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Input Methodologies review – Topic paper 1, form of control and RAB indexation

Submission to the Commerce Commission

Final

From the Electricity Networks Association

Contents

1.	Introduction	3
2.	Submission summary	3
3.	Form of control	5
	3.1. Overview of Form of control paper	5
	3.2. Overview of Authority’s letter	5
	3.3. ENA’s preferred form of control	6
	3.4. Benefits of a revenue cap	6
	3.5. Proposed wash-ups.....	7
	3.6. Incentives for new connections.....	9
	3.7. Pricing efficiency and the form of control	10
	3.8. Revenue cap compliance	14
	3.9. Recommendations.....	15
4.	RAB indexation	15
	4.1. Overview	15
	4.2. ENA comments	16
	4.3. Recommendations.....	19
5.	Appendix	20



1. Introduction

1. The Electricity Networks Association (ENA) appreciates the opportunity to make a submission to the Commerce Commission (Commission) on the consultation paper **Input methodologies review draft decisions Topic paper 1 – Form of control and RAB indexation for EDBs, GPBs and Transpower, 16 June 2016 (Form of control paper)**.
2. This submission also considers:
 - The letter from Carl Hansen, Chief Executive of the Electricity Authority, to Sue Begg, the Deputy Chair of the Commerce Commission, *Possible implications for efficient distribution pricing of a decision to change the form of control for electricity distribution businesses*, 30 May 2016 (**Authority's letter**).
 - The Commission's consultation paper *Default price-quality paths for gas pipeline services from 1 October 2017: Implementing matters arising from proposed input methodologies changes*, 28 June 2016 (**Gas DPP paper**). The Gas DPP paper discusses how the Commission proposes to apply a pure revenue cap to gas transmission businesses and is therefore a good indication of how a pure revenue cap might be applied to electricity network businesses (**EDBs**).
3. The ENA represents all of New Zealand's 26 electricity distribution businesses (EDBs) or lines companies, who provide critical infrastructure to NZ residential and business customers. Apart from a small number of major industrial users connected directly to the national grid and embedded networks (which are themselves connected to an EDB network), electricity consumers are connected to a distribution network operated by an ENA member, distributing power to consumers through regional networks of overhead wires and underground cables. Together, EDB networks total 150,000 km of lines. Some of the largest distribution network companies are at least partially publicly listed or privately owned, or owned by local government, but most are owned by consumer or community trusts.

2. Submission summary

4. The ENA recommends that:
 - A pure revenue cap is applied to non-exempt EDBs.
 - The only wash-up that is applied is one that washes up for the difference between actual and allowable revenues, with a time value of money adjustment. This wash-up should be symmetric.
 - If a price smoothing mechanism is applied, there is no more than one of them.
 - No restriction is applied to EDBs' ability to recover the revenue losses caused by catastrophic events. Any such restriction is inconsistent with the expectation of earning a real return and the Commission should carefully consider the investment incentive implications of making decisions that are in violation of its own core economic principles.
 - No cap on the wash-up of voluntarily under-charged revenues is applied at this time.

- The Commission introduces an incentive for EDBs operating under a revenue cap to connect new customers efficiently, potentially this could be a recoverable cost that applies to any connection charges where they are more than 20% of the historical average cost of connections for the EDB.
- The concerns raised by the Electricity Authority (**Authority**) are not persuasive. We have considered these concerns but they have no factual basis or any supporting evidence.
- The Commission take steps to address the substantial risk of equity holders not achieving $NPV \geq 0$. Options to consider include:
 - Improving the Commission's forecasts; potentially including using inflation forecasts from multiple sources, not just RBNZ.
 - Applying a wash-up for the difference between forecast and actual inflation within the price-quality path.
 - Applying revaluations at the rate of forecast, rather than actual, inflation.
 - Using a nominal WACC without RAB indexation or an intermediate approach where the RAB is indexed only for the proportion that is equity funded.

3. Form of control

3.1. Overview of Form of control paper

5. The Commission's intention appears to be to better align EDB incentives to support efficient market outcomes by removing:
 - Volume forecasting risks from EDB which have the potential to limit investment levels.
 - Disincentives to restructure prices so that they are more efficient.
 - Disincentives to pursue energy efficiency and demand-side management initiatives.
6. The Form of control paper:
 - Proposes to apply a 'pure' revenue cap to EDBs (and also to gas transmission businesses).
 - Considers that a pure revenue cap will better meet the Part 4 purpose as it will remove the quantity forecasting risk currently associated with the weighted average price cap (WAPC).
 - Considers that a pure revenue cap will also incentivise efficient pricing by removing a compliance and revenue recovery risk associated with the current regulatory treatment of WAPCs.
 - Considers that a revenue cap will incentivise EDBs to invest in energy efficiency and demand-side management.
 - Proposes to implement the revenue cap by means of a wash-up of the difference between actual and allowable revenue in each year (including a time value of money adjustment), but with some additional features:
 - A constraint on the average price increase in each year, to minimise price shocks for consumers (e.g. if large customers exit and their prices are reallocated to others).
 - A cap and collar on the annual draw down amount to reduce price volatility.
 - A cap on the accumulation of voluntary undercharging.
 - A cap on the amount that can be washed up (designed to ensure EDBs bear some of the losses associated with a catastrophic event).
 - A wash-up account to account for the effect of each of these wash-up mechanisms.

