



**Review of Draft Decision  
Paper for the 2010-15 Default  
Price-Quality Path for  
Electricity Distribution**

**Report to Powerco**

**August  
2011**

## Acronyms and Abbreviations

AER	Australian Energy Regulator
CAPM	Capital Asset Pricing Model
CPI	Consumer Price Index
CPP	Customised Price Path
DPP	Default Price Path
FCM	Financial Capital Maintenance
FDC	Finance During Construction
IMs	Input Methodologies
IPART	Independent Pricing and Regulatory Tribunal of New South Wales
NPV	Net Present Value
WACC	Weighted Average Cost of Capital

# Table of Contents

<b>Executive Summary</b>	<b>1</b>
<b>1 Introduction</b>	<b>5</b>
<b>2 Resetting the DPP has not been shown to Promote the Objectives of the Act</b>	<b>5</b>
2.1 The Counterfactual is that the Existing DPPs Continue in Place	6
2.2 The Proposed Reset will not Improve Incentives to Invest	7
2.3 The Proposed Reset will not Provide Incentives to Improve Efficiency	9
2.4 The Proposed Reset has not been shown to Share Efficiency Gains with Consumers	9
2.5 The Proposed Reset has not been shown to Limit Suppliers' Ability to Extract Excessive Profits	10
2.6 The Proposed Reset will not Produce Outcomes Similar to Workably Competitive Markets	11
2.7 Conclusion on Whether a Reset Promotes the Objectives of the Act	14
<b>3 Costs of Resetting the DPP versus any Benefits</b>	<b>14</b>
3.1 The Commerce Act Amendments were designed to Improve Regulatory Certainty	14
3.2 The Commission's Decision does not Promote Certainty	15
3.3 The Reset will Reduce Incentives for Efficiency and Investment	16
3.4 Conclusion on the Costs of Resetting the DPP	18
<b>4 Has Consultation on the Financial Model been Adequate?</b>	<b>18</b>
4.1 Translating Methodologies into a Financial Model is not a Mechanical Exercise	19
4.2 Regulators in Australia and the United Kingdom Consult on the Financial Model	24
4.3 The Commission has not yet Adequately Consulted on the Financial Model	29
4.4 The Commission should consult on its Financial Model before taking any Reset Decision	30

## Tables

<b>Table 2.1: Comparison of Rates of Return in a Competitive Market</b>	<b>12</b>
<b>Table 4.1: Comparison of International Best Practice and the Commission’s DPP Reset Process</b>	<b>30</b>

## Figures

<b>Figure 2.1: Proposed Price Adjustments by Customer Demand</b>	<b>8</b>
<b>Figure 2.2: Comparison of Prices Before and After the Draft Decision</b>	<b>13</b>
<b>Figure 3.1: Relationship between Direct Costs and Proposed Price Adjustments</b>	<b>17</b>
<b>Figure 4.1: Comparison of AER and IPART Models—Building Block Components</b>	<b>23</b>
<b>Figure 4.2: Comparison of AER and IPART Models—Timing Assumptions</b>	<b>23</b>
<b>Figure 4.3: Comparison of AER and IPART Models—Asset Roll Forward Assumptions</b>	<b>24</b>

## Executive Summary

Powerco has asked Castalia to review the Draft Decision Paper for the 2010-15 Default Price-Quality Path for Electricity Distribution Businesses (EDBs) (the Draft Decision), and to provide our professional opinion on the following questions:

- To what extent are the objectives of Part 4 of the Commerce Act (listed in section 52A) served by the Commission's decision to reset the Default Price Path (DPP)?
- Would the benefits of resetting the DPP be likely to outweigh any costs?
- Has the consultation process on the financial model used to reset the DPP led to the same level of quality assurance and certainty found in comparable regulatory systems overseas?

This Executive Summary responds to each of these questions, and provides a summary of our reasoning. More detail on our responses to each question is provided in the remaining sections of this report.

### **Resetting the DPP will work against the objective of the Act in some respects, and has not been shown to promote the objective of the Act in other ways**

To determine the effects of the draft reset DPP, it is important to:

- Consider the incentives under the reset DPP compared to a counterfactual of keeping the existing DPP in place
- Have a clear view of what outcomes a workably competitive market would produce.

Our review of the Draft Decision suggests that the Commission has not consistently analysed how the reset DPP would compare to the existing DPP. The Commission also appears to adopt an unrealistic view of what workably competitive market outcomes would look like—a view that seems at odds with the Commission's own position in its role as competition regulator. The Commission appears to assume that in workably competitive markets the rates of return earned by market participants will converge to a common level over short periods of time, while the prices charged to consumers will diverge.

We have identified the following important differences and similarities between the existing DPP and the draft reset DPP:

- Both DPPs set a limit on the prices that can be charged by EDBs. In other words, under both price paths, any savings achieved by the EDBs between now and the remainder of the regulatory period are kept by the EDBs, while no EDB can use its market power to increase prices
- The existing DPP is consistent with a range of returns, reflecting various company-specific factors. This range may be due to a mix of company performance, company specific cyclical factors, and the use of market power. In contrast, the reset DPP sets each company's returns equal to the Commission's estimate of WACC. In a mechanical sense, the sole outcome expected from resetting the DPP is to drive all market participants to the same industry-wide rate of return. This will penalise companies that expect to outperform the benchmark through their efficiency and other efforts, and reward companies that were expecting to underperform against this

benchmark. The Commission does not attempt to isolate variations in returns that may be due to different factors

- The draft reset DPP applies over a shorter regulatory period (three years, compared to five years for the existing DPP).

We have examined each of the four criteria listed in section 52A of the Commerce Act (the Act) in light of these similarities and differences between the existing DPP and the reset DPP:

- **Incentives to invest will be lower for EDBs serving 72 percent of the load supplied by regulated businesses.** No evidence has been provided to suggest that investment incentives will increase for other EDBs, or that the importance of this minority outweighs the negative effects on investment by the majority. In particular, there will be a reduction in the already weak incentive to invest in risky projects with long-term pay-offs, such as those associated with energy efficiency
- **There will be no increase in incentives to improve efficiency or services,** as regulated businesses have the same incentives to reduce costs below their price cap under the existing and reset DPPs. To the extent that the reset reduces the credibility of the regulatory regime, the incentive may decrease
- **There is no evidence provided in the Draft Decision that resetting the DPP would share the benefits of efficiency gains with customers.** While some customers would get lower prices (and others higher prices), the Commission has not shown any relationship between the lower prices received by some consumers and the efficiency gains achieved by EDBs. Given the uncertainties over forecasts and the information used to calculate starting rates of return, there is every reason to expect a range of random redistributive outcomes. In some cases, customers will receive the benefits of efficiency gains; in others they will be given the benefits of optimistic forecasts. In other cases still, customers may be forced to pay more for the poor efficiency of their EDB
- **It is unlikely that the reset advances the objective of “limiting EDBs in their ability to extract excessive profits”.** While some EDBs will have their projected profit reduced, the Commission does not advance any evidence or reasoning either that current profits are “excessive”, or that the current DPP does not already “limit EDBs’ ability to earn excessive profits”. We understand that at least for Powerco most recent returns are lower than the estimated WACC when the IMs are applied to the most recent financial results. More importantly, the Commission’s approach demonstrates an implicit presumption that any deviation above the industry-wide weighted average cost of capital (WACC) must be excessive. This presumption is not supported by either economic theory or by market evidence. In the body of the report we explain that there is no logical link between the Commission’s decision to set the industry-wide WACC at the 75<sup>th</sup> percentile of estimates, and the view that an individual company’s return above the industry-wide WACC must be excessive.

The overall question is whether the reset produces outcomes consistent with workably competitive markets. Workably competitive markets do not produce returns for suppliers that are equal to an estimate of the industry-wide WACC—either over the short or the long run. Instead, workably competitive markets reward efficient firms by enabling them

to generate returns above their cost of capital for sustained periods. In contrast, poorly performing firms earn returns below their cost of capital for sustained periods, enduring debt write-downs, bankruptcies, or takeovers. We present evidence showing such diversity of returns for the markets which the Commerce Commission has had an opportunity to examine and to find workably competitive. A DPP reset that is designed primarily to force convergence in returns over a short period of time will do nothing to produce outcomes that are consistent with workably competitive markets.

**Resetting the DPP now imposes costs through reduced investor certainty and poorer efficiency and investment incentives, which have not been shown to be outweighed by any benefits**

The draft decision substantially increases the level of regulatory uncertainty in New Zealand. This uncertainty will be particularly costly because it undermines the recently made gains in the credibility of the New Zealand regulatory regime. Restoring regulatory certainty was seen as an important driver of the Commerce Act amendments, and is an explicit objective of the input methodologies.

The process and principles underlying the decision do not promote regulatory certainty. The decision is discretionary—the Commission does not need to reset prices now—and regulatory certainty would be better achieved by leaving the existing DPP in place. The guiding principle of the Draft Decision seems to be to bring all companies' expected returns for the next three years into line with an estimate of the industry WACC. Such an approach has similarities with “cost-plus” regulation that has been subject to extensive international critique, and is no longer the norm in comparable regulatory systems overseas. This leads to another source of uncertainty—that the Commission may alter its approach due to the weak incentives provided to regulated firms to invest and become more efficient. The process for arriving at the Draft Decision, which included last minute changes and unexpected swings in outcomes, exacerbates this regulatory uncertainty.

Achieving regulatory certainty requires a level of forbearance from the Commission to resist making decisions that could be made, but do not materially further the objectives being sought. The Draft Decision seems to be an example of the type of decision that provides a small, quick win for (some) customers, at the cost of ensuring that the regulatory environment leads to enduring benefits.

