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30 September 2014

Brett Woods  
Senior Analyst  
Regulation Branch  
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WELLINGTON

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Dear Brett,

## **Proposed amendment to the WACC percentile: Invitation for submissions on further evidence**

We appreciate the opportunity to submit on the Commerce Commission's consultation paper "Further work on cost of capital input methodologies: Invitation for submissions on further evidence", 19 September 2014, and related material.

As part of our submission we have commissioned Frontier Economics to urgently review the Dobbs report, and revise their adaption of Dobbs' model to address the issues raised (Attachment A). We also engaged Webb Henderson to review the legal advice provided by Franks & Ogilvie for MEUG (Attachment B).

No part of our submission is confidential.

### **OUR VIEWS AND OBSERVATIONS**

We have the following views and observations in relation to the additional evidence provided by the Commission:

1. It made sense for the Commission to engage Dobbs to review the Frontier Economics report and we support the decision to consult on his findings.
2. The latest material confirms a departure from the status quo is not supported by evidence and Frontier's analysis, accounting for Dobbs' recommendations (but still excluding economic investments), continues to indicate that the optimal WACC is at or above the 75<sup>th</sup> percentile.
3. While we agree with aspects of the NZIER reports we consider the analysis is too rudimentary to be of value at this stage (without considerable testing and refinement by the Commission). The Franks & Ogilvie conclusions do not withstand scrutiny and amount largely to assertion aimed at erroneously curtailing the Commission's discretion and decision making.
4. We remain concerned about the validity of the RAB multiples analysis and do not consider the introduction of two additional data points addresses the issues raised by submitters in the previous consultation.

We expand on each point below.

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## 1. THE COMMISSION WAS RIGHT TO ENGAGE DOBBS TO REVIEW THE FRONTIER REPORT

Frontier's adaptation of Dobbs' model materially changed the evidence before the Commission and it is logical for the Commission to review this work. Professor Dobbs seems the obvious party to perform the review. We also consider that it was prudent for the Commission to request that Transpower produce an excel interface to Frontier's model and to publish this.

Although we support the Commission's decision to consult on this material, the short, unscheduled nature of the consultation (and its specialised content) limited our ability to respond fully. It would have been helpful to have some insight into the Commission's thinking on the consultation material to help direct our focus. Absent this insight, we have prioritised some of the key aspects of the Dobbs report and the opinion by Franks & Ogilvie. We have, unfortunately, only been able to give limited attention to other issues, including the RAB multiples and NZIER material.

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## 2. ADAPTATION OF THE DOBBS MODEL

As noted above, we support the Commission's decision to review Frontier's model and to consult on the Dobbs review. We commissioned Frontier to respond to the Dobbs review including and to rerun their model in light of Dobbs' recommendations. We comment briefly on the Dobbs review below.

We agree with Dobbs that caution should be applied to "how much quantitative significance" is placed on the Dobbs model (and Frontier's adaption) when determining the optimum WACC percentile. The limitations of quantified modelling are illustrated by the modelling simplifications Dobbs details in his report. We note though that many of the simplifications, such as that the "model assumes that the firm supplies final retail demand", are easily altered (as Frontier Economics has done) or do not serve to undermine the integrity of the model or its results.

We agree with Dobbs that "demand elasticity, in conjunction with the assumption concerning maximum willingness to pay, is a major driver for model output; the more inelastic the demand and the higher the maximum willingness to pay, the higher the model predicts the allowed rate of return should be (the higher the percentile of the WACC distribution)". We consider that VOLL, while arguably appropriate as a measure of the marginal loss from under investment, is inappropriate as a measure of the loss from removing the service *altogether* (the implied loss of \$263bn is clearly too high). Frontier also addresses these points.

### Frontier's response to the Dobbs review

We asked Frontier to review the Dobbs report and to make any adjustments they considered appropriate in light of Dobbs' recommendations. In the limited time available Frontier has attempted to respond to the substantive points raised by Dobbs. They:

... focussed on the most substantive of the issues raised by Professor Dobbs. These are as follows:

- The 'goodness of fit' of the model (i.e. its applicability to the electricity sector).
- The value of a loss function model framework to assist the Commission's decision making.
- The appropriate welfare standard to assume when implementing the model.
- The need for some further modelling and sensitivity analysis.