3.2. Overview of Authority's letter

7. The Authority's letter takes a different perspective from the Form of control paper. The Authority's letter:

- Questions whether the exposure of EDBs to quantity forecasting risk is problematic, noting that “Forecasting sales is a risk that nearly every business faces”.¹
- Questions whether a revenue cap would incentivise EDBs to retain inefficient pricing structures as they would not be at risk of revenue losses over time.
- Questions whether a revenue cap would incentivise inefficiently high prices for price sensitive customers.
- Disputes the relevance of conclusions by the Australian Energy Regulator (AER) that weighted average price caps are unlikely to incentivise efficient pricing.
- Argues that recent changes should help to incentivise efficient pricing.
- Questions whether other options are available to reduce the compliance risk associated with weighted average price caps.

3.3. ENA’s preferred form of control

8. The ENA recognises there are advantages and disadvantages of any form of control option. On balance, the ENA supports the application of a pure revenue cap to non-exempt EDBs from the next price reset at 1 April 2020. However, there are a number of matters of detail that need to be addressed if a revenue cap is to deliver the expected benefits in a cost effective way.
9. The Commission has previously considered whether regulated suppliers that are subject to a revenue cap could have a higher/lower asset beta but its draft decision is to make no change to the asset beta as a result of changing the form of control. ENA members strongly support this draft decision.
10. Evidence submitted by ENA in February 2016 identified that there was no statistical difference between the asset betas of regulated suppliers that are subject to a revenue cap regime compared to a price cap.² That work followed the Commission’s 2010 methodology for estimating, beta but it also compensated for the instability that is inherent in the on-the-day beta estimate that derives from the day of the week or month that is chosen for the sample.

3.4. Benefits of a revenue cap

11. The ENA supports a revenue cap primarily because it removes the quantity forecasting risk associated with price setting under a DPP. Under a WAPC the Commission is required to forecast volumes for each non-exempt EDB at each price reset. Where the Commission’s forecasts are wrong (as they inevitably will be, to some extent) the EDB risks recovering more or less than the Commission considers the EDB needs to cover its costs and earn a normal return. The WAPC is therefore likely to lead to situations where investment incentives are impaired (because an EDB cannot earn a normal return) or excessive profits are earned due to quantity forecasting errors. The ENA considers the IMs would materially better meet the Part 4 purpose if this risk was removed.
12. For clarity, the ENA agrees with the Commission that this risk is distinct from the risk of volumes changing over time and potential errors in forecasting volumes by individual EDBs. As the

¹ Authority’s letter, page 8.

² Reference CEG report ‘Asset Beta’ February 2016.

Authority's letter states, this risk is faced by most businesses. The regulatory forecasting risk is the problem requiring a change to the IMs.

13. The ENA also supports a revenue cap as it will remove price-path compliance and revenue recovery risks associated with price restructures (which exist because each EDB needs to comply with complex price restructure requirements when changing their pricing structures and may not be able to accurately forecast demand under the new prices). Additionally, under the current approach to restructuring prices under WAPC, EDBs are prohibited from taking into account behavioural responses to new price structures. We consider a revenue cap will remove a real barrier to EDBs developing more efficient price structures.
14. The Authority's letter asks whether alternative means are available to address these compliance concerns. The ENA is not aware of any practicable option. Where a WAPC is in place, the Commission will need to require assurances that any changes to price structures has not resulted in an EDB recovering more than their allowable revenue.
15. The ENA agrees a revenue cap will remove disincentives for EDBs to invest in energy efficiency and demand-side management, although it will not provide any direct incentives for such investment.

3.5. Proposed wash-ups

Wash-ups should be straightforward

16. The ENA supports a simple and straightforward wash-up mechanism that washes up for the difference between actual and allowed revenues in each year, adjusted for the time value of money. This wash-up should be symmetric.
17. The ENA does not consider that any of the other wash-up mechanisms proposed in the Form of control paper are necessary. They are certainly not all necessary as they are duplicatory and overlap. We think it would be complex and costly for non-exempt EDBs to manage all of these wash-ups simultaneously and account for each of the wash-up values over time.
18. For example, if an EDB under-recovered in a year, the carry-forward of that under-recovery into the following year could be constrained by any or all of the following:
 - A cap on the maximum price increase – so no more could be carried forward than the specified maximum price increase (expressed as a percentage of the previous year's price)
 - A cap on the draw-down amount – so no more could be carried forward than the cap on the draw-down value (expressed as a percentage of net allowable revenue)
 - A cap on voluntary undercharging – so if the EDB had set its prices to recover less than its allowable revenues, for whatever reason, only a specified percentage of the under-recovery could be carried forward (expressed as a percentage of the under-recovery)
 - A cap on the wash-up amount – to prevent any future recovery of a percentage of the losses, but only if the loss is very large, which is intended to make EDBs bear part of the cost of (expressed as a percentage of net allowable revenue).