There is considerable international evidence that the cost of regulatory uncertainty is real. The five-year regulatory period has emerged as a rule of thumb for the reasonable balance between the need for the regulator to act in the interests of consumers and the need to constrain regulatory action in order to give regulated businesses the time and freedom to take advantage of profit opportunities. Any reduction in the regulatory period needs to have a very strong justification, which has not been presented in the Draft Decision.

The Draft Decision will also reduce incentives to achieve efficiency gains and invest if regulated businesses view the reset as part of a broader regulatory approach of keeping returns in line with the Commission's estimate of industry WACC.

**Further consultation on the financial model is needed to provide the certainty achieved in comparable jurisdictions overseas**

The Commission did not consult on—or finalise—the financial model used to calculate the proposed price paths before issuing the Draft Decision. This means that regulated EDBs did not have an opportunity to review and comment on the way that the Commission has translated the high level regulatory concepts in the input methodologies into a detailed financial model, or to correct errors in the model.

The task of translating the high level regulatory concepts into a detailed financial model is not trivial—there are many issues involved and the decisions made during the process can have a material and significant (and adverse) impact on the results. Judgements are inevitably needed to construct the financial model. Errors can also creep into the model, and we understand that several minor modelling errors have been corrected since the model was released. A more substantive issue of regulatory judgement is the Commission’s treatment of the timing of cash flows in the financial model for the proposed reset. This is a task that requires a consistent and carefully considered approach, and we believe that the Commission may not have achieved its objective of financial capital maintenance through the modelling conventions adopted.

As a result of these challenges, regulators in Australia and the United Kingdom routinely consult on the development of financial models, and finalise the design of their models before calculating price adjustments. Such a practice reduces regulatory risk and gives investors the confidence to continue to make necessary investments in regulated infrastructure.

By these standards, the Commission’s consultation process for making the Draft Decision was inadequate. The Commission can correct this procedural inadequacy by separately consulting on the financial model and re-issuing the decision after the financial model has been finalised.

# 1 Introduction

Powerco has asked Castalia to review the Draft Decision Paper for the 2010-15 Default Price-Quality Path for Electricity Distribution Businesses (EDBs) (“the Draft Decision”). We have been asked to provide our professional opinion on the following questions:

- To what extent are the objectives of Part 4 of the Commerce Act (listed in section 52A) served by the Commission’s decision to reset the Default Price Path (DPP)?
- Would the benefits of resetting the DPP be likely to outweigh any costs?
- Has the consultation process on the financial model used for the reset led to the same level of quality assurance and certainty found in comparable regulatory systems overseas?

We address each of these questions in turn in this report. In Section 2 we evaluate whether resetting the DPP will achieve the objectives of the Act. We individually consider each of the limbs of section 52A—which focus on incentives for investment and efficiency, sharing benefits with consumers, and limiting excessive returns. We then consider whether the reset achieves the overall objective of “promoting outcomes that are consistent with outcomes produced in workably competitive markets” to “promote the long term benefit of consumers”.

In Section 3 we look at whether resetting the DPP introduces any costs. We evaluate the decision to reset prices against the intention of the Commerce Act amendments to increase regulatory certainty in order to promote investment. We also look at the process used to make the Draft Decision—given that resetting the DPP is not an input methodology and the consultation has taken place against a looming statutory deadline.

Section 4 concentrates on the Commission’s decision to not consult separately on the financial model. We identify the issues that can arise in translating regulatory decisions or principles into a financial model, and we evaluate which issues arise in the current decision. We also review international experience with consultation on financial models.

## 2 Resetting the DPP has not been shown to Promote the Objectives of the Act

We were asked to give our professional opinion on the following question:

*To what extent are the objectives of Part 4 of the Commerce Act (listed in section 52A) served by the Commission’s decision to reset the Default Price Paths (DPPs)?*

To answer this question we first define the appropriate counterfactual in Section 2.1. The Commission set a DPP to apply from 1 April 2010 through the Initial Reset Decision. The existing DPP is in the form of CPI-X, and does much to achieve the objectives of the Act. The current decision must therefore focus on whether a new DPP would do more to achieve the objectives of the Act than the existing DPP. The Commission’s Draft Decision does not consistently apply this counterfactual when considering whether the proposed new DPP would promote the objectives of the Act.

With the correct counterfactual in place, we analyse the benefits of the proposed reset for each of the considerations listed in section 52A. We find that the Commission has not yet made the case that the proposed reset would advance any of the specific considerations in the Act (Sections 2.2 to 2.5). Evaluating the decision against each limb

of section 52A—investment, efficiency, sharing benefits and limiting excessive returns—we conclude that there are no compelling reasons to reset the DPP at this time. In Section 2.6 we step back and assess the reset against the overall objective of “promoting outcomes that are consistent with outcomes produced in workably competitive markets” to “promote the long term benefit of consumers”. Again, we find no reason to believe that resetting the DPP would do more to promote outcomes that are consistent with those found in workably competitive markets than leaving the existing DPP in place.

Throughout this section we refer to the objectives of the Act. Section 52A sets out the objective of Part 4 of the Act, and is reproduced below for convenience.

*52A Purpose of Part*

*(1) The purpose of this Part is to promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—*

*(a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and*

*(b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and*

*(c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and*

*(d) are limited in their ability to extract excessive profits.*

## **2.1 The Counterfactual is that the Existing DPPs Continue in Place**

Establishing the correct counterfactual is important to making a correct and defensible decision on the price reset. The EDBs are currently subject to the DPP that the Commission set to apply from 1 April 2010. The Commission is not required to reset this DPP now. If it did not reset the DPP, the existing DPP would continue in place until the end of the regulatory period in 2015. Accordingly, the relevant question is whether the Commission’s proposed reset would do more to serve the objectives of the Act than allowing its earlier DPP decision stand.

Given this test, it is important to be clear about how the effects of the existing DPP on the incentives to invest and to increase efficiency compare to the reset DPP:

- A price-quality path creates incentives for investment by assuring the EDB that it can expect to earn at least its WACC on the invested capital. In this context, it is important to note the “at least” part of this statement. Many investment projects undertaken by EDBs may be relatively risky. For example, improvements in control systems associated with smart grids involve new technologies, and hence are likely to require a higher hurdle rate of return than utility WACC. For this reason, the opportunity to earn above WACC during the course of the regulatory period is an important component of the overall incentive structure under the price cap regulatory regime. In this context, the two main differences between the existing DPP and the reset DPP are the length of the regulatory period and the effect on variation around the industry-wide estimate of WACC.

The existing DPP provides incentives for investment since, according to the Commission calculations, EDBs serving 72 percent of the load served by

regulated EDBs make returns at or above the industry’s estimated WACC, while the remaining 28 percent are free to apply for CPPs if needed for investment. The question the Commission needs to address is how the incentive to invest will differ under the draft reset DPP

- A price-quality path creates incentives to increase efficiency by preventing firms from passing their costs to consumers at will, but allowing them to benefit from efficiency gains over a reasonable period of time. Under the existing DPP any cost reductions achieved will translate directly into higher EDB profits for at least the next three years. Under the reset DPP, exactly the same will be true. The main difference will be that under the reset DPP, firms are likely to be prevented from enjoying the benefits of efficiency improvements achieved since the commencement of the regulatory period. The Commission needs to consider what effect that will have on the future incentives.

The existing DPP also allows the Commission the option of sharing some or all of the benefits from efficiency gains with customers when the DPP is reset for the 2015-2020 regulatory period, as the Commission is legally required to. The Commission therefore needs to consider what effects resetting the DPP would have on the sharing of the efficiency gains for the remainder of the current regulatory period. As we discuss below, the Commission particularly needs to consider whether it has the information to ensure that price changes mid-way through the regulatory period would result in the sharing of benefits over the longer term, or may in fact result in random and unintended redistribution that would disadvantage consumers in the longer term.

The existing DPP already limits the ability of the EDBs to extract excessive profit. The key question the Commission needs to consider is whether there is any evidence that the observed variation around the industry-wide WACC relates to “excessive” profits, and whether the re-set DPP would better serve that objective.

In the following sections, we examine the proposed DPP **relative** to the current DPP.

## **2.2 The Proposed Reset will not Improve Incentives to Invest**

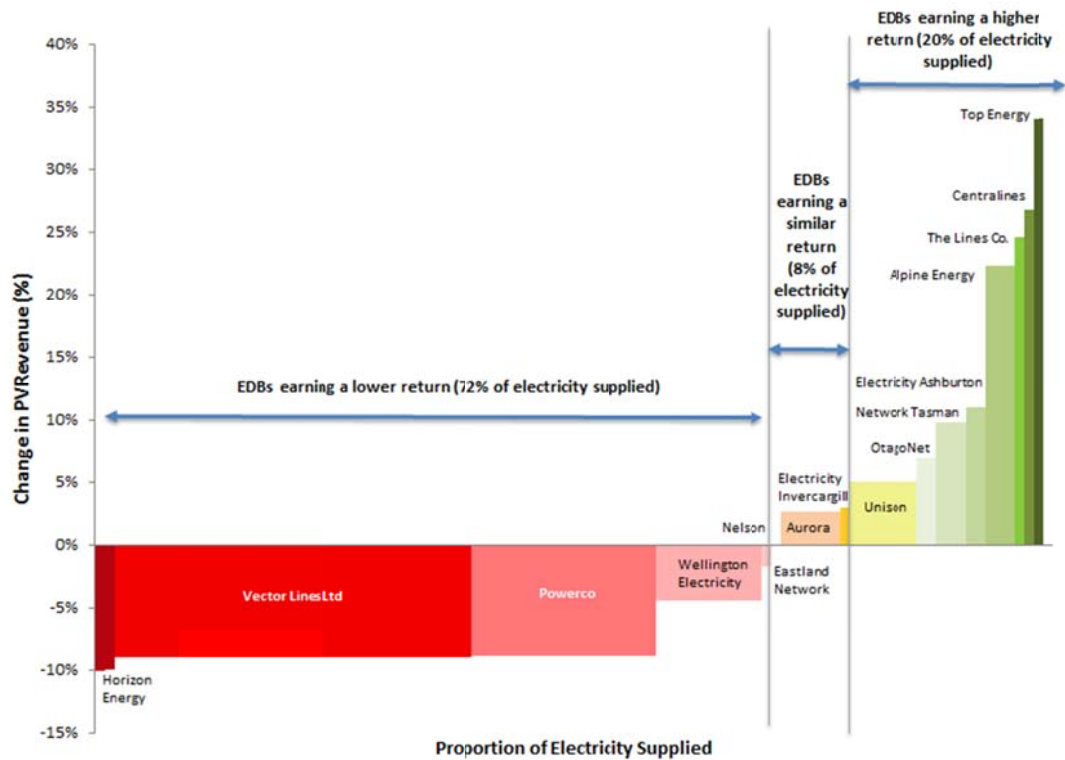
The DPP reset differs from the existing DPP in two important respects:

- **The length of the regulatory period.** The reset DPP runs for three years, compared to the longer five year period envisaged for the existing DPP
- **The effect of variation around the industry-wide estimate of WACC.** The reset DPP sets forecast returns equal to the estimated WACC, while the existing DPP allows for variation in EDB returns.

