ELECTRICITY PRICE REVIEW

SUBMISSION FORM

INTRODUCTORY REQUEST

Waitaki Power Trust acknowledges that this submission is not formatted in the manner required by the information attached to the formal submission form.

However, our reading of the Electricity Price Review First Report for Discussion resulted in the identification and discussion of a number of issues that did not fit neatly into the question based boxes approach, adopted for the submission document.

As consumer representatives Trustees sincerely request on behalf of the consumers they represent that the submission lodged by Waitaki Power Trust is given due consideration in the same way as all other submissions received.

Yours faithfully
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Chairman, Waitaki Power Trust

Email your submission to energymarkets@mbie.govt.nz or post it to:

Electricity Price Review

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A. OVERALL COMMENTS: SCIENTIFIC METHOD AND THE ACCURACY OF ANALYSIS

1. Investigations required to be completed over a relatively short period of time frequently suffer from a lack of scientific rigour.

2. Waitaki Power Trust considers that the Electricity Price Review First Report for Discussion is a case in point.

3. Energy Trusts throughout New Zealand have already received a set of corrections entitled "Update and Revisions" which in plain language were corrections to false or misleading information.

4. That in itself, is disappointing as it undermines the overall perceived veracity of the findings made by the Report.

5. We would add another type of discrepancy to the list – a mistake that creates ambiguity.

6. Consider Figure 7 of the First Report, on page 22.

7. The heading states:

   > "Figure 7: Household and Commercial distribution charges"
   > (First report, page 22).

8. The dark green line in the graph in the graph itself which represents the decrease in distribution charges is labelled "Commerce **and Industry"** (ibid, page 22).

9. The contradiction between the wording of the heading **above the graph** and the labelling of the line **within the graph** renders the information portrayed by the line graph, useless.

10. Additionally, the fact that the source of the graph is attributed to:

    > "Trustpower annual meeting presentation, July 2013" (ibid, page 22)

    Is also of concern.

11. Submitters cannot know whether the contradictory information relating to Figure 7 was provided by Trustpower, or made by the investigators supporting the Expert Advisory Panel.

12. However, what submitters are aware of is that some of the information presented in a second graph, Figure 6, page 20, relating to "Changes in composition of residential prices for 1990 to 2004" was also sourced from Trustpower.

13. Given the example provided by paragraphs 7 and 8 above, submitters have no option but to consider the accuracy of all information sourced from Trustpower as potentially suspect.

14. The alternative is to view the content of the First Report itself, as suspect.

Recommended Solution

That the Expert Advisory Panel overseeing the Electricity Price Review take steps to ensure the accuracy of information contained in reports that are released under its watch, by appointing a team with the specific responsibility of checking for errors, prior to a report being released.

THE FIRST REPORT PART 4: INDUSTRY

B. The Gap between Generation and the Retail Market: Competitive marketing or trading of electricity.

15. In considering whether a generator's productive output is simply traded individually, in hedge market terms, by the five big generator/retailers or whether electricity is competitively priced, it is important to understand what volume of electricity is involved.

16. The First Report states that

> "The five biggest retailers are also the five biggest generators, **accounting for 90 per cent of both markets"** (First Report, page 10).

17. Five percent of electricity used in New Zealand is also generated by co-generation through part of the industrial process by large industries such as pulp and paper mills.

18. That generation can however be put aside as it is unlikely that a co-generator would divert electricity to the spot market rather than use its own generation output to off-set total demand.

19. Hence it is safe to conclude that around 10 percent of all electricity used in New Zealand, produced by small companies such as Pioneer Generation does not reach the wholesale spot market at all, but is sold by small generators directly to residential consumers, the price setting forces at work being more akin to **supporting a local business**, than worrying about price.

20. Information provided by the First Report makes it abundantly clear that a significant volume of electricity generated by the big five generators is not put forward to the wholesale spot market either.

21. Figure 8: Estimated breakdown of charges by consumer type, in the First Report shows that commercial and industrial users minimally participate in the retail market (see First Report, page 23).

22. Elsewhere, the First Report states that

"Residential consumers account for … about a third of demand" (First Report, page 18).

23. The logical conclusion is that somewhere between 60 and 70 percent of electricity produced by the five big generator/retailers is traded outside of the wholesale spot and retail markets.

24. Indeed, by comparing information provided by the First Report and Figure 8 and Figure 4 a closer estimate is that commercial users have access to around 43 percent of the electricity produced by the big five, while commercial users the figure is around 22 percent, giving a total of 65 percent of electricity generated by Meridian, Mighty River Power now trading as Mercury, Genesis, Trustpower and Contact disappears by other means and is not sold through the retail process.

25. That conclusion is concerning as it raises the possibility of the five big generator/retailers engaging in risky business decisions with respect to meeting residential demand.

26. It is also concerning, given that last week Genesis, Contact, Mercury and Trustpower put together in a cartel-like manner, back to back contracts to tie up a further 2 percent of electricity production to supply Comalco with sufficient electricity to **fire up a fourth potline.**

27. The obvious consequence is that in times of generation shortfall in providing electricity to the residential market, such as below average snowfall coupled with low rainfall to New Zealand's hydro lakes, the volume of base load electricity tied up by hedge price contracts between electricity generators and industrial businesses affiliated to the Major Electricity Users Group will only increase electricity prices to residential consumers.

