

Presentation to National Power New Zealand 2006



State owned enterprises: where to from here?

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State owned enterprises: where to from here?

- Overview of SOEs in the energy sector
- Privatisation of SOEs: should it be full or partial?
- Financial prominence of SOEs and economic impacts on the energy sector

1. Executive summary

The returns on the capital invested in the New Zealand electricity industry have come mostly through revaluations rather than through operating earnings which alone, have not covered the industry's cost of capital. The return on equity targets set in the Statements of Corporate Intent (SCI) for the State Owned Enterprises (SOEs) suggests the required average rate of return on assets for SOEs is lower than would be acceptable to private investors.

The undervaluation of assets, particularly among the SOEs, means reported SCI returns on the existing book value of assets are overstated. This may enable the SOEs to "hide" sub-optimal returns on new investment. Under-valuations and inadequate return expectations enable companies to accept lower prices in the marketplace. We can conclude that current SOE financial policy settings prefer state investors over private investors, and incumbents over new entrants.

SOE financial drivers can not be separated from the question of market reform. It is possible to improve both. Reform of the way expectations of SOE performance are determined is needed; this should focus on the SCIs. Additional new entry tests should also be incorporated into SCIs to ensure systemic bias is overcome. SCI returns should target equity returns derived from the weighted average cost of capital, and the existing assets need to always be fully valued to their market value.

2. Introduction

This paper explores issues around the SOE electricity companies, their influence on the market, and draws some tentative conclusions about their role in market reform. The basis for its analysis is the publicly disclosed financial statements for the five largest companies in the electricity industry; Meridian Energy, Genesis Energy, Mighty River Power, Contact Energy, and TrustPower. This paper will draw significantly from the 2004 report co-commissioned by Alliant Energy New Zealand Ltd that was undertaken by independent, and experienced staff members from the Accounting & Finance and Economics Departments of Auckland University³ (the 'Uniservices report'). This study compared the financial characteristics of all five companies to determine whether differences exist between private and SOEs. Extracts from the report are in quotation marks and adjusted for the third person in this paper.

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² The assistance of Barry Shalley from strategica pte limited in drafting this paper is acknowledged by the author, who would also like to thank Alastair Marsden, one of the original authors of the Uniservices report for comments on an earlier draft of this paper.

³ INVESTMENT IN THE NEW ZEALAND ELECTRICITY INDUSTRY: An examination of comparative financial performance, pricing, and new entry conditions; and a discussion of the principles of new investment, by Auckland Uniservices Limited

3. The electricity supply industry in perspective

The New Zealand electricity value chain is shown in Figure 1 below. Its total revenue in the past year is approximately \$5.6 billion⁴ (see Table 1). This includes a lines component which goes to distribution companies and Transpower. The balance is the electricity component which falls to generator/retailers, and covers all operating costs, research and development, tax, and an average return on the capital invested. The latter works out to be a 6.8% return on the average equity invested⁵ by the five companies for the 2005 financial year. These are the returns from operations only and exclude revaluations.

| Total Market Year Ended June 2005 | | \$m |
|-----------------------------------|--|--------------|
| Operating revenue | | 5,559 |
| Line revenues | | 1,474 |
| Electricity revenues | | 4,085 |
| Operating earnings before tax | | 1,043 |
| Tax | | 370 |
| NPAT | | 673 |

Table 1

The carrying value of the combined balance sheet assets of Meridian Energy, Genesis Energy, Mighty River Power, Contact Energy, and TrustPower is \$14.7 billion, with term liabilities of \$3.4 billion, a gearing ratio of