Frontier's key conclusions are:

Our key finding is that after addressing the recommendations made by Professor Dobbs, the optimal WACC percentile predicted by the model remains well above the 75<sup>th</sup> percentile currently employed by the Commission, and is very robust to variations in input assumptions within the bounds of plausibility.

...

Even ... with an implausibly low welfare level associated with electricity, the optimal WACC percentile is the 74<sup>th</sup> percentile, i.e. higher than proposed by the Commission in its Draft Decision.

...

We think that the loss function modelling we have presented, including the additional analysis we have undertaken to address the recommendations made by Professor Dobbs, provides the Commission with robust evidence to inform its decision on the appropriate WACC percentile.

The results of Frontier's modelling can be found in section 4 of their report. Although we consider Frontier's work is highly credible and robust we are alert, as outlined above, to the limitations of quantified modelling. We note that the Frontier loss function analysis does not capture discretionary economic investments and, in this respect, will understate the optimal WACC.

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### 3. FRANKS & OGILVIE AND NZIER SUBMISSIONS FOR MEUG

#### FRANKS & OGILVIE

We engaged Webb Henderson to review the Franks & Ogilvie legal analysis. Their review is included as Attachment B. Webb Henderson has concluded that:

- there is no reason for the Commission to accept the purported 'tests' set out in Franks & Ogilvie analysis as legally binding
- if the Commission were to apply the purported 'tests' set out in Franks & Ogilvie analysis, then its decision may be vulnerable to legal challenge.

We also have a number of additional comments on the Franks & Ogilvie advice.

Franks & Ogilvie attempt to argue that an above mid-point WACC would result in excessive profits and violate the competitive market outcome component of the Part 4 purpose statement. For example, Franks & Ogilvie claim "The Commission cannot rely on the promotion of incentives to invest to justify setting a regulatory WACC above the best estimate of a normal return, as that would not be consistent with outcomes produced in competitive markets and contrary to the purpose of part 4", "We are instructed that competitive markets do not offer indefinite or long term expectations of above normal returns" and "Accordingly we think that s 52A(1), properly read, invalidates a deliberate uplift *per se*".

There are a number of problems with these propositions, which forms a core part of the Franks & Ogilvie argument, including:

- an above mid-point WACC does not necessarily result in either above normal profits or excessive profits (it depends on what the actual, unknown, WACC is)
- Franks & Ogilvie fail to distinguish between "excessive profits" and "above normal profits" treating the terms interchangeably (excessive profits are a subset of above normal profits)
- "competitive market" outcomes are defined by subparts a, b, c, and d which "limit" "excessive profits" but do not preclude either above normal profits or excessive profits
- "[C]onsistent with outcomes produced in competitive markets" does not translate to "exactly the same". Some care is needed with how far the competitive market outcome component of the purpose is taken. For example, following Franks & Ogilvie's reasoning, the Commission would be precluded from setting regulated prices above SRMC, because such prices would not be durable in a competitive market. If regulated suppliers were not able to price above SRMC, however, they

would not be able to recover efficient costs (as  $SRMC < AC$  in a natural monopoly market).

In addition, we have the following observations about the Franks & Ogilvie opinion:

