

Submission on DPP Starting Price Adjustments and Other DPP Amendments (2)

Forecasting Assumptions

From the Electricity Networks Association

23 May 2011

Electricity distribution businesses (EDBs) supporting this submission

The Electricity Networks Association makes this submission along with the explicit support of its non-exempt EDB members listed below.

Alpine Energy Ltd
Aurora Energy Ltd
Centralines Ltd
Eastland Network Ltd
Electricity Ashburton Ltd
Electricity Invercargill Ltd
Horizon Energy Distribution Ltd
Nelson Electricity Ltd
Network Tasman Ltd
OtagoNet Joint Venture
Powerco Ltd
The Lines Company Ltd
Top Energy Ltd
Unison Networks Ltd
Vector Ltd
Wellington Electricity Lines Ltd

Orion New Zealand Ltd, due to its current difficult circumstances, has been unable to focus on this submission sufficient to confirm or otherwise its support for it.

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Executive summary

1. The Electricity Networks Association (ENA) welcomes the opportunity to submit on the Commerce Commission's (Commission) paper, issued in April, on the method to adjust default price-quality path (DPP) starting prices for non-exempt electricity distribution business (EDBs).
2. Over the last two years the Commission and the sector have made a large investment in the development of regulatory input methodologies (IMs), which are designed to improve the certainty of price-quality regulation. The method to adjust DPP starting prices is the Commission's first opportunity in this sector to apply the IMs. The April paper, unfortunately, has generated a great deal of uncertainty in the sector as it puts forward, late in the process, a very different method for adjusting starting prices than that developed in two previous Commission papers over the last two years. In the submission of 16 May 2011 the ENA recommends a method for adjusting starting prices that builds on its previous submissions on this topic and takes into account the very limited data the Commission has available to it, at this time, to undertake this task.
3. The ENA has now considered in more detail the forecasting assumptions the Commission has used in its Starting Price Adjustment (SPA) Model and sets out its critique of the proposed assumptions in this submission.
4. The ENA considers that the development of the key forecast input parameters in the SPA Model falls short of the degree of robustness necessary to ensure that DPP paths can be expected to reliably provide EDBs with sufficient earnings to cover their WACC. Specifically the ENA submits that the forecast assumptions are arrived at arbitrarily, industry trends are not relevant for individual EDBs and the statistical analysis and conclusions applied are inconsistent with the underlying data sources. In addition, in respect of each forecast assumption we note the following:
 - Real revenue growth – the relationship between real GDP growth and EDB output growth is weak, showing considerable variability over time. The output measures used are also not reflective of EDB revenue growth. In addition the industry average measure is a poor indicator of the expected output growth for each EDB and is dominated by the historical performance of the larger non-exempt EDBs.
 - Opex – the opex growth assumption is derived from the real revenue growth assumption and therefore suffers from the same limitations described above. The growth in the price of opex is assumed to be equal to CPI as a proxy for labour cost increases in the sector. CPI is not intended to measure industry opex prices and the focus on the labour component ignores the other components of opex such as materials, fuel and rent.

- Capex – the capex growth assumption is derived from EDB AMP forecasts. It fails to adjust for capex price inflation, does not adequately reflect the significant variability in EDB forecasts and is likely understated due to the uncertainty in scheduling projects in the later period of the forecast.
 - CPI – the CPI measure is inconsistent with the WACC assumption applied in the SPA model. The model incorporates two inflation forecasts based on different starting points, September 2009 for the implied inflation within the risk free rate in the WACC, and March 2011 for the CPI forecast assumption.
5. Accordingly given the lack of time series data to provide the basis for credible forecasts at the EDB level, and the absence at this stage of a statistically robust method acceptable to the Commission, the ENA considers the Commission should place less weight on this aspect of its proposed model. The ENA's proposed alternative model as set out in the 16 May 2011 submission describes the way in which the Commission's proposed forecasting component could be used as a check on the drift in ROIs over the regulatory period.
 6. The ENA recognises in principle it may be possible to have a forecasting component to the DPP starting price adjustment method in the future, once the relevant data series are available and a coherent and statistically sound method has been developed and tested.
 7. We note that the 2011 SPA Paper indicates that the Commission intends to further develop the forecasting assumptions. If the Commission persists with its proposed approach and plans to use a different set of forecasting assumptions to be derived from analysis and data which has not been made available to interested parties, we submit that those parties (including ENA members) must be given an opportunity to review and comment on the further refinements before the draft decision stage of the DPP SPA consultation process.
 8. Finally the ENA submits that in the event SPAs are determined for non-exempt EDBs which may have the potential to result in undue financial hardship on the EDB or undue price shock to consumers due to the magnitude of the change, that:
 - Where the starting price adjustment is a reduction of 5% or more, the EDB may propose, if it chooses to do so, an alternative rate of change as provided for under section 53P(8)(a). That proposal should set out the EDB's justification for the alternative rate of change including the proportion of the adjustment to be accommodated in the first year; and
 - Where the starting price adjustment is 10% or more and where the EDB intends to implement the full adjustment, the EDB must propose how it intends to implement the price change including the initial year and alternative rates of change relevant to that proposal.

- In both cases the EDB's proposal would need to demonstrate that the alternative price path is equivalent in present value terms over the regulatory period to the proposed one-off starting price adjustment.

