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Dear Jenny,

MARIA Profile Project Team's [PPT's] Report.

Thank you for the opportunity to comment on the PPT Report.

As the Electricity Commission is aware the concept of profiling was instituted after a legal battle as a means of providing an assessment of customer demand and energy use patterns for tariff and pricing decision. In my opinion it has been a dismal failure and I am surprised the PPT has promulgated its continued use as a mean of estimating electricity demand. I can only assume that the PPT are unfamiliar with the serious problems the legacy meter physical assets propagate and the consequent poor measurement performance issues.

If the PPT is familiar with such issues and has examined widely the sorry state of metering then there must be some other motive that persuades them to recommend the continuance, with costly and cumbersome management, of the existing profiling system.

The consequences arising from this lack of measurement and management, caused by the continued use of profiling, are hugely serious for the nation. Unless corrected, I see profiling will cause serious investment mistakes, incorrect tariff formation, reduced competition and un-necessary price increases which will be destructive for both the commercial community and domestic customers alike. If the Electricity Commission accepts this report and makes no change to demand response capabilities, I believe it is not facing up to the reality of the situation in an election year. **Change in metering capability, at all electricity user levels, with the creation of time of use tariff formation and billing, is essential for the health and future prosperity of the nation. Other countries have seen the necessity and are taking the right steps to modernise their metering systems.**

Proof.

The above statements are supported by the following facts:

- The physical metering assets are antiquated in a very sad state. A large proportion of meters were installed in the 1950's. Meters of this vintage have pivot with jewel

- bearings, operating beyond their service lives and today they will be highly inaccurate.
- Each of the 65 supply Authorities had their own views on legacy meter structure with mostly volumetric single or three phase single register installations. In Wellington for example there are many houses with a single one register meter and a ripple control relay. Other installations on the same network with two rate metering or two meters. How can you possibly set profiles when the ICP register provides no indication of the metering asset structure. Unlike other countries there is no uniformity of meter installations, domestic, dairy farm, commercial or industry. New Zealand's metering and communication systems are simply out of date and we all suffer the consequences
 - There is no means to assess correctly the losses in the distribution network against consumer usage. Metering at a zone substation to provide a deemed profile of a user is false due to the lack of measurement of I²R losses and reactive energy both in the network and at the customer premises. The Buller Electricity network, like many others, I know has serious reconciliation problems.
 - There is no means of power factor measurement in areas such as dairy farms where the major sector of the loads are from induction motors. Limited if any PF correction exists in networks or at customer premises. Many GXP power factors are un-necessarily low. Profiling gives no information and these management performance errors continue.
 - The only research work related to customer usage patterns, known to me is the work done by BRANZ under their HEEP programme. This work is related to societal economic groups and unrelated to tariff formation and loss measurement. Prior to this the only research on after diversity maximum demand [ADMD], was undertaken by the Electricity Supply Association in the mid 1980s. It really is an indictment on the nation's leadership and capabilities to allow the essential services of electricity supply and delivery to be left so inadequately managed. Profiling, in my view, is a major cause.
 - It is **incorrectly assumed** that, in the mass and C&I markets, that half-hourly metering is regarded as too expensive. This is referred to in para 4 page 24 section 6. **Cost-Benefit Analysis** of the PPT Report. However profiling **is not a low cost option**, as is assumed, since it increases upstream costs such as settlement system costs and the financial management across retailers and hinders system modernisation by demand response and distributed generation. It is fairly well known that the profiling system causes much havoc in network settlement.
 - The PPT profile library proposal in my opinion is a waste of money, an unnecessary overhead and a very poor management system.

Profiling Impacts.

Profiling methods distort market incentives to introduce and install innovative distributed generation, demand response and interval metering improvements for energy supply and management. The profile assigned to a customer is essentially the average profile of all like customers in that particular network area. Within the assigned customer profile, therefore some customers continue to cross subsidise other customers in relation to the

energy component of their electricity bills. In the same way the lack of load factor and TOU measurement of power demand, means that network charge out rates are false.

The Solution.

For the sake of justice to the consumer it is essential to encourage demand response with TOU price signals. This improves investment performance and generation and T&D system efficiencies. It is essential that NZ faces up to the fact that profiling must be phased out as fast as possible. Full TOU with appropriate billing structures could be established within 5/6 years. This will ameliorate the overloading of the aging transmission and distribution system and deliberately introduce demand response that is urgently needed to control demand and energy use.

The Cost.

In my submission, to the Commission on the subject of Investment and Competition made on the 11th February 2005 reference was made to the cost of modern metering, communication, and TOU tariff /billing information. For reasons of commercial sensitivities these prices were submitted separately and in confidence. In essence the cost of profiling is not the least cost option because it prevents analysis of each network and GXP performance, reduces the possibility of competition and does not send correct investment signals. With profiling upstream costs will soar, confusion and inefficiencies will remain or increase and all electricity consumers will suffer from incorrect costings, as will the nation's economic performance.

Reference Material.

If the Electricity Commission want corroborative support for the comments made in this submission I refer to the following:

- 1] A report by Allan Asher Chief Executive of Energywatch the Government-backed consumer watchdog on the influences in the UK by oligopolies.*
- 2] The NEMMCO Annual Metering Reports commencing with MT_MD930v002.*
- 3] Essential Services Commission of Victoria, July 2004 "Mandatory Rollout of Interval Meters for all electricity customers".*

Conclusion

I trust this report assists the Electricity Commission to make the changes urgently needed. I recently visited several dairy farms for business reasons. I examined the electricity load and metering of both single and three phase installations. As a professional engineer and businessman, with a vast experience in electricity network assets and functions, I viewed these installations as typical of the state of our electricity supply system electricity delivery mechanisms and the customer position. I was shocked and saddened by the standard of metering and measuring capabilities on these farms. It is an indictment of the current situation and no attention is being given to what are the fundamentals, Serious modifications are required; serious research work and investments are needed, in order to get the electricity supply and delivery, [an essential service], back on track to being a healthy dynamic industry.

It is quite unrealistic to have media publicity on nuclear generation when basic system modernisation work, to enable demand response and distributed generation introduction

are neglected and held back by such policy direction as suggested in this ill conceived PPT report.

Everyone is being let down by this present debacle of profiling. A competitive market, using profiling, will not solve present reconciliation issues, nor will it stimulate system modernisation, supply security and affordable pricing to consumers that is so urgently needed.

The views expressed in this submission are based on sound engineering knowledge and familiarity with the base products that make up an electricity supply and delivery system. As a manufacturer of electricity products and as a consultant, I am very familiar with all the issues. I am happy to meet the Commission to substantiate any aspect.

Sincerely

Brian H. Tolley