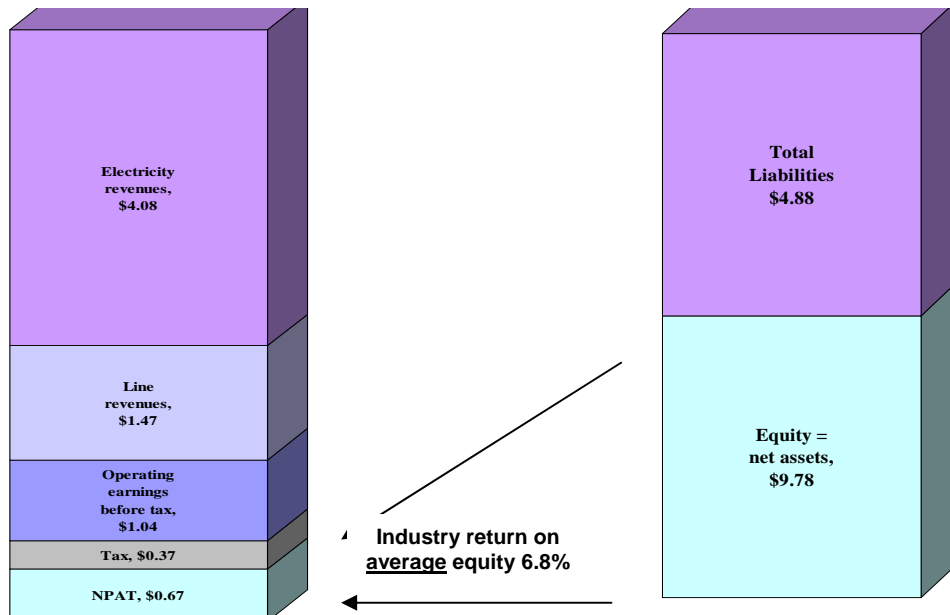
| Total Market Year Ended June 2005 | | \$m |
|---------------------------------------|--|---------------|
| Asset values incl revaluations | | 14,656 |
| Current liabilities | | 1,447 |
| Longer term liabilities | | 3,429 |
| Total liabilities | | 4,875 |
| Equity = net assets | | 9,781 |

Table 2

about 23%. These figures are presented graphically in Table 2. Figure 1 shows the above data graphically.

Figure 1: NZ Electricity Value Chain (NZ\$billion) Year to June 30th 2005

NZ Electricity Industry Balance Sheet (NZ\$billion) Year to June 30th 2005



⁴ This data comes from the income statements of the three SOEs together with Contact Energy & TrustPower. Lines costs are derived from submissions to the Commerce Commission and assume there are no margins passed through. For the 2005 year, the earnings figures for Contact and TrustPower are calculated using data reported for the twelve months ending June 2005. The gas businesses are backed out of the statements with their costs attributed on 100% pro rata basis to its revenue portion.

⁵ Calculated using the average book value of equity as at the end of the 2004 and 2005 financial years.

4. The State Owned Enterprises Act

The electricity industry is perhaps the best local example of a competitive industry within which State Owned Enterprises compete on commercial terms against private companies.

In Part 1 of the State-Owned Enterprises Act 1986, the principle objective of the state businesses is set out: This is to be a *successful business*, to *operate* as a successful business and, to this end, to be *as profitable and efficient as comparable businesses that are not owned by the Crown*

This paper does not argue that the state electricity companies have not been successful businesses. To the contrary, these businesses have been very successful in terms of growing shareholder value and most investors would be very happy to have owned them through the period of the study. Let us be clear from the start; this paper does not take issue with ownership in itself, nor did the original study.

Rather, this paper addresses how the SOE performance drivers affect the market. In particular, it addresses how differences in the way in which they *operate* affect new entry and the level of competition in the industry.

Before doing so however, we will examine whether differences do in fact exist between state and private companies, and if so whether SOEs are *as profitable and efficient as comparable businesses that are not owned by the Crown*.

5. How profitable is the New Zealand electricity industry?

Profitability can come from either operating earnings, gains on the sale of assets, or in non-realised revaluations. Let us consider all three.

Table 3 details industry operating earnings. Operating earnings derive from operating cost structures and operating revenue. Over the study period industry operating earnings have increased from \$398 million in 2001 to \$673 million in 2005 as shown in tables 1 and 3.

| Operating earnings \$m | 2001 | 2002 | 2003 | 2004 | 2005 |
|--|-------------|-------------|-------------|-------------|-------------|
| Operating surplus before income tax | 589 | 435 | 652 | 827 | 1,043 |
| % increase | 37% | -26% | 50% | 27% | 26% |
| Operating surplus attributable to shareholders | 398 | 287 | 449 | 519 | 673 |
| % increase | 24% | -28% | 56% | 15% | 30% |

Table 3

Gains on sale arise from an asset's sale price exceeding its depreciated cost basis. In effect this swaps one investors perception of future cash flows with another. Gains on sale were less than \$30 million during the 2000-2005 period. The very significant gains achieved by Meridian on their Australian investments occurred after the period examined here.