In our view, both of these factors suggest that the reset will not improve incentives to invest.

The Draft Decision would reduce the returns made by five EDBs, while increasing the returns made by 11 EDBs. The EDBs receiving a downward price adjustment between them supply the majority of the customers served by regulated EDBs, and most of the electrical load (72 percent). The effect of the Commission’s Draft Decision in terms of the proportion of load served by regulated EDBs is shown in Figure 2.1.

Figure 2.1: Proposed Price Adjustments by Customer Demand



The impacts of the Draft Decision on investment incentives can be divided into three groups (highlighted in Figure 2.1)

- **EDBs receiving a lower return.** Regulated EDBs serving 72 percent of the relevant load will have reduced incentives to invest. The Draft Decision would therefore reduce incentives to invest in the networks that supply these customers
- **EDBs receiving a broadly similar return.** EDBs serving 8 percent of the relevant load will have no improvement in investment incentives given that their rates of return will remain relatively in line with the existing DPP (an increase of less than 5 percent)
- **EDBs receiving a higher return.** On the Commission’s own reasoning, the Draft Decision does not improve incentives to invest for the companies whose returns are increased by the reset. As the Commission acknowledges, companies that need enhanced investment incentives would in any case apply for CPP if expected profit levels were not sufficient to motivate investment. So even those companies that are given price increases would not have increased incentives to invest, compared to not resetting the DPP.

The effect of lower returns will influence the type of investments made by EDBs, as well as the overall level of investment. Some of the investments made by EDBs may be relatively risky. For example, improvements in control systems associated with smart grids involve new technologies, and are likely to require a higher hurdle rate of return than the Commission’s estimate of industry WACC. Other investments, such as those associated with energy efficiency, have a long-term pay-off. For these investments, the

opportunity to earn above WACC during the course of the regulatory period is an important component of the overall incentive structure under the price cap regulatory regime. Setting returns to an estimate of industry WACC would clearly not increase the already weak incentives to make these investments.

Overall, the Draft Decision will not increase incentives to invest compared to a counterfactual of leaving the existing DPP in place.

### **2.3 The Proposed Reset will not Provide Incentives to Improve Efficiency**

Compared to the alternative of leaving the DPP unchanged, the reset does not increase incentives for efficiency. Incentives for increased efficiency come from the ability of a firm to profit from efficiency gains. The Commission acknowledges this at paragraph 1.43 of the Draft Decision, when it states that “this incentive effect arises because we have determined maximum allowable prices for the next three years, which means that each EDB can boost its profitability by reducing its costs over this period.”

What the Commission does not acknowledge is that EDBs would have at least as strong an incentive to increase efficiency without the reset. The existing DPP already gives EDBs the ability to increase profits by reducing costs. If any EDB can achieve a dollar in cost savings under the existing DPP, its profit will increase by one dollar. Likewise, after the reset, if an EDB reduces costs by a dollar, its profit will still increase by the same amount.

While the Commission is right that following the reset, EDBs would have incentives to increase efficiency, the Draft Decision does not argue that a reset will increase incentives for efficiency compared to leaving the existing DPP unchanged. The Commission seems, in this case, not to have turned its mind to the correct counterfactual in developing its Draft Decision.

### **2.4 The Proposed Reset has not been shown to Share Efficiency Gains with Consumers**

The Commission says (at paragraph 1.41 of the Draft Decision) that the objective of sharing with consumers the benefits of efficiency gains will be met by resetting the DPP because:

*The benefits of these efficiency gains will be shared with consumers once the 2010-15 DPP comes to an end (consistent with s 52A(1)(c)). This is because, to the extent that EDBs have achieved efficiencies between 2010 and 2015, these efficiency gains will be reflected in the costs that we are likely to refer to when we reset prices for the next regulatory period.*

This seems to be another example of where the Commission has not used the correct counterfactual. The same sharing of benefits would take place, at the same time, and in the same way, if the existing DPP remains in place.

The Commission does not explicitly claim that resetting the DPP will improve the sharing of the benefits of efficiency gains. However, it seems implicit in the Draft Decision that the Commission considers that because the decision will reduce tariffs for some customers that this shares efficiency gains. In fact, “reducing tariffs of those companies earning above their WACC” is not the same as “passing on to customers the benefits of efficiency gains”.

To show that resetting the DPP shares efficiency gains, the Commission would first need to identify the efficiency gains that are being shared. The Draft Decision does not do

this. As a result, the Commission is unable to show that those customers receiving tariff reductions are benefitting from efficiency gains that are being passed through into tariffs. Less obviously, it is quite possible that companies whose tariffs would increase have made efficiency gains—but it does not seem that the Commission has considered whether their customers should benefit from any such increase in efficiency.

There are several ways that tariffs could be reduced that do not involve efficiency gains. Actual demand growth or operational costs could be different from forecasts, or the information used to calculate existing rates of return might not reflect current performance. We expect that the Draft Decision will in practice reflect a range of random redistributive outcomes. Some customers will be receiving the benefits of efficiency gains. Others will likely be receiving benefits from overly optimistic forecasts. Some other customers may be forced to pay more for poor efficiency. The important point is that to meet the objectives of the Act, the Commission needs to show that the reset shares efficiency gains.

## **2.5 The Proposed Reset has not been shown to Limit Suppliers' Ability to Extract Excessive Profits**

The Commission states (at paragraph 1.41 of the Draft Decision) that it considers that resetting the DPP now will “reduce the likelihood that any individual EDB will be able to extract excessive profits.” However, the Commission does not provide any reasoning or analysis to support this statement.

In order to base a decision on the grounds of “limiting suppliers’ ability to extract excessive profits” the Commission should first define what returns it considers to amount to “excessive profits” and what is meant by “limiting ability”. The Commission also needs to be clear about the benchmarks that it will use to assess whether these definitions are met in any particular case.

The Commission’s proposed reset appears to be founded on the objective of bringing all companies’ expected returns more or less into line with the Commission’s estimates of the industry WACC. The merits of this approach are not obvious, as we argue in Section 3.2 below. We also question whether the words of section 52A(1)(d) support this approach.

The phrase “excessive profits” should not be read to mean “any profits higher than WACC”. After all, the essence of incentive-based regulation is that companies should be able to earn returns in excess of WACC for a period of time in order to incentivise efficiency gains. Also, if the Commission considers that, on average, the industry should earn its WACC, it follows that one would expect half the companies in the industry to be earning above this estimate of WACC. To clarify this issue, the Commission could provide an indication of the margin above the estimated industry WACC, or what other considerations, would lead the Commission to consider a profit or projected profit to be “excessive”.

For similar reasons, the phrase “limited in their ability” should not be interpreted to mean “have no ability”. An alternative interpretation that would better reflect conditions in workably competitive markets would be that “limiting suppliers’ ability” means that companies should not be unlimited in their ability to earn excessive profits.

The combination of these two points suggests that the Commission should identify the threshold that determines where profits are excessive, and what limits are required on the ability to earn excessive profits. Without these points being spelled out, the

Commission’s claim that resetting the DPP would advance this objective of the Act is hard to either confirm or refute.

The concept of a rate of return band would be consistent with placing limits on excessive returns. However, the Commission rejects the idea of a range around the WACC on the grounds that the WACC itself is derived from a range of WACC estimates, and is set at the upper end of that range. This argument confuses the difference between the process of determining an industry-wide WACC, and the process for dealing with short-term variations in returns among the EDBs. An industry-wide WACC clearly is an approximation, and is derived from a range of possible values. However, once an approximate value within such a range is determined, the Commission must then ask the different question of whether individual EDBs’ deviations from that value fall within a “reasonable range”.

The uncertainty about the value for the industry-wide WACC derives from the difficulty of estimating the true cost of capital using the available market data. A reasonable range around that estimate relates to uncertainty of estimating and interpreting each EDB’s specific position relative to the industry average. As we have already explained, individual rates of return may deviate from the industry average due to firm-specific performance and cyclical factors (such as where on the investment cycle the firm happens to be).

It is worth pointing out, in this context, that the Commission’s decision to derive the industry-wide WACC from the 75<sup>th</sup> percentile of industry WACC estimates—that is, the decision to be relatively “generous” in setting the industry-wide WACC—should not logically change how the Commission thinks about variations around the industry average. It is tempting to think that allowing an individual margin on top of the already generous average estimate would lead to excessive return. Such thinking would be wrong from the point of view of economics and finance theory. Since the deviation from the average is driven by factors which have nothing to do with how the average is estimated, there is no logical basis for summing the “margin of generosity” and the margin above average.

