

Pat Duignan – Submission on the draft EDB DPP3 2020-25

This is a personal submission which analyses the interaction between the incentives proposed in the draft EDB DPP 2020-25 (DPP3) decision and the level of the cost of capital.

I am making this submission to draw attention to key analytical issues regarding the incentives for efficiency under the current EDB IMs. This submission is not intended as advocacy regarding the views of regulated suppliers or any other interested parties. I note, however, I have assisted ERANZ and made personal submissions during the current DPP3 and IPP3 processes.

The analysis in this submission is based on my interpretation of the draft Reasons Paper's discussion of the Capex IRIS. If I have misunderstood that discussion, then cross-submissions or the Commission's final Reasons Paper will no doubt correct my analysis which would serve the useful function of clarifying the issues for others as well as myself. I recognise the Commission released an Excel spreadsheet showing IRIS calculations on 21 June 2019, but I have not been in a position to deduce from that spreadsheet the answers to the issues I identify in this submission.

The main incentives for opex and capex efficiency

Table E1, on page 214 of the draft DPP3 Reasons Paper, identifies the five main incentives influencing EDB decisions on opex and capex, namely

- a) The Opex IRIS results in an EDB retaining any opex saving and bearing any opex over-expenditure (compared to the opex allowance built into the DPP maximum allowable revenue (MAR)) for 5 years after the year in which the saving or over-expenditure occurs. Thus the EDB benefits for a total of 6 years before the efficiency gain is reflected in a reduction in the price quality path and starts to benefit consumers. The strength of this opex cost efficiency incentive depends on the discount rate which determines the present value to an EDB of enjoying any cost savings for 6 years. The IMs do not give the Commission discretion to modify the resulting strength of the incentive.
- b) The Capex IRIS IM, in contrast, provides that the Commission has discretion at each DPP reset to determine how the cost or saving from an EDB's capex being above or below the capex allowance in the MAR will be shared between an EDB and consumers, thus deciding for each regulatory period the strength of the incentive for the EDB to economise on capex.
- c) The WACC uplift increases the cost of capital allowance above the central estimate of the cost of capital resulting in a probability that an EDB has an incentive to undertake a higher level of capex than it would have in the absence of the uplift. The strength of this incentive is the determined by the present value of the uplift and thus depends on the discount rate.
- d) The Quality Incentive rewards an EDB for achievement of higher reliability, the proposed marginal reward for DPP3 being equal to the benefit to consumers of reduced frequency or duration of outages as indicated by the relevant Value of Lost Load.
- e) The Quality Standards provide a strong incentive for the EDB to at least achieve the quality standards reliability since underachievement exposes the EDB to material financial penalties.

In preparing this submission I have not identified any reason to use a value other than the central estimate of the WACC as the discount rate when calculating a present value. The justification for the

uplift – asymmetric risk – in my assessment does not imply that the 67th percentile should be used for calculating present values.

Accordingly, I now consider that the central (50th percentile) estimate of the WACC, rather than the 67th percentile estimate used in the DPP2 Reasons Paper (to which I was a signatory), is the appropriate discount rate to use in calculating the strength of the relevant IRIS and WACC incentives. (It is possible, depending on the exact way tax is treated in the operation of the Opex IRIS, that the post-tax WACC rather than the vanilla WACC could be the relevant discount rate to use in assessing an EDB’s incentives regarding expenditure decisions. I hope that the Commission will provide its view on this issue.)