Like operating earnings, gains on sale are usually cash returns to the owner. However, as successful as these transactions are, for the purpose of this argument they are extraordinary and will not be considered. If an operating company was to rely on gains on sale it would be

an investment company. That is clearly not what the State Owned Enterprises Act was intended to spawn. We will focus instead on revaluations and operating earnings.

Revaluations capitalise expectations of future cash flow. In this market they come from price paths that are expected to be crystallised through operating earnings. The capitalisation occurs because these price forecasts become *expected* cash flows to the business. The question here is whether the owner would sell at the current carrying book value of the investment. If the assets of the company would sell for more than the book value of the investment in the financial accounts, then the assets should be revalued to reflect that opportunity value. This provides investors, shareholders and management with more transparent and relevant information.

Revaluations contributed to electricity company earnings as shown in Table 4.

| Revaluations \$m | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---------------------------|-------------|-------------|-------------|-------------|-------------|--------------|
| Trustpower | | 34 | | | 421 | |
| Contact | 24 | | 843 | | 550 | |
| Meridian | 78 | | | 600 | | |
| Genesis | 207 | | | | | 331 |
| MRP | 18 | | | | | 1,056 |
| Total Revaluations | 326 | 34 | 843 | 600 | 972 | 1,386 |

Table 4

Summarised in Figure 2 below is a breakdown of the mixture of profitability for the five companies in aggregate over the period 2000 - 2005.⁶ These are compared to the estimated cost of capital employed in the industry. The difference between the industry profitability and its cost of capital is the 'economic returns' to the industry shareholders.

To calculate asset revaluation gains we used the revaluation gains reported in their financial accounts. Operating earnings were also taken from the financial accounts. Gains on sale were so minor they were excluded from this calculation. The discount rate used in this calculation was the mid-point estimate of the nominal weighted average cost of capital (WACC) which was estimated by Uniservices over the period 1999 – 2004 to be between 8.9% and 10.5%. Details of the calculations are provided in section 3 of the Uniservices report. A WACC of 8.9% was used for the 2005 year.

The result shows that the excess economic earnings of the five companies over this time period amounted to \$2.7 billion. However, revaluations to assets amounted to \$4.2 billion over the same period. Operating earnings failed to cover the required return to the providers of capital funds. In fact, operating earnings net of tax and depreciation amounted to \$3.6 billion, compared to a capital charge of \$5.0 billion, a deficiency of \$1.5 billion (rounded).

Revaluations are a reflection of *future* expected income, not current. Far from showing the industry earning too much from revenue currently collected from electricity consumers, this data suggests it has not been earning enough.

⁶ The excess earnings for the three SOE generators for the financial year ending June 1999 are calculated for the three-month period between 1 April 1999 and 30 June 1999. The capital charge is calculated on a pro-rata basis.