28. That situation is not a matter of **IF below average snowfall and low rainfall occur, there will be a generation shortfall but, when.**

29. The effects of climate change on snowfall to the Southern Alps has, for a sufficient length of time, **been monitored by climate change scientists, to establish and record the trend toward decreasing snowfall levels annually.**

30. Given the transition to a low-carbon economy will place greater reliance on water and wind as energy sources for generating electricity, **we urge that the Electricity Price Review Panel acknowledge the consequences on electricity prices to residential consumers,** that will result from a situation where the five big generator/retailers operate in an unregulated business environment where they have free rein to decide on the volume of electricity generated to be tied up in contracts with penalty clauses, such that there is lack of electricity supply to residential users.

31. Generators are of course aware of the risks associated with selling electricity under contract terms.

32. Hence, each of the five big generator/retailers has contracts with one or more of the other four, to supply electricity to their contracted parties, if for some reason or other they cannot fulfil the terms of the contract with that party.

33. The obvious focus in that situation, is an attempt to avoid invoking the consequences of penalty clauses in the contract.

34. Put differently**, the purpose of contracts between generator/retailers is not due to concern about the effect of generation shortfall on electricity prices to residential consumers.**

35. If the status quo prevails and current business practice by the five big generators continues on unchecked then our prediction is that in the medium term electricity prices to residential consumers will continue to rise.

36. Let's be clear, our prediction is not based on insufficient generation capacity in New Zealand.

37. It is grounded on the fact that in the current unregulated business environment in which the five big generator/retailers operate, each of Meridian, Genesis, Mercury, Contact and Trustpower, determine individually, the ratio of the volumetric split between electricity sold under contract, electricity that is put through to the wholesale spot market and electricity to be sold, at retail rates, directly to their customers.

38. As Trustees who hold 100% of the shares in an electricity distribution business which services a large rural area all we can say is dairy farmers, in particular, would appreciate the same level of business freedom as New Zealand's five biggest generator/retailers have!

39. The further question is whether an unregulated business environment occupied by only five participants facilitates competition.

40. Lack of transparency in the gap between generation output and the retail market creates difficulties in establishing with certainty an answer to the question posed above.

41. None-the-less, it is an important question which needs to be asked.

42. The Electricity Price Review First Report uses competition as the yardstick against which to assess efficiency:

> "Competition and efficiency are established ways of determining whether the electricity sector is working as it should. The assumption is that a competitive market is generally an efficient one and therefore, good for businesses and consumers" (First Report, page 12).

43. The Electricity Price Review discussion document in considering the effect of an influx of new retailers acknowledges that

> "the big five generator/retailers still have more than 90 percent of the market" (ibid, page 5),

and further reports that the smaller new retailers consider that

> "the lack of an effective wholesale contract market is another barrier to competition" (ibid, page 12).

44. The exercise of market power to sharply raise prices on the wholesale spot market, by the five big generator/retailers, even in the short term when supply is tight, is distinctly anti-competitive, as are risky selling strategies associated with hedge priced contracts with large volumes of base load electricity attached, signed between the generator and industrial users such as Comalco and pulp and paper processors.

45. An accepted method for assessing the competitive element in the business practice of the so-called big five is a comparison between the cost of electricity in c/kWh compared with the estimated cost of building new generation capacity.

46. Figure 14 in the Electricity Price Review First Report shows that between 2002 and 2008 the spot market wholesale contract price **to all users** was general higher than the estimated cost of building new supply, especially during the period between 2002 and 2005.

47. From Concept Consulting's analytical graph the conclusion should be that between 2002 and 2008 there was weak or minimal competition with respect to price between Meridian, Genesis, Mercury, Contact and Trustpower at the level of wholesale contracts.

48. Lack of competition between the five generator/retailers above is more clearly evident on a graph sourced nearly ten years ago from Ministry of Economic Development (see Appendix 1).

49. The graph at Appendix 1 above, covering the period 1998 – 2007, is based on a more sensitive analysis as it looks at the average cost of a kWh of electricity during that period (excluding network charges) for residential, commercial and industrial users.

50. The more telling point is that the lack of competition at the wholesale contract level, as exhibited by the average kWh price to industrial and commercial users, flowed through to the retail price of a kWh of electricity to residential consumers.

51. While it is fair to conclude that the 2010 Electricity Industry Act has resulted in increased competition in the retail sector, Trustees are yet to see sound evidence that the generation/wholesale spot market also operates in a competitive business environment.

52. Rather, our conclusion is that without regulation, a free-reining market exists between generation output and the wholesale spot market that embodies a form of protectionism which results from the fact that generators are able to sell internally, directly to their retail arm.

53. From a business perspective that strategy is sound for individual generator/retailers.

54. Why would they buy from the wholesale spot market if their cost of production at any point in time is less than the wholesale spot market price?

55. None-the-less competition and increased efficiency can only occur if **all generation is fed into a common commercial pool** which would provide electricity to the hedge market, the contracts market, the wholesale spot market and the retail market.

Recommended Solution

That the Electricity Price Review Panel takes the opportunity it has to put before the Minister of Energy a raft of changes to the current free-reining business environment in which the five big generator/retailers operate that will

- facilitate competition;
- increase efficiency;
- prevent monopolistic type business activity;
- increase transparency; and
- stop any generator/retailer being able to directly supply electricity sold through its own retail arm due to vertical integration.

C. DISTRIBUTION GOVERNANCE, TARIFFS, EFFICIENCY AND THE ISSUE OF EXCESSIVE PROFIT

56. The Electricity Price Review First Report discussion of governance of electricity distribution businesses (EDBs) is based on an unstated assumption.

57. It is that at the Board of Directors level, all members are experts only in the realm of the distribution of electricity.

58. Directors of most EDBs that Trustees are aware of, are, in point of fact, primarily members of the New Zealand Institute of Directors.

59. Even candidates with electrical engineering qualifications fall into that category, as do people with legal qualifications and accountants.

60. Indeed, it is thoroughly enlightening to read the CVs of candidates who have lodged an expression of interest in becoming a director on the Board of an EDB company.

