



MAJOR ELECTRICITY USERS' GROUP

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Dear Karen

Submission on Pan Industry Input Methodologies for cost of capital

Purpose and structure of this submission

1. This is a submission by the Major Electricity Users' Group (MEUG) on the following Commerce Commission (the "Commission") papers in relation to pan industry Input Methodologies (IM) on cost of capital as follows:
 - "Input Methodologies Electricity Distribution Services, Draft Reasons Paper, dated 18 June 2010^{1,2}
 - "Input Methodologies for EDBs and GPBs Companion Paper Draft Determinations and CPP Requirements" dated 2 July 2010.^{3,4}
 - "Input Methodologies Gas Pipeline Services, Draft Reasons Paper", dated 21 June 2010⁵.
 - "Draft Commerce Act Gas Distribution Services Input Methodologies Determination", dated 2 July 2010.⁶
 - "Input Methodologies Transpower, Draft Reasons Paper", dated 25 June 2010⁷.
 - "Draft Commerce Act Transpower Services Input Methodologies Determination", dated 2 July 2010⁸.
 - "Input Methodologies Airport Services, Draft Reasons Paper", dated 31 May 2010⁹.
 - "Draft Specified Airport Services Input Methodologies Determination", dated 1 June 2010.¹⁰

¹ <http://www.comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Draft-Reasons-EDBs/Input-Methodologies-Electricity-Distribution-Services-Draft-Reasons-Paper-June-2010.pdf>

² Suppliers of Electricity Distribution Services are referred to as EDBs.

³ <http://comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Draft-Determinations/Input-Methodologies-for-EDBs-and-GPBs-Companion-Paper-Draft-Determinations-and-CPP-Requirements-July-2010.pdf>

⁴ Suppliers of Gas Distribution Businesses are referred to as GDBs and include Gas Transmission Businesses (GTBs) unless otherwise stated.

⁵ <http://www.comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Draft-Reasons-GPBs/Input-Methodologies-Gas-Pipeline-Services-Draft-Reasons-Paper-June-2010.pdf>

⁶ <http://comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Draft-Determinations/Draft-Commerce-Act-Gas-Distribution-Services-Input-Methodologies-Determination-2-July-2010.pdf>

⁷ <http://www.comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Draft-Reasons-Transpower/Input-Methodologies-Transpower-Draft-Reasons-Paper-25-June-2010.pdf>

⁸ <http://comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Draft-Determinations/Draft-Commerce-Act-Transpower-Services-Input-Methodologies-Determination-2-July-2010.pdf>

⁹ <http://www.comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Draft-Reasons-IMs/Input-Methodologies-Airport-Services-Draft-Reasons-Paper-31-May-2010.pdf>

¹⁰ <http://comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Draft-Reasons-IMs/Draft-Specified-Airport-Services-Input-Methodologies-Determination-1-June-2010.pdf>

2. The electricity, gas and airport services to which the above papers refer are subject to regulation under Part 4 of the Commerce Act (“the regulated services”). This submission refers specifically to the EDB Reasons paper and the Draft Determination relating to EDBs, but the submission points apply in respect of the relevant principles and model elements common to each. For example the paper from Ireland, Wallace & Associates addresses the EDBs Determination and Reasons paper, and is focussed on the choice of a notional fixed leverage of 40%. The argument and principles in that analysis apply also to those other Draft Determinations and Reasons papers referred to above as if each reference to particular facets of the EDB Determination and Reasons paper was to the corresponding points and aspects of each of the above proposals and explanations.
3. This submission:
 - Contains a reminder of why setting a regulatory cost of capital is important for consumers;
 - Summarises respects in which the Draft Determination fails to satisfy statutory requirements; and
 - Lists changes needed to the Input Methodology Draft Reasons and Draft Determinations.