Contributions to Excess Earnings

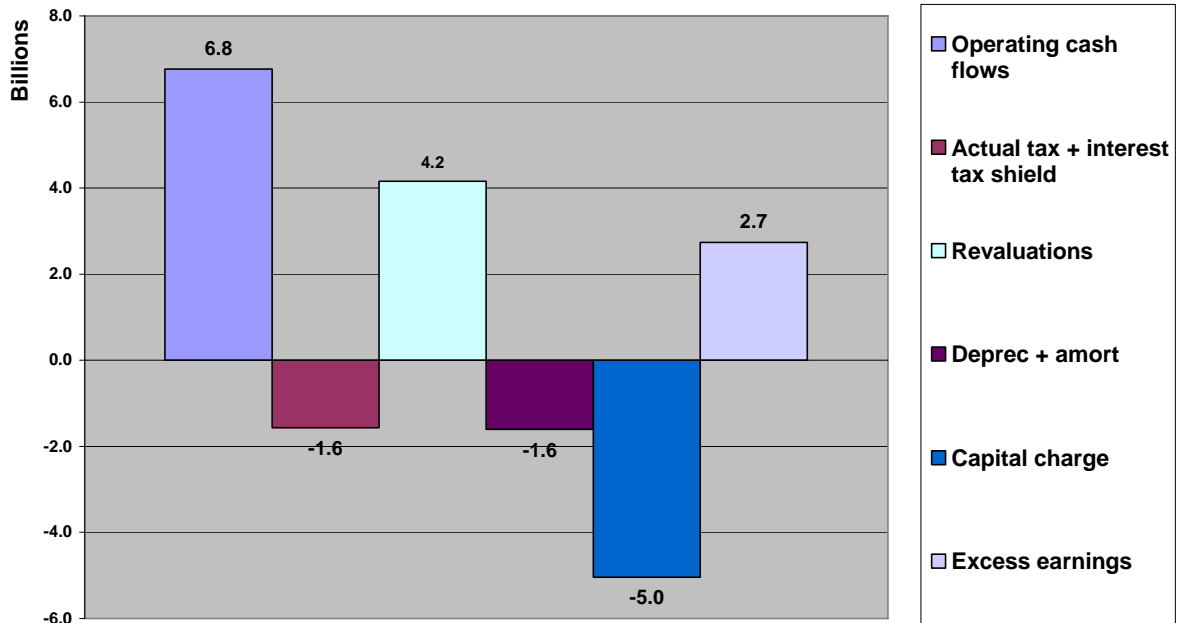


Figure 1 (2000 - 2005)

Point 1: The returns on the capital invested in the New Zealand electricity industry have come mostly through revaluations rather than through operating earnings which alone, have not covered the industry's cost of capital.

6. Performance expectations in the New Zealand electricity supply industry

The WACC of a company is comprised of its cost of debt, and its cost of equity. The cost of debt is a function of a risk free rate and a debt margin. The cost of equity, or return on equity (ROE), is the expected earnings required by shareholders to be indifferent in their investment, relative to other investments. It takes into account the interest tax shield available and the risk associated with the market it is in, the assets it holds within that market, and the enterprise gearing ratio. Table 5 shows a possible WACC composition for a New Zealand electricity company.

| Description | Estimate | Source |
|--|---------------|---|
| Risk free rate | 5.75% | 10 year govt stock |
| Aggregate tax rate for investors on debt | 33% | |
| Asset Beta | 0.650 | Mid range from UoA study |
| Equity Beta | 0.848 | |
| TAMRP | 7.50% | Commerce Commission decisions and PWC website |
| Cost of equity | 10.22% | |
| Cost of debt | | |
| Debt margin | 1.25% | Mid range from UoA study |
| Cost of debt pre tax | 7.00% | |
| Corporate tax rate | 33% | |
| WACC | | |
| Debt to Value ratio | 23% | Industry books |
| Equity to Value ratio | 77% | |
| WACC (nominal) | 8.9% | |

Table 5

In this example the cost of equity is 10%. The Uniservices study calculated in greater detail the cost of equity capital to the electricity industry participants. They found that the cost

“...faced by Contact, TrustPower and the three SOEs over the six-year period varied between circa 8.8% (lower bound estimate) and 13.9% (upper bound estimate)...”. In reality, the industry’s operating returns have been underperforming for shareholders during this period. Table 6 shows actual returns on average equity earned by the industry in aggregate in the period 2000-2005. It is only after revaluations are included that the returns to equity have been economic.

| \$millions | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|--------------|-------------|--------------|--------------|--------------|--------------|
| Average equity (opening + closing) | \$5,061 | \$5,351 | \$5,901 | \$6,786 | \$7,646 | \$8,933 |
| NPAT | \$284 | \$329 | \$231 | \$404 | \$467 | \$608 |
| Return on Average Equity From Operating Earnings | 5.6% | 6.2% | 3.9% | 5.9% | 6.1% | 6.8% |
| Revaluations | \$326 | \$34 | \$843 | \$600 | \$972 | \$1,386 |
| Return on Average Equity Including Revaluations | 12.1% | 6.8% | 18.2% | 14.8% | 18.8% | 22.3% |

Table 6

Table 6 illustrates that ROE based on operating earnings as defined by net profit after tax (NPAT) to average total equity invested was substantially below the cost of equity capital over the periods 2000 - 2005 inclusive. Table 6 also calculates the ROE inclusive of revaluations which in a true cost of equity capital sense are part of the returns to equity holders. They are however, based on expectations only and do not derive from current operating earnings. The Uniservices report stated that “...*The electricity industry will only attract new generation investment if the operating earnings on additional plant are expected to cover the capital cost over the life of the plant...*”

The key here is the relationship between operating earnings and opportunity cost. As discussed, they are not the only earnings available to a business but importantly, they provide the cash returns necessary to attract private investors. This statement becomes even more important if an owner of 70% of the industry’s assets has ruled out any disposition that may turn a revaluation gain into a realised (i.e. cash equity) return. The cash return, though expected in a future period, should still be through operating earnings (which are expected to be higher). The cashflows still need to occur in order to justify the revaluation.