19. It is quite easy to conceive of circumstances where several of these caps or constraints could all bind at the same time. Trying to unpick what portion of the wash-up is being capped by which mechanism is likely to be complicated and/or arbitrary.

Price smoothing mechanisms

20. The ENA supports the smoothing of price changes for consumers. Our experience is that consumers prefer to avoid substantial price shocks. When undertaking price restructures, ENA members routinely seek to transition to new structures over time to reduce the scale of any price shocks. As EDBs do this already, we are not convinced there is a great need for wash-ups that seek to achieve an outcome through regulation that is already being delivered by commercial practice. The Commission also has some scope to use the rate of change (X-factor) to smooth price impacts over time.
21. That said, the ENA is not strongly opposed to one of these smoothing mechanisms being included in the IMs if this is deemed necessary (noting that we can debate how and when to apply it at the time of the next DPP reset). However, the ENA does not support the introduction of multiple smoothing mechanisms that seek to simultaneously achieve very similar outcomes.
22. In relation to the two price smoothing mechanisms proposed in the Form of control paper, the ENA considers that if the cap and collar on the drawdown amount is applied (limiting the wash-up to a particular percentage of allowable revenues) then there should be no need for a cap on the average percentage price increase. The average price increase will already have been restricted by the cap on the drawdown amount.

Voluntary undercharging

23. The ENA is not convinced a cap on voluntary undercharging is necessary at this time. Some non-exempt EDBs, conscious of the impact of energy prices on their consumers, do choose to price below the allowable maximum. A potential consequence of limiting the voluntary undercharging could be to create a 'use it or lose it' situation in which EDBs start pricing up to the cap in order to avoid losing the revenue altogether. We suggest the Commission discuss this cap with EDBs that currently routinely undercharge to identify its likely impact on their pricing decisions.
24. Also, EDBs that voluntarily undercharge are likely to take several years to build up a large pool of un-recovered revenues. Considering that the revenue cap will only take effect from 1 April 2020, this wash-up could be re-considered at the time of the next IM review (which we assume will be in 2023) at which point the scale of the issue will have become clearer.
25. The Commission has not explained why it considers it in the long-term interests of consumers to cap recovery of under-recovered revenues, especially when considering that the consumers affected by such smoothing are consumer-owned and have an interest in ensuring that the value of their businesses are maximised, given there is always an option for sale.³ Furthermore, in situations where forward interest-rates indicate a potential fall in WACC in an ensuing regulatory period (e.g., the WACC has dropped 1.5% since the 2015 DPP reset) such smoothing approaches may provide greater price stability for customers.

³ The fact that this is even an issue highlights the questionable value of regulating non-exempt, but consumer-owned EDBs.

Catastrophic event restriction

26. The ENA does not support the proposed cap on the wash-up amount, which is intended to prevent EDBs from recovering their full losses that result from a catastrophic event (or other major demand shock). The Form of control paper claims this is consistent with the approach taken in the Orion CPP decision. This cap will work by limiting the wash-up mechanism to the lesser of:
- The allowable revenue less the actual revenue
 - X% of the allowable revenue (the value of X is to be specified).
27. The intention is to set the value of X at a level that is unlikely to affect normal variations in revenues but would be sufficient to cap the wash-up of losses following a major demand shock like a catastrophic event.
28. The ENA agrees this is consistent with the Orion CPP decision but it should be recognised that this aspect of the CPP decision was opposed by Orion and the wider industry. The ENA does not accept that the same approach should automatically be applied through the IMs to a different form of control. This proposed cap is inconsistent with the nature of a ‘pure’ revenue cap, in which all under and over-recovery is washed up.
29. If this cap is applied, the inability of regulated suppliers to fully recover the costs of a catastrophic event will now be known in advance by all EDBs and their investors. This approach is inconsistent with the core economic principle, endorsed by the Commission in the *Framework for the IM review* consultation paper, of delivering an ex ante expectation of achieving real FCM. The expectation of all non-exempt EDBs and their investors is that they will make a small loss in each regulatory period – i.e. the risk of a catastrophic event is small, but not zero, and if it occurs a large loss is likely. The Commission should carefully consider the investment incentive implications of making decisions that are in violation of its own core economic principles.⁴
30. Additionally, the incentive created by this restriction is for EDBs that experience a catastrophic event to prioritise their CPP application above emergency remedial work on their network. This will not be in consumers’ interests.

3.6. Incentives for new connections

31. The Form of control paper states the Commission considered the potential impact of a revenue cap on the incentives for EDBs to establish new connections. The Form of control paper recognises that a WAPC provides stronger incentives to connect new customers than a revenue cap.
32. In our submission on the emerging views consultation,⁵ the ENA supported a DPP reopener or recoverable cost to ensure the costs of unexpected (i.e. not forecast at the time of the DPP reset)

⁴ The Commission has previously asserted that catastrophic event losses are irrelevant because this risk is alleged to be managed by investors holding a diversified portfolio of investments. This is simply an erroneous view of the role of investor diversification: it implies that businesses should ignore the potential for catastrophic event losses in assessing business cases for investments, whereas proper business case assessments require that expected NPV ≥ 0 taking into account the range of possibilities. This is particularly an issue for EDBs where insurance cannot be cost-effectively purchased for “T&D” assets.