Impact of mistake on Consumers

4. It is challenging to provide investors enough certainty that they will earn a fair return for new investments so they have sufficient incentives to invest, without enabling monopoly profits. Yet it is highly material to consumers.
5. The aggregate asset value of the regulated services is currently approximately \$16.2 billion. This estimate is an approximation and includes where known already committed and or approved capital expenditure as follows:
 - Regulatory Asset Base for EDBs from PricewaterhouseCoopers “Electricity Line Business 2009 Information Disclosure Compendium”, October 2009. System fixed assets at ODV roll forward as at 31 March 2009.
 - Transpower Regulatory Asset Base is estimated as the sum of System Fixed Assets as at year ended 30 June 2009 (not including works in progress on the balance sheet) plus capital expenditure approved by the EC to date excluding minor works approved that would have already been accounted for.
 - Regulatory Asset Base for GDBs for 2008 (excluding Maui Development Limited pipelines) and Airports for 2008 from Commerce Commission, Input Methodologies Discussion Paper, 19 June 2009, appendices A and C. (<http://www.comcom.govt.nz/assets/Pan-Industry/Input-Methodologies/Input-Methodologies-Discussion-Paper-19-June-2009.pdf>)
6. Determined asset values and derived cost of capital are two important drivers of regulated prices and revenue. The table below estimates the total annual cost of capital related charges for Part 4 regulated entities and charges/prices payable by consumers on the existing \$16.2 billion regulated asset base. Apart from the Regulated Asset Base assumptions as detailed above, all the other cost of capital input parameters are as proposed in the draft decisions.

Using draft IM	Pan Industry	EDBs	Transpower	GDBs	Airports	Total
Regulated Asset Base (\$m)		\$7,834	\$4,902	\$1,501	\$2,012	\$16,248
<u>Cost of capital input parameters</u>						
Risk free rate	5.00%					
Debt premium	1.80%					
Debt beta	0.00%					
TAMRP	7.00%					
Company tax rates	28%					
Investor tax rates	28%					
Leverage	40%					
Asset beta		0.34	0.34	0.44	0.65	
<u>Cost of capital estimates</u>						

Equity beta		0.57	0.57	0.73	1.08	
post-tax WACC using B-L CAPM		6.50%	6.50%	7.20%	8.67%	
vanilla WACC		7.26%	7.26%	7.96%	9.43%	
<u>50th percentile cost of capital related annual cash flows (\$m pa)</u>						
Capital charges for Part 4 entities		\$509	\$319	\$108	\$174	\$1,110
Charges payable by consumers		\$707	\$442	\$150	\$242	\$1,542

7. The \$1,542m per annum of cost of capital related charges payable by consumers is an underestimate because:
- Some of the asset data is at least two years out of date; and
 - The draft decisions envisage DPP, CPP and IPP revenue paths being set at the 75th percentile whereas the above table has calculated charges at the 50th percentile.
8. Cost of capital related charges are not the only charges consumers pay for services from Part 4 regulated entities. In addition there are depreciation and operating costs.
9. To consider the sensitivity of the cost of capital related charges for suppliers and charges/prices to consumers, the following sections illustrate:
- The difference when applying the draft decision “counter-intuitive leverage” approach with MEUG proposed “independent of leverage” approach; and
 - The cost of capital charges for existing and new investment.

Comparing the draft decision “counter-intuitive leverage” approach with MEUG proposed “independent of leverage” approach

10. As will be explained later in this submission, the primary flaw in the proposed IM cost of capital is use of B-L CAPM and leverage set at 40%. This is termed the “counter-intuitive leverage” approach. MEUG propose an “independent of leverage” approach. The preceding table in paragraph 6 calculated cost of capital using the draft IM “counter-intuitive leverage” approach. The table below summarises the cost of capital using the MEUG “independent of leverage” approach. The Regulated Asset Base assumptions and all the cost of capital input parameters are identical apart from leverage which is zero. The difference between the “independent of leverage” and “counter-intuitive leverage” approach is 0.52% in WACC. The results follow:

Using “independent of leverage” approach	EDBs	Transpower	GDBs	Airports	Total
<u>50th percentile cost of capital related annual cash flows (\$m pa)</u>					
Capital charges for Part 4 entities	\$468	\$293	\$100	\$164	\$1,026
Change in capital charges compared to draft IM					\$84
Charges payable by consumers	\$651	\$407	\$139	\$228	\$1,425
Change in charges payable compared to draft IM					\$117

11. The difference between the IM proposed and our approach is approximately \$84m in capital charges per annum which is equivalent to \$117m in charges/prices. This is highly material.

Cost of capital for existing and new investment

12. Demand for the regulated services is not static. Over the medium and long term, new investment will be required. The regulatory cost of capital must consider returns on the existing “sunk” asset costs of \$16.2 billion. As estimated in paragraph 6 this is at least \$1,110 million per annum in capital charges and \$1,542 million of equivalent charges/prices.
13. As the demand for regulated services increases and plant nearing the end of its economic life is required to be replaced, the regulated asset value will increase. Take for example \$5 billion of new capital investment apportioned across regulated sectors in proportion to their existing asset base.
14. The aggregate revenue charge for Part 4 regulated services calculated using the draft Input Methodology cost of capital decisions on expected new investment of \$5 billion over the next five years equals:
 - \$342 million per annum of cost of capital related revenue charge to those regulated services; and
 - \$474 million per annum of charges/prices payable by consumers.

