

MEUG Q&A on Economic Profit Analysis (EPA) methodology and results for Meridian Energy Ltd (MEL)

24th August 2021

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Q&A on EPA methodology and results for MEL

Qu. 1.	<p>Why did MEUG do this analysis and why start with Meridian Energy?</p> <p>For decades there has been discussion on whether electricity suppliers have been earning material and persistent excessive profits but little evidence to assist that discussion.</p> <p>MEUG started a pilot analysis in early 2020 to test if an Economic Profit Analysis (EPA) framework, using over 20 years of publicly available audited information, could be applied to the electricity industry suppliers to estimate economic profits.</p> <p>Meridian Energy was chosen for the pilot because it has the largest market capitalisation (see table below), has fewer non-electricity industry operating activities than some other businesses, and has well set out recent accounts.</p> <p>The April 2021 pilot proved it was feasible for a framework and template to be developed for consolidating results for the industry. We then used that framework to finalise the initial results for Meridian Energy.</p> <table border="1" data-bbox="320 775 938 1077"><thead><tr><th></th><th colspan="2">Market capitalisation (\$m)¹</th></tr></thead><tbody><tr><td>Meridian Energy</td><td>13,630</td><td>38%</td></tr><tr><td>Mercury Energy</td><td>9,470</td><td>27%</td></tr><tr><td>Contact Energy</td><td>6,530</td><td>18%</td></tr><tr><td>Genesis Energy</td><td>3,540</td><td>10%</td></tr><tr><td>Trustpower</td><td>2,480</td><td>7%</td></tr><tr><td>Total</td><td>35,650</td><td>100%</td></tr></tbody></table>		Market capitalisation (\$m) ¹		Meridian Energy	13,630	38%	Mercury Energy	9,470	27%	Contact Energy	6,530	18%	Genesis Energy	3,540	10%	Trustpower	2,480	7%	Total	35,650	100%
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Qu. 2.	<p>What are the key outcomes of the pilot analysis?</p> <p>Economic Profit Analysis (EPA) is an approach policy decision makers should consider including in their regulatory toolbox to supplement other tools to monitor electricity supplier behaviour and the effectiveness of policy changes.</p> <p>The analysis of Meridian Energy since corporatisation in 1999 shows a persistent excess economic profit trend over recent years. However, analysis of other suppliers is needed to determine if profit trends for all suppliers have been consistent with Meridian Energy or there have been offsetting economic gains and losses.</p>																					

¹ As of 6th August 2021.

Qu. 3.

Are the persistent levels of excess economic profits of Meridian Energy evidence of the exercise of consistent and persistent market power in the industry?

This analysis is not evidence that all the large vertically integrated electricity suppliers have had and exercised consistent and persistent market power because we cannot assess the whole sector's performance based on an analysis of just one company.

An EPA Analysis sheds light on material issues to be analysed but not necessarily on the relative importance of the drivers leading to persistent excess profits. The Commerce Commission (CC) Market study into the retail grocery sector draft report of 29th July 2021 explained this as follows, with underlining of text added by MEUG²:

"The ability of all or most market participants to extract profits which are persistently in excess of a normal return may indicate that competition is not working effectively for the long-term benefit of consumers.

Excess levels of profitability can arise temporarily in competitive markets from pro-competitive conduct such as innovation and increasing efficiency of operations. Likewise, an absence of excess returns does not necessarily mean that competition is working effectively, as the relevant businesses may not be operating efficiently.

Similarly, there may be some market participants that make consistently high levels of profit in competitive markets because they are more efficient than their competitors, such as when they control unusually productive resources, while their less efficient or innovative competitors make relatively low levels of profitability

Nevertheless, in a workably competitive market we would expect profitability to tend towards normal returns over time. We would expect new entrants to be drawn to the market by excess returns, investing in capacity that increases the supply of goods and services, which in turn lowers the price of these products, and reduces the level of returns down to normal levels.

We therefore focus our assessment on whether major grocery retailers' profits are consistently (across firms) and persistently (over time) in excess of normal returns to inform our overall understanding of whether competition is working well for consumers."

² https://comcom.govt.nz/_data/assets/pdf_file/0025/260377/Market-study-into-the-retail-grocery-sector-Draft-report-29-July-2021.pdf Attachment C, paragraphs C4 to C7.