1. Introduction

9. This submission from the Electricity Networks Association is in response to the Commerce Commission's (Commission) paper of 11 April on DPP starting price adjustments and other amendments to the DPP (2011 SPA Paper).
10. The 2011 SPA Paper is the third the Commission has issued on a possible method for undertaking starting price adjustments. The former papers were issued in June 2009 (2009 SPA Paper) and August 2010 (2010 SPA Paper)¹ and the ENA has provided responses to each of these.
11. Our 16 May 2011 submission considered the legal and wider context of any DPP starting price adjustments, and responded to the Commission's proposed new method for undertaking such adjustments. In this submission we consider the Commission's proposed approach to forecasting ROIs as set out in the SPA Model which accompanies the 2011 SPA Paper.
12. The ENA has submitted previously, and continues to hold the view that the method for adjusting DPP starting prices should be determined by the Commission as an IM.² This submission does not reiterate the arguments for this view but the ENA considers the method proposed in this submission to adjust DPP starting prices could, and should be articulated as an IM.

2. Legal Framework

13. The 16 May 2011 submission highlighted the difficulty inherent in producing forecasts of an EDB's business over the regulatory period, while retaining the relatively low cost approach required of the DPP regime. We considered the legal framework for setting starting prices and made the following observations in respect of current and projected profitability.

Starting prices based on current and projected profitability

14. Section 53P(3)(b) provides that the Commission may set starting prices "based on the current and projected profitability of each supplier". This is the first reset of the DPP where the Commission proposes to set starting prices based on the current and projected profitability of each supplier.

¹ *Reset of default price-quality path for electricity distribution businesses; Discussion paper; Commerce Commission, 19 June 2009, and Starting price adjustments for default price-quality paths; Discussion paper; Commerce Commission, 5 August 2010*

² The reasons for this view are set out in the ENA letter of 23 July 2010 headed *Starting price adjustment methodology*

15. While there is some ambiguity in what is meant by the test of “current and projected profitability of each supplier”, it is obviously correlated with the objective inherent in starting price adjustments to keep supplier returns at an appropriate level over the regulatory period. Where current and projected profitability:
 - is excessive, a downward adjustment in prices will be required; and
 - is insufficient, an upward adjustment will be required.
16. The Part 4 Purpose requires the Commission to adopt the best method for assessing current and projected profitability based on the available data. The regulatory objectives in the Part 4 Purpose will be undermined if the Commission’s assessment of current and projected profitability is inaccurate.
17. In the ENA’s view, the Commission’s method and data for measuring projected profitability is deficient. We note that the section requires the measurement of current and projected profitability of “*each supplier*”. The Commission’s proposed approach operates on an untested assumption that industry-wide forecasts are the best possible proxy for assessing the projected profitability of each supplier (keeping in mind the need for the DPP to be low-cost).
18. However, ENA submits that there are fundamental flaws in the use of certain industry-wide forecasts to assess the projected profitability of each supplier. The forecasts cannot be reasonably expected to operate as a proxy for the projected profitability of each supplier.
19. The Commission’s method to estimate commencing ROIs using one year’s data, plus its method to forecast that value over the regulatory period produces a result which would reflect the underlying ROI of an EDB only by chance. ENA does not consider that it is reasonable to rely on the results generated from the Commission’s model as a measure of current and projected profitability.
20. For these reasons there is a real issue as to whether the Commission is in fact applying the statutory test of basing starting prices on the current and projected profitability of each supplier.

3. Estimating and forecasting ROI

Forecasting ROI throughout the regulatory period

21. The Commission proposes estimating the ROI of each EDB at the commencement of the regulatory period (i.e. for the year 2010/11) by taking the ROI values reported for 2009/10 (adjusted for the IMs), and rolling that value forward using three industry-wide and one economy-wide forecasting assumptions. The ENA considers the Commission needs to be cautious in the extent to which it places weight on its proposed forecasts. These forecasts

neither reflect historical trends of each EDB's business nor an EDB's projection of its business in its AMP.

Commission's forecast assumptions

22. The Commission has calculated a series of industry wide forecast assumptions which are applied to each non-exempt EDB's 2009/10 ROI's in order to generate forecasts of profitability for the DPP period ending 31 March 2015.
23. The Commission provide four industry-wide growth forecasts for the 2011-2015 period. These are as follows:
 - Real revenue growth of 1.5% per annum
 - Nominal operational expenditure growth of 3.8% per annum
 - Nominal capital expenditure growth of 3.3% per annum
 - Consumers price index ("CPI") growth of 2.3% per annum.

Issues

24. We have three broad concerns in relation to the methodology and approach associated with using these industry-wide forecasts:
 - ***The forecasts are arrived at arbitrarily.*** Other than for CPI it is very difficult to derive robust, independently verifiable forecasts for each of the components of ROI. To address this issue the Commission have taken a variety of approaches including extrapolating historical trends and using other, more readily available forecasts as proxies. Unfortunately, the Commission is not able to demonstrate that the relationships between these proxies and the metric being forecast are particularly stable or strong over time, and hence their use as key drivers of industry wide forecasts is somewhat arbitrary. This issue is demonstrated more clearly in the following analysis.
 - ***Industry trends are not relevant for individual EDBs.*** The approach of applying industry-wide forecasts to individual EDBs is significantly flawed. Each EDB sits within its own sub-regional economy and is subject to very different growth characteristics. The range in scale of the EDBs is vast and the service potential of these assets is also very different. A one-size-fits-all application of industry forecasts will inevitably and inequitably involve significant winners and losers across the EDBs.
 - ***The Commission's dataset is unstable and assumptions are used that are contrary to the Commission's own analysis.*** The analysis is particularly sensitive to the time periods used and relationships between variables are not consistent over time. Outputs are therefore adjusted to attempt to correct for such variation.

25. In the following sections we analyse in more detail each of the forecasting assumptions proposed by the Commission. We note that the 2011 SPA Paper indicates that the Commission intends to further develop these assumptions. If the Commission persists with its proposed approach and plans to use a different set of forecasting assumptions to be derived from analysis and data which has not been made available to interested parties, we submit that those parties (including ENA members) must be given an opportunity to review and comment on the further refinements before the draft decision stage of the consultation process.