These are in addition to the cost of capital related charges for existing assets in paragraph 6 above.

15. The impact of mis-specifying the cost of capital is obvious. Bias in favour of ensuring investors have incentive to proceed with new investment will, if it overshoots, give Part 4 service providers a windfall gain on their existing asset base. That result can be avoided, if any deliberate bias is confined to new capital. The windfall has costs. It represents spending and investing power taken away from business and residential customers.

Summary of law criteria

16. The following part summarises the reasons for MEUG’s opinion that the proposed methodology for determining the cost of capital, does not satisfy the statutory requirements and that they would be better satisfied with the amendments recommended by MEUG.
17. There is an inherent fragility in a model that claims to solve for a relationship that has instead been solved only by making the key variable invariant. That is particularly the case where the variance of the variable concerned is the main claim for utility in the model. It is designed to derive WACC despite variance in leverage. It reflects the key insights of those who developed CAPM – that overall cost of capital should not vary with variance of leverage. This might not matter so much pragmatically if the resulting ‘artificially flat’ line was fixed at the level predicted by all theory i.e. at the least cost point on the curve. Instead the Commission has drawn a flat line from a higher single point on an invalid curve. This does not validate the “work around”, rather it highlights the lack of respectability in the solution.
18. The purpose of Part 4:
 - 52A Purpose of Part**
 - (1) The purpose of this Part is to promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—*
 - (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and*
 - (b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and*
 - (c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and*
 - (d) are limited in their ability to extract excessive profits.*
 - (2) In this Part, the purpose set out in subsection (1) applies in place of the purpose set out in section 1A.*

Promote the long-term benefit of consumers

How the draft input methodology fails

19. The Commission propose a model for determining WACC that could leave the cost of capital higher than is justified by any established or reputable framework or theory.
 - It could result in years of unjustifiably high charges for consumers. It could build patterns of over-investment into relevant industries.
 - It will foster industry expectations that will be staunchly resistant to change even if it becomes empirically evident that the cost of capital is excessive.

20. The Commission purports to adopt a model that derives an objective market determined cost of capital. Consumers are intended to be reassured that the resulting price path protects them from exploitation of monopoly power – that it is delivering an analogue of competitive pricing. If the methodology in fact involves a subjective crude “work around” to avoid fixing a known defect in the model, that assurance is misplaced. Consumer confidence in the integrity of the regulation is vulnerable. The ‘work around’ achieves a flat curve so that the chosen model can be applied without exposure to the most extreme results of its flaw. It makes invariant a key variable. It leaves the model without respectability, so it is unlikely to last. That does not promote the long term benefit of consumers.

How the input methodology could be improved

21. *The Commission has commented that the lack in New Zealand of information used by Australian regulators limits New Zealand’s ability to adopt more sophisticated models. Acknowledging that CAPM should not result in a WACC above the cost of unleveraged equity should focus the Commission and interested parties on finding empirical justifications and tested logical determinants for any departure from the least cost point on the model’s curve. That is necessary for long term development of a more empirically validated and theoretically respectable CAPM. For example, the Draft should encourage measurement of the effect of tax differentials, having no capital gains tax, and the degree of utilisation of imputation credits.*

Promote outcomes that are consistent with outcomes produced in competitive markets

How the draft input methodology fails

22. Competitive markets result in net present values of investment being equal to zero at the lowest point of the cost of capital curve. The Commission’s proposed model allows a premium in the WACC above its cost where leverage is equal to zero, over the long run. This raises the NPV to more than zero. It will incentivise unwarranted investment to the long term detriment of consumers that would not occur if the supplier faced normal competitive pricing. To the extent the ‘model’ allows recovery of a deemed cost of capital above market costs, suppliers are authorised to recover a return on wasted capital that they would lose long term in a competitive market.