Our analysis of the Draft Decision suggests that the revenue earned by regulated EDBs is around 2 percent above the Commission’s estimate of industry WACC, on average. These calculations are subject to a significant margin of error. For example, we understand that applying the IMs to Powerco’s most recent financial results show that the company’s returns are below the Commission’s estimate of industry WACC. Putting that aside, the key question is whether a variation of 200 basis points around the industry-average estimate of WACC represents a “reasonable range”. The best way to answer that question is to consider whether such a range would be possible in workably competitive markets. As we demonstrate in the next section, the best available market evidence shows that such a range is indeed consistent with workably competitive markets, and hence must be seen as “reasonable”.

The existing DPP adequately limits the ability of EDBs to extract excessive profits both as a matter of regulatory practice and on the recent evidence of results. We therefore see little prospect for resetting the DPP to improve outcomes against this objective.

## **2.6 The Proposed Reset will not Produce Outcomes Similar to Workably Competitive Markets**

Workably competitive markets enable successful businesses to earn higher rates of returns, even for sustained periods of time. Workably competitive markets should also drive a degree of price convergence for customers receiving the same service. The

decision to reset the DPP appears to work against both of these features commonly found in workably competitive markets.

### Variation in the returns earned in competitive markets

As mentioned above, the driver of the proposed DPP reset seems to be to bring forecast profitability for all companies into line with the Commission’s estimate of industry WACC. The Commission says, for example, “if we did not reset the 2010-15 DPP, there would be significant disparities between the current and projected profitability of EDBs (paragraphs 2.24-2.25).”

In real-life markets that the Commission has judged to be workably competitive, rates of return differ substantially between companies, and these differences can persist over many years. There are likely to be many industries that illustrate this point. Taking one industry, it should be uncontroversial to assert that New Zealand’s horticultural industry (growing and packing produce) is workably competitive.<sup>1</sup> The presence of several publicly listed companies in that industry (Satara, Seeka, and Turners & Growers) allows us to observe whether their rates of return in recent years have been the same, or even broadly similar. In fact, as shown in Table 2.1 we find that rates of return differ not only across the companies, but also vary from year to year within each company.

**Table 2.1: Comparison of Rates of Return in a Competitive Market**

	Satara	Seeka	Turners & Growers
2008	12.7%	8.7%	7.1%
2009	11.1%	11.7%	4.2%
2010	9.2%	10.1%	5.2%

Note: For this calculation, we use returns as earnings before interest, tax, amortisation and depreciation (EBITDA) as a proportion of total assets

This result is not surprising. Efficient firms earn returns above their cost of capital for sustained periods, as a result of their superior strategies and execution. Other firms earn returns below their cost of capital for sustained periods, enduring debt write-downs, bankruptcies and takeovers. This dynamism of returns is precisely what drives the investment, innovation and efficiency of real competitive markets. If no one could ever make a return in one sector above that available from existing investments, the effort of trying to innovate, create and grow business would be futile, and simply stop.

The benchmark of workable competitive markets used by the Commission should include:

- The ability for some companies to make profits in excess of their costs of capital for considerable periods
- The ability for other companies to make profits less than their cost of capital and indeed to go into bankruptcy or be taken over if they are poorly managed
- No company having unconstrained pricing power, since each company faces the threat and reality of competition.

<sup>1</sup> The Commission has previously permitted industry consolidation in horticultural packaging and marketing industries—see for example Decision 251 (<http://www.comcom.govt.nz/clearances-register/detail/251>), 171 (<http://www.comcom.govt.nz/clearances-register/detail/171>).

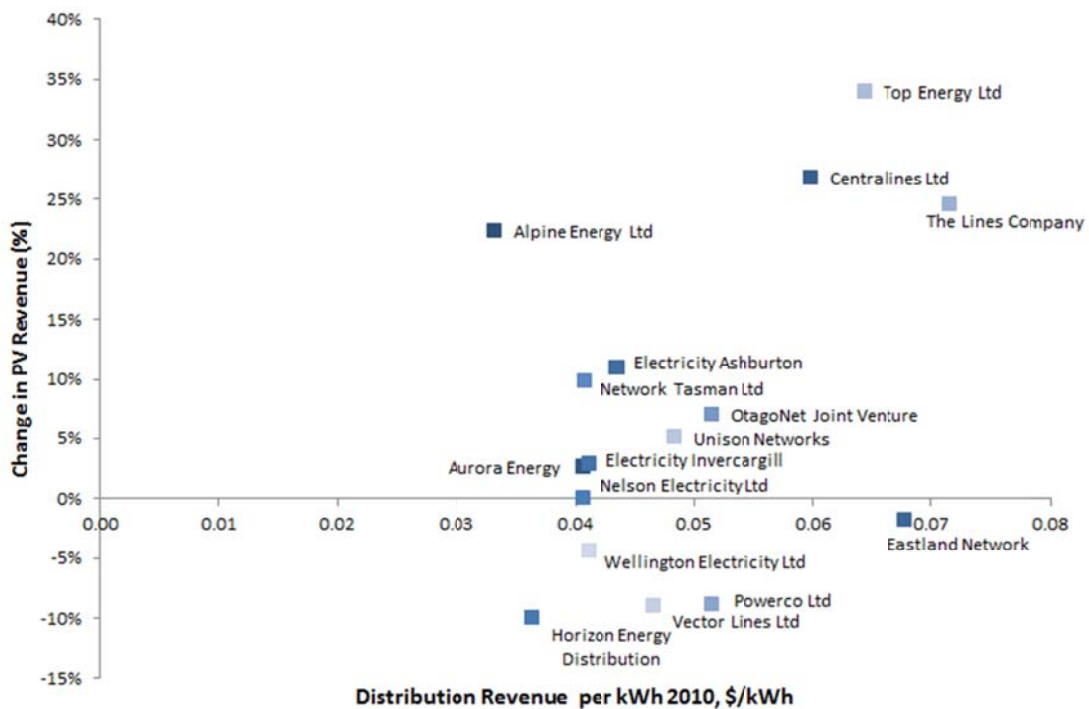
The existing DPP is consistent with EDBs earning a range of returns that happen to lie both above and below the Commission’s estimated WACC. These returns reflect a range of company-specific factors, including company performance, company specific cyclical factors, and the use of market power. In contrast, the reset DPP seeks to fix all returns at the level of the estimated WACC.

**Competitive markets tend to drive price convergence over time**

One characteristic of workably competitive markets is that providers generally charge similar amounts for similar products. EDBs currently charge different amounts for the (very similar) services they provide. However, by resetting the DPPs, the Commission would increase the differences in price between providers of similar products, cutting the prices of those providers which already charge the least, while increasing the prices of those providers which currently charge the most. This effect is depicted in Figure 2.2.

We are not claiming that all EDBs should charge exactly the same price, and have exactly the same costs. Some EDBs operate in challenging geographic locations, and there are other legitimate reasons for different prices. However, we do consider that a workably competitive market would tend to place downward pressure on prices diverging over time, and any difference would be capped by the differences in the costs of serving different customers.

**Figure 2.2: Comparison of Prices Before and After the Draft Decision**



Source: Data from 2010 Electricity Information Disclosures and Draft Decision.

In summary, the Draft Decision would tend to bring rates of return for all companies closely and quickly into line with each other, while in workably competitive markets returns vary widely, and these differences persist for years. It would also tend to increase price dispersion between EDBs for similar products, while workable competitive markets tend to reduce price dispersion. We therefore conclude that the Draft Decision would move the industry further away from the statutory goal or “outcomes similar to those produced in workably competitive markets”.

## **2.7 Conclusion on Whether a Reset Promotes the Objectives of the Act**

The question is “should the Commission reset the DPP now?” We answer this question by considering whether a price reset would further the objectives of the Act. We conclude that the DPP now in place meets the objectives of the Act by limiting the ability of suppliers to extract excessive profits, in a way that provides incentives for investment and efficiency. The Draft Decision has not advanced any compelling arguments that resetting prices would better achieve these objectives. A mechanistic approach of setting returns equal to estimated cost is quite unlike the workings of real competitive markets and does not improve incentives for efficiency, innovation and investment.

## **3 Costs of Resetting the DPP versus any Benefits**

We were asked to give our professional opinion on the following question:

*Would the benefits of resetting the DPP be likely to outweigh any costs?*

For reasons given in Section 2 above, we do not see evidence of any benefits that would suggest that resetting the DPP would be justified at this time. However, we do see the imposition of real costs by creating a regulatory regime that is less conducive to investment and efficiency gains than is envisaged under the Act. The uncertainty introduced by resetting the DPP would be at odds with the rationale for changing Part 4 of Act:

- The amendments to Part 4 of the Act were designed to move away from one-off regulatory decisions towards a deliberate, predictable process. The intention of this change was to benefit customers in the long run by providing incentives to regulated businesses to invest and increase efficiency, and to pass on these benefits to customers over a reasonable timeframe. Achieving these outcomes involves a degree of regulatory forbearance—small, quick wins for customers need to be resisted in order to provide an environment that leads to enduring benefits
- Resetting prices against a looming statutory deadline creates uncertainty when key details have not been subject to consultation, and the methodology and results are subject to unpredictable changes. The Commission’s role should not be driven by keeping returns in line with what it considers to be “reasonable” rates. Such an approach is out of line with what the Act intends, and it is unlikely to be in the long term interests of consumers
- The lack of regulatory forbearance and the sacrifice of due process will tend to chill the environment for efficiency gains and investment. This will ultimately lead to worse outcomes for consumers, and will be quite different from the outcomes that would be delivered in a workably competitive market.

We discuss each of these points under the subheadings below.