⁵ ENA, *Input Methodologies Review Emerging Views Papers: Submission to the Commerce Commission*, 24 March 2016, page 9.

new connections could be recovered. This would ensure EDBs have appropriate incentives to connect new customers efficiently.

33. The Form of control paper concludes that such mechanisms are unnecessary “because connections to the electricity distribution network are very likely to still occur without a specific incentive on the EDBs. Any capital expenditure on new connections will go into the RAB and will be taken into account at the following reset.”⁶ The Form of control paper also suggests costs of connection could be recovered through capital contributions, possibly being spread across a number of years. We fail to see what the difference between a capital contributions spread over time is and a “tariff”, except that the asset effectively depreciates more quickly according to the rate the capital contribution offsets the initial asset investment.
34. The ENA continues to support a form of incentive for connecting new customers. It may not be in consumers’ interests to require substantial capital contributions from them as they seek to connect and it is important for EDBs to continue to be able to fund new connections in an efficient manner. Also, if EDBs can only recover the connection costs from the next price reset, they will be accepting a loss up till that point and will not expect to achieve real FCM on those investments. It is of concern to the ENA that the Commission considers that EDBs would continue to invest in situations where $NPV < 0$ when regulatory rules do not recognise the full costs of investments. We consider that the most straightforward means of achieving this would be to allow EDBs to set additional prices for new large connections outside of the revenue cap for the remainder of the regulatory period, where such new connections had not been specifically allowed for in the setting of the DPP. The latter condition would reflect that if AMPs are used to set capex allowances, these may already include allowances for significant new connections.
35. The Form of control paper also proposes increasing the information disclosure requirements on EDBs regarding connections (e.g. to require disclosure of the number of connection requests and timeliness of connections). The ENA is comfortable in principle with this proposal but notes that the disclosure requirements should be developed in a low-cost way.

3.7. Pricing efficiency and the form of control

36. This section considers the concerns raised in the Authority’s letter. In general, the Authority analysis and concerns seem to be theoretical in nature and for us there is no real world evidence presented that informs the risks of inefficient pricing behaviour arising from changes to the form of control.

Quantity forecasting risk

37. The Authority’s letter suggests that quantity forecasting risk is a risk that faces all businesses and EDBs should be able to manage it. The Authority’s letter appears to have misunderstood the nature of the volume forecasting risk the Commission is trying to resolve – that is, the risk the Commission’s forecasts will be wrong and result in price shocks for consumers when adjustments need to be made. The uncertainties that are emerging from market and technology changes serve to heighten this risk. The Authority’s letter only considers the risk of volumes of sales changing over time, it does not discuss the particular risk associated with regulatory forecasts being incorrect.

⁶ Form of control paper, paragraph 89.

38. As discussed above, the ENA supports a revenue cap because it removes the risk of regulatory quantity forecasts being wrong, with consequential impacts on either investment incentives or potentially excessive profits (the Commission's analysis of the 2013 DPP reset found the largest difference between actual and forecast revenue growth for an EDB was 5.5%; although the variance for most EDBs was within 2%, this is still a material risk to revenues).⁷ This benefit of a revenue cap is not addressed by the Authority's letter.
39. The Authority's letter also suggests that quantity risk may reduce if EDBs' prices included fewer volumetric charges. The ENA agrees that forecasting may be easier if the Commission was seeking to forecast capacity or demand rather than kWh throughput, but the underlying problem would remain – that the regulator is required to forecast demand and this forecasting process is likely to result in some revenues being mis-aligned with costs. Additionally, until such capacity or demand-based pricing structures are in place, the Commission will have a significant challenge forecasting quantities as there may be very limited data on which to base forecasts.

Incentives for efficient pricing

40. The Authority's letter raises concerns that a revenue cap may weaken EDBs' incentives to develop more efficient pricing structures. It considers that if EDBs faced no revenue recovery risk (e.g. they are able to wash-up any under-recovery in subsequent years) then EDBs will face weakened incentives to change their prices in response to events such as technology change in the energy sector. The Authority's letter raises the prospect of this leading to inertia, in which EDBs do not update their prices and address any short-fall of revenues resulting from inefficient prices through the wash-up.
41. The ENA accepts this is a potential outcome based on a narrow, theoretical view of the world, but does not believe it is very likely to occur in practice. The Authority's letter has focused on the short-term incentive for EDBs. However, in the long term if EDB prices become unsuited to consumer demands (e.g. kWh demand declines and the response is an ever increasing variable price) the effect will be that the prices become unsustainable and either consumers stop using the network or there is a form of political intervention to resolve the problem. EDBs are businesses that invest in long-life assets and are concerned to ensure that they can recover their investments. If inefficient pricing structures would threaten the long-term viability of their businesses, then they can be expected to reform their prices, irrespective of the short-term incentive.
42. If we consider actual EDB activity, there has been a growing momentum for EDBs, regulated and not, to move pricing structures into a more efficient and fit for purpose shape. A number of ENA members have pricing options available that meet the Authority's goals for cost-reflective and service-based prices. The ENA has a well-established project team developing detailed pricing guidelines for members to use when restructuring pricing options. Those guidelines include practical advice on developing pricing structures on the interactions with retailers and end consumers that are critical to successfully move pricing into the future.
43. The view that EDBs will not adjust their prices under a revenue cap is contradicted by the activities of some exempt EDBs. As exempt EDBs are not subject to price control they can conceivably do what the Authority's letter expects – not change their pricing structures and