1. The evidence Franks & Ogilvie suggest is required to demonstrate an above mid-point WACC percentile is only one potential type of evidence that could be used to justify an above mid-point WACC percentile. The High Court decision detailed alternative potential evidence.
2. Franks & Ogilvie state that “suppliers have chosen not to: ... (a) Provide empirical evidence of under-investment adversely affecting consumers, in the absence of the uplift”. It is not possible to provide empirical evidence for a hypothetical counterfactual (lower WACC percentile), but we note there is empirical evidence of the consequences of sustained periods of underinvestment (prompted, at least in part, by concerns of inadequate returns) in electricity transmission and rail in New Zealand.
3. Franks & Ogilvie state that “suppliers have chosen not to: ... (b) Explain why alternative elements of the regulatory regime are insufficient to protect against the loss risks of lowered reliability (which appear to be the only significant form of relevant loss)”. This is untrue. Numerous submitters, including Transpower, have detailed why, for example, it would not be appropriate to use penalties to ensure regulated suppliers invest, rather than by ensuring they are able to recover their costs (including cost of capital). Further, reliability is not the only “significant form of relevant loss”: material technical and competition benefits arise from discretionary ‘economic’ investments, particularly in electricity transmission grid.
4. Franks & Ogilvie state that “suppliers have chosen not to: ... (c) Address the High Court scepticism (necessity, not plenty, is the mother of invention) about any positive linkage between innovation and expectations of excess returns”. We note that both Transpower and Dr Lally went into considerable detail as to why the High Court’s in principle and tentative arguments for a lower WACC percentile lacked merit. We specifically agreed with the comments made by Dr Lally, for example:

... the Court argued (para 1473-4) that a WACC margin for uncertainty would raise prices and therefore could not enhance dynamic efficiency (innovation) because “necessity (not plenty) is the mother of invention.” However, whilst it is true that necessity stimulates invention, it is not the only stimulant, and typical explanations of the proverb recognise this; the definite article “the” appears in the proverb for dramatic impact rather than to purposely exclude any other stimulants to invention. Smart phones were not invented because they were necessary but because those who undertook the R&D believed that the projects were NPV positive. However, if the prices of such devices are ever regulated (and particularly if the allowed WACC is through error set below the true value), one could reasonably expect innovation in this area to decline. In short, WACC margins for uncertainty enhance dynamic efficiency. The Court seems to subsequently accept this (ibid, para 1479), when it states that “Future investment choices by suppliers must rationally be influenced by expected earnings on those future investments.”

In his review of the draft Commerce Commission decision Vogelsang also expressed the following view on the “mother of invention” argument:

The argument contained in paragraph 3.5.5 of the report, namely that a lower allowed WACC may force the firm to lower its costs, has been very controversial in environmental economics. Here, most famously Porter (1991) has argued that environmental regulation will lead to more efficient technologies and at the end of the day will make firms more profitable. This argument that regulatory constraints improve efficiency (or, as the High Court put it, “necessity, not plenty, is the mother of invention” [High Court decision, paragraph 1474]) has been mostly rejected by neoclassical economists.

5. The statement that "There is no legislative indication that incentives to invest outweigh incentives to innovate" implicitly relies on assumption that there is a tension or trade-off between incentives to innovate and invest. We do not consider that this is a valid assumption (or has any legal foundation).
6. Franks & Ogilvie claim that for the Commission to set an above mid-point WACC "It must find that the incentive [on regulated suppliers to invest] is the best way to produce the desired outcome, having regard to the range of regulatory tools available, and their intended and unintended costs". If the Commission accepted this view, also expressed by NZIER, then it would not be possible to conduct a review that is limited solely to setting the WACC percentile.

### NEW MATERIAL FROM NZIER

We agree with NZIER "that the Commission is using a lot more intuition [in the advice taken by the Commission and the investigatory work from our 29 August report] than was first implied by the High Court comments on the arguments presented in the merits review".

The NZIER reports also include a significant discussion on how the Commission could go about valuing service reliability, including with reference to the papers 'Estimated Value of Service Reliability for Electric Utility Customers in the United States' and 'Cost of power interruption to electricity consumers in the US'. We note NZIER's suggestion that a "good next step ... in assessing Frontier and other evidence orientated submissions would be to consider how: ... a more granular analysis of the difference in the estimated value of lost load for different consumer groups affects the estimated consumer loss". We do not disagree that this could be a worthwhile exercise (it is one of the initiatives suggested by the Commission in its RCP2 decision<sup>1</sup>) but recognise this is a non-trivial exercise that cannot be done within the timeframes available for the current WACC percentile review.