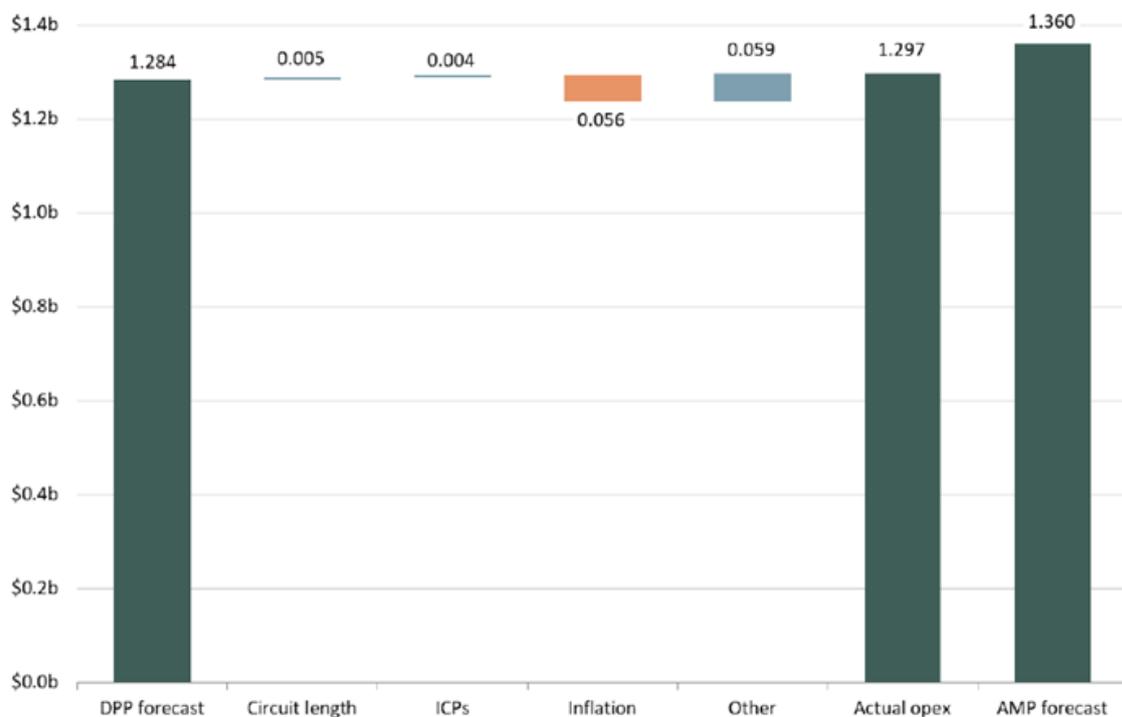
The strength of the Opex IRIS incentive during DPP2

For DPP2 the 67th percentile and 50th percentile vanilla WACCs were 7.19% and 6.72% respectively and the 50th percentile post-tax WACC was 5.97%. The strength of the Opex IRIS incentive for DPP2 using a discount rate of 7.19%, 6.72% or 5.97% is around 34%, 32% or 29% respectively.

The apparent ineffectiveness of the Opex IRIS incentive during DPP2

Figure A1 in the draft Reasons Paper¹ reveals that, for the 14 EDBs regulated under DPP2, the Opex IRIS incentive has not resulted in aggregate opex savings during 2016-18 relative to the allowance on which the DPP2 price quality path is based. This is despite that opex allowance allowing for a decline in partial productivity of 0.25% per annum.

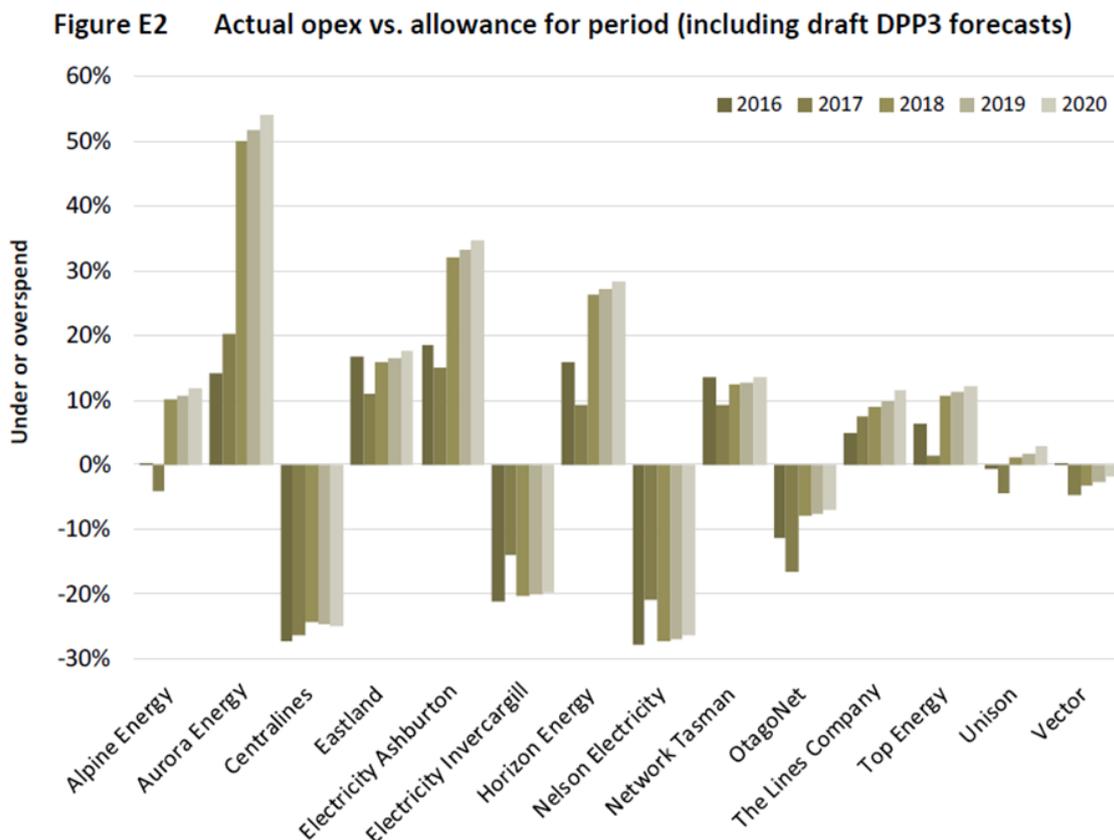
Figure A1 Deviations between DPP allowance and actuals, 2016–2018 (\$b)