61. Further, should the Electricity Price Review Panel care to survey territorial authorities, regional authorities and majority or 100% Consumer Trust owned Boards of Directors and/or trustee/shareholders who have a watchdog oversight role with respect to the EDB's

performance, the Panel may be totally surprised at the width and depth of the skill base associated with EDB Boards and their trustee/shareholder owners!

62. With respect to tariffs and tariff policy the First Report states that

> "Most residential and small business consumers pay a flat amount per kWh for distribution, regardless of day or night or season they use it (electricity)" (ibid, page 55, word in brackets added).

63. No evidence is provided for the contention above and trustees do not accept that Network Waitaki's tariffs are based solely on a flat tariff rate per kWh for residential and small business consumers.

64. At least 40 percent of Network Waitaki's residential consumers pay the low daily fixed charge tariff while tariffs to all other residential and small commercial users are based on a combination of a fixed daily line tariff plus a variable tariff charge attached to the price of a kWh of electricity.

65. The incorrect statement quoted from the Electricity Review Report for Discussion quoted at paragraph 62 may have arisen because retailers repackage both distribution and transmission charges in various ways to suit their own purposes, so that what the majority of residential consumers throughout New Zealand will see on their power bill is an item labelled – daily fixed charge!

66. Trustee/shareholder representatives from the 100% Trust owned EDBs meet annually with the Commerce Commission in Wellington to share information and discuss relevant EDB performance.

67. In May this year, following visits by the Commerce Commission to almost all 100% of the EDBs in the South Island, the information provided by the Commission at the meeting with Trustee/Shareholders, was most gratifying.

68. Commerce Commission representatives reported verbally that they were impressed by the level of efficiency which had been observed during their visits and further, with repect to economy of scale, efficiency was evident across the board, regardless of the size of the EDB's business activity and the number of consumers served.

69. When calculating whether annual profit by an electricity distribution business is excessive it is important to note the following points.

70. Twenty one of the twenty nine EDBs in New Zealand are either majority or 100% Trust owned.

71. Every Power Trust Deed includes a statement about returning the benfits of ownership to consumers.

72. That requirement is expressed in various ways, the common element being that consumers receive either an annual rebate, a discount or a dividend.

73. The total sum involved is declared in each EDB's annual report.

74. However, for accounting and assessment purposes, the Commerce Commission **adds the value of the rebate, discount or dividend pool to the company's declared profit** rather than counting it as expenditure as the EDB does.

75. So, even though Unison, Horizon, Northpower, Nelson Electricity, Counties Power, Electra and Scanpower were found to have made excessive profits over the 2016-2017 financial year according to the First Report when the assessment yardstick, the Weighted Average Cost of Capital (WACC) was lowered from 8.77 percent to 7.19 percent by the Commerce Commission, when the four 100% Trust owned EDBs in that group, ie Northpower, Counties, Electra and Scanpower pay an annual discount or rebate to their consumers.

76. At that point in time when the discount or rebate is paid the assessment of whether the annual profit, considered as a rate of return on the value or investment in the company, will give a realistic answer on the true situation.

D. INDUSTRY AND THE ISSUE OF EXCESSIVE PROFIT

77. We saw above that in the case of twenty one of the twenty nine EDBs in New Zealand, whether or not an EDB is regarded as making excessive profit, was measured by considering annual profit as a function of the rate of return on the value of the company, with WACC as the yardstick, of excessive or not, hinged on whether the annual discount, rebate or dividend to consumers was to be taken as an expense or as part of the profit.

78. In the case of the five big generator/retailers, the First Report did not provide a definitive answer.

79. What the first Report does state is that

> "We found nothing to suggest grid operator Transpower or distributors are making excessive profits. **Nor, based on our analysis to date, have we found evidence to indicate generator/retailer profits are excessive** (thought we note the lack of sufficiently detailed data means this is not a definitive assessment (First Report, page 5).

80. The old saying: "A miss is as good as a mile", applies here.

81. Meridian's Chief Executive, Neal Barclay, is quoted in a recent edition of the Otago Daily Times, as follows

> "I'm not saying we've been ripping people off. **Power companies don't make excessive profits in New Zealand."** (ODT, 9 October 2018, page 16).

82. By signing off on the Electricity Price Review, First Report for Discussion the Review Panel have sown the seeds for Meridian's public statement which, on our analysis, is untrue.

83. To establish whether annual profit made by the five big generator/retailers could be excessive our research began by obtaining a copy of the State Owned Enterprises Act 1986, undated to 2018.

84. Part 3 of the Act covers Accountability which includes provisions relating to the Statement of Corporate Intent which is to be provided by Crown owned entities.

85. A key provision is

> "Each statement of corporate intent shall also include the board's estimate of the current commercial value of the Crown's investment in the group and a statement of the manner in which the value was assessed" (SOE Act 1986, Section 14, Part 3, Clause 3, page 7/39).

86. Using Meridian Energy as a case study, a copy of Meridian's SCI for the year commencing 1 July 2012 was obtained.

87. Information provided by Meridian's 2012 SCI included:

- That PriceWaterhouseCooper did the valuation;
- Eight material external factors that were considered relevant to the valuation were listed; and
- The level of the Crown's investment in Meridian was valued as being in the range of $6,429 million to $6,729 Million.

88. Given the sell down of 49 percent of the Crown's shareholding and the transfer of oversight of Meridian Energy, Genesis and Mighty River Power from the SOE Act 1986 to the Companies Act in 2013, copies of Meridian's subsequent Annual Reports were then sought.