⁷ Commerce Commission, Profitability of Electricity Distributors Following First Adjustments to Revenue Limits, Summary and Analysis, 8 June 2016, Figure 4 (page 17).

recover any lost revenues in subsequent years. However, we can advise that exempt EDBs are actively reviewing their pricing methodologies and structures and seeking to achieve efficiencies in this area, including as part of the ENA's Distribution Pricing Working Group (DPWG).

44. Also, for ENA members the Authority's view that price caps drive efficient pricing is difficult to sustain given that price caps have been in place for many years but the Authority still believes current prices are inefficient.
45. The Authority's letter indicates that the Authority may seek to further regulate the price structures of New Zealand EDBs if the Commission progresses with a revenue cap. We assume this only applies to non-exempt EDBs, as the situation will not change for those who are not subject to price control. Understandably, the Authority's letter does not provide details of what this regulatory intervention might be. Any regulation that is introduced will also need to go through the process required in the Electricity Industry Act 2010, including consultation and a formal cost-benefit analysis. At this stage, the ENA does not consider this to be a material factor in the form of control decision as there is no clarity regarding the nature of regulation that might be imposed and thus there is no way to weight this risk against the benefits of moving to a revenue cap.

Australian Energy Regulatory analysis

46. In recent years the AER has reviewed the form of control that applies to electricity distributors operating within the Australian National Energy Market (**NEM**). The AER concluded that revenue caps were the most appropriate form of control and is in the process of applying revenue caps to Australian distributors. For example, in its most recent Framework and Approach paper, relating to the Tasmanian distribution business TasNetworks, the AER stated:

We consider that a revenue cap best meets the factors set out under clause 6.2.5(c) of the rules. We consider that a revenue cap will result in benefits to consumers through a higher likelihood of revenue recovery at efficient cost, better incentives for demand side management, less reliance on energy forecasts and further alignment with the development of efficient prices. Furthermore, we consider that the detriments of a revenue cap – within period pricing instability and weak pricing incentives are able to be mitigated.⁸

47. The Authority's letter disputes the relevance of the AER's conclusions on various grounds.
48. The Authority's letter claims the AER's conclusions that efficiency gains under a WAPC may not be achieved were reached in relation to New South Wales distributors, who are state owned, whereas New Zealand distributors may be more likely to respond to the commercial incentives of a WAPC. However, the AER has also reached these conclusions in relation to other distribution businesses in the NEM, including those in Victoria who are all privately owned commercial enterprises.
49. We agree with the Commission that the current application of WAPCs to EDBs does not seem to have incentivised efficient prices, because of the regulatory compliance and revenue recovery risks noted above.⁹ We also agree with the Commission that there are other factors that can

⁸ Framework and Approach for TasNetworks Distribution for the Regulatory control period commencing 1 January 2017, July 2015, page 14.

⁹ Form of control paper, paragraph 74.

incentivise efficient pricing.¹⁰ These factors include initiatives such as the DPWG, which is seeking to promote efficient pricing structures across ENA members, and independent reviews of distribution pricing. Overall, we agree with the Commission that the benefits from removing compliance and revenue recovery risk outweigh the theoretical efficiency concerns of a revenue cap.¹¹

Incentives for inefficiently high prices

50. The Authority's letter raises a concern, based on some economics literature, that a revenue cap may incentivise EDBs to set very high prices for price sensitive customers. The theory in the literature is that all sales create costs for the firm. Therefore if a firm can increase its prices to its price sensitive customers it will reduce the sales to those customers and thus save costs, while using the revenue cap to ensure their revenues remain unchanged.
51. The ENA does not consider this risk is anything other than theoretical. The example provided in the Authority's letter is where an EDB sets very high peak charges to avoid the need to invest in a circuit upgrade beyond the point where the investment would be efficient. The example does not reflect how EDBs act in the real world. Any EDB that imposed very high peak charges would likely find these charges to be unpopular with its consumers, particularly if they persisted for several years (as the example in the Authority's letter suggests), and could thus lead to media or political pressure on the company. This would not be in the EDBs' interests. The ENA also questions whether EDBs would be able to set critical peak prices in a way that targets users of particular assets. This would require a level of information and pricing disaggregation that is not currently found amongst EDBs.
52. We think it is telling that this incentive appears to only exist in the economics literature. We note the Authority's letter does not point to any real-world examples of companies acting in a way this incentive creates. Given the frequency with which revenue caps are applied by regulators globally we would have expected to see some examples of this type of behaviour if this risk was real.
53. The ENA is not convinced that the Authority's concerns about the incentives on EDBs to reform prices will manifest themselves in reality. Performance incentives on regulated electricity firms are a developing subject area but with limited practical experience. A recent book by the NBER on the learnings from regulatory reform includes a chapter from Paul Joskow on the incentives on distribution and transmission businesses under economic regulation.¹² This chapter is insightful about the learnings from the evolution of the economic regulation of electricity distribution businesses in a number of ways.
54. Joskow points out that the application of economic regulation to electricity networks is very immature compared with the development of the theoretical frameworks and is an evolutionary process of learning by doing.