The Uniservices report also “...compared [the calculated cost of equity capital] with the targets set in the Statements of Corporate Intent (SCI). The return on equity targets measured by net profit after tax divided by average equity set in the SCIs for the SOE generators were generally below their estimates of their cost of equity capital. The result suggests that the government may be willing to accept a lower expected return from its investment than would be acceptable to a commercially-focussed shareholder...”

“...This seems at variance with a key objective of the State Owned Enterprises Act, that SOEs should be as profitable and efficient as comparable businesses that are not owned by the Crown. In our view if the government behaved as a commercially-oriented shareholder it would require that book values are independently revalued on an annual or bi-annual basis to their market values and that *future expected operating returns on assets are set with reference to these market values...*”

Point 2: The return on equity targets set in the Statements of Corporate Intent (SCI) for the SOE generators are below the opportunity cost of equity capital. This suggests the required average rate of return on assets for SOEs is lower than would be acceptable to private investors.

7. Differences in the structure of balance sheets in the electricity industry

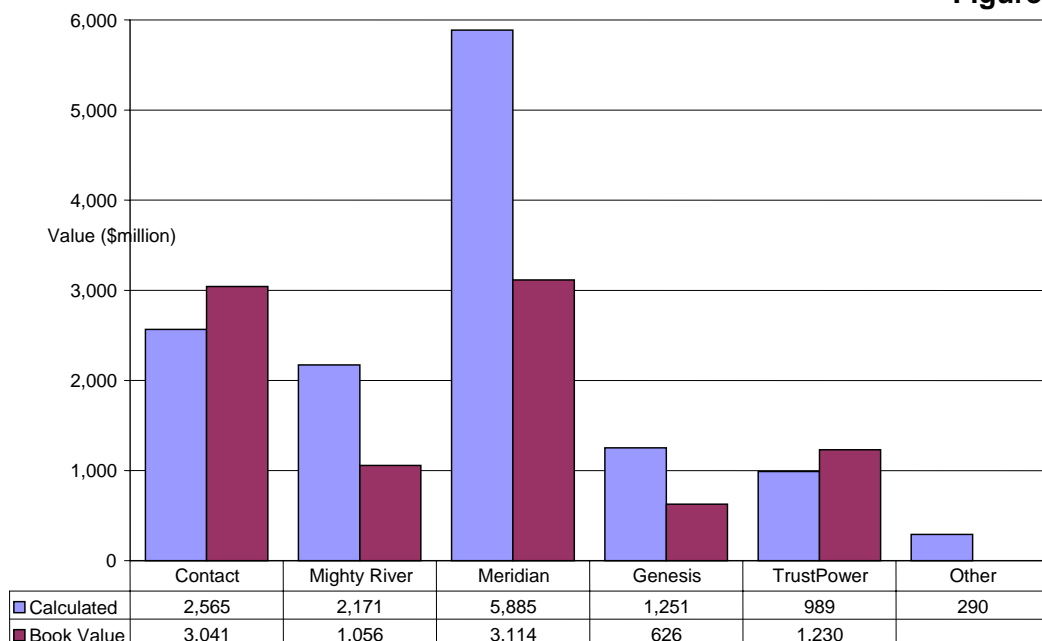
“...Using publicly available forecasts of future prices⁷, historic information on load factors and estimates of fuel costs, [the Uniservices report’s authors] undertook a bottom-up valuation of each power plant and then aggregated these to create valuations at the company level...” They arrived at a value of about \$430,000-\$480,000 per GWh of output for the hydro generators, and about \$220,000-\$240,000 per GWh for the two predominantly thermal generators. They then compared these values with book values taken from company accounts. They interpreted their estimate as a market value, partly on the assumption that investors expect future electricity prices to equal the published price forecasts.

They found quite strong evidence that for SOEs the “...revaluations of generation assets that have been made are insufficient to bring book values into line with market values. Their estimate of the market value of Contact’s generation assets was 16% below the book value reported in Contact’s financial statements as at 30 September 2003. They also found that TrustPower’s generation assets were circa 20% below their (revalued) book value as at 31 March 2004. However the book values of the generation assets as at 30 June 2004 for each of the three SOEs were found to be undervalued by approximately 50% compared to their estimate of their market value..” .