### **3.1 The Commerce Act Amendments were designed to Improve Regulatory Certainty**

The creation of regulatory certainty was an important driver of the Commerce Act amendments, and is an explicit objective of the IMs. This builds on considerable international evidence that the cost of regulatory uncertainty is real.

The Commerce Act amendments were clearly seen by Parliament and observers as a major step towards encouraging investment by creating a certain and stable operating climate.<sup>2</sup> Three specific changes to Part 4 highlight the drive towards a more predictable, deliberative process designed to improve investment outcomes:

- **Introducing a Part 4 purpose statement.** The absence of a specific purpose statement for Part 4 had led to uncertainty as to how and when price control would be applied. The general purpose statement in the Act to ‘promote competition in markets for the long-term benefit of consumers’ was difficult to apply in industries where competition is not possible. This meant that business were asked to invest against a constant but unknown regulatory threat
- **Developing input methodologies.** The Commission is required to issue IMs before setting prices. Section 52R explicitly states that promoting certainty for suppliers and consumers is the purpose of issuing IMs. This ensures that regulated businesses know the rules of the game before investing
- **Allowing companies to apply for a CPP.** The Commission is able to apply tailored price paths to make specific investments by individual companies possible where the benefits of a customised path outweigh the costs of applying for a CPP.

This background is important to the Commission’s current proposal to reset the DPP. The drive for increased regulatory certainty should create an additional hurdle that regulatory decisions need to surpass. This hurdle is reflected in the thresholds that the Commission needs to satisfy before making its decision (such as in section 54K which requires a “materially different” result).

### 3.2 The Commission’s Decision does not Promote Certainty

The Commission has chosen not to make some elements of the DPP reset input methodologies. Specifically, neither the P0 reset approach nor the financial model that translates the approach into a price adjustment are IMs. We understand that the Commission’s intention is nevertheless to achieve regulatory certainty by consulting with stakeholders on the approach to resetting prices, and giving all parties an opportunity to comment on the financial model.

In our view, this process does not provide the level of regulatory certainty envisaged by the Commerce Act amendments.

- The Commission is not required to reset the DPP now, and can only do so if the reset would have resulted in a materially different price path being set (pursuant to section 54K). By resetting prices, the Commission is introducing a change that is not required and that needs to meet a threshold that has not been clearly defined
- The five-year regulatory period strikes a balance between the need for the regulator to act in the interests of consumers and the need to constrain regulatory action to give regulated businesses the time and freedom to take advantage of profit opportunities. Any reduction in the regulatory period

---

<sup>2</sup> See Commerce Amendment Bill — In Committee, Third Reading, Volume:649;Page:18539 and Kensington Swan “Competition – Fair Play”, March 2008. Available online at: [http://www.kensingtonswan.com/Newsletters/Competition%20and%20Consumer/Changes to Competition Law Improve Infrastructure Businesses.pdf](http://www.kensingtonswan.com/Newsletters/Competition%20and%20Consumer/Changes%20to%20Competition%20Law%20to%20Improve%20Infrastructure%20Businesses.pdf).

needs to have a very strong justification, which has not been shown in this case

- There has been limited consultation on P0 methodology and financial model (discussed further in Section 4 below). These aspects of the Commission's process are not IMs, but remain important to EDBs and affect their incentives to invest.

### **3.3 The Reset will Reduce Incentives for Efficiency and Investment**

We consider that the Draft Decision will also introduce costs through reduced incentives for efficiency and investment. These costs arise because EDBs will have no reasons to seek out efficiency gains or invest when the Commission has signalled an approach of setting prices equal to an estimate of the industry WACC.

#### **The Draft Decision is likely to reduce efficiency incentives**

By choosing to reset the DPP rather than leave prices unchanged, the Commission is likely to reduce incentives for efficiency. The decision signals that the Commission will seek to pass on any profits greater than an estimate of the industry cost of capital to customers. Not only will the decision to reset not increase incentives for efficiency, it will likely reduce companies' incentives to cut costs.

The effort that businesses put into making efficiency gains depends on their ability to profit from their decisions. In a regulatory setting where tariffs are periodically reset in line with costs, the extent to which the regulated business can profit from an efficiency gain depends on how quickly it expects the regulator to pass on the benefits of cost reductions to customers. By choosing to reset tariffs in line with costs at a time that it does not have to, the Commission is signalling that where it has discretion, it is likely to err in favour of passing the benefits of cost savings on to customers quickly. This will signal lower expected profits from any level of cost savings, and so reduce incentives for efficiency.

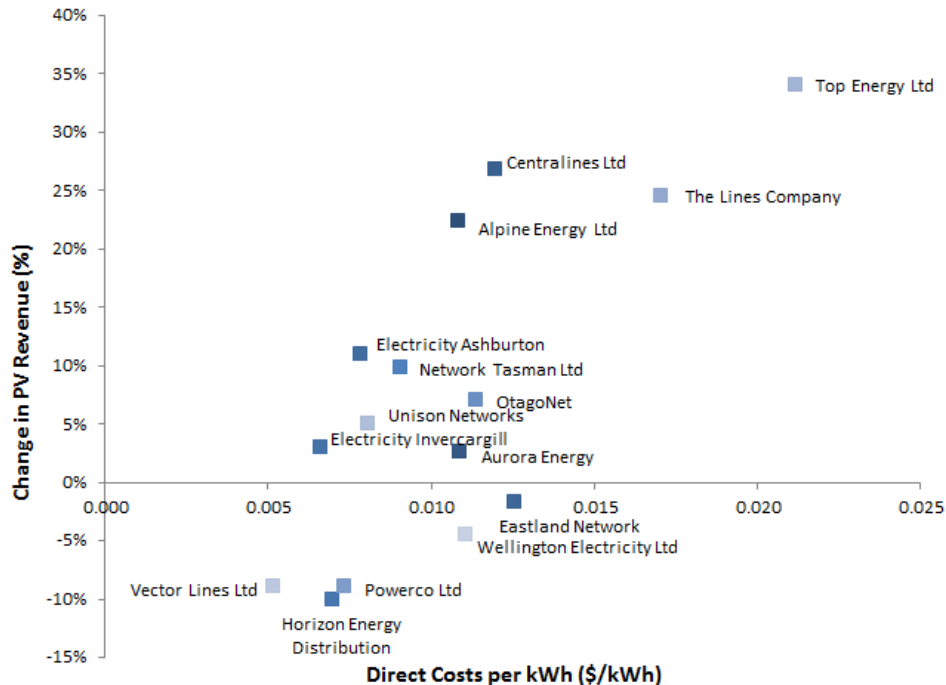
The Draft Decision also allows companies making returns below the estimated industry cost of capital to charge customers more. While the reasons for these results will vary—just as the reasons for EDBs earning above the industry WACC vary—some of these firms will be underperforming due to reasons of inefficiency. Allowing these firms to recover the costs of these inefficiencies will tend to engender complacency among company management by signalling that companies that are not able to control costs will have their profitability restored at the next tariff reset.

This precedent effect is damaging since the Act prohibits the Commission from taking into account comparative efficiency benchmarks when resetting prices. In the future, if the Commission wants to refuse tariff increases to those firms whose low profitability was a result of inefficiencies, it would have great difficulty due to the limits on its ability to actually assess which companies are efficient and which are not. By proceeding with the reset, the Commission runs the risk of creating an expectation that companies with higher costs will be rewarded with price increases. This outcome would clearly reduce incentives to control costs.

These incentive effects are not purely conceptual. Figure 3.1 looks at the direct costs incurred by EDBs in New Zealand (from 2010 information disclosures), and compares these costs to the price resets in the Commission's Draft Decision. In our view, the effect of the Commission's decision to reset the DPP may reward past decisions made by EDBs that increase costs, while punishing EDBs that have achieved efficiencies. For example, Powerco has been successful by achieving economies of scale in its business

and making good commercial decisions. The Commission’s draft decision weakens the incentives for EDBs to pursue these strategies compared to an approach of leaving the existing DPP in place.

**Figure 3.1: Relationship between Direct Costs and Proposed Price Adjustments**



Source: Data from 2010 Electricity Information Disclosures and Draft Decision.

Our argument is not that the Commission should never set prices by reference to a company’s costs. All successful regulatory systems that we are aware of periodically increase or decrease allowed prices, and reference costs when they do so. Setting prices by reference to cost inevitably blunts incentives for efficiency. This is the price that must be paid for the ability to pass efficiency gains on to customers, as well as to protect companies from uncontrollable cost increases. At those times when the Commission is required to reset tariffs, it would be standard regulatory procedure for the Commission to take a company’s costs into account. Indeed, the reference in the Act to setting the DPP with reference to actual and expected profitability clearly implies that the Commission may consider costs, since these are a key factor in profitability.

The point here is that the Commission is not required to reset the DPP now. It has the option of leaving in place the DPP that it issued just a year ago. By choosing to reset the DPP, the Commission may reduce incentives for efficiency by signalling that the Commission will bring tariffs into line with costs as quickly as possible.

**The Draft Decision is likely to reduce investment incentives**

In Section 2.2 we found that a reset DPP would not improve the incentives that EDBs have to invest. Companies that serve the majority of demand will receive a reduction in revenue (providing fewer incentives to invest in increasing the company’s assets), while the remaining companies could apply for a CPP if they have specific investment needs. We also consider that resetting the DPP may introduce new costs by undermining investment incentives.

Just as firms seek out efficiency gains to increase profits, firms look for investment opportunities that provide good returns to investors. The regulatory approach signalled in the Draft Decision removes any ability that EDBs have to profit from good investment decisions. As mentioned above, this will have particularly negative impacts on riskier investments with longer pay-off periods.

### 3.4 Conclusion on the Costs of Resetting the DPP

To evaluate the full impacts of the Draft Decision, the Commission should take into account the costs introduced by the decision to reset the DPP.