Qu. 4.

What were the results for the initial analysis of Meridian Energy?

Meridian Energy's economic profits have been more than twice the Weighted Average Cost of Capital (WACC, further discussed in Qu. 10.) for the last 8-years (since 2013) and highest in the last two financial 2019 and 2020 years of \$438m and \$560m respectively.

Other results from the analysis include:

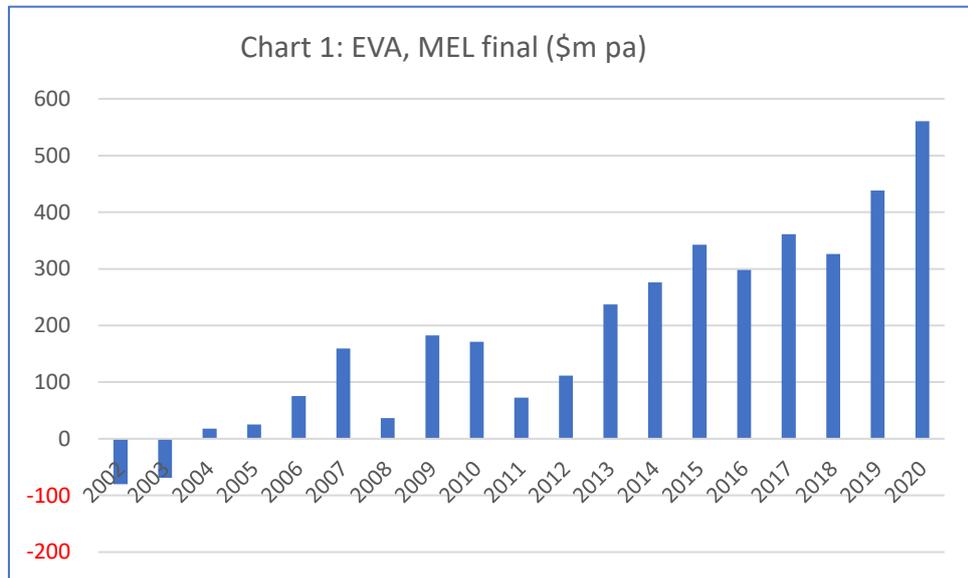
- 20-year cumulative excess economic profits for June years ending 2002 to 2020 of around \$3.5 billion. In the first 10-years (2002-2012) Net Operating Profits after Tax just covered cost of capital on average.
- For the last 8-years, between 2013 and 2020, excess economic profits ranged from \$237m and \$561m per annum.
- For the last 5-years, 2016 to 2020, cumulative excess economic profits were around \$1.9 billion, i.e., just over half of the cumulative 20-year excess profits.

The analysis to date has been for Meridian Energy only and it would be speculative to draw conclusions about the industry. The analysis needs to be extended to other suppliers.

MEUG's analysis did not seek to answer what were the drivers that lead to the results for Meridian Energy. Once an industry analysis is completed, then analysis designed to understand drivers in an industry context can be scoped.

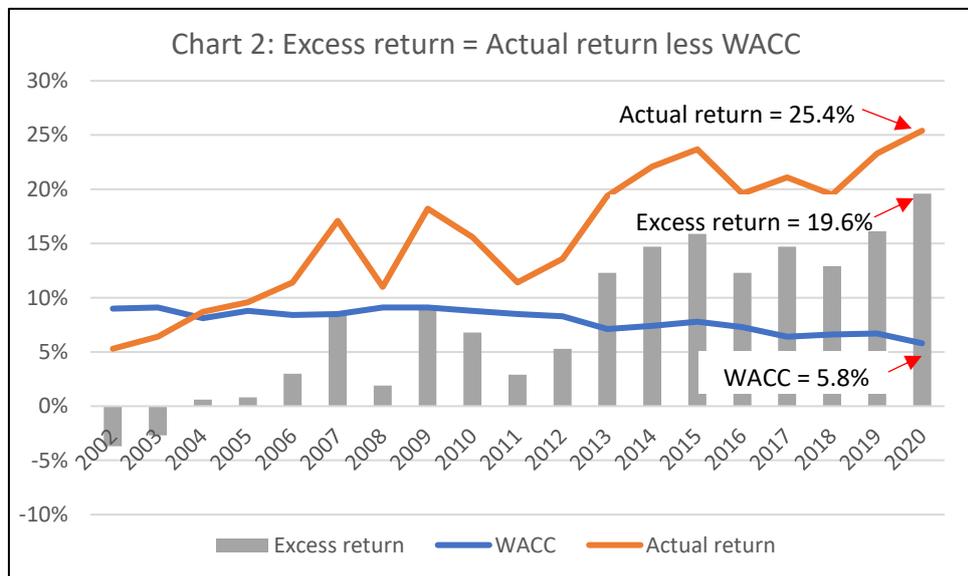
The two charts on the next page summarise the results for the initial EPA for Meridian Energy.