Real revenue growth forecast

26. The real revenue growth assumption, to which the Commission's model is very sensitive, aims to reflect average real revenue growth across the sector. However, growth has and is expected to vary very significantly across EDBs. Further, the metrics in this real revenue growth estimate and their weightings do not correspond to those used by EDBs in their pricing structures and therefore the forecast growth in these metrics is not a credible proxy for growth in an EDB's revenue.

Calculating Total Output

27. The Commission asserts that EDB real revenue growth (RRG) is a function of growth in the following four output measures:

- Number of connections;
- Electricity supply volume (KWh);
- Circuit length (kms); and
- Transformer capacity (KVA).

28. The proposed approach is to create a measure for Total Output which is a weighted combination of the above factors, based on weight assumptions used previously by Economic Insights (EI) in their EDB productivity analysis reports.³ Specifically the calculation of Total Output is as follows:

$$\begin{aligned} \text{Total Output} = & 0.464 \times \ln(\text{number of connections}) + 0.217 \\ & \times \ln(\text{electricity supplied}) + 0.319 \times \ln(\text{line kms} \\ & \times \text{transformer capacity}) \end{aligned}$$

29. Only outputs from non-exempt EDBs have been used to develop this indicator. We also note that the 1996-2010 dataset used for this measure which is derived

³ Refer for example to *Electricity Distribution Industry Productivity Analysis: 1996-2008, Report prepared for the Commerce Commission*, Economic Insights Pty Ltd, 1 September 2009, page 15

from EDB annual regulatory disclosures is impacted by data improvements, corrections and re-specification of the measures themselves. There is no evidence that these influences have been considered in deriving the output measure. In particular we note that the Commission’s Electricity Distribution (Information Disclosure) Requirements 2008 (2008 IDRs) Part 4 Transitional Provisions provide for disclosures to enable the impact of new specifications of system length, transformer capacity and total consumers from 2008 to be quantified. These provisions are intended to assist quantifying the discontinuity which arises in the historical dataset as a result of the changes introduced in the 2008 IDRs.

30. Growth in Total Output is used as a proxy for RRG. The annual average Total Output growth derived from the historical 1996 -2010 data series for non-exempt EDBs is 2.08% per annum. Average historical real GDP growth over the same period is calculated as 2.65% per annum. The difference between the Output Growth measure and real GDP growth for 1996 - 2010 is therefore 0.6% per annum. This has then been “rounded-up” to 1% on the basis of analysis over different time periods.⁴ Detail of the analysis of the alternative periods to support this conclusion has not been provided in the 2011 Update Report or the accompanying models.

Forecasting Total Output growth

31. The Commission has developed its forecast of annual Total Output growth based on forecast growth in real GDP less 1%. Forecast real GDP is sourced from RBNZ forecasts and equates to 2.5% per annum. This annual growth rate is extrapolated to 2015. Specifically for the period 2011-2015 it is calculated as:

$$\begin{aligned} \text{Forecast RRG} &= \text{Forecast Total Output Growth} \\ &= \text{Forecast Real GDP growth} - 1\% = 1.5\% \end{aligned}$$

32. The assumption that Total Output will grow at 1% slower than real GDP is based on analysis of historical trends. Appendix C of the 2011 Update Report states the following although the historical analysis is not provided.

“...analysis reveals that historically the average difference between real GDP and total output growth is somewhat above 1 percentage point. This suggests that the difference observed over 1996 and 2010 is low by historic standards.”⁵

33. All historical growth rate analysis is based on the average of the following two methods to calculate growth:

⁴ 2011 SPA Paper, paragraph C1.9

⁵ 2011 SPA Paper, Appendix C, paragraph 1.9

- Calculating the slope of the (logged) growth curve over the period and “de-logging” it (“trend growth”); and
- the percentage difference between the log of the 1996 figure and the log of the 2010 figure (“log growth”).

Issues with the Approach

RRG Measure

34. As discussed earlier, Total Output is derived by the Commission as an amalgam of four different measures of industry output. It is important to note that this is a conceptual index only – the number itself is meaningless as it involves weighting and combining components from completely different bases (customer numbers, KWh, kms and KVA).
35. As PEG have previously argued⁶, an assessment of EDB output and output growth should not be based on an abstract view of the services the EDB provides but rather on the output *“that is most likely to generate a price path that aligns an EDB’s revenue stream with its costs”*.
36. The metrics in the RRG estimate and their weightings do not correspond to those used by EDBs in their pricing structures and therefore the forecast growth in these metrics is not a credible proxy for growth in an EDB’s revenue. We note that data from threshold compliance statements (which normalises the output and inflation impacts), combined with actual revenues, provides a potential source of information for determining output and price growth using revenue weights which are relevant for each EDB.