"During the last two decades, the theoretical foundations for incentive regulation of legal monopolies have developed considerably, and now provide a reasonably mature theoretical framework for designing incentive regulatory mechanisms for practical application. However, the application of these

¹⁰ Form of control paper, paragraph 79.

¹¹ Form of control paper, paragraph 82.

¹² Reference **NBER book** [Economic Regulation and Its Reform: What Have We Learned? \(2014\)](#),

concepts to electric distribution and transmission networks has lagged considerably behind these theoretical developments for a variety of reasons.”

55. In other words, theoretical concerns about adverse or unintended outcomes are unlikely to reflect actual experience and behaviours. We believe there is sufficient evidence to indicate that EDBs are motivated to move towards more efficient pricing, though this will likely happen at varying speeds and will rely substantially on the cooperation of retailers and metering equipment providers to enable a transition towards more cost-reflective pricing approaches.
56. Finally, we note that pricing customers out of joining a network would be inconsistent with the pricing principles that apply to EDBs and which are set and monitored by the Authority. The Authority would therefore be likely to identify any instances of such pricing reasonably quickly.

Barriers to pricing reform

57. The Authority’s letter argues that some current initiatives should reduce barriers to pricing reform, including the Authority publishing guidance on the Low-User Fixed Charge (LUFC) regulations and the increasing prevalence of smart meters.
58. The ENA has an ongoing project looking at the evolution of distribution pricing, what options could be offered more widely and what is needed to facilitate understanding and acceptance of the need for pricing to evolve. Based on our analysis, the provision of guidance on the LUFC regulations and increasing smart meters are helpful (although perhaps unlikely to make a material difference) but this would be the case irrespective of the form of control.

3.8. Revenue cap compliance

59. The Form of control paper suggests that applying a revenue cap would lead to changed price path compliance requirements for non-exempt EDBs. The potential details of how this would work are set out in relation to gas transmission businesses in the Gas DPP paper, which suggests:

“The revenue cap would require that the forecast revenues planned to be used by the GTB in its pricing be no more than a forecast allowable revenue amount specified by us. This would mean the point of compliance with the revenue cap would be after the GTB sets its prices but before those prices take effect.”¹³

60. In other words, the price path compliance statement would change from being required 50 working days after the end of an Assessment Period, to being required before the start of an Assessment Period. The ENA does not agree with this proposal. We note this means EDBs would need to complete two compliance statements each year – one ex ante for the price path and one ex post for the quality standard, which would increase the compliance workload for EDBs over time and, more importantly, would probably increase the compliance workload in the two or three months before 1 April, when EDBs are already busy with asset management plan and pricing methodology disclosures and some year-end tax requirements. It would also be challenging for auditors to supply additional staff to EDBs at this time, which would be a third compliance visit to EDBs each year (in addition to June DPP compliance and information disclosures in August).
61. The revenue cap approach would also result in the removal of any reference to lagged quantities in the compliance arrangements. This is appropriate.

¹³ Gas DPP paper, paragraph 24.2.

62. One aspect that is not clear at this stage is the implications for the pass-through balance. The pass-through balance effectively applies a revenue cap for pass-through and recoverable costs at present. It is not clear whether the Commission intends to retain the pass-through balance or to remove it. Retaining the pass-through balance and the pass-through price may assist with transparency of charges. In any event, the pass-through balances that exist at the end of this regulatory period will need to be provided for in a transition to a revenue cap.

3.9. Recommendations

63. The ENA recommends that:

- A pure revenue cap is applied to non-exempt EDBs.
- The only wash-up that is applied is one that washes up for the difference between actual and allowable revenues, with a time value of money adjustment. This wash-up should be symmetric.
- If a price smoothing mechanism is applied, there is no more than one of them.
- No restriction is applied to EDBs' ability to recover the revenue losses caused by catastrophic events. Any such restriction is inconsistent with the expectation of earning a real return and the Commission should carefully consider the investment incentive implications of making decisions that are in violation of its own core economic principles.
- No cap on the wash-up of voluntarily under-charged revenues is applied at this time.
- The Commission introduces an incentive for EDBs operating under a revenue cap to connect new customers efficiently, potentially this could be a recoverable cost that applies to any connection charges where they are more than 20% of the historical average cost of connections for the EDB.
- The concerns raised by the Authority are not considered further as they have no factual basis or supporting evidence.