- The decision to reset the DPP now has significant costs. The process for making the Draft Decision introduces regulatory uncertainty through last minute changes to model inputs and unexpected swings in outcomes. EDBs will also have reduced incentives to improve their efficiency, and investment incentives will also reduce as EDBs factor in the risk of future regulatory decisions
- Any benefits of the reset need to be weighed against the likely costs of the decision. We have been unable to identify any significant benefits of the reset, and we therefore conclude that the costs imposed by resetting the DPP at this time will likely outweigh any benefits.

## 4 Has Consultation on the Financial Model been Adequate?

Castalia was asked to give its professional opinion on,

*“Whether the consultation process on the financial model used being used for the reset has provided the same degree of quality assurance and certainty found in comparable regulatory systems overseas”*

This is an important question, as the financial model is the tool which literally determines the Po adjustment for Powerco and other EDBs.

In this section we review the consultation processes carried out on the development of similar financial models to the Commission’s DPP reset model by regulators in Australia and the United Kingdom. We then benchmark international approaches against the process used by the Commission on the DPP reset model.

As this section shows, the process of translating methodologies into spread sheet models is far from risk free or mechanical. Therefore, consultation on the financial model is essential to achieving regulatory objectives of predictability, fairness, and quality decision-making. In our view, the consultation on the model has not yet been adequate to achieve these objectives. It certainly falls well short of the process used by experienced regulators in Australia and the United Kingdom.

This section finds that:

- **Translating written methodologies into a financial model is not a mechanical or low risk exercise.** Judgements are inevitably needed. Errors can creep in. These judgements can have implications in the tens or even hundreds of millions of dollars for the value of EDBs
- **High quality regulators in Australia and the United Kingdom consult on the financial model *before* using it to form draft decisions.** Understanding how important the financial model is to the quality and

predictability of regulatory decisions, high quality regulators internationally have developed thorough process for review and consultation on the financial models they use to make decisions

- **The Commission has not consulted on the financial model in the thorough and predictable way Australian and United Kingdom regulators do.** This has introduced risk into the regulatory reset methodology in way that is quite unnecessary and inimical to the objectives that the new Part 4 is trying to achieve
- **The Commission should consult on its financial model before taking a final reset decision.** It would be poor regulatory practice to reset the DPP using a model that is being adjusted in the heat of the battle over substantive matters of methodology and value worth tens or hundreds of millions of dollars to EDBs and consumers. Fortunately, since the Commission is still consulting, it has the opportunity to remedy the errors in the process so far by consulting on the financial model, as a stand-alone exercise.

The Commission's process has placed several EDBs (including Powerco) in the difficult position of engaging on material issues about the construction of the financial model in the context of a draft decision that signals a significant negative price adjustment. This is prejudicial: a draft decision is very different to an issues paper. Final and draft regulatory decisions should properly be about the exercise of the regulators discretion on matters of substance as to the level of efficient costs or the allowed rate of return, not on technical issues such as whether expenses are modelled at the beginning end or middle of the period.

#### **Has there been adequate consultation on the DPP reset methodology?**

Before examining the Commission's process for translating the regulatory methodology or framework into a financial model, we question whether the consultation on the methodology itself has been adequate. The relative lack of rigor in consultation over the DPP reset methodology stands in marked contrast to the painstaking consultation over the input methodologies. This comparative lack of robustness of the DPP reset methodology is likely to have contributed to the difficulties in translating it into a financial model. Translating a methodology into a model is doubly hard when the methodology is insufficiently detailed and key concepts are not widely understood or agreed by key stakeholders.

### **4.1 Translating Methodologies into a Financial Model is not a Mechanical Exercise**

Translating the regulatory framework—even when it has been agreed and finalised—into a financial model or models is not simply a mechanical task as appears to have been assumed by the Commission. The process involves a series of value judgements and assumptions by the regulator, and there is also the matter of getting the calculations correct in a model of potentially material size and complexity.

The key issue is that the value judgements and assumptions made by the regulator in building the financial model can and do have a material impact on the results produced from the modelling—the regulated revenue or prices are materially impacted. This section looks issues where judgements are needed and errors can occur in financial modelling. We divide the evidence of this issue into three categories:

- Issues that have emerged in the model used for the Powerco Draft Reset Decision

- Other issues that often emerge when translating regulatory principles into financial models
- Evidence from Australian regulatory practice of the complexity of the judgements involved.

### **Issues that have emerged in the model used for the Powerco Draft Reset Decision**

The four problems involving modelling judgements that are most clearly visible in the Commissions Draft DPP decision for Powerco are as follows:

- **Definitional problems.** Economic concepts such as Financial Capital Maintenance (FCM) are relatively broad, and there may be disagreement about exactly what these concepts mean and how they will be implemented through an exact formula. This issue is relevant to the model used in the Commission’s Draft Decision in the assumptions regarding the timing of cash flows. For example, the Draft Decision model assumes that capital expenditure occurs at the mid-point of the year.<sup>3</sup> This means that regulated businesses will incur expenditure for a period before they begin to receive a return. This will not preserve FCM. The model should make an allowance for working capital or change the timing assumptions so that expenditure occurs at the beginning of the period. The Draft Decision applies the Commission’s newly developed Input Methodologies to the previous methodology used to estimate the DPP. While there has been extensive consultation on the Input Methodologies, there has been far less consultation on its use to “update” the previous DPP methodology. This would create a risk that key concepts could be misapplied as a result of a lack of consultation and consensus amongst all stakeholders
- **Data problems.** A practical problem that arises in developing a model for a regulatory control period is the selection of a base year—year zero from which projections of future outcomes are made. The base year could be the estimated outcome of the current year, it could be the previous year for which audited financial data is available, or it could be some average of several years’ results. Whatever year is chosen, it may require adjustment for abnormal or one-off events. If estimates are used, the regulator also needs to decide whether to adjust calculated revenues or prices if actual results for the base year, when they become available, differ from the estimate. This issue is relevant to the Commission’s DPP reset because the Commission used data from the 2009/10 financial year as a base.<sup>4</sup> However, actual results for the 2010/11 financial year will soon become available through the Information Disclosures process. If these disclosures show materially different levels of financial performance than that implied by the Commission’s reset DPPs (which we understand is the case for Powerco), then the Commission is left with a regulatory approach that does not reflect reality and does not use the best available information.
- **Accounting problems.** While regulatory models tend to focus on cash flow and economic concepts, underlying accounting standards must also be recognised. The treatment of asset disposals in the DPP reset draft decision financial model does not appear to reflect accounting standards. The accounting standards are clear that where assets are disposed of, the remaining

---

<sup>3</sup> Appendix b, Paragraph B3(5) of the Draft Decision.

<sup>4</sup> Paragraph 131 and 132 of the Draft Decision.

written down value is expensed and the asset base is reduced by the same amount. The Commission's DPP model does not follow this, the treatment is that while the asset base is written down, the amount is not recognised as an expense. There is a similar accounting issue regarding the timing of capital expenditure. The model assumes that half of capital expenditure is commissioned at year end. This means that regulated businesses must incur expenditure for a period before they begin to receive a return—creating a funding gap. This gap occurs because accounting standards for recognising Finance During Construction (FDC) on capital expenditure generally only allow FDC for major capital projects with expenditures over several years. This means that financial models need to allow for working capital as a cost for capital projects that cannot claim FDC when they use timing assumptions different to capital expenditure incurred at the beginning of the year

- **Simplification problems.** The tools used for financial models have technical limitations, such as single period discounting. Given that each period represents a year, the regulator needs to make decisions on how to treat the timing of cash flows such as revenues, operating and maintenance expenses, capital expenditures, and taxation. These decisions can have a material impact on the results, and all treatments abstract from the actual timing of cash flows. There is, however, no single right approach. Most United Kingdom and Australian regulators assume that all cash flows occur at a single point in the year—either at the end or the midpoint—and make appropriate working capital allowances. An alternative approach commonly taken in modelling for valuation purposes is to carefully analyse the actual timing of each cash, and if necessary, separately model cash flows based on evidence from that detailed analysis. This issue arises in the model used in the Commissions Draft DPP reset, as the Commission has, between one consultation round and another, introduced a change in the assumed timing of cash flows.<sup>5</sup> The commission has also introduced *ad hoc* adjustments to the timing of some cash flows in what seems to be a partial attempt to produce the type of timing accuracy typically found in valuation models.<sup>6</sup> These apparently small changes are worth tens of millions of dollars to EDBs and their customers, but have not yet been consulted on, or tested for realism, accuracy, or appropriateness. Equally, related issues such as consistency between assumptions on cash flow timing and the amount of working capital allowed in a business's Regulatory Asset Base, have simply not been articulated by the Commission, or consulted on with stakeholders.

### **Other problems that often emerge and therefore warrant consultation**

Four other types of problems commonly emerge in regulatory modelling, and could have impacts on interests of one or more EDBs and customers. These potential problems provide further rationale for a thorough consultation on the model in its own right.

- **Structural problems.** Several decisions need to be made on the model's structure to address issues such as the treatment of inflation—whether the model is expressed in real or nominal terms. The impact of this decision is

---

<sup>5</sup> Draft Decision, paragraph 2.29.