89. Listed in Meridian's 2015 Annual Report under the heading 'Comprehensive Income Statement" and classified as "items that will not be reclassified to profit or loss" was the following entry

> "Asset revaluation B1 329" (Meridian Energy Limited, Annual Report 30 June 2015, page 42).

90. In short, as a result of the revaluation process the value of Meridian's assets was increased by $329 million.

91. Notes relating to the asset revaluation process state

> "Revaluations are performed **with sufficient regularity** to ensure that the carrying amount does not differ materially from that which would be determined using fair values at the balance date. Meridian uses an independent valuer … to establish a valuation range on which **the Board's ultimate valuation decision is based**" (ibid, page 54).

92. Trustees then sought expert help to enable an account of Meridian's annual report for the last ten years to be analysed and reported on. (See Appendix 2)

93. Our expert showed that the significance of continuous asset revaluation cannot be overstated.

94. Whether the annual profit made by each of the five generator retailers is excessive or not is totally dependent on considering the annual profit as the rate of return on the asset value of the company and converting the ratio to a percentage.

95. The consequences of that process are two-fold.

96. Firstly, it is unlikely that the annual profit declared by a generator/retailer that almost annually undertakes to revalue the company's assets, will ever be considered as making excessive profit.

97. And, secondly, even if the **percentage of funds** to be put aside for depreciation remains constant, the dollars involved which are treated as an expense for accounting purposes, will increase annually as a result of the asset revaluation process.

98. Note that the increase in asset value resulting from revaluation, if transferred to a 'revaluation reserve' which may or may not be akin to a depreciation account.

99. The outcome, in comparison with EDBs that do not revalue assets on a regular basis, is revealing.

100 For generator/retailers that do practice regular/annual asset revaluation

- Depreciation will be higher than for EDBs which don't engage in regular asset revaluation and tax would be lower;
- Generator/retailer profits will be reduced by the higher non cash-flow cost of depreciation, but will be increased by the reduced true cash-flow cost of tax.

101 As a result, regular/annual asset revaluation puts Meridian, as a company in a better position, even from a cash-flow point of view than EDBs which are regulated and do not have the freedom Meridian does.

102

Attached at Appendix 3 is an article from the 'Stuff" website which shows that at least for the 2013 financial year Mighty River Power, now trading as Mercury, also practiced asset revaluation.

103

Trustees consider that given the significance of the disruptive effect asset revaluation has on the assessment of Meridian's profit levels and the retail cost of a kWh of electricity to Meridian's residential consumers, it is of the utmost importance that the Review Panel authorizes the annual reports of Genesis, Mercury, Contact and Trustpower between 2013 and 2017 inclusive, to be analysed as well.

PART 3. CONSUMERS AND PRICES
Prices

104

Trustees strongly disagree with the method adopted by the Expert Review Panel, used to arrive at the average price in c/kWh for electricity paid by residential, commercial and industrial users, a method which involved converting all charges which usually appear on a power bill into

> "a single unit: c/kWh … (then) analys(ing) the total average price paid per unit by consumers which includes all generating, transmission, distribution and retailing costs" (First Report, page 19).

105

That approach takes no account of the fact that the majority of raw data collected in any field of enquiry is sensitive to the methodology and assumptions used for the analysis which can render the data useless by introducing bias, such that **the conclusions arrived at are figments created by the methodology, rather than facts.**

106.

The distorting effect of the methodology used and assumptions made when analyzing raw data is succinctly made when assessing whether pricing is efficient in the generation section (see First Report, page 32).

107.

The assumption that the methodology described at paragraph 104 above will result in an accurate analysis of the price in c/kWh paid by the average residential consumer is plainly false.

108.

Averaging distribution costs without accounting for the difference in line tariffs charged by majority and 100% trust owned EDBs compared with distribution costs charged by fully

privately or territorial authority owned EDBs, is akin to trying to mix oil and water into a single solution.

109.
Bar graphs published by the Commerce Commission and those appearing in PriceWaterhouseCooper's annual Compendium of facts relating to Electricity Lines Businesses (EDBs), attend to that fact.

110
A second unhelpful consequence of the analytical method used for the purpose of price comparison, is the fact that it disguises and contorts identifying the factors that have driven the true cost, in c/kWh, of electricity to residential consumers.

PRICES: FACTORS WHICH HAVE DRIVEN UP ELECTRICITY COSTS PER KWH TO RESIDENTIAL CONSUMERS

111.
The following points are relevant to the answer

- That 90 percent of electricity consumed in New Zealand is generated by the five big generator/retailers
- A further 5% is produced by co-generation.

112
Therefore it is improbable that the small recently established generators have contributed to price increases. It is also improbable that recently established retail electricity companies have played a role either.

113.
More likely candidates responsible for continued price increases to residential consumers are generator/retailers that practice regular or almost annual asset revaluation.

114.
Evidence was provided above that both Meridian and Mighty River Power, now trading as Mercury, have utilized that process which results in increasingly larger amounts being transferred almost annually to the company's depreciation account.

115.
As the cost of electricity, in c/kWh for industrial users has been nearly stable in real terms, from around 1980 until the present, it is improbable that Meridian, for instance, recoups any of the thousands of millions of dollars transferred from annual cash-flows to its depreciation account, every year from industrial users. (See Appendices 4 and 5)

116.
Trustees consider that the consequences of asset revaluation, are and have been, one of the main drivers of the increase in electricity prices per kWh to residential consumers.

117.