Chart 1 shows the dollar value of the Economic Value Added (EVA), that is the value in excess of a capital charge (equivalent to the excess economic profit) over time for Meridian Energy.



Analysis dated 28th July 2021.

Chart 2 shows the economic profit (labelled “actual return”), WACC and the difference between the two being the excess return (or excess economic profit) in percentage terms.



Analysis dated 28th July 2021.

<p>Qu. 5.</p>	<p>How do the results of the Economic Profit Analysis of Meridian Energy compare with the last reported accounting profits for year ended June 2020?</p> <p>For estimating excess economic profits, reported accounting profit metrics are not as useful as an Economic Profit Analysis based on sound finance theory and techniques.</p> <p>For example, Meridian Energy reported an accounting underlying Net Profit after Tax for the year ended 30th June 2020 of \$317m. The EPA estimates economic profits of \$560m. The two approaches use different constructs. Three key aspects are:</p> <ul style="list-style-type: none"> • EPA seeks to correct the accounting profit to reflect cash return on cash invested in the business. The emphasis on cash flows is the reason adjustments are made to the accounting approach. Material adjustments are listed in Qu. 14. • Importantly for Meridian, the practice of frequently revaluing assets obfuscates understanding trends in economic profits over time. This is the largest adjustment required to accounting data. The topic of revaluing assets by Meridian Energy in its accounts and treatment of revaluation in EPA is discussed further in Qu. 12. • EPA considers the opportunity cost of capital. There is no equivalent to the opportunity cost of capital in underlying accounting profit metrics. An enterprise (or industry) may report persistent underlying accounting profits over time but that does not give any information on whether that is the same, more or less than the opportunity cost of capital for that enterprise (or industry).
<p>Qu. 6.</p>	<p>What action does MEUG want?</p> <p>First, policy makers consider adopting and extending the Economic Profit Analysis (EPA) to the industry since corporatisation in 1999 some 20-years ago.</p> <p>Adoption and extension of the EPA by policy makers to the industry entails:</p> <ul style="list-style-type: none"> • Extend the EPA to other large suppliers to gain a high level of confidence the analysis represents the industry and its dynamics. • If there are sustained excess profits for the industry, understand the reasons for those using EPA and other policy tools. A greater understanding of the industry dynamics will assist scope long-term solutions to be considered. • Adopt EPA along with other policy tools to continually monitor the industry and relevant suppliers in it. <p>Second, in advance of knowing the EPA results for the industry, and to curtail near-term harmful effects of persistent high prices on consumers, consider quick wins that can be implemented that do not compromise or foreclose robust long-term solutions.</p> <p>Possible quick wins are discussed in Qu. 7.</p>

Qu. 7.

What and how should solutions be considered?

Long-term solutions should be decided using standard economic cost-benefit analysis (CBA) of identifying the problem in terms of the economic market failure to be addressed, considering feasible solutions, seeking feedback and testing with interested parties, then choosing the solution(s) expected to have the highest net present value (NPV).

Identifying quick wins that do not compromise effective long-term solutions is urgent.

For longer-term solutions, only after scoping the size and nature of a problem can solutions be considered and ranked. Hence, MEUG is not for or against solutions such as structural separation; though consideration of that option and other longer-term solutions is dependent on the preceding steps using a standard CBA approach discussed above.

Extending the EPA of Meridian Energy to the industry is necessary to understand if there have been consistent (across firms) and persistent (over time) excess economic profits for the industry (refer the Commerce Commission quote from their grocery market study discussed in Qu. 3 above).