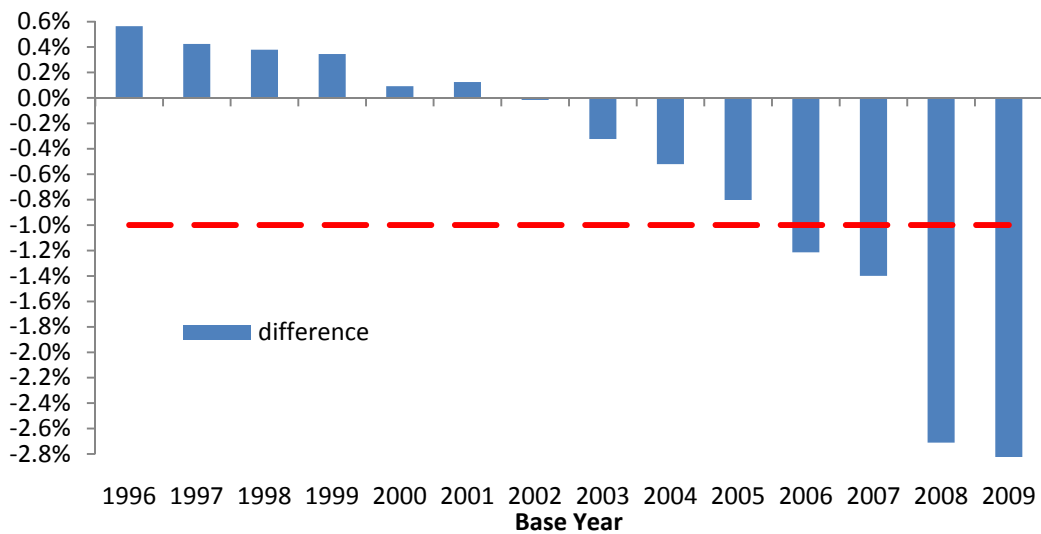
Use of real GDP as the forecast basis

37. Using a forecast of real GDP growth less 1% per annum to forecast RRG presupposes a strong relationship between the two. It is not clear that this is the case, and the Commission’s own analysis demonstrates that the relationship is weak. Specifically:
 - ***The relationship is sensitive to the choice of base year.*** This is demonstrated in Appendix 3 of the 2011 SPA Paper and in the accompanying models. While on average since 1996 the difference between real GDP and Total Output has been 0.6%, it has been 0.1% since 2000, and -0.5% since 2004. This calls into question the strength of the relationship and its stability over time. Figure 1 below demonstrates how sensitive the difference in average growth rates between the Industry Output measure and real GDP are to different analysis periods.

⁶ *Submission to Initial Reset of the Default Price Path for Electricity Distribution Businesses: Draft Decisions Paper*, Pacific Economic Group, LLC, October 2009, section 4.2 page 29

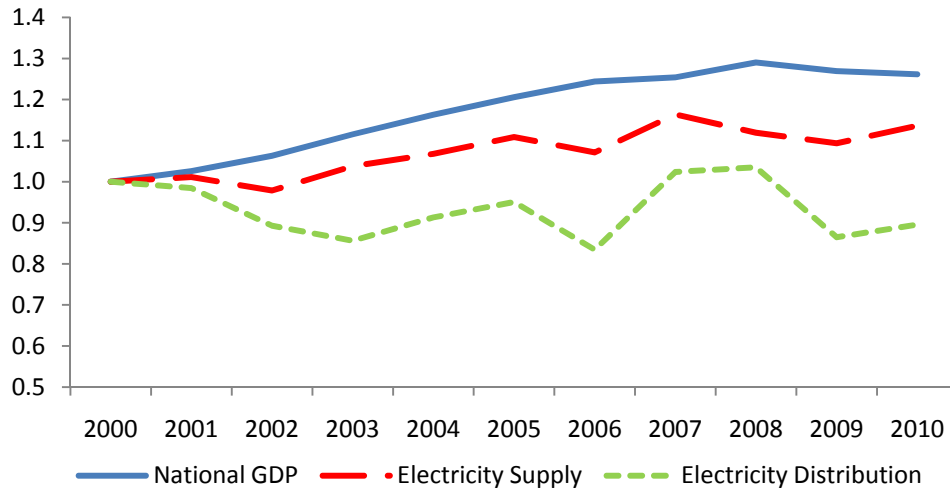
- Real GDP growth for the economy does not reflect real GDP growth for the sector.** There is no evidence of a relationship between real GDP growth for the electricity distribution sub-sector and the economy as a whole. Since 2000, while the economy as a whole has shown steady growth until the recession induced dips in 2009 and 2010, the electricity supply and electricity distribution sub-sector has contracted over the period. This is illustrated in Figure 2 below. This lack of relationship calls into question the use of economy-wide GDP as an indicator of Total Output and revenue growth.
- Total Output growth continued through the recession.** While real GDP contracted in 2009 and 2010 as a result of the recession, there was no similar impact on Total Output. This reinforces the lack of a relationship between real GDP and Total Output.

Figure 1: Difference between (log) EI industry output and (log) GDP growth at different base years



Source: Economic Insights, ENA Analysis

Figure 2: 2000-2010 Real GDP growth (base 2000 = 1)

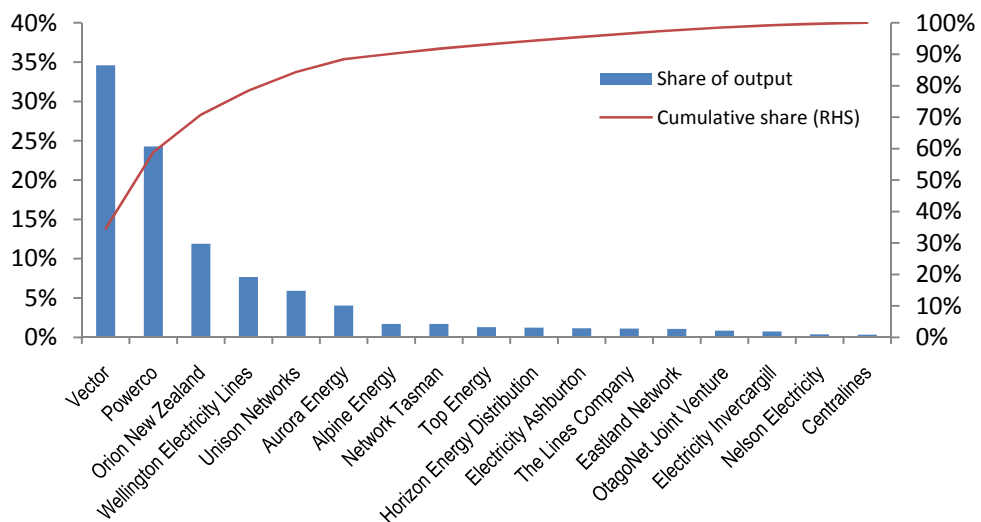


Source: Statistics New Zealand, ENA Analysis

Applying industry-wide forecasts to individual EDBs

38. One of our primary concerns with this approach is how it is applied to individual EDBs. In the case of Total Output, the construct is dominated by the output of the bigger non-exempt EDBs. In 2010, almost 71% of the Total Output measure was attributable to the three largest EDBs; Vector, Powerco and Orion. This implies that EDBs across the entire industry are being measured against a metric based on the experience of the bigger entities as demonstrated in Figure 3 below.