To increased depreciation, can be added

- The effects of rebalancing commercial distribution tariffs against residential tariffs which occurred around 1987-88, the effect of which reached cross over point around 1995, noting that the effect of rebalancing would be higher for consumers serviced by private and territorial authority owned EDBs than for consumers serviced by majority and 100% trust owned EDBs; (see also Appendices 4 and 5)

- The effect during 1992-1993 of a change in ECNZ policy to move toward a long run marginal cost method of cost recovery for all aspects of business activity, including operational, maintenance and capital work carried out annually, by the Crown owned generator/retailers Meridian, Mighty River Power, Genesis;

- The effects of continued vertical integration that has enabled the five big generator/retailers to determine, on a production cost versus spot market price basis, whether to put generation output directly through to the company's retail arm or the wholesale spot market; and

- The addition of GST which only residential consumers pay, in 1986 at 10%, followed by an increase at 12.5% in 1989 and a further increase in 2010 to 15%.

118.

Accordingly, on our analysis, it is completely inappropriate and wrong to state, as is written in the Electricity Price Review First Report Discussion Document 2018 that

> "Shifting (distribution costs) from businesses to householders was the biggest factor in residential price increases between 1990 and 2018" (Frist Report, page 21).

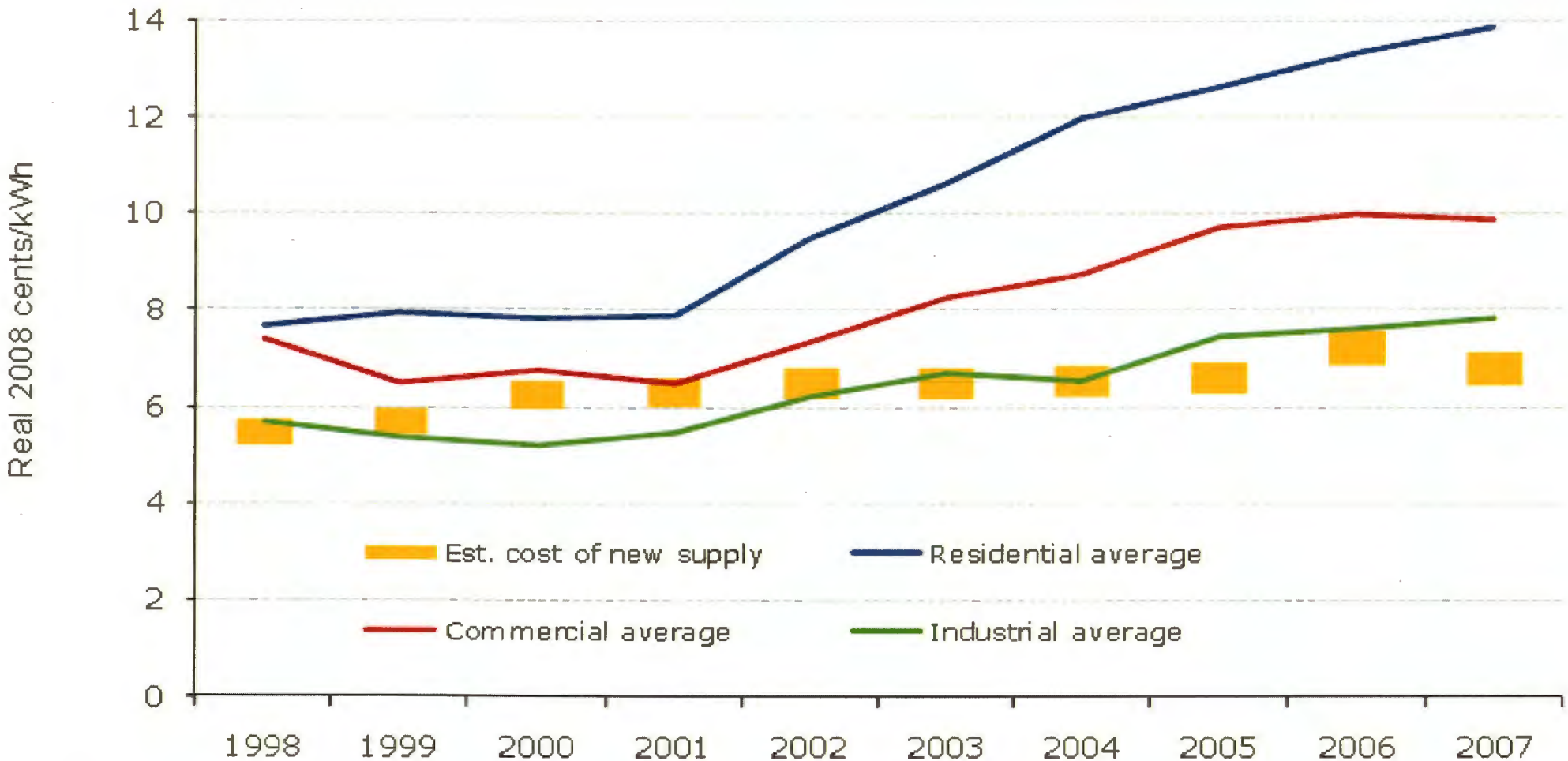
119.

What that statement fails to account for is the compounding effect asset revaluation on depreciation, the effect of transitioning from a straight cost only method of charging to cost plus profit based charges, the addition of GST, and the effects of vertical integration whereby a generator/retailer can directly pass through to its retail arm electricity which has not seen sight of any market place at all.

Recommended Solution

That members of the Electricity Price Review Expert Advisory Panel commission further investigations based on assumptions which identify and account for confounding variables that result in biased outcomes, and sound scientific method, in order to untangle and correct the mish-mash of false information relating to prices, price change through time and drivers of price increased in the First Report.