Identifying quick wins that do not compromise effective long-term solutions is urgent. Most of the EA's current work programme needs to continue to improve spot and hedge markets because they will be needed for most feasible long-term changes. For example:

- Implementing Real-Time-Pricing.
- Improving market making.
- Improving network pricing.
- Most important are the multiple EA work programmes for evolving technologies and business models to facilitate the transition in the sector to more renewable generation including the recently announced Market Development Advisory Group price discovery project, and the System Operator investigation into future security and resilience projects.

Possible quick fixes could include:

- **Facilitating a futures cap product. For example, finding ways to have more flexible gas supply available for gas fired generation.**
- Publishing more frequently updated hydro level and inflow data. Promoting more public and private sector models (e.g., DOASA³) to understand market behaviour will assist the debate on and quality of final policy decisions. Those models need more frequently published hydro level and inflow data. Having a diversity of tools and models for policy makers, including EPA, we believe is a desirable outcome.

The possible quick fixes above were not intended to be a comprehensive list given our focus to date has been to test the pilot EPA framework and publish the results for Meridian Energy to assist policy makers appreciate the benefit that EPA can add to their regulatory toolbox. Quick-wins should also be subject to an appropriate Cost-Benefit-Analysis.

³ Refer <https://www.emi.ea.govt.nz/Wholesale/Tools/Doasa> for details of the Dynamic Outer Approximation Sampling Algorithm (DOASA) developed by Stochastic Optimisation Ltd and publicly available from the EA website.

Qu. 8.

What is the Economic Profit Analysis methodology?

Economic profitability analysis (EPA) is used to measure the financial performance or the valuation (or prospective cost-benefit analysis) of a project, an enterprise, or an industry. As a financial tool, EPA can also be used to assess if individual businesses or an industry are earning economic profits, excess profits, or losses. A strength of EPA is it is anchored in audited public accounts. The benchmark of success in an EPA is if economic profits exceed the opportunity cost of capital (i.e., WACC).

Using basic audited accounting information, adjustments are made to better reflect “cash returns” on “cash invested” period by period. When considered across all periods of say a project, if the Net present Value (NPV) of the project CBA equals zero then the project is expected to exactly meets its cost of capital.

Businesses invest in projects they expect to earn a positive NPV using a specific corporate or sector cost of capital. An economic profitability analysis tests whether individual investments, or the sum of all investments by the business, have meet the cost of capital test.

The cost of capital is estimated using the WACC formula used by the Commerce Commission and discussed in Qu. 10.

The Commerce Commission, under Part 4 of the Commerce Act, uses economic profitability analysis to monitor ex post actual returns of individual regulated monopolies against ex ante set price-quality paths. Aggregating economic profitability across companies in a utility sector gives a view on the sectors overall economic profitability and performance.

The Commerce Commission in recent market studies has used modified Return on Average Capital Expenditure (ROACE). ROACE is like EPA in that the opportunity cost of capital is taken into account using a WACC relevant to the sector being analysed. The ROACE results for the market studies are discussed further in Qu. 11.

The EPA methodology is therefore a conventional regulatory economic model that is foundation of regulatory analysis used by the Commerce Commission and regulators world-wide.

EPA and EVA concepts are used by businesses world-wide also.⁴ EPA/EVA allows individual businesses to benchmark their performance against the industry or relevant competitor.

⁴ For example, see the 7th edition of “Valuation, Measuring and Managing the Value of Companies” by Messrs Koller, Goedhart and Wessels of McKinsey & Company that has sold over 800,000 copies which is available from Amazon and other sellers and related software is available.

Qu. 9.

Is there a recent New Zealand example of the application of Economic Profit Analysis?

A relevant example of how EPA can be used to illustrate economic profit trends for individual companies and the whole sector were set out in four submissions by Ireland, Wallace & Associates (IWA) to the Commerce Commission on the retail fuel market study in 2019.⁵

Those submissions are listed below:

“Invitation to comment on preliminary issues Commerce Commission New Zealand. A Submission on Question 9: ‘Trends in Profits’”, 21 st February 2019. ⁶
“Invitation to comment on ‘Working paper on assessing profitability’”, 7 th May 2019. ⁷
“Draft Report - dated 20 August 2019, Submission”, 13 th September 2019. ⁸
“Submission in response to: ‘Return on average capital employed OIA response document’ and ‘Conference Consultation’ held on 24 September 2019”, 11 th October 2019. ⁹