4. RAB indexation

4.1. Overview

64. The Form of control paper:

- Explains the policy intent for the current application of RAB indexation to EDBs – to provide EDBs with an ex ante expectation of a real return (or real financial capital maintenance).
- States that EDBs do not have an expectation of an ex post nominal return unless actual inflation equals forecast inflation.
- Notes that where suppliers issue nominal debt there is a small bankruptcy risk where actual inflation is lower than forecast (because total nominal returns would be lower and interest payments to debt holders tend to be fixed in nominal terms when nominal debt is issued) but considers that this risk can be managed by suppliers.

- Proposes to continue to apply RAB indexation to EDBs.
- Notes that a different approach applies to Transpower.

4.2. ENA comments

65. The ENA appreciates the explanations provided by the Commission of its policy intent and the effect of changes in inflation on asset revaluations and revenues. These have helped to clarify the debate.
66. The ENA does not have a strong view on whether a real or nominal return is most appropriate for EDBs. We recognise both approaches have different advantages and disadvantages. However, it has become clear that equity-holders are bearing the brunt of systematic over-forecasting by the RBNZ of actual inflation, with their own research finding a persistent bias in their CPI forecasts amounting to over 1% on their long term forecasts.¹⁴

Real returns and bankruptcy risk

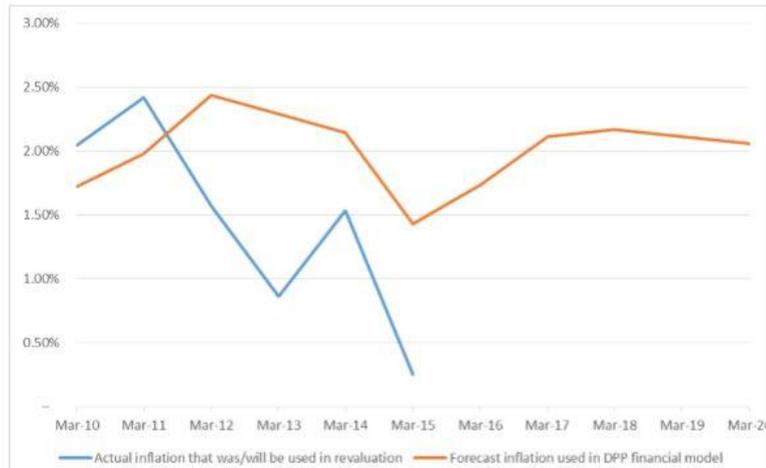
67. The draft decisions consultation material maintains a strong emphasis on ex-ante real returns. While this position has some logic, it is undermined by the application of a different approach to Transpower, where there Commission appears to be seeking to justifying the variance in approaches rather than adopting a common set of principles.
68. The more important consideration is the effect on the risks imposed on equity holders, given debt is issued by EDBs in nominal terms, but cash-flows provide for recovery of a real WACC in the short-term. This means that equity-holders are forced into earning less than the real required return on equity in the short-term, with a hope that CPI inflation will at least match the RBNZ's forecast so that the $NPV \geq 0$ criterion is met in the longer term.
69. In his advice to the Commission, Dr Lally agrees that EDBs are exposed to bankruptcy risks because of the difference between real returns in the price path and nominal debt payments to lenders. He thinks that this risk is only slight.
70. The ENA submission to the Commission on this subject in Feb 2016 also noted there is a mismatch between the nominal cost of capital as input to the price setting process and the compensation provided to regulated businesses.¹⁵ However, we took a different view regarding the seriousness of the mismatch.

¹⁴ <http://www.rbnz.govt.nz/-/media/ReserveBank/Files/Publications/Bulletins/2016/2016jun79-10.pdf>

¹⁵ Reference CEG 'Inflation: revaluations and revenue indexation'. February 2016.

13. Our analysis of the New Zealand experience under the IMs suggests that this mismatch has been significant that businesses have not been compensated for the estimated nominal cost of capital over the 2010-2015 EDB DPP period. Moreover, it appears very likely that this experience will be repeated in the 2015-20 EDB DPP period. Figure 1 compares our understanding³ of forecast vs actual inflation (adjusted by the Commission for the impact of the GST).

Figure 1: Forecast inflation in DPP resets vs actual inflation



Source: Actual inflation (adjusted for GST) is taken from row 4 of output sheet in 1 April 2015 Model 8 Forecast change in CPI (final determination version). This is extended with actual information to March 2015. Forecast inflation to March 2014 is taken from “revaluation rate” of financial model for the 2010-15 DPP November 2012 (row 33 of individual supplier sheets). Post March 2014 forecasts are taken from Model 9 row 12 of the RAB sheet in the 2015 reset DPP financial model (final determination version).