¹ Page 125, https://comcom.govt.nz/_data/assets/pdf_file/0023/149801/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Draft-Reasons-paper-29-May-2019.pdf

The outturn for the period 2016-18 is that, after taking into account lower inflation and slightly higher circuit length and ICP growth than predicted, these EDBs in aggregate over-spent the opex allowance in that period by \$59M or around 4.6%.

Figure E2 in the draft Reasons Paper² displays (for each of those EDBs) opex year by year outturns to 2018 and forecasts for 2019-20 compared to the allowances on which their DPP2 price quality paths are based. Nine of the EDBs are forecast to overspend their allowances for the full period. Of the five EDBs shown as achieving opex savings compared to the allowances, three (including Vector) are shown as achieving lower savings in the period 2019-20. Thus, it seems likely the aggregate overspend will increase above the 4.6% recorded to date.



The draft reasons paper suggests the over-spend may in part be due to:

- a) productivity growth being lower than forecast, or EDBs becoming less efficient;
- b) econometric drivers deviating from actuals;
- c) any step changes not accounted for; and/or
- d) random variation in the level of opex.

Arguably it is very concerning that, despite the strength of the Opex IRIS being close to the 33% level that many analyses treat as a maximum appropriate level, the incentive has not been strong enough to elicit opex efficiency improvement. Viewed from another perspective, the outturn refutes any

² Page 222, https://comcom.govt.nz/_data/assets/pdf_file/0023/149801/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Draft-Reasons-paper-29-May-2019.pdf

suggestion that the DPP2 price-quality path determined by the Commission was over-generous as regards the opex allowance.

The strength of the Opex IRIS incentive for DPP3

As the draft Reasons Paper explains, the strength of the Opex IRIS incentive for DPP3 will be significantly less than it has been for DPP2 due to WACC being much lower for DPP3 than for DPP2.

The draft Reasons Paper's current estimates of the 67th percentile and the 50th percentile vanilla WACCs for DPP3 are 5.13% and 4.69% respectively, with the current estimate of the 50th percentile post-tax WACC being 4.27%.

The strength of the Opex IRIS incentive for DPP3 using a discount rate of 5.13%, 4.69% or 4.27% would be around 26%, 24% or 22% respectively.

In summary, during the period 2020-2025 the Opex IRIS will provide a 25% weaker incentive for EDBs to achieve Opex efficiency improvement than during the current regulatory period. This seems very unfortunate given the current higher incentive appears not to have elicited efficiency gains for the 14 EDBs in aggregate. Indeed, the current level of the incentive may not have even halted the efficiency decline that occurred prior to Part 4 being implemented.

I realise that the Opex IRIS was reviewed during the IM review and cannot now be changed for DPP3.

The Commission was not convinced during that review of the need to modify the Opex IRIS to avoid a reduction in the risk-free rate reducing the strength of the efficiency incentive. The outcome is, however, that when the effectiveness of Part 4 regulation now is being called into question in some quarters, the Commission is locked into providing a reduced incentive for Opex efficiency during the forthcoming regulatory period.

The strength of the Capex IRIS incentive

Fortunately, the Commission does have discretion to decide what should be the strength of the Capex IRIS incentive for DPP3. The Commission's draft decision is to set that equal to its estimate of the strength of the Opex IRIS incentive. Since the Commission estimates the strength of the Opex IRIS incentive will be 26% (ie using the 67th percentile WACC as the discount rate) the draft decision is to set the strength of the Capex IRIS incentive at 26%.