IWA’s submission of 21st February 2019 critiqued partially accounting information-based approaches (e.g., using Return on Average Capital Employed (ROACE)) and proposed a modified ROACE using publicly available financial information to apply a value-based framework equivalent to the approach used by the Commission in setting and monitoring the performance of regulated monopolies. Attachment 3 of that submission proposes 8 steps for the analysis. Those are:

Step	IWA proposed step for CC retail fuel Market Study
1	Collect historic financial data.
2	Organise and model the data extracted for the financial statements including unwinding notes to accounts.
3	Translate accounting data into an economic model and data.
4	Use economic data to calculate profit performance over time, e.g., use Net Operating Profit after Tax incorporating adjustments ¹⁰ (NOPAT) divided by operating capital to calculate return on capital and then compare that with the desired capital charge based on the weighted average cost of capital for that industry.
5	From initial time series identify material issues that may require further details directly from the companies to obtain more precision.
6	Use resulting baseline analysis to identify aspects where further “drill downs” by line and activity may assist understand drivers of the results.
7	CC publishes the complete analysis to resolve any remaining accounting adjustment issues.

⁵ Refer <https://comcom.govt.nz/about-us/our-role/competition-studies/fuel-market-study>

⁶ https://comcom.govt.nz/_data/assets/pdf_file/0015/127302/Ireland,-Wallace-and-Associates-Submission-on-preliminary-issues-paper-21-February-2019.pdf

⁷ https://comcom.govt.nz/_data/assets/pdf_file/0028/168346/Ireland,-Wallace-and-Associates-Limited-Submission-on-assessing-profitability-07-May-2019.PDF

⁸ https://comcom.govt.nz/_data/assets/pdf_file/0027/174942/Ireland,-Wallace-and-Associates-Limited-Submission-on-Retail-Fuel-Draft-Report-13-September-2019.PDF

⁹ https://comcom.govt.nz/_data/assets/pdf_file/0022/190381/Ireland,-Wallace-and-Associates-Limited-Cross-submission-on-Retail-Fuel-Draft-Report-October-2019.PDF

¹⁰ A list of frequently observed specific adjustments is listed in attachment 4 of the IWA 21st February 2019 paper. For the pilot EPA for Meridian Energy, material adjustments are listed in Qu. 14 of this memo.

	<p>8 The detailed analysis assists the CC with other analysis to form the basis of decisions or judgements that underpin recommendations to Ministers.</p>	
	<p>For the analysis released by MEUG, steps 1 to 4 were completed to give the summary EPA results for MEL. The next step would then be to repeat steps 1 to 4 for other large suppliers to have confidence that the trends in aggregate for those suppliers reasonably reflects trends for the whole sector. After a sector analysis, then steps 5 to 7 can be undertaken. Step 8 is relevant to the retail fuel market study, though could be generalised to any sector as judgement may be needed to interpret the large range of trends and results over multiple years and multiple entities if there are not common trends for all businesses.</p> <p>Undertaking an initial EPA is not a trivial exercise. In this case it has required sorting Meridian Energy’s publicly available audited financial information into a standard framework in steps 1 to 3 for 20 plus years since corporatisation. MEUG is making that information available as a public-good so that other interested parties can use that foundation material to test trends.</p> <p>For step 4, IWA used proprietary software to organise data and calculate the EPA summary results. There are various vendors of software to calculate EPA using appropriately formatted accounting information as an input into and explanation of the economic profit analysis.</p> <p>The preceding commentary covers the mechanics of transforming or modifying historic audited accounting information into economic terms to test whether an enterprise has covered its cost of capital (i.e., the opportunity cost of capital estimated using WACC). When EPA is applied to a sufficient sample of companies in a sector, EPA can estimate economic profit trends for that sector.</p> <p>The EPA methodology can be extended to consider the markets expectations of each enterprise’s future excess or under-performance against WACC. Table B of the IWA 13th September 2019 submission to the CC retail fuel market study and paragraphs 36 to 38 of that paper discuss and calculate the Future Growth Value (FGV) being the market’s view (based on current share price) of expected economic profits, i.e., expected economic profits are embedded in share prices.</p>	
<p>Qu. 10.</p>	<p>How was the WACC calculated?</p> <p>The cost of capital is estimated using the Weighted Average Cost of Capital (WACC) formula used by the Commerce Commission. The sector specific parameter in the formula is the sector asset beta. The EPA assumed an electricity supplier industry asset beta of 0.60.</p> <p>For New Zealand, examples of asset beta for specific sectors have been determined by the Commerce Commission at 0.35 for Transpower, 0.40 for electricity distributors and 0.60 for regulated airports.¹¹</p>	