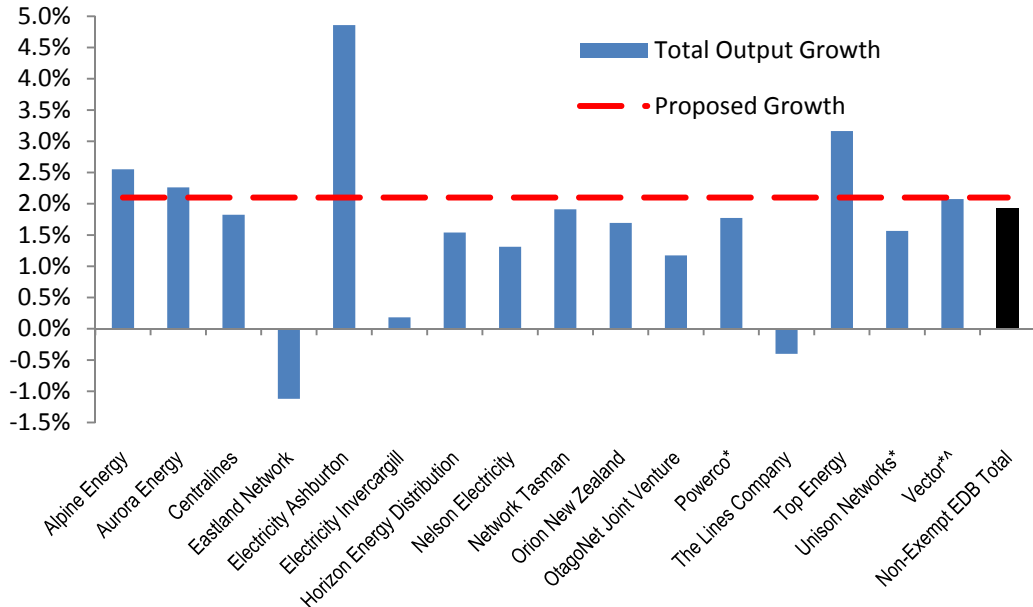
Figure 3: 2010 EDB share of Total Output



Source: Economic Insights, ENA Analysis

39. In addition we note that there is wide variance in the historical growth rates between the non exempt EDBs as demonstrated in Figure 4 below. The EDB data derives an average annual growth rate of 1.92%, however the Commission proposes to use 2.1% as illustrated below.

Figure 4: Historical (log) Total Output growth by EDB 1996 - 2010



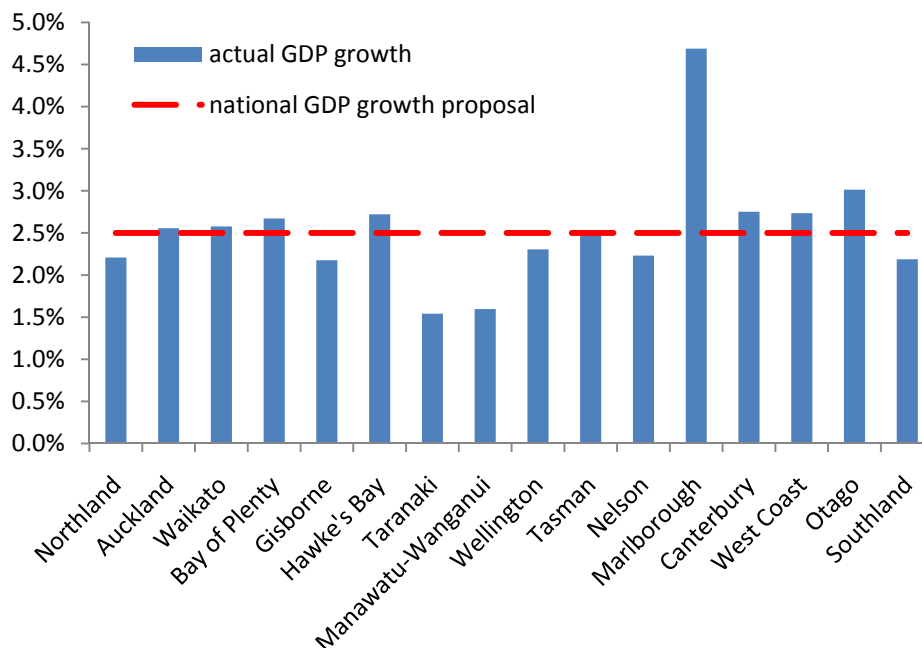
*Includes United Networks data for relevant network areas

^ Vector includes Wellington Electricity for the purpose of this exercise

Source: Economic Insights, ENA Analysis

40. Using a national real GDP forecast also implies some degree of consistency in real GDP growth across the country. In reality real GDP has and will continue to grow at quite different rates depending on the performance of the relevant regional economy. Figure 5 below demonstrates the variability in real GDP growth across regions in New Zealand from 2000 - 2010.

Figure 5: Average log GDP growth by region 2000-2010



Source: Statistics New Zealand, ENA Analysis

Opex growth forecast

Proposed approach

41. Opex growth is driven by changes in the volumes of inputs used and the prices paid for those inputs. To forecast opex growth the Commission has used proxies for both the volume of inputs used and the price of those inputs.