71. The ENA considers that the Form of control paper under-states the problems with nominal debt being funded through real returns. The objective should be to reflect the efficient and achievable debt management practices of a prudent and efficient EDB. This is compromised by the provision of real revenues to fund nominal interest costs. While the bankruptcy risk is low, bankruptcy is of course an extreme outcome. More likely there will be a mis-match between the real returns and the nominal debt costs as the nominal compensation will only match the EDB’s nominal interest costs if the inflation forecast equals actual inflation. This is problematic because the likelihood of forecast error impacts EDBs’ ability to meet their contractual requirements to pay nominal interest payments. Depending on the direction of the forecast error this could either result in windfall gains to the supplier (contrary to section 52A(1)(d) or revenues that do not cover an EDB’s costs, which will have an effect on investment incentives contrary to section 52A(1)(a).
72. Additionally, members suggest that the approach in the IMs may not in fact precisely deliver a real return because the time period of the CPI inflation forecast does not match the time period for the inputs into the WACC (i.e. the inflation forecast used as an input to determine starting prices for the current DPP regulatory period did not cover the period from September 2014 to September 2019). It is not clear how material this six-month difference is in practice.

Inflation forecasting bias

73. In its Bulletin of June 2016,¹⁶ the Reserve Bank provides details on a review of its forecasting performance since the start of this decade. The paper shows that although the RBNZ compares favourably to other forecasters, there is a persistent bias towards over-forecasting CPI. This bias

¹⁶ RBNZ (2016) *Bulletin* Vol. 79, No. 10 June 2016

has proved and continues to prove significantly detrimental to equity investors, because all CPI forecast error is concentrated on equity investors because debt is issued in nominal terms.

74. To illustrate the impact, consider the following data from the 2015/16 year:

WACC element	Value
Nominal Vanilla WACC (67th percentile)	7.2%
Cost of debt	6.09%
Cost of equity (67th percentile)	8.1%
Forecast inflation (regulatory period)	2.04%
Leverage	44%
Real WACC	5.1%
Real required return on equity	5.9%
Actual real return on equity, given debt issued in nominal terms (the cash ROI to equity holders)	4.2%
Required capital gains as a percent return required on equity	3.8%
Actual inflation (2015/16)	0.59%
Actual capital gains as a percentage of equity-funded RAB	1.1%
Shortfall of RoE through reduced capital gains	2.7%
Total Return on equity (cash + capital gains)	5.5%

75. The table highlights two features of the current indexation approach:

- Because equity holders effectively shoulder all of the inflation forecast risk, in the short-term real returns to equity holders are suppressed below the required real return. In the current regulatory period this is effectively 1.7% per annum.
- As a result of the bias in RBNZ inflation forecasting, equity-holders have foregone 2.7% in returns through reduced capital gains.

76. This highlights that it is critical that inflation forecasts used in setting the DPP revaluation rates are unbiased (which the recent RBNZ analysis indicates they are not, and therefore if investors perceive the RBNZ forecast errors will not be corrected the NPV=0 criterion cannot be met).

77. In addition, the extrapolation of RBNZ CPI forecasts is also unsound as there is no clear evidence that the RBNZ's exercise of monetary policy settings is having any material influence on out-turn inflation reaching the RBNZ's target band.

Potential options

78. While the ENA does not have a preferred solution to this issue, we note the following options are available:

- Progress methods to improve the Commission’s forecasts; potentially including using inflation forecasts from multiple sources, not just RBNZ.¹⁷
- Apply a wash-up for the difference between forecast and actual inflation within the price-quality path.
- Apply revaluations at the rate of forecast, rather than actual, inflation (at least for non-exempt EDBs).
- Move to use of a nominal WACC without RAB indexation or intermediate approaches where the RAB is indexed only for the proportion that is equity funded.

79. It is now clear that EDBs are in fact exposed to a substantial risk of equity holders not achieving NPV ≥ 0 . This is not a sustainable position. The Commission should seriously consider progressing one or more of the available options to address this problem.

4.3. Recommendations

80. The ENA recommends that:

- The Commission take steps to address the substantial risk of equity holders not achieving NPV ≥ 0 . Options to consider include:
 - Improving the Commission’s forecasts; potentially including using inflation forecasts from multiple sources, not just RBNZ.
 - Applying a wash-up for the difference between forecast and actual inflation within the price-quality path.
 - Applying revaluations at the rate of forecast, rather than actual, inflation.
 - Using a nominal WACC without RAB indexation or an intermediate approach where the RAB is indexed only for the proportion that is equity funded.

¹⁷ However, given the analysis of inflation forecasting performance by NZIER, it does not appear that there are more credible unbiased inflation forecasters.

5. Appendix

The Electricity Networks Association makes this submission along with the explicit support of its members, listed below.

Alpine Energy
Aurora Energy
Buller Electricity
Counties Power
Eastland Network
Electra
EA Networks
Horizon Energy Distribution
Mainpower NZ
Marlborough Lines
Nelson Electricity
Network Tasman
Network Waitaki
Northpower
Orion New Zealand
Powerco
PowerNet
Scanpower
The Lines Company
Top Energy
Unison Networks
Vector
Waipa Networks
WEL Networks
Wellington Electricity Lines
Westpower