The Uniservices report went on. “...The book value of the generation assets is the base on which calculations of the return on equity are founded. The market value of the generation assets, however, reflects the opportunity cost of those assets. The equity of the SOEs is not listed or traded on any open market. In the absence of any external market price, revaluing assets in the financial accounts to their market value is important to provide greater transparency and to help ensure an entity seeks to earn an appropriate return on the opportunity cost of those assets. Our analysis suggests that the book values of the SOEs’ generation assets are also lower than their market values and lower than may be observed in a successful business not operated by the Crown.”

A summary of the Uniservices estimate of the market values compared to book values for the five companies as at June 2004 is provided in Figure 3 below.

Figure 3



⁷ The MED also used EnergyLink forecasts in their estimates. See the Uniservices report for further details.

“...In the absence of asset revaluations, the financial performance of a company relative to its asset values is not necessarily a good indicator of operational performance. If the book values are summed across the SOEs and for the two private companies, the SOEs comprise 53% of the total book values. If our calculated market values are used however, the SOEs account for 71% of the industry. Operational performance of the SOE sector will appear quite different depending on which of these two baselines are used...”

The 2004 figures will now be less contrasting because revaluations by two of the SOEs occurred in 2005. Then again, price path forecasts have also changed since mid 2004 and we have not updated the Uniservices valuation estimates with 2005 price forecasts. Whether they are in line with market currently is not at issue here; evidence from the Uniservices report over a long period of monitoring suggests that there is currently a systemic bias towards undervaluation of assets by SOEs.

Undervalued assets lead to a lower equity carry (i.e. a low book value of equity) on the balance sheet or financial accounts of the company and do not reflect the market opportunity as represented by future price paths. For the SOEs this lower asset base reduces the pressure on management and the Government as shareholder to earn a fair risk-adjusted market rate of return on capital employed. Unlike private sector companies the SOEs are not subject to normal market disciplines such as the possibility of takeover or change in corporate control if poor investment decisions are being made.

We can conclude that the actual SCI return as reported by the SOEs is likely to be overstated compared to the return that would be reported if assets were valued in the financial accounts at their fair market value. This may enable SOEs to make new investment that does not meet the expected weighted average cost of capital (“WACC”) or ROE because reported SCI returns on the existing book value of assets are overstated,⁸ and the SOE can then “hide” sub-optimal returns on new investment.

“...Investment is less likely to be privately funded under current policy settings. This follows directly from the above findings. On the basis of current SCI targets and the asset revaluation policies adopted by the SOEs it follows that SOEs may then be more willing than privately owned firms to invest in marginal projects....”

Does evidence support this? The answer to this is prima facie ‘yes’. It is clouded by the mix of different generation skills, fuel availability, transmission investment issues, and consenting processes. However, of all the new generation investment amongst the five since 2000, as stated in their Statements of Cashflows, 75% came from SOEs which represented only 53% of the industry asset book values. Even though SOE investment proportions may be at parity in terms of the true value of the companies involved, this is not reflected in the financial statements that drive the market.

Point 3: The undervaluation of assets, particularly among the SOEs, means reported SCI returns on the existing book value of assets are overstated. This may enable the SOEs to “hide” sub-optimal returns on new investment.

⁸ As discussed this arises because the book value in the financial accounts of the SOEs’ generation assets are understated relative to their fair market value. Moreover, although the SOEs have periodically revalued their assets this has not been done on a regular annual or bi-annual basis.

8. The effect these differences can have on market price levels

The Uniservices study addressed how undervaluations can affect price levels. They translated the undervaluations into implied enterprise by enterprise pricing by varying the projected price paths to show by what factor projected prices would differ from the industry projection in order to achieve consistency with the published book value⁹. Another way of thinking about this is as the internal transfer price, the price at which in a vertically integrated industry energy changes hands internally between different corporate divisions.

They found that for Meridian, prices need only be 60% of the base case assumptions for calculated asset values to equal book values. Part of this difference is likely to be due to the presence of the Comalco contract. However, the numbers for the other two SOEs, at 66% and 86%, were also lower than the projected price path. This is illustrated below.