The draft Reasons Paper suggests that setting the Capex IRIS incentive strength equal to the Opex IRIS incentive strength will avoid a bias towards meeting demand by methods dependent on capex as opposed to methods, such as demand responses, which involve increases in opex.

The analysis in the draft Reasons Paper does not, however, take into account the effect of the WACC uplift.

The purpose of the WACC uplift is ensure that EDBs have an incentive to invest so as ensure the reliability of the distribution networks is not compromised. The WACC uplift provides an incentive for EDBs to undertake all forms of investment but the strength of that incentive is uncertain since the actual level of the cost of capital cannot be observed.

On the assumption that the Commission's Part 4 implementation of the Simplified Brennan-Lally CAPM provides an unbiased estimate of the actual cost of capital, the uplift above that estimate is

the best available measure of the annual benefit from the uplift that an EDB loses as a result of unit reduction in its capex (and thus its RAB).

In summary, the benefit the Capex IRIS provides when an EDB reduces its capex is partially offset because the RAB and therefore the annual dollar amount received as a result of the uplift will be reduced.

If an EDB constrains its capex in DPP3 to \$1M less than the level on which the MAR is based, I interpret the draft Reasons Paper as proposing to provide a benefit of \$0.26M (present valued) to that EDB through the Capex IRIS.

The EDB's capex being \$1M lower during DPP3 will result in the RAB at the beginning of DPP4 being \$1M lower than it otherwise would be. The foregone uplift will be the present value of the annual uplift which is 0.44% in the draft decision ie \$0.0044M per annum per \$1M reduction in capex.

The present value depends on the period for which the reduction of \$1M in the DPP3 capex outturn continues to result in the RAB being lower than if there had been no reduction in DPP3. Arguably, the rationale for the Capex IRIS is undermined unless the reduction in the RAB persists for many periods. If the reduction in the RAB is reversed in a subsequent period then at that time consumers cease to benefit from the original underspend of the capital allowance. The benefit to consumers would be only a short-term timing benefit.

I suggest that it would be helpful if the final Reasons Paper explains how the Capex IRIS incentive takes into account this issue of the period for which the reduction in the RAB will persist. (This is the capex version of the need to distinguish between permanent versus temporary savings which is an essential feature of the Opex IRIS as explained in the draft Reasons Paper.)

The present value of the \$0.0044M discounted at the 50th percentile draft decision vanilla WACC estimate of 4.69% would be \$0.094M assuming the \$1M reduction in the DPP3 capex resulted in the RAB being \$1M lower indefinitely.

Thus, in the circumstances assumed above, the present value benefit to an EDB of constraining its DPP3 capex to \$1M less than the level on which the draft decision MAR is based would be \$0.26M minus \$0.094M ie \$0.166M. On this analysis, the overall strength of the incentive for savings of capex during DPP3 would be 16.6% which is much less than the strength of the Opex IRIS incentive.

The overall incentive for EDBs to economise on capex will be further weakened by two additional factors in DPP3. Firstly, the Quality Incentive naturally provides an incentive for EDBs spend more capex where that will improve reliability resulting in a financial benefit from the Quality Incentive. Secondly, the historically low level of the riskfree rate will tend to incentivise investment.