Average cost excluding network charges



Source: Ministry of Economic Development,

Appendix 1

APPENDIX 2

Meridian and Revaluation of Assets **23 October 2018**

From the Meridian financial statements as published on their website, it is clear they revalue their assets almost annually, based on principles quoted in their documents:

> **GENERATION STRUCTURES AND PLANT VALUATION TECHNIQUES AND KEY INPUTS.**
> The Meridian Board uses its judgement to decide on the appropriateness of key valuation techniques and inputs for fair value measurement. Judgement is also used in determining the estimated remaining useful lives of assets. As the valuation of generation structures and plant does not fully use observable market data, it continues to be classified as a level 3 fair value (a definition of the other levels is included in D1 Financial risk management). As discussed above, the independent valuer uses an income approach that involves incorporating two techniques in establishing a valuation range, being capitalisation of earnings and DCF. The fair value adopted aligns closely with the capitalisation of earnings value. This methodology calculates value by reference to an assessment of future maintainable earnings and capitalisation multiples as observed from market prices of listed companies with broadly comparable operations to Meridian. In preparing the capitalisation of earnings valuation, an EBITDAF multiple range at which to capitalise Meridian's historical and forecast earnings is determined. In determining the maintainable earnings, observable wholesale electricity prices extracted from the ASX have been used. It is assumed in this valuation that the contract with NZAS runs to full term, under existing contractual arrangements.

This revaluation tries to establish a commercial value for the assets based on its potential to produce future income, and it assumes existing contracts remain in place for the period evaluated as the remaining commercial life of the assets.

From the last ten year's s financial statements, the table below was drawn up in an attempt to understand how Meridian is using the revaluation of assets in their reporting. From the opening balance each year, we added capital expenditure, subtracted any sales of productive assets, as well as any assets in the process to be sold, and depreciation. Any amount of profit of sales above book value was added back to the asset value calculation. The calculated new value of assets was then compared with the number in the balance sheet, and from the "difference line" it is clear there is at least some resemblance between this difference and the given revaluation amount.

Meridian Asset Values ($ Million)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Opening balance Property, Plant and Equipment Value	6,315.073	6,432.590	6,743.115	8,207.327	7,720.807	7,963.600	6,769.000	6,929.000	7,097.000	7,771.000	7,961.000
CAPEX	264.488	465.621	196.944	248.122	244.800	510.400	284.000	131.000	42.000	33.000	33.000
Sales of Property, Plant and Equipment Value	-1.095	-19.876	-11.092	-821.735	-0.600	-3.200	-41.000	-19.000	-5.000	-1.000	-23.000
Held for sale	-7.984	-10.519	-0.350	-1.888	-29.449	-64.800	-26.500	-0.350	-0.350	-0.350	-0.350
Depreciation	-139.556	-149.793	-174.318	-209.283	-201.200	-202.900	-220.000	-239.000	-236.000	-264.000	-268.000
Gain on sale	0.508	4.797	0.275	174.125	0.200	1.100	7.000	19.000	-1.000	-4.000	7.000
Calculated Property, Plant and Equipment Value	6,431.434	6,722.820	6,754.574	7,596.668	7,734.558	8,204.200	6,772.500	6,820.650	6,896.650	7,534.650	7,709.650
Difference in Calculated vs Published value	1.156	20.295	1,452.753	124.139	229.042	-1,435.200	156.500	276.350	874.350	426.350	231.350
Property, Plant and Equipment Value from Financial Statements	6,432.590	6,743.115	8,207.327	7,720.807	7,963.600	6,769.000	6,929.000	7,097.000	7,771.000	7,961.000	7,941.000
Annual Revaluation	0.000	0.000	1,213.663	129.673	0.000	-476.000	0.000	329.000	889.000	428.000	0.000
Revaluation reserve	2,746.5	2,737.8	2,737.1	3,686.7	3,392.5	3,418.0	3,073.9	3,074.0	3,311.0	3,941.0	4,249.0
Depreciation/Opening Asset Value	2.2%	2.3%	2.6%	2.5%	2.6%	2.5%	3.3%	3.4%	3.3%	3.4%	3.4%

Some discrepancies are noted in the calculations, meaning we did not manage to quantify the full accounting process as used by Meridian. But the correlation between the differences as calculated and the revaluation number given is good enough to be able to state that the asset values quoted in the balance sheet has been amended to reflect revalued assets.

Because of this, depreciation is higher than for a company that did not revalue its assets, and tax would be lower. Profits would be reduced by a higher non-cashflow cost of depreciation, and it will be increased by a reduced true cashflow cost of tax. Due to the apparent process used to incorporate asset revaluations the company is in a better position not only on paper but also from a cashflow point of view. The table above also indicate that depreciation has increased as a percentage of the asset value in later years, reducing profits and tax liabilities further. The reason for this increase in depreciation is not clear from the analysis that was done.

It is also interesting to note that Meridian managed to sell productive assets in each of the ten years analysed, and in eight of the ten cases the assets were sold for more than the book value of these assets, even though the book value reflected the revalued numbers. From that experience it could be argued that Meridian is still not overstating the value of their assets in their balance sheets (at least not for the assets that were sold), even if the net revaluation as reflected in the balance sheet (Revaluation Reserve) and its notes amount to a total of more than $4 billion at the end of the 2017/18 financial year. The reserve increased by $1.5 billion in the ten-year period discussed here.

As a commercial entity Meridian has more freedom in revaluing its assets than a more regulated distribution business would have, but it appears to be done according to accepted accounting practices and is within the requirements of the tax law in New Zealand.

Appendix 3 - Note the highlighted text

From the "Stuff" website, a 2013 article on Meridian (then still Mighty River) revaluation of assets record

Why I'm in Mighty River queue

Tim Hunter05:00, Apr 14 2013

http://www.stuff.co.nz/business/money/8538980/Why-I-m-in-Mighty-River-queue

Good bet: Politics is the mainreason why Mighty River Power shares should do well.