Price Paths Consistent with Book Values

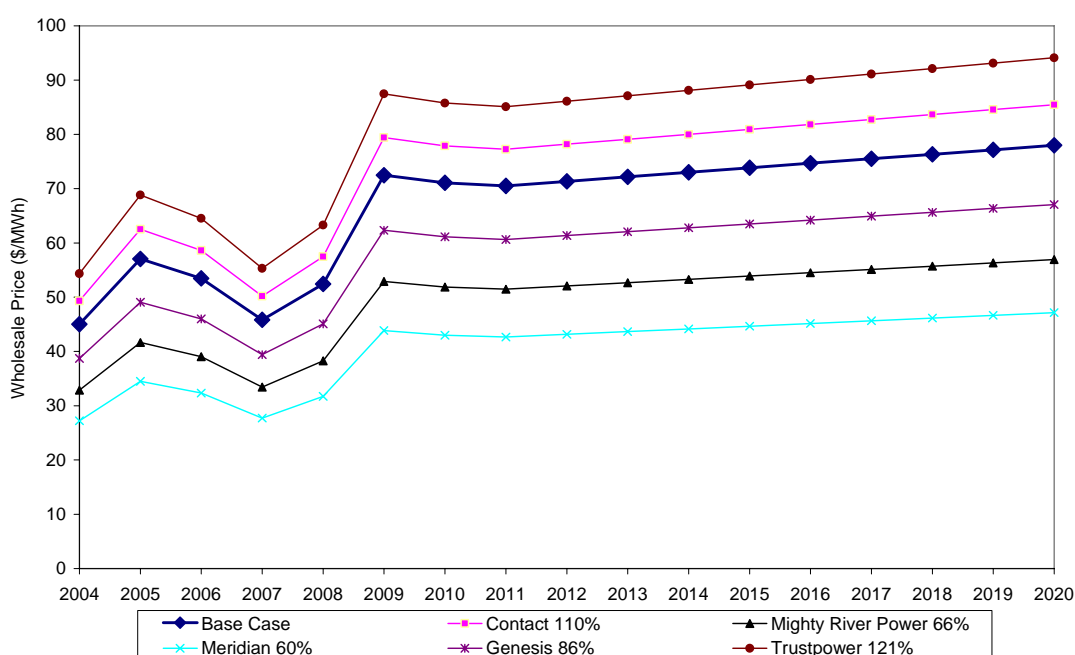


Figure 4

Again, this data will now be less contrasting following revaluations by two of the SOEs in 2005. Nevertheless, it is instructive from a policy perspective to see how SOE balance sheets can work their way into the market, as reflected in market price levels. This means that owners of undervalued assets can still achieve target returns from operating revenue that is lower than the revenue needed for assets valued at their opportunity cost¹⁰.

Point 4: Under-valuations and inadequate return expectations enable companies to accept lower prices in the marketplace. They lower the required cash returns from operating revenues that are necessary to cover the fair opportunity cost of capital on the market value of assets employed.

⁹ The change to the price paths is achieved by reducing the price in every time period to a fixed percentage of the base case assumption. A real post-tax cost of capital of 7.5% was used in these calculations.

¹⁰ This paper is largely silent on the matter of gearing, preferring to focus on return objectives, and valuations. However, at just 23% on current [undervalued] asset values, there is substantial opportunity for improved capital management. Readers are referred to "The Economist's" Economic focus in the February 11th 2006 edition for an interesting new look on corporate finance.

9. Discussion

The discussion to this point has focused on earnings and valuations and return expectations, and the differences between public and private ownership. Why is this important? Because we are faced with an important philosophical decision. Unlike say telecommunications, energy has not behaved as a falling marginal cost product; indeed it can be argued that the second law of thermodynamics means it never can be. It may just be that energy will never get any cheaper relative to other goods in the economy. Faced with this possibility, the decision becomes even more important.

Do we want a market that attracts the best innovation and technology, has a fully informed supply function, and releases demand to fully express itself? Or do we want a market that hinges off incumbent state generators to secure our future energy needs?

Why is private investment important? There are two reasons. Firstly, you are more likely to benefit from innovation and technology. At the point at which new investment is made, innovation and technology cast an indelible footprint and our energy future needs this.

Secondly, and more importantly for this argument, it shows policy-makers that that there is no systemic bias from their own companies towards lowering the operational thresholds that a private operator must live within, and thus making private investment, both incumbent and new entry, less attractive.

Lets recap to explain further. Price path forecasts are based on the potential threat of new entry. Valuations are based on price path forecasts. Revaluations are based on increased expected future revenue. Revaluations increase the equity carry on the balance sheet. Increased equity carry mean a higher return hurdle threshold. A higher return threshold means increased prices. Increased prices mean a revaluation is necessary.