¹¹ Refer CC determination 2nd August 2021, Table 4, p6, https://comcom.govt.nz/_data/assets/pdf_file/0018/260514/2021-NZCC-10-Cost-of-capital-determination-Transpower2C-GPBs-and-airports-2-August-2021.pdf

Qu. 11.

How do the results compare with other analysis of the electricity industry?

The EPA for Meridian Energy is a comprehensive financial analysis of an individual supplier. Some other analyses have covered several electricity suppliers; though for only a few years. Those analyses therefore have some insights into the industry performance, though lacking the robustness of a long historic record to anchor the analysis. The EPA for Meridian Energy on its own gives reduced insight into the industry EPA.

Other public financial and partial analyses we are aware of include:

1. Auckland UniServices report for Alliant Energy and Trustpower in October 2004.¹²
2. Ernst & Young for the Treasury in 2011.¹³
3. Dr Bertram, Victoria University of Wellington, publications between 2012 and 2019.
4. Commerce Commission's electricity sector investigation report May 2009.
5. The Electricity Price Review 2019.
6. The Commerce Commission retail fuel market study 2019.
7. The Commerce Commission grocery sector market study 2021.

In analysis 4 and 5 above, that is the Commerce Commission electricity sector investigation report May 2019 and the Electricity Price Review, the analytical methodology did not use EPA, EVA, ROACE or modified ROACE analysis. Nevertheless, they are relevant because they considered electricity supplier behaviour but through different analytical lenses.

The analysis by Auckland UniServices and the report by Ernst & Young for the Treasury were not comprehensive as they analysed only a few years. In comparison the EPA of MEL commissioned by MEUG is comprehensive in terms of modifying publicly available audited accounts into an economic format for the 21 years since corporatisation and this includes a set of 21-year normal accounts.

The analysis by Dr Geoff Bertram comprised a series of presentations between 2012 and 2019. For example, detailed summary graphs of large suppliers and the sector in aggregate were made in a presentation "Asset values, rents, and the single buyer proposal for the New Zealand electricity sector," for an Auckland University Economics Department Seminar in April 2014¹⁴. At the time it was published issues were raised on deferred tax and other aspects of the analysis.

A lesson from the first three analyses were that the task of modifying a long sequence of historic audited accounts for multiple large suppliers into an economic framework is complex and time consuming. MEUG was aware of this when commissioning the pilot analysis in early 2020 though we considered the initial one-off cost of establishing a robust historic data series would provide a sound platform for annual updates following publication of additional audited accounts every year.

The advantage of economic profit analysis and the three studies above, is they all analysed publicly available audited information modified to fit the context of their studies.

¹² Dr Alastair Marsden, Dr Russell Poskitt and Dr John Small, Auckland UniServices, a report for Alliant Energy New Zealand Ltd and TrustPower Ltd, Investment in the New Zealand Electricity Industry, October 2004.

¹³ Ernst & Young, a report for The Treasury, SOE Economic Profit Analysis, 25 November 2011, refer <https://www.treasury.govt.nz/publications/information-release/soe-economic-profit-analysis>

¹⁴ Refer <http://www.geoffbertram.com/publications> and document URL <http://www.geoffbertram.com/fileadmin/publications/Auckland%20seminar%2011%20April%202014.pdf>

The Commerce Commission May 2009 Electricity Sector Investigation Report, based on an analysis by Professor Wolak. The “Wolak analysis” considered the offer behaviour of suppliers compared to a least cost counterfactual rather than an analysis of opportunity costs of capital and economic profits. The Commission noted¹⁵:

“Overall, the Commission considers there is strong prima facie evidence that each of the largest four suppliers into the wholesale market (Contact, Genesis, Meridian and Mighty River Power) have a substantial degree of market power. That market power is exercised, for substantial periods, by offering into the wholesale market at prices above those that they would offer under competitive conditions. The periodic nature of these bouts of high prices, together with high entry barriers, means that potential competition does not provide a constraint on the exercise of market power.”