Desire takes many forms. Some people want to stuff the tails of live rattle snakes in their mouths (the record is 13, apparently) and some queue all night to buy an Apple iThing when they could just walk into a shop and get one the next day.

The iThing behaviour is more common than the rattlesnake habit and we should be alert for it when thinking about Mighty River Power - after all, the shares will still be available for purchase after the initial offer is over, so why rush in?

As a sharemarket investor, I have asked myself this question and there are several reasons I intend to buy shares in the Mighty River float.

One is the price. The prospectus says the shares will probably be priced in the range of $2.35-$2.80 each, although I won't know exactly how much until after I have committed to buy.

This is not unusual in share offers and it is obviously a concern for small investors but, to me, the risk is not that great. While I have read the prospectus front to back and have a reasonable grasp of the business, I do not consider myself good at valuing companies.

However, the price will ultimately be influenced by people who are valuation experts - professional investors in the bookbuild process - and they have a strong incentive to pay as little as possible.

The indicative price range also gives me a decent idea of what deal I'm likely to get. For example, it implies the net dividend yield will be 4.6-5.5 per cent based on projected earnings for the year to June 2014.

That level of income is acceptable for a company of this type and the outcome could be better as Mighty River's projections may be conservative.

True, the price-to-earnings ratio (share price divided by earnings per share) looks high - 35 to 41 based on this year's expected earnings and 21 to 24 based on 2014 forecasts - but the p/e ratio may not be a useful valuation guide in this case.

Analyst reports point out that Mighty River's depreciation charge is excessive because it is based on annual asset revaluations, which means reported net profit is therefore artificially low.

One report talks of the "effective 'fictional' depreciation on revalued renewable assets", while another states "a significant percentage of the accounting depreciation charge likely relates to the revaluation of assets and is therefore not 'real'."

Perhaps the biggest reason I think the shares are likely to be good value is political rather than financial - this is the Government's first of three power company share offers and a poor experience for investors would be highly damaging to the whole programme, as well as to National's electoral fortunes.

As Phil Anderson of Devon Funds Management puts it: "The political implication of the stock price being below the listing price on election day is something I'm sure they've thought about."

Of course, the company could simply perform badly for a whole bunch of reasons neither the Government nor the management could foresee. Is that a reason not to invest? It might be if Mighty River was to be the only share I owned, but that's not the case.

There are risks in every sharemarket investment, so I follow the conventional approach of investing in several different businesses to mitigate the damage of a single investment going badly.

The biggest known risk facing Mighty River is probably the potential closure of Tiwai Point aluminium smelter near Invercargill. The plant uses so much electricity that its absence would leave a huge oversupply in the market, reducing prices and profits for power companies across the board.

Analysts have estimated the closure of Tiwai would reduce Mighty River's value by $400 million to $550m, which is about 29-39 cents a share or, in layman's terms, quite a lot.

Before Tiwai's power supplier Meridian revealed talks with Tiwai's owner on a new contract had reached deadlock, analysts were thinking closure was unlikely. Since the announcement on March 28 - and the Government's attempted intervention - the market's views seem to have swung the other way.

Anderson, who has spent many hours studying the power market, said the change was likely to affect how much investors would be willing to pay.

"It seemed to increase the probability of that [closure] scenario, so there is a bit more of a discount for that," he said.

Still, not every aluminium company is feeling gloomy. Alcoa, a global producer of raw aluminium as well as aircraft and car parts, announced a strong quarterly result last week and said the market was not as weak as commodity prices implied.

"The decline in aluminium prices is not reflective of the overall current market fundamentals," said chief financial officer William Oplinger. Projected annual demand growth was 7 per cent and capacity cuts, particularly in China, had reduced the excess supplies, he said.

So who knows what the future holds for Tiwai, but the market is at least factoring the risk into the equation.

Aside from the risk factors, Mighty River's business has good qualities for an investor like me. It is a utility supplying an essential infrastructure, its main resources - hydro and geothermal power - are renewable and its customers' demands are much more predictable than, say, a clothing maker's.

The sum of the parts makes for strong and relatively stable cashflows, which gives me confidence the dividend payouts will be sustainable and helps me sleep at night.

Finally, I am a believer in the mixed-ownership model for state-owned power companies and I want to be part of it.