To help understand this, consider that revaluations are not an immediate cash return to equity but rather represent an expected cash return to equity. Of course for the SOEs the reason that a revaluation gain from an expected cashflow can not convert to a realised (i.e. cash equity) return is because the owner has said that they will not consider selling the asset. The cash return, though expected in a future period, should therefore still be through operating earnings (which are expected to be higher). The point is, those expected [higher] cashflows still need to occur in order to justify the revaluation.

How then should policymakers determine this test? One simple answer is the presence of new entry. Rather than SOEs pricing their output to just below new entry (which is what price path forecasts are based on) and have policymakers faced with the difficulty of determining whether sub-economic operating earnings from its companies are being used to depress competition, they can be used to facilitate competition. Returns should be driven towards the economic levels at which significant new entry will appear. Only then can policymakers be confident that no systemic bias appears in the outcome. This could be done easily by incorporating additional tests into Statements of Corporate Intent.

Apart from incumbents maximizing their operating earnings, new entrants also need to have a market into which to sell their new generation. There is a very illiquid forward market into which any new entrant could comfortably sell their generation, or buy generation output.

This is not an intractable market reform dilemma. Driving a company towards investment returns that reflect the opportunity costs of capital will produce positive economic benefits. It will drive competition deep into the value chain as each level of the operation, vertically integrated or otherwise, becomes more exposed to opportunity costs. Contestability within value chains will produce the best economic outcome for New Zealand.

The direct relationship [through operating earnings] between SOE financial performance objectives and competition in the marketplace is a policymakers tool, and outcomes in the marketplace can be directly attributed to the way in which that tool is used.

10. Some conclusions

What are the key messages that you can take away from this paper? Firstly, the electricity industry is the best example of a competitive industry where SOEs and private companies compete. It has been doing as such for nearly seven years now. Substantial data on the relative performance of the companies involved now exists. This paper has presented robust data in its overview of the performance of SOEs in the energy sector.

This paper does not represent a plea for privatisation of State Owned Enterprises. It, like the Uniservices report "...does not support an argument for further privatisation of generation assets at this time. Within the electricity sector there are serious weaknesses that would not be solved by privatisation and which are more easily addressed while assets are publicly-owned. One of these is the lack of a transparent and liquid forward market, which is itself a function of the structure of the industry...They were strongly of the view that the strengths and weaknesses of this structure should be carefully assessed before asset sales are considered". This paper argues for neither full nor partial privatisation as an ends alone.

Lets recap on the main points.

The returns on the capital invested in the New Zealand electricity industry have come mostly through revaluations rather than through operating earnings which alone, have not covered the industry's cost of capital.

The return on equity targets set in the Statements of Corporate Intent (SCI) for the SOE generators are below the opportunity cost of equity capital. This suggests the required average rate of return on assets for SOEs is lower than would be acceptable to private investors.

The undervaluation of assets, particularly among the SOEs, means reported SCI returns on the existing book value of assets are overstated. This may enable the SOEs to "hide" sub-optimal returns on new investment.

Under-valuations and inadequate return expectations enable companies to accept lower prices in the marketplace. They lower the required cash returns from operating revenues that are necessary to cover the fair opportunity cost of capital on the market value of assets employed.

We can conclude that current SOE financial policy settings will prefer state investors over private investors, and incumbents over new entrants. SOE under-valuation leads to higher book returns compared to that of private sector competitors. This makes investment from public capital sources more likely. Vertical integration makes it even more likely because new entrants from outside the industry do not face a transparent liquid forward market to sell into or buy from.

A policy conclusion: You cannot separate SOE financial drivers from the question of market reform. It is possible to improve both. Reform of the way in which expectations for performance are determined is the key change needed here. If that is most easily achieved by full or partial privatisation of SOEs, then so be it. It may be achieved better another way. The important point is, a competitive market capable of delivering energy security at least economic cost and with full access to new technology at the margin, is possible but it needs to include a reform of the way the government, as a shareholder, does its business.

This reform should focus on the Statements of Corporate Intentions. Additional new entry tests should be incorporated into SOEs' SCIs to ensure systemic bias is overcome. The discussion above suggests that in order to attract additional private sector investment, SCI returns should target equity returns derived from the weighted average cost of capital, and the existing assets need to be fully re-valued to match those returns.