And later in paragraph 702:

“The analysis undertaken on market power suggests that the identified exercise of wholesale market power by Contact, Genesis, Meridian and Mighty River Power reflects normal, legitimate profit-maximising behaviour in the context of the characteristics of the electricity product, and the current market structure, design and rules. It has not suggested this conduct away from competitive benchmark levels varies over time, and, indeed, that for long periods of time there is no sign of such distortion, is consistent with the finding that firms exercise unilateral, rather than coordinated, market power is possible because of anti-competitive activity. The Commission’s view is that the fact that the size of the distortion of wholesale prices away from competitive benchmark levels varies over time, and, indeed, that for long periods of time there is no sign of such distortion, is consistent with the finding that firms exercise unilateral, rather than coordinated, market power.”

The Commission decided not to commence a regulatory inquiry under Part 4 of the Commerce Act. While there may not have been co-ordinated exercise of market power by the large suppliers, the findings of the Commission in 2009 in terms of the large suppliers at times having unilateral market power and therefore individually and possibly in aggregate earning sustained excess economic profits remained an open question.

The Electricity Price Review final report in October 2019 was a limited analysis. The final report notes the analysis was inconclusive (with underlining of text added by MEUG),¹⁶

“We found no evidence of generator-retailers making excessive profits, although data limitations mean we cannot be definitive in this assessment.”

Using EPA overcomes data limitation issues as it is based on detailed public audited financial information.

¹⁵ Refer https://comcom.govt.nz/_data/assets/pdf_file/0025/219094/Electricity-investigation-Investigation-report-21-May-2009.PDF paragraph 700.

¹⁶ Refer <https://www.mbie.govt.nz/dmsdocument/6932-electricity-price-review-final-report> Final EPR report dated 21st May 2019, published 3rd October 2019, p41.

The final analyses of interest are the Commerce Commission retail fuel market study and the current grocery sector market study. These analyses use modified ROACE, in part similar to EPA as discussed in Qu. 8. Using modified ROACE calibrated to its context, the Commerce Commission estimated the retail fuel suppliers had been earning economic profits for several years more than a normal return appropriate for that sector, and in some years were double a normal return.¹⁷:

- Excess returns for the retail fuel sector “... have consistently exceeded the top end of the range of our estimate of a normal return since the departure of Shell in 2010.”¹⁸ From reading Figure C6 of that report, the excess returns in 2018 were around 12%.
- Excess returns for the three major grocery retailers for the 5-years between 2015 to 2019 were estimated at between 15.5% and 17.7% using the CC upper range for the grocery sector WACC.¹⁹

¹⁷ This memo has not considered the robustness of the formula used by the CC for the modified ROACE used for their market studies compared to using EPA/EVA as a measure of historic economic performance. Therefore, it is not possible to say definitively that the trends and magnitude of economic profits estimated using the CC ROACE methodology would be consistent with an EPA/EVA approach.

¹⁸ CC Market study into the retail fuel sector, final report, 5th December 2019, Attachment C, paragraph C203.

¹⁹ See report reference footnote 4, paragraph 3.36.

Qu. 12. How were accounting revaluations treated?

For the Economic Profit Analysis (EPA) accounting revaluations were reversed.

Meridian Energy revalued property, plant, and equipment assets (PP&E) continually over the 21-years of the analysis. Cumulative revaluations total \$7.6 billion. Revaluations have been made without a corresponding recognition of the annual gain/loss in the accounting Income Statement. IWA has reversed revaluations to reflect what would be normal historic cost accounting. In other words, absent revaluations we get normal historic cost accounts. For Meridian Energy, the largest adjustment has been for revaluations.

A treatment of revaluations was described by the Commerce Commission in their December 2010 Reasons Paper when setting the first Input Methodologies (Electricity Distribution Businesses and Gas Pipeline Businesses):²⁰

“If regulated suppliers were permitted to increase their prices to reflect a change in replacement cost, without the revaluation gain being treated as income, regulated suppliers would not be limited in their ability to extract excessive profits.”

The above principle of recognising valuation changes in the income statement to ensure appropriate measurement of profits applies to all businesses, not just regulated suppliers.