Estimating growth in the “volume” of opex (real opex)

42. The Commission have used the Total Output growth measure as a proxy for growth in the volume of opex. To establish the forecast for opex volume growth the forecast for RRG of 1.5% per annum, as described above, has been used.

Estimating growth in the “price” of opex

43. The Commission has based their estimate of the growth in opex price on the Electricity, Gas and Water component (EGW) of the Labour Cost Index (LCI). This is a series published by Statistics New Zealand. However, according to Appendix 3 of the 2011 SPA Report:

“In setting the X factor, the Commission determined that the input price differential between the sector and the economy overall was zero. As such,

an opex input price assumption equal to growth for the economy overall of 2.3% per annum ... is assumed”

44. In other words the LCI is used as the measure of opex price growth for the sector, and the LCI reflects an average 2.3% growth per annum from 1996-2010.
45. To establish the forecast for opex price growth from 2011-2015, the Commission has used the CPI as a proxy for the LCI. CPI forecasts from the RBNZ for the period equate to 2.3% per annum.

Estimating nominal opex growth

46. The Commission therefore obtains a forecast of nominal opex growth from the preceding two forecasts. Specifically:

$$\begin{aligned} \text{Opex growth}_{2011-2015} &= (1 + \text{Total Output growth}_{2011-2015}) \\ &\quad \times (1 + \text{CPI growth}_{2011-2015}) - 1 \\ &= 1.015 \times 1.023 - 1 = 3.8\% \end{aligned}$$

Issues with approach

47. The issues we raise above concerning the derivation of the RRG are therefore also relevant also for the opex growth assumption.
48. In their analysis, the Commission have demonstrated that the historical relationship between opex growth and Total Output growth is not stable and may not hold into the future. They note:

“Between 1996 and 2010 the growth in real opex was flat..”

“For the period between 1996 and 2010, Total Output grew by around 4.4 percentage points per annum faster than opex. In contrast, total output grew 0.4 percentage points slower than opex between 2001 and 2010.”⁷

49. In undertaking this analysis the Commission have used an opex dataset derived from earlier work undertaken by EI for the purpose of deriving the X factor for the DPP. This data generates an annual average growth rate of approximately 5% nominal from 2002. The opex data in the earlier periods is influenced by the difficulties in separating distribution opex from retail/generation opex of the electricity supply businesses which previously owned the distribution networks. The business separation reforms which were implemented in 2000 resulted in a step change in disclosed opex at that time.

⁷ 2011 SPA Paper, paragraphs C1.15 and C1.17

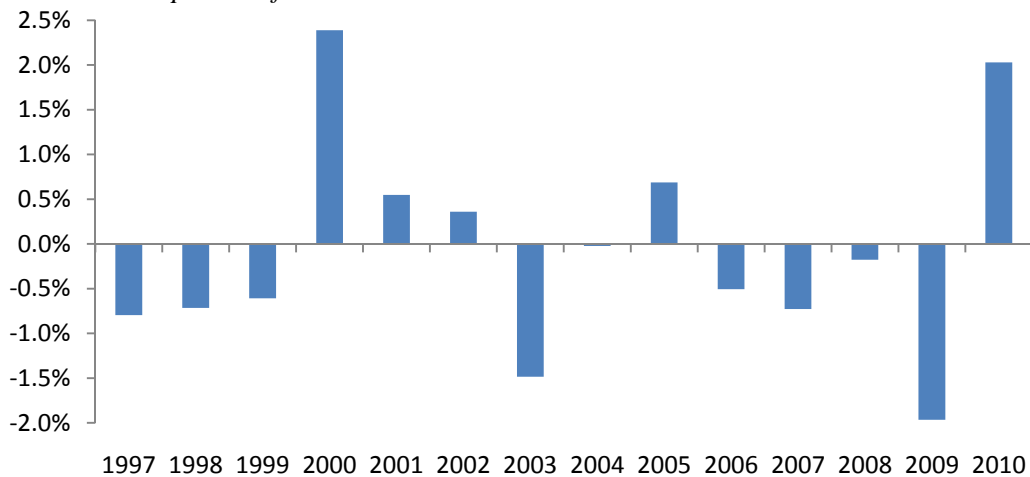
50. In other words, despite the lack of an established historical relationship, the Commission have decided to use growth in Total Output as a proxy for opex growth. The ENA submits this approach is arbitrary. We also note that the AMPs used for the capex growth forecast include forecasts (in real terms) of the maintenance components of opex for each EDB, but the Commission has made no use of the maintenance forecasts.

Use of forecast CPI growth to forecast opex price growth

51. The Commission investigates the applicability of using different price indices (as opposed to CPI) to establish a forecast for opex price changes across the industry. The Labour Price Index (LPI) for the economy as a whole, and then more specifically the index for the Electricity, Gas and Water (EGW) component of the LPI are considered. Over the historical period both of these indices have been roughly equal to CPI. The Commission has favoured average CPI as the forecast basis.

52. While historically this has broadly been the case on average, there has been significant variability between CPI, LPI and LPI (EGW). Figure 6 below shows the historical year on year difference in growth rates between CPI and LPI (EGW). As can be seen, there is a significant variability in individual years.

Figure 6: Difference between year on year growth rates of CPI vs the Electricity, Gas and Water component of the Labour Price Index



Source: Statistics New Zealand, ENA Analysis

53. As demonstrated above there are a number of possible approaches to establishing an estimate of the price path for operating expenditure. While labour costs will be a major component of opex; materials, fuel and rent are also examples of relevant inputs.