<sup>6</sup> Draft Decision, paragraph 2.29 states “*However, this assumption ignores the fact that—due to seasonal factors—revenues are likely to be higher in the first half of the year than in the second half of the year. This provides a slight timing benefit in favour of EDBs. To offset this effect, and to improve the accuracy of our modelling overall, we have modelled tax costs as falling at the year-end (rather than throughout the year as would be likely in practice)*”.

significant in changing how inflation risk is allocated between the business and its customers

- **Treatment of taxation.** The regulator also needs to decide whether the model will calculate pre-tax or post-tax returns. If post-tax returns are used, the regulator also needs to decide whether nominal or effective tax rates will be used.
- **Computational problems.** Financial models can become very detailed and complex and should always be audited, verified, and stress tested to ensure computational accuracy. Tools such as Excel when used for financial modelling, lack capabilities such as version control and auditability of changes to formula and data
- **Circularity.** If the model is constructed on the basis of post-tax returns then inherently the calculations will be circular, and this must be designed for and accommodated in the model. The circularity arises as the allowed revenue must be increased to the extent of the tax expense and the increase in the allowed revenue also increases the tax expense.

### **Australian experience shows the complexity of the decisions involved**

To further illustrate the point that financial modelling decisions are not mechanical, consider what happened when the Australian Energy Regulator (AER) took over from IPART (the Independent Pricing and Access Regulatory Tribunal) the job of regulating the electricity distribution businesses in New South Wales. The handover took place in 2008. Both regulators used the same basic regulatory framework provided by the National Electricity Law and Rules (although there were some changes). And yet, modelling judgements and assumptions were changed.

The fact that two competent regulators applying much the same rules and methodologies made modelling judgements that are different in important respects shows how complex these judgements are. They are not obvious, mechanical, or inherently predictable, and therefore need to be consulted on.

The evidence comes from a 2009 research paper published by IPART. This paper compares the different financial models used by IPART and the AER. Figure 4.1, Figure 4.2 and Figure 4.3 (reproduced from the report) show significant differences between the detail of the model in the areas of building block components and asset roll forward assumptions. The tables highlight that most of the differences are due to different judgements made by the regulators about how broadly consistent regulatory approaches are translated into financial models—even when faced with essentially the same set of objectives and tasks.

**Figure 4.1: Comparison of AER and IPART Models—Building Block Components**

Building block components	In model		Comments on the difference in calculation
	AER	IPART	
Carry-over amounts	Yes	No	Inclusion of carry-over amounts for DNSPs is a requirement of the National Electricity Rules.
Benchmark tax liability	Yes	No	IPART does not include a benchmark tax liability because it is a pre-tax model.
Return on asset	Yes	Yes	The AER applies a nominal vanilla WACC to a nominal RAB and makes an adjustment for inflation in depreciation. IPART applies a real WACC to the RAB.  IPART adjusts the year-end value of return on assets by discounting it by a half-year pre-tax WACC.
Return of asset (depreciation)	Yes	Yes	The AER's model adjusts depreciation for inflationary gain. IPART adjusts the year-end value of depreciation by discounting it by a half-year pre-tax WACC.
Return on working capital	No	Yes	The AER excludes return on working capital due to its timing assumptions.
Opex	Yes	Yes	There are no fundamental differences in the treatment of opex. The AER adjusts for inflation because it is a nominal model.

Source: IPART, “Comparison of financial models – IPART and Australian Energy Regulator”, November 2009.

**Figure 4.2: Comparison of AER and IPART Models—Timing Assumptions**

	AER		IPART	
	Assumptions	Adjustments	Assumptions	Adjustments
Capex	Mid-year assumption	$\text{Capex} \times (1 + \text{real vanilla WACC})^{1/2}$	Mid-year assumption	$\text{Capex} \times 50\%$
Cost building blocks	Year-end assumption		Mid-year assumption	Mid-year value of depreciation and return on assets  Eg year-end depreciation / $(1 + \text{real pre-tax WACC})^{1/2}$  Return on working capital provided.

Source: IPART, “Comparison of financial models – IPART and Australian Energy Regulator”, November 2009.

**Figure 4.3: Comparison of AER and IPART Models—Asset Roll Forward Assumptions**

	<b>AER</b>	<b>IPART</b>
RAB roll forward to the start of the new determination period	Opening RAB = closing RAB of previous year + actual capex (WACC adjusted) net of capital contributions and disposals -actual straight line depreciation +indexation on opening RAB + adjustment for the difference between actual and forecast net capex in year before start of existing determination	Opening RAB = closing RAB of previous year + actual capex net of capital contributions - actual disposals - allowed depreciation (adjusted for inflation) + indexation on opening RAB plus 50% of capex and disposals
Forecast real RAB	Opening real RAB = closing real RAB of previous year -real straight line depreciation of opening RAB + real capex (WACC adjusted) net of capital contributions and disposals	Opening real RAB = closing real RAB of previous year - real straight line depreciation of opening RAB , 50% of capex and 50% of disposals + real capex net of capital contributions - real disposals
Forecast nominal RAB	Opening nominal RAB = closing nominal RAB of previous year -nominal straight line depreciation + nominal capex (WACC adjusted) net of capital contributions and disposals + indexation on opening RAB	Opening nominal RAB = closing nominal RAB of previous year - nominal straight line depreciation + nominal capex net of capital contributions - nominal disposals + indexation on opening RAB plus 50% of capex and disposals

Source: IPART, “Comparison of financial models – IPART and Australian Energy Regulator”, November 2009.

These differences highlight that there are considerable opportunities for regulatory judgements to diverge when it comes to translating regulatory methodologies into financial models. Clearly, the design of the financial model is an important driver of regulatory outcomes, and something that needs to be consulted on, if predictability and quality are to be achieved.

## **4.2 Regulators in Australia and the United Kingdom Consult on the Financial Model**

Experienced regulators in Australia and the United Kingdom understand the judgements and risks involved in the development of financial models. They therefore consult on them before using them. This section outlines:

- Why experienced regulators consult on their financial models before using them for making even draft decisions
- How Australian and United Kingdom regulators have consulted on financial models

- A synthesised best practice regulatory approach to consultation on financial models.

### **Why experienced regulators consult on financial models before using them**

The analysis above shows that translating high level regulatory principles into financial models involves many regulatory judgements, assumptions, and simplifications. To ensure regulatory certainty and consistency, these judgements, assumptions, and simplifications need to be made through an open and transparent process that gives affected parties an opportunity to contribute to model development. The model also needs to be accompanied by appropriate reasons or justifications for the decisions made to allow businesses to fully understand the judgements and respond.

The Commission may feel that it has been consulting on the financial model. It has, after all, published the financial model used in reaching its Draft Decision, and has asked for comments on the model in the context of asking for comments on the Draft Decision. However, as we show below, experienced regulators consult on the model **before** using it to make draft decisions. There is a world of difference between consulting on a model in and of itself, and consulting on a model in the context of trying to influence a draft decision that could transfer tens or hundreds of millions of dollars in value from one group of stakeholders to another.

Consulting on material issues about the construction of the financial model in the context of a draft decision is certain to conflate “model issues” with “decision issues”. As a result it will be difficult to separate the arguments for a change in the model specification from the arguments for reconsidering the exercise of regulatory discretion. It will be difficult for the regulator—having announced a substantial price change—to subsequently announce a materially different change due to “technical errors in a computer model”. A draft decision implies that the regulator’s mind is at least partly made up.

Consultations, submissions, and discussion on financial models is best carried out by parties with an open mind, away from the more prejudicial environment of a draft, or worse still, a final decision.

### **How Australian and United Kingdom regulators have consulted on financial models**

This section reviews the practices of the Australian Energy Regulator (AER), the Australian Competition and Consumer Commission (ACCC), and Ofgem and Ofwat in the United Kingdom. All of these regulators consult separately on the financial models before releasing a price determination, and the consultation process routinely resolves issues that could not have been as successfully addressed in the context of a decision on prices or revenues.

#### ***Australian Energy Regulator***

The AER is responsible for the economic regulation of distribution network service providers (DNSPs) in the Australian National Electricity Market in accordance with the National Electricity Law (NEL) and the National Electricity Rules (NER).

The NEL empowered the AER to undertake economic regulation of DNSPs in January 2008, replacing a number of stated-based regulators and regulatory regimes.

At the same time, the NEL and the initial NER required the AER to develop the following models and schemes within six months of January 2008:

- A post-tax revenue model (PTRM)—NER Section 6.4.1(c)

- A roll forward model (RFM)—NER Section 6.5.1(b)
- Cost allocation guidelines—NER Section 6.15.3
- An efficiency benefit sharing scheme—NER Section 6.5.8
- A service target performance incentive scheme—NER Section 6.6.2.

In developing these models and schemes, the AER was required to follow a consultation process set out in Section 6.16 of the NER, which requires the AER to:

- Publish the proposed model or scheme
- Publish an explanatory statement that sets the reasons for the proposed model or scheme
- Invite written submissions on the proposed model or scheme and allow 30 business days for the making of submissions
- Publish such issues, consultation and discussion papers, and hold such conferences and information sessions, in relation to the proposed model or scheme as it considers appropriate, and
- Make a final decision on the proposed model or scheme within 80 business days of publishing the proposed model or scheme.

These legislative requirements mean that the AER must develop, consult, and finalise a number of financial models and incentive schemes before completing any price determinations. In the final determination the AER must publish:

- The final model or scheme
- The reasons for the final decision
- A summary of material issues raised in submissions and its response to those issues.

The AER has applied this consultation process in its first price determinations for Australian electricity distributors. In late 2007, the AER released an issues paper on the schemes and models that it was required to develop and invited written submission from stakeholders.<sup>7</sup> In early 2008, the AER released the proposed schemes and models, held public forums to receive comments from stakeholders, and invited written submissions.<sup>8</sup> In June 2008, the AER published its final decisions on the schemes and models, with reasons and analysis of stakeholder comments.<sup>9</sup>

For each of the schemes and models, the AER released the financial model, an explanatory statement, and a user manual before issuing any determinations. During these consultation processes, the following issues were raised and resolved in the finalised model:

- **Cash Flow Timing.** As in the DPP reset model, cash flow timing attracted much comment from stakeholders. In the final model, revenue and expenditure were assumed to occur at the end of the year for “administrative simplicity” as since they largely offset each other, consistency of treatment is

---

<sup>7</sup> “Guidelines, models and schemes for electricity distribution network service providers”, AER, November 2007 and submissions at <http://www.aer.gov.au/content/index.phtml/itemId/717527>.