How the input methodology could be improved

23. *Using a leverage of zero is consistent with the Commission’s acknowledgement that a firm’s leverage should not be influenced by WACC. Firms in competitive markets do sometimes opt for zero leverage. The best way to avoid the abnormality in the Commission’s model is to use a WACC that assumes leverage of zero.*

Suppliers have incentives to innovate

How the draft input methodology fails

24. Innovation is disruptive. Firms’ cultures rarely welcome disruption. Established firms are generally innovative only in response to necessity, or to the prospect of super-profits. The pricing regime reduces the scope for super profits. Monopoly suppliers need pressures consistent with competitive markets to innovate. In this area, that is downward price pressure. The Commission’s nominal leverage based on the flawed model reduces or removes the incentive for innovation by setting WACC too high.

How the input methodology could be improved

25. *The bias of error, if error is unavoidable, should be to increase cost pressure. A WACC that results in a NPV of zero for regulated firms is more likely to force innovation on the participants. Using a zero leverage point for WACC calculations is more likely to achieve this.*

Suppliers have incentives to invest, including in replacement, upgraded, and new assets

How the draft input methodology fails

26. The Commission has said that it wishes to err on the side of caution when dealing with uncertainty, to promote this objective. Offering excess return on capital may facilitate this. But that may be outweighed by the incentives to avoid writing off sunk investments, and other adverse incentives of a regime that necessarily depends on reported capital spending. The ‘bias for error’ is also pursued by the Commission using the 75th percentile after determining the WACC range and then adding a generous ROI range. Artificially increasing the WACC by using 40% leverage (within a model the Commission accepts has “counter-intuitive” effects) puts this purpose above the others when it is more transparently achieved in other ways.

How the input methodology could be improved

27. *The Commission should adopt a more rigorous and respectable treatment of WACC, then use a higher percentile if required to achieve the objective of ensuring willingness to make capital investments. This approach ensures that this incentive objective of the Part is more openly balanced with the others, is transparent, and is not lost within economic models.*
28. *An alternative to allow a greater “incentive margin for error” for new investment could have a higher WACC applicable to capital reflected in new assets but not the opening capital. The law does not oblige the Commission to allocate incentive leeway in relation to existing committed capital. A two tier WACC is not necessarily offensive. The differential could be expressly temporary, to expire at the next revision, when hopefully there is a stronger empirical and theoretical base for refining the models, with more confidence in their relationship to market costs. In the meantime it would target the margin for ‘error’ more precisely as an incentive to investment.*

Suppliers have incentives to improve efficiency

29. The evaluation of the draft’s satisfaction of this criteria involves similar considerations to those in relation to innovation. Efficiency is best achieved where monopoly returns are constrained so that suppliers must improve efficiency. This is the theory on which CPI – X price regulation was developed.

Suppliers have incentives to provide services at a quality that reflects consumer demands

30. DPP determinations in relation to setting quality standards should not be a consideration when determining the appropriate WACC calculation.

Suppliers have incentives to share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and are limited in their ability to extract excessive profits.

31. If the Commission allows WACC to be set higher than is clearly justified as a market derived cost of capital, firms will not share benefits of efficiency or decrease prices. Instead the Commission will be allowing long term monopoly profits in the regulated industry.

52R Purpose of input methodologies

The purpose of input methodologies is to promote certainty for suppliers and consumers in relation to the rules, requirements, and processes applying to the regulation, or proposed regulation, of goods or services under this Part.

32. The Draft’s proposed methodology is likely to be fragile. It has been contentious. It now does not have inherent authority as the application of a fully proven model. The Commission and one of its co-authors has acknowledged its limitations. It is only able to be used by applying to it what is overtly a device, a compromise to allow purported application of the recognised model when in fact it simply fixes arbitrarily a premium above the values otherwise derived from more conventional models internationally.

Certainty for suppliers and consumers

How the draft input methodology fails

33. Fragility in the methodology:
 - (a) Invites challenge, lobbying and other attempts to change it – effectively suppliers will seek advantage from the difficulties in robustly resisting criticism of a model acknowledged to be flawed; and
 - (b) Leaves uncertainty as to its longevity, and about the regime that may replace it.
34. Attributing meaning to leverage, as if it should alter WACC, invites continued dispute, pressure and lobbying by regulated firms to get the benefit of a more favourable leverage. If the cost of capital allowance proves to be overly generous it will ultimately result in disrepute for the regulation.

How the input methodology could be improved

35. *Using a leverage value of zero avoids the problems above. It is at least as certain as using 40%, but it is consistent with generally accepted methodology. It will steer pressure toward empirical refinement of the model, rather than to spurious attempts to tie actual leverage to permitted WACC calculations.*

Certainty of rules, requirements, and processes

How the draft input methodology fails

36. Using the product of a leverage value more than zero discourages improvement of future rules, requirements, and processes. It will attract focus on what leverage notional figure is appropriate. The Commission and interested parties would be better to be incentivised to research empirically, and to determine for New Zealand the effect of such factors as tax differentials, the absence of capital gains tax and the partial utilisation of imputation credits.