54. We note that the Commission’s Gas Control Authorisation used forecasts of the Producers Price Index⁸ to convert nominal opex forecasts to real opex for the purpose of the price component of the Authorisation. We also note that the Australian Energy Regulator has used more specific input price indices in its allowances for opex in regulatory pricing decisions. These are derived from labour and materials (such as copper) price indices. It is not clear why CPI has been favoured over PPI or other more relevant input price indices for the SPA model.

Capex growth forecast

Proposed approach

55. The approach to calculating the forecast capex is straightforward. The Commission has taken the capex forecasts from individual non-exempt EDB 2010 AMPs and then summed them to establish an industry total forecast for each year from 2011 to 2015. To establish an average growth rate over this period they have taken the average of the following to growth rate calculations:
- the slope of the (logged) growth curve over the period and “de-logging” it (“trend growth”); and
 - the percentage difference between the log of 2010 figure and the log of 2015 figure (“log growth”)
56. This approach is used to determine an industry wide assumption for the nominal forecast capex growth rate of 3.3% per annum.

Issues with approach

57. We have three major concerns with the proposed approach. Specifically:
- ***Real capex forecasts are used to derive a nominal capex growth rate.*** EDB AMPs include capex forecasts in real terms consistent with the 2008 IDRs.⁹ The capex growth rate derived from this data is applied as a nominal growth rate in the Commission’s SPA Model. It does not however take into account capex price inflation, and therefore is understated. We note that the potential sources of price indices for opex are also relevant for capex, albeit with different weightings for labour and materials components.
 - ***Variability in capex spends between EDBs.*** Individual EDB projected capex growth rates from 2011-2015 vary significantly. The largest growth

⁸ These forecasts are constructed by NZIER

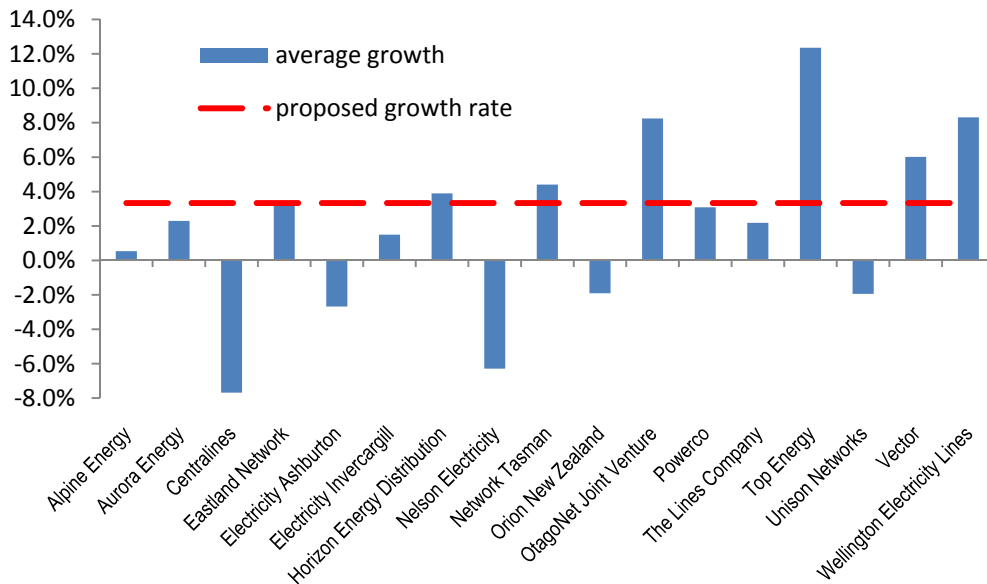
⁹ Refer 2008 IDRs, Requirement 7(1)(e) and the associated definition of **Current dollar terms** in Part 1(2)

rate over the period is 12.35% and the smallest is -7.68%. The standard deviation is 5.1% which is considerably higher than the average growth rate of 3.3% per annum. Figure 7 below shows the variability across the real capex forecasts of individual EDBs. Subjecting individual EDBs to an average industry-wide forecast creates significant winners and losers. The ENA submits this is inappropriate and inequitable.

- **Capex forecasts tail off over time.** Forecast capex within AMPs tends to tail off after the first year or two. This reflects the uncertainty of scheduling projects in future periods and the opportunity to update forecasts annually. This is clearly demonstrated in the total capex picture articulated in the combined non-exempt EDB AMPs. Forecast growth in (log) capex is 20.3% in 2011 and 9.9% in 2012. This falls off dramatically in the following years resulting in the average annual growth rate of 3.3% for the five year period. The year on year growth in real capex is shown in Figure 8 below. This suggests the current forecast will underestimate the capex trend to 2015.
- **Capex growth rate biased towards start and end points** - The estimate for capex growth is based on the average of the two approaches used elsewhere; namely by:
 - Calculating the slope of the (logged) growth curve over the period and “de-logging” it (“trend growth”); and
 - Taking the percentage difference between the log of the 2015 figure and the log of the 2010 figure (“log growth”).