Few businesses in New Zealand revalue assets and take gains and losses to the Income Statement other than some Investment and Property companies. Electricity suppliers treat revaluations in different ways. Meridian Energy most recently have revalued in most years. Contact Energy stopped revaluing PP&E in 2014 and deemed the current value as historic cost.

An alternative to our approach of reversing accounting revaluations would have been to retain asset revaluations and adjusted Meridian Energy’s accounts by having corresponding recognition of the revaluation changes in the accounting Income Statement. Both reversing revaluations as we have done, or adjusting the Income Statement, is a non-trivial exercise.

We chose to reverse revaluations as that appeared to be the least difficult of two complex options. In theory over a long period of years, applying EPA to a set of financial statements where there are no asset revaluations, or applying EPA to accounts where revaluations are treated consistent with the Commerce Commission approach of recognising changes in the Income Statement, will lead to similar if not identical (over a sufficiently long period) estimates of cumulative economic profits. A benefit of MEUG’s EPA for Meridian Energy compared to other analysis is that we have used a long historic accounting record. Other analysis using only a few recent years have the difficulty of estimating the opening asset value and how to allocate prior revaluations to past or future periods.

²⁰ Refer https://comcom.govt.nz/_data/assets/pdf_file/0019/62704/EDB-GPB-Input-Methodologies-Reasons-Paper-Dec-2010.pdf paragraph X20.

Qu. 13.	<p>How were overseas investments, divestments, and be-spoke projects such as the sale of Tekapo assets to Genesis Energy treated?</p> <p>If an overseas investment, divestment, or be-spoke project such as the sale of some of the Tekapo assets to Genesis contributed revenue or incurred costs or required capital then it would be included in Net Operating Profit after Tax (NOPAT) and economic capital for calculating EPA/EVA. The assets sold are operating until sold.</p> <p>The EPA results for Meridian Energy are for the consolidated group accounts. Further analysis can be undertaken to identify the contribution of overseas business units, subsidiaries and investments, and the impact of be-spoke projects such as the sale of the Tekapo assets. That analysis has been beyond the scope of the work undertaken by MEUG to date. That analysis can be undertaken as Meridian Energy audited accounts have included detail on geographic split with metrics such as sales and profit on assets. The accounts have also disclosed details of continuing and discontinued businesses. That raw accounting data information has been collected as part of establishing the historic record for the EPA framework.</p>
Qu. 14.	<p>What adjustments were made to modify financial information for the Economic Profit Analysis?</p> <p>Adjustments are made to separate operating performance from financing decisions.</p> <p>The objective is to transform reported financial information into an economic framework by adjusting raw accounting data to reflect underlying economic performance. The adjustments are designed to separate operating performance from financing decisions ultimately presenting the returns generated from an all equity funded business. The returns generated from an all equity funded business on a cash rather than accrual basis reflecting aggregate cash investment and distinguishing non-operating items. The resulting performance measure should better reflect the “cash return” on “cash invested” in operations. The derived Net Operating Profit after Tax (NOPAT) is the economic profit of an all equity funded business and the Operating Capital Employed (Capital) is the cash and cash-equivalent investment in operations.</p> <p>Material adjustments include:</p> <ul style="list-style-type: none"> • Non-capitalised leases • Asset Sale/Unusual Loss (Gain) • Establishment/Asset Sale costs • Treasury hedge adjustment • Asset impairments • Energy hedge adjustment • Revaluation Depreciation • Asset Revaluations adjustment • Revaluation increment to Income Statement • Deferred tax effects

Glossary

CBA	Cost benefit analysis
CC	Commerce Commission
DOASA	Dynamic Outer Approximation Sampling Algorithm (model)
EA	Electricity Authority
EPA, EVA	Economic Profit Analysis methodology. Sometimes the methodology is called Economic Value Added (EVA), though we use that term to refer to the economic profits after considering the opportunity cost of capital (WACC).
FGV	Future Growth Value
HC	Historic cost
IWA	Ireland, Wallace & Associates Ltd
MBIE	Ministry of Business, Innovation & Employment
MEL	Meridian Energy Ltd
MEUG	Major Electricity Users' Group
MV	Market value, i.e., refers to specific assets being marked to market.
NOPAT	Net Operating Profit after Tax
NPV	Net Present Value
PP&E	Property, plant, and equipment
Q&A	Question and answer
ROACE	Return on average capital employed
WACC	Weighted average cost of capital