In the time available we have been unable to properly evaluate the merit of NZIER's proposal for assessing the value of reliability investments; however we make the following high level observations:

- NZIER's report is solely focused on electricity distribution. It does not appear to consider electricity transmission at all and while others are better placed to comment on the correlation between reliability and investment in distribution networks we suggest the correlation exists for electricity transmission.
- As with Oxera, NZIER's discussion on WACC percentiles is entirely centred on reliability. No mention is made of the distinction between economic and reliability investments, or the implications of this for WACC percentile.
- NZIER assert "The relatively high level of operational expenditure on fixing outages and outage prevention (total \$107m) compared to both the total investment in network assets and the investment in network reliability, suggests that EDBs already have a strong incentive to identify investments that will efficiently improve network reliability and reduce operating expenses". It is unclear what should be made of such statements. It is unclear how a "relatively high level of operational expenditure ... suggests that EDBs already have a strong incentive to identify

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<sup>1</sup> Setting Transpower's individual price-quality path for 2015-2020, NZCC 23, Attachment I.

investments that will efficiently improve network reliability and reduce operating expenses”? If NZIER’s statement is valid it would suggest the 75<sup>th</sup> percentile WACC is achieving its objective.

- Similarly, we found it difficult to reconcile NZIER’s view that there has been “considerable recent investments in reliability and upgrade” which has “contributed to NZ networks performing well with a growing headroom of capacity” but that “regulated networks appear to under-invest”.

Finally, we have not attempted to replicate NZIER’s analysis but found its conclusion about the value households place on reliability curious:

For instance small connection points (pretty much residential) place a very low value on outages – 41 cents per minute of outage....The point here is that the loss values adopted for use in submissions are just not reflective of the real world New Zealand situation.

Without commenting on the methodology by which NZIER generate this estimate the 41 cents per minute estimate appears to higher than the \$20,000 mandated VOLL in the Electricity Industry Participation Code (and adopted by submitters) i.e.  $\$0.41 \times 60 \text{ minutes} \times 1\text{kW per household} = \$24.6 \text{ per kWh} (= \$24,600 \text{ per MWh})$ .

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#### 4. RAB MULTIPLES ANALYSIS

We did not have capacity in the time available to examine the two new data points beyond reviewing the publicly available information cited in the Commission’s consultation paper.

Based on that limited analysis our view remains that the small sample size severely limits the conclusions that can be drawn without undertaking a detailed due diligence analysis of the transactions. The two additional data points did not appear to materially change the issues raised by submitters on the Commission’s initial RAB multiple analysis. However, in each of these cases, and those previously considered, there appear to be valid reasons why the stocks might attract a “premium” over the RAB.

Moreover, the Commission should also allow for the possibility that some investors may have simply paid too much.

#### CONCLUSIONS

We agree with Dobbs that the Commission should not mechanistically accept the outcome of any modelling in reaching a WACC percentile decision. Quantified modelling provides helpful evidence and insights into whether the 75<sup>th</sup> percentile should be retained or not, but by necessity is a simplification of the real world.

There will inevitably be reasons for lowering or raising the WACC percentile that quantitative modelling cannot fully capture. This means the Commission still needs to apply some judgement, albeit not necessarily as much as when it originally developed the Input Methodologies.

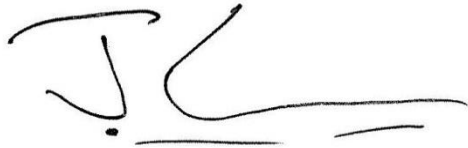
The weight of the evidence before the Commission at this point supports retention of a 75<sup>th</sup> percentile WACC estimate. In our view, for the Commission to determine that it should now lower the WACC percentile would require significant new material<sup>2</sup> or the application of considerable (non-evidence based) judgement.

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<sup>2</sup> NZIER’s suggestions in relation to valuing service reliability may or may not be helpful in this respect.

Please let me know if you have any questions or would like to discuss any of the points made in this submission.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'JC' followed by a long horizontal stroke.

Jeremy Cain  
**Regulatory Affairs Manager**