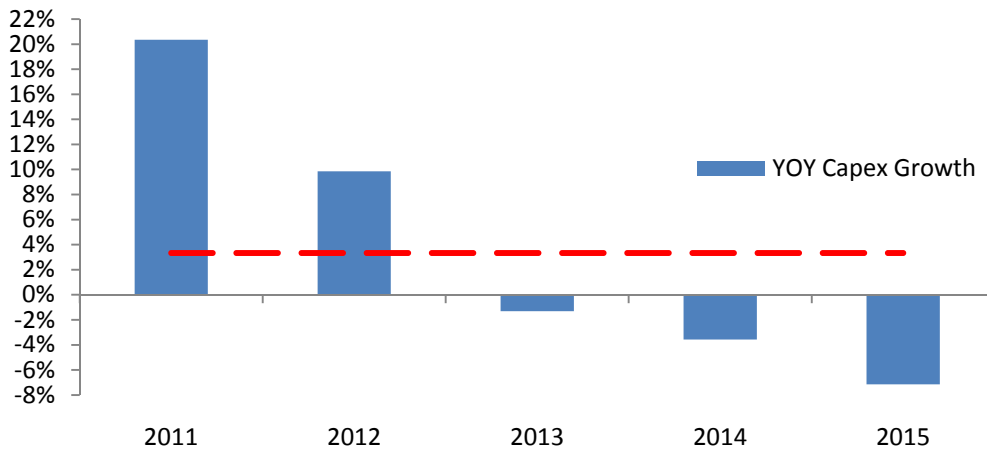
Taking this approach, the Commission calculates a capex growth rate of 3.3% per annum. This methodology essentially biases the starting and end points of the capex programme, and does not reflect the significant volume of capex embedded in the intervening years. The impact is particularly pronounced due to the growth in capex from 2010-2012 and the tailing off from 2012-2015. This can be shown by considering that the total volume of capex forecast in the AMPs from 2011-2015 is \$2.389 billion. However with 3.3% annual growth, the total forecast capex from 2011-2015 is only \$2.061 billion. The Commission’s capex forecast growth results in a \$327 million shortfall in non-exempt EDB capex.

Figure 7: Forecast (log) real Capex growth by EDB 2010 - 2015



Source: 2010 EDB Asset Management Plans, ENA Analysis

Figure 8: Year on year forecast (log) real Capex growth for all (non-exempt) EDBs



Source: 2010 EDB Asset Management Plans, ENA Analysis

CPI forecast

58. The ENA submits that the forecast CPI assumption needs to be aligned to the implicit inflation expectations in the WACC estimate. This is not the case in the

proposal as the CPI values are derived at a different point in time to when the DPP WACC parameters were estimated.

59. The model developed by the Commission to calculate the SPA uses the estimate of WACC developed for the DPP as set out in Decision Number 718, released on 3 March 2011. Paragraph 23 of this Decision describes the determination:

“the Commission has determined a 75th percentile estimate of vanilla WACC of 8.77% for the first DPP regulatory period (commencing April 2010) based on the risk-free rate and debt premium as at 1 September 2009.”

60. The risk free rates include a real interest rate plus an implied inflation rate. The use of the September 2009 risk free rate means that the underlying inflation rate implied within the WACC is also taken at September 2009. This is in itself not an issue; however the Commission’s forecast assumptions in the SPA Model also include a forecast for CPI growth (inflation). This forecast is explicitly based on the Reserve Bank of New Zealand’s *March 2011 Monetary Policy Statement*.

61. In other words, the Commission’s model has its two inflation forecasts based on different starting points:

- September 2009 for the implied inflation within the risk free rate and WACC calculation; and
- March 2011 for the CPI forecast assumption.

Conclusion

62. Given the lack of time series data available to provide the basis for credible forecasts at the EDB level (which is the level at which prices are set) the proposed approach is not supported. The method proposed by the Commission is ad hoc, as demonstrated above, and does not have the capability of providing any statistical assessment of the level of confidence in the forecasts.
63. In the absence at this stage of a statistically robust method acceptable to the Commission, the ENA considers the Commission should place less weight on this aspect of its proposed model. The ENA’s alternative model as set out in the 16 May 2011 submission describes the way in which the Commission’s proposed forecasting component could be used as a check on the drift in ROIs over the regulatory period.
64. The ENA recognises in principle it may be possible to have a forecasting component to the DPP starting price adjustment method in the future, once the relevant data series are available and a coherent and statistically sound method has been developed and tested.

4. Alternative Rates of Change

65. The 2011 SPA Paper sets out a proposed process for the Commission to determine alternative rates of change as provided for under section 53P(8)(a) of the Act. These are intended to accommodate undue financial hardship and/or price shock to consumers under DPPs. If significant SPAs were to be determined, these circumstances could arise. The 2011 SPA Paper sets out a range of criteria and possible processes the Commission may use to determine alternative rates of change.
66. After considering the proposals the ENA is of the view that EDBs affected by significant starting price adjustments should set out their proposals (if any) to the Commission for alternative rates of change including adequate justification for those proposals. This would enable business specific circumstances to be fully reflected in the proposal without the Commission presupposing the likely nature of those circumstances. For example the ability of the EDB to implement changes to funding or expenditure prior to the starting price adjustment taking effect will be relevant to a proposal.
67. The ENA considers the threshold for any alternative price path should be lower for price reductions than for price increases, as in the case of price reductions the financial hardship is concentrated on the supplier, whereas in the case of price increases the price shock is spread across the customer base and charges for electricity distribution services make up only a small portion of a customer's overall outlays (e.g. the Commission at paragraph 6.17 estimates a 10% increase would give rise to only a 0.2% rise in an average household's annual outlays). As a starting position the ENA suggests alternative paths should be considered where starting price reductions are 5% or more, or where increases are 10% or more.
68. Accordingly the ENA submits that in the event SPAs are determined for non-exempt EDBs:
 - Where that starting price adjustment is a reduction of 5% or more, the EDB may propose, if it chooses to do so, an alternative rate of change as provided for under section 53P(8)(a). That proposal should set out the EDB's justification for the alternative rate of change including the proportion of the adjustment to be accommodated in the first year; and
 - EDBs may also choose to increase their prices where upwards SPAs are granted. This may be necessary to ensure sufficient investment is made in electricity distribution infrastructure in order to meet current and future consumer demand. Where that starting price adjustment is an increase of 10% or more and where the EDB intends to implement the full adjustment, the EDB must propose how it intends to implement the price change

including the initial year and alternative rates of change relevant to that proposal.

- In both cases the EDB's proposal would need to demonstrate that the alternative price path is equivalent in present value terms over the regulatory period to the proposed one-off starting price adjustment.