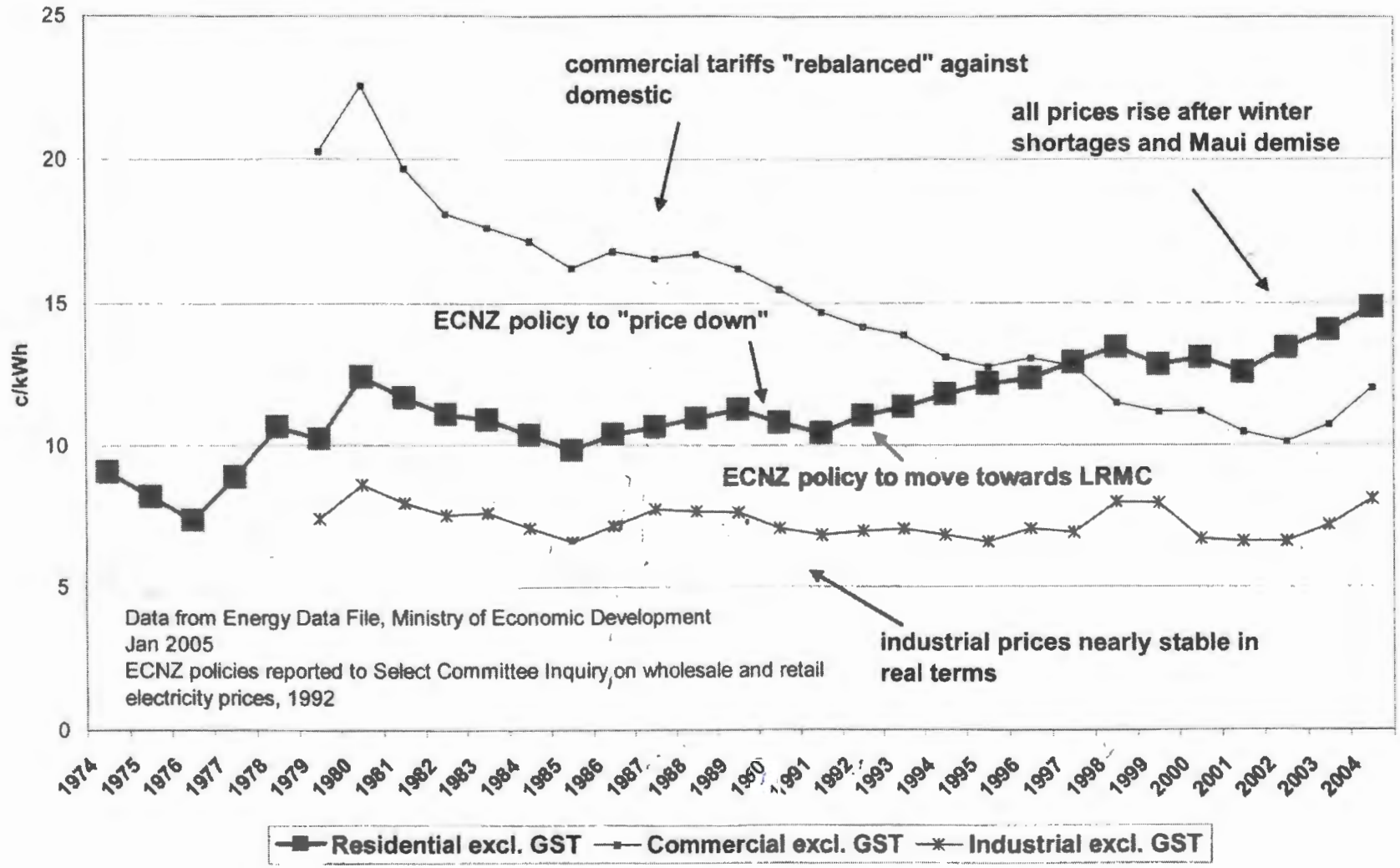
I think it will contribute to a stronger local capital market which will help reduce our reliance on foreign investment and make the economy more robust. It should also improve competition in the electricity market and improve the performance of the businesses themselves.

I must be open to the possibility I could be wrong but, in the meantime, I'll back my judgment.

Tim Hunter is deputy editor of the Fairfax Business Bureau.

Sunday Star Times

All categories electricity prices, real 2004 $,1974-2004



Appendix 1 (GST Excluded)

Appendix 1

Appendix 4

APPENDIX 5

Figure G.5a: Electricity Sales by Sector – March Years

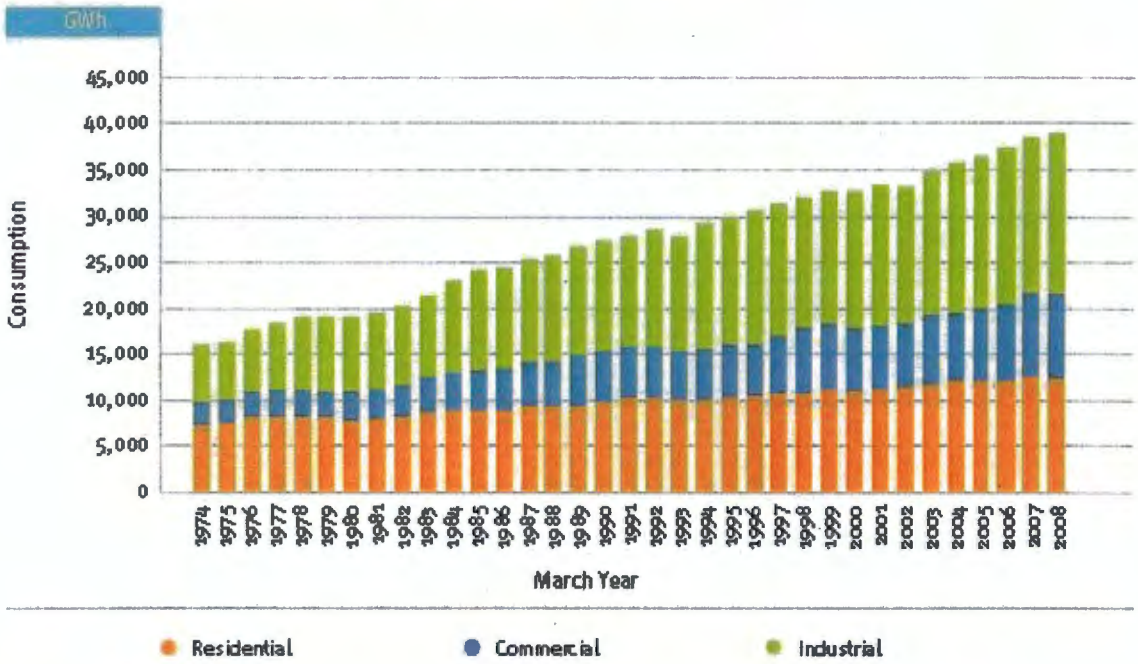


Figure G.5b: Electricity Sales Income by Sector – March Years

Figure 6.5c: Electricity Consumer Connections by Sector at 31 March