Replacement of 11 KV Ring Main Units**: "*This reliability focused program of works focuses on ageing 11 kV oil filled RMUs such as the Long and Crawford population, and the combined population of series 1 Andelect/Astec/ABB SD RMU switchgears. The CBARM model for this asset type is fully developed and is used to inform the replacement program*."[8]
    - **Replacement of Distribution Transformers: "***To ensure the integrity of this simple but important asset population, ageing distribution transformers, both pole mount and ground mount, will be replaced (transformers smaller than 100 kVA will be run to failure). The replacement program is informed by our mature CBARM model for distribution transformers*"[9]

Need for correction

8. The error in the current report provides an incorrect view of Vector's asset management practices which could damage Vector's reputation.

9. Accordingly, we request the Commission and IAEngg reissue the report to clarify that Vector's 2023 AMP does consider ageing assets as an expenditure driver.

Yours sincerely

[redacted]

Richard Sharp
GM Economic Regulation and Pricing

[6] Vector, *Electricity Asset Management Plan 2023* at 11.5.3
[7] Ibid at 10a.7.1
[8] Ibid at 11.5.4
[9] Ibid at 11.5.5