Summary of relationship of the WACC calculation model to the statutory purposes

37. By conferring continued respectability on a flawed model, with an upward sloping curve, interested monopoly parties are incentivised to “bank the gains” made by the implicit acceptance of the point on the invalid upward sloping line, then concentrate on representations and lobbying to increase the deemed leverage on the same slope. Further the Commission is vulnerable as it has invited one off and particular solutions for each regulated industry rather than one value to apply whenever the model is applied. The Commission has commented that information used by Australian regulators is not currently available in New Zealand. This limits the Commission’s ability to develop more sophisticated models.

How the input methodology could be improved

38. *The Commission should orient the model toward eliciting research and submission effort on underlying uncertainties. That may be by expressly admitting the subjective and unquantified estimation involved in allowing any margin above the cost derived by applying the model at the zero leverage point. Parties could be encouraged to bring forward evidence to refine the formula, or the factors that should impinge on margins for uncertainty. Research could provide New Zealand data to populate a more rich (less simple) formula. The outcome could be a rise in the zero leverage WACC estimate, or a flattening of the relevant curve, or a change in the formula. Much of that effort will not be elicited if the current approach is suspected to produce results more generous than a more rigorous model. Parties who benefit will prefer ignorance.*
39. Detailed comments on the proposed cost of capital are set out in the appendix.

IWA submissions

40. Attached to this submission is a report by Ireland, Wallace & Associates “Input Methodologies (Electricity Distribution Services) Draft Reasons Paper, June 2010, Submission, Cost of Capital” dated 13 August 2010. This is the “IWA report”. It provides a concise and independent expert view of the “anomaly” represented by an increasing derived cost of capital as leverage is added.
41. The IWA report specifically addresses the EDBs IM Draft Reasons paper. It is however equally applicable to cost of capital for other Part 4 services.
42. The three areas where the IM draft decisions and draft determinations should be changed are:
- a) Chapters on cost of capital, in subpart 5 of part 2¹¹, subpart 1 of part 4¹² and section 5 of subpart 3 of part 5¹³ of the electricity distribution services and gas distribution services determinations. In the Transpower determination there will be corresponding changes¹⁴:
Amendments similar to those proposed below should be made in all the above subparts.

“2.5.2 Methodology for estimating the cost of capital”

¹¹ Pages 31-35 of EDS Input Methodologies, pages 29-34 of GDS Input Methodologies.

¹² Pages 45-48 of EDS Input Methodologies, pages 42-45 of GDS Input Methodologies.

¹³ Pages 73-79 of EDS Input Methodologies, pages 42-45 of GDS Input Methodologies.

¹⁴ Subpart 4 of part 2 (pages 12-16) and subpart 5 of part 3 (pages 20-23).

In subsection (3) for the defined variable r_e (the cost of equity) substitute " r_a is the cost of capital and is estimated by

$$r_f(1-T) + B_a * TAMRP"$$

"2.5.3 Fixed WACC parameters"

In subsection (1) leverage should be 0% (instead of 40%)

In subsection (4) for the defined variable "equity beta" substitute "the asset beta is 0.34 (" B_a ")

In subsection (5) the debt issuance cost percentage should be 0% (instead of 0.3%)

- b) The asset beta for Transpower is too high. Instead of 0.34, the Determination should set the asset beta at 0.30 which has generally been adopted by Transpower in the past.
- c) For EDBs and GDBs subject to DPP or CPP and for Transpower subject to IPP the 50th percentile cost of capital range should apply for all existing, committed and approved assets. This is a change from the Draft Determination application of the 75th percentile range. Provided the Commission sets all other IM at the mid point range, then it may be appropriate to set the cost of capital range for new investment by EDBs and GDBs subject to DPP or CPP and for Transpower subject to IPP at the 75th percentile. Acceptance of this by MEUG is conditional on first, all other IM parameters being set at the mid point or efficient levels and second, the Commission providing evidence of that the additional cost to consumers over and above the 50th percentile is in their best long-term interest.

43. This submission is not confidential. We look forward to commenting on the submissions of other parties in the cross-submission round.

Yours sincerely



Ralph Matthes
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