The capex outturn for DPP2

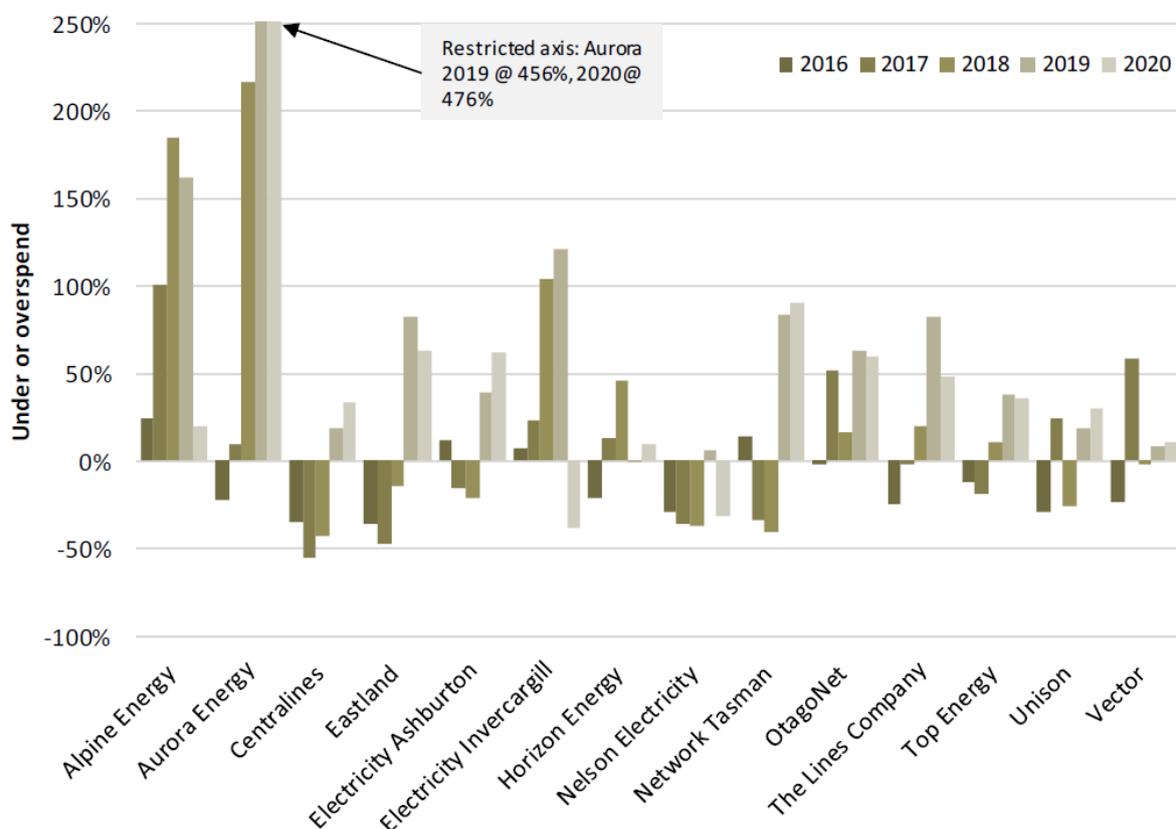
For DPP2, the Capex IRIS incentive was set at 15%. The Commission set the Capex IRIS incentive strength at this relatively low level because it faced a dilemma. The capex allowances provided for DPP1 had been significantly underspent. EDBs, however, argued that they had been inhibited from spending capex until the first DPP was published in November 2012. Consistent with this argument, EDB Asset Management Plans for DPP2 (2015-20) included high forecasts of capex. In the circumstances the Commission provided for higher capex levels but set the Capex IRIS incentive at 15% to avoid the benefit to EDBs of capex underspending in DPP2 being too generous.

For DPP2 the uplift was 0.47% and the 50th percentile vanilla WACC was 6.72%. The resulting overall strength of the incentive for savings of capex in DPP2 is 15% minus 7% ie 8%, on the assumptions set out earlier.

Figure E4 in the draft Reasons Paper³ displays for each of the 14 EDBs capex year by year outturns to 2018 and forecasts for 2019-20 compared to the allowances on which their DPP2 price quality paths are based. For the period to 2018, 8 of the EDBs are shown as underspending on capex compared to the allowances built into the MAR. For the full DPP2 period, however, 12 of the 14 EDBs are forecast to exceed the capex allowances.

If the capex outturns do indeed exceed the DPP2 capex allowances, that outcome could be viewed as reflecting, or at least being consistent with, the low Capex IRIS incentive rate set for DPP2.

Figure E4 Actual capex vs. allowance for period (including 2018 AMP forecasts)



Conclusion

As indicated in the overview this submission attempts an analysis of the interaction between the incentives proposed for DPP3 in the draft decision and the level of the cost of capital.

The analysis has identified a number of issues including that the incentive provided by the WACC uplift tends to partially offset the incentive provided by the Capex IRIS. The analysis suggests that the draft decision would result in the overall incentive for EDBs to economise on capex still being

³ Page 223, https://comcom.govt.nz/_data/assets/pdf_file/0023/149801/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Draft-Reasons-paper-29-May-2019.pdf

weaker than the incentive to economise on opex despite the intention to set the strength of the Capex IRIS equal to that of the Opex IRIS.

A handwritten signature in blue ink, appearing to read 'P Duignan', with a horizontal line extending from the end of the signature.

Pat Duignan
18 July 2019