<sup>8</sup> “Proposed PTRM explanatory statement”, AER, April 2008 and submissions at <http://www.aer.gov.au/content/index.phtml/itemId/728425>.

<sup>9</sup> “Final decision: Electricity distribution network service providers: Post tax revenue model”, June 2008.

conceptually correct. Capital expenditure was assumed to occur at the mid-point of the year because to assume an end of year would require an allowance for working capital. A partially as-incurred (or hybrid) approach for recognising capital was adopted. Return **on** capital is calculated based on recognising capex on an as-incurred basis and return **of** capital is calculated based on recognising capex on an as-commissioned basis. Under this approach, DNSPs receive revenue for the cost of funding capital expenditure—the mid-point of the year—but do not receive revenue recovering the cost of assets through depreciation before they contribute to service delivery<sup>10</sup>

- **Asset classes.** The model was expanded to accommodate 30 asset classes to respond to stakeholder concerns about possible inaccuracies in depreciation and remaining useful asset lives<sup>11</sup>
- **Separation of RAB values.** The AER clarified RAB values where assets are used to provide services that are regulated under more than one form of price control (such as gas distribution)<sup>12</sup>
- **Calculation of opening tax values.** This issue arises in transitioning from a pre-tax revenue framework;<sup>13</sup> and
- **Minor modelling errors.** As a result of the consultation, unused cell names were removed and minor calculation errors corrected.<sup>14</sup>

The need to resolve these issues highlights the importance of consulting on the financial model separately from any price determination.

### ***Australian Competition and Consumer Commission***

The ACCC is the Australian general competition regulator, and also has responsibility for regulating access to telecommunication networks. In its role as telecommunications access regulator, the ACCC has developed a number of models used to calculate charges for accessing fixed line networks and providing mobile termination services.

These are complex models. The fixed line access model calculates the cost of constructing and operating a hypothetical greenfields fixed line network, using geospatial data for every existing connection to the network. The ACCC carried out an extensive industry consultation process on the model, releasing an issues paper in December 2008 calling for submissions. In June 2009 the ACCC held a workshop on the model as updated as a result of the submissions. The model was finalised in July 2009. The ACCC then issued a draft Review of Fixed Line Wholesale Service Pricing, a report in August 2009 using the model, and a final report in December 2009.

Similarly, a mobile termination cost model was released in draft form in January 2007 for industry consultation, and was finalised after extensive stakeholder input in June 2007 before being used in the draft mobile termination charges determination in June 2007 and the final determination in December 2007.

---

<sup>10</sup> Section 5.1, “Final Decision: Post Tax Revenue Model”, AER, June 2008.

<sup>11</sup> Section 5.2, “Final Decision: Post Tax Revenue Model”, AER, June 2008.

<sup>12</sup> Section 5.3, “Final Decision: Post Tax Revenue Model”, AER, June 2008.

<sup>13</sup> Section 5.3, “Final Decision: Post Tax Revenue Model”, AER, June 2008.

<sup>14</sup> Section 5.3, “Final Decision: Post Tax Revenue Model”, AER, June 2008.

For both these two ACCC examples, the model consultation occurred and the model was finalised prior to a draft determination—that is the draft and final determination process used a consulted on and finalised model.

### ***Ofgem***

The Office of Gas and Electricity Markets (Ofgem) is responsible for regulating monopoly companies that own and operate the gas and electricity networks in the United Kingdom.

In the current price review for the period 1 April 2010 to 31 March 2015 (DPCR5), a finalised model was released in August 2009, at the same time as the Ofgem draft decision—the initial proposals in their terminology. The model was accompanied by an audit certification from an accounting firm that the model was computational correct and followed the regulatory methodology. The model was used in the final determination—the final proposals in December 2009.<sup>15</sup>

The Ofgem regulatory approach is slightly different to regulators such as the AER and the Commerce Commission. The regulatory methodology is substantially more detailed and contains very specific formulae for such things as incentive schemes and forecasts of operating and capital expenditure based on past history and applying regression analysis. The level of detail is such that it blurs the distinction between a high level methodology and a low level model. This is exacerbated by the network businesses submitting their business plans—that is their view of their costs over the regulatory control period in templates that are part of the Ofgem models.

A consequence of this approach is that consultation takes place on specific “components” of the financial model during the development of the methodology. The audit certification provides the assurance that the final complete model represents the sum of the agreed components.

### ***Ofwat***

The Water Services Regulation Authority (Ofwat) is the economic regulator of the water industry in England and Wales. Ofwat has completed price reviews every five years since 1994.

In preparation for the 2004 price review, Ofwat released a new financial model (known as Aquarius 3) in May 2003.<sup>16</sup> Regulated businesses were informed that the financial model would be used for the final price determination in late 2004. The model was accompanied by a user manual, and a rule book. Workshops were held with water companies in April 2003 to update them on the changes since the previous release of the financial model in November 2002.

In the 2004 price determination process, industry consultation on the Aquarius model occurred in advance of the draft determinations. Ofwat specifically acknowledged that regulated businesses would require a software (model) update, based on those consultations, at least two weeks prior to the draft determination being released. These last minute updates were minor.

In the 2009 review, the financial model used was different from that used in the 2004 review. The new model was finalised in July 2009 ahead of a final determination of price limits in November 2009. Consultation on the model, which the businesses used to

---

<sup>15</sup> “Distribution Price Control Review 5 (DPCR5)”, Ofgem, <http://www.ofgem.gov.uk/Networks/ElecDist/PriceCtrls/DPCR5/Pages/DPCR5.aspx> .

<sup>16</sup> “Price review 2004”, Ofwat, <http://www.ofwat.gov.uk/pricereview/pr04/> .

submit their draft proposals—that is their business plans—occurred prior to the draft determination.<sup>17</sup>

The models used in the 2004 and 2009 reviews were both formally audited by an independent accounting firm, with the auditors certifying that they both complied with the published framework for the review and that proper accounting principles had been followed.

### **Summary of best practice approach to consultation on financial model**

In this section we propose seven key steps that make up best practice regulatory process for developing and finalising a financial model. These are:

1. **Finalizing the regulatory methodologies** (such as building blocks or input methodologies)
2. **Creating a draft model** that reflects these regulatory approaches, and make it freely available with indicative data and with explanatory material, user manuals, and model audit reports
3. **Consulting with industry and other stakeholders** on the detail of the model. Interactive workshops and user groups are particularly useful in ensuring understanding of the model and getting good feedback
4. **Setting up a formal change control or version control process** so that all changes are logged and a defined current version of the model exists
5. **Revising the draft model** to reflect the results of consultations, if necessary through several iterations
6. **Getting an independent audit** of the model to certify that it complies with the regulatory methodologies, accounting standards, and is error free
7. **Finalizing and locking the model.** The final decision on the model should highlight material points raised in the feedback and submissions. It should also give the reasons and analysis underpinning decisions made in the final model. The model itself, and the independent audit, should be made available before the regulator starts to prepare its Draft Decision, and should not subsequently be changed.

At the end of this process, the finalised model may safely be used in reaching a draft decision.

### **4.3 The Commission has not yet Adequately Consulted on the Financial Model**

In resetting DPPs the Commission has followed a process of developing and changing the model during a price determination. When regulators release a draft decision it indicates their view on the matters at hand and—to some extent—indicates that they have at least partially made up their mind. This is a quite different environment to an issues paper where the regulator has an open mind and is seeking views from stakeholders. This is not a best practice consultation approach that is designed to aid regulatory certainty and predictability.

In this section, we benchmark the Commission’s approach against the synthesis of international best practice outlined above—showing where the Commission’s approach aligns with international best practice, and where it differs.

---

<sup>17</sup> “Price review 2009”, Ofwat, <http://www.ofwat.gov.uk/pricereview/pr09faqs>.

**Table 4.1: Comparison of International Best Practice and the Commission’s DPP Reset Process**

Best Practice	Commission DPP Reset
Finalise Methodologies	Input Methodologies finalised after extensive consultation. Less consultation on application of input methodologies to DPP reset leaves a question mark that the methodology is sufficiently developed
Create Draft Model before any draft decisions	Model first available in draft form at time of draft decision with significant and not consulted on changes from version accompanying Update Paper
Consult on Model	No separate consultation on model, combined with consultation of draft decision
Version control process	Model available on website, no history of changes since first released in Update Paper, model revised during draft decision consultation process
Revise draft model in response to submissions	Changes made, but during draft decision consultation period. No formal Commission decision on these changes apparent
Independent audit	Assurance that the model has been “checked”. No independent certification that the model conforms to the methodology or is computationally correct
Finalise the model before use in draft decisions	Model to be finalised at time of final decision. Only mechanism for consultation on final model is through an appeals process

#### **4.4 The Commission should consult on its Financial Model before taking any Reset Decision**

Our analysis suggests that the Commission has not yet been sufficiently alert to the important judgements involved in translating regulatory methodologies into a financial model. As a result, the Commission has not followed international good practice and consulted on the financial model before making its Draft Decision. The inevitable result is to introduce unpredictability and increase the risk of error in the decision. This is a concern, since the financial model is the very thing that determines the price reset. If the process that governs decisions on the financial model is flawed, then it follows that reset decisions using that model will likely be flawed too.

The actual Po adjustment proposed for PowerCo and other EDBs in the Draft Decision is **not** a direct product of the principles and methods set out on paper by the Commission. Rather, it is a direct product of the numbers input by the Commission in its financial model, and the calculations carried out in Excel by that financial model.

As this section has shown, the translation of words on paper into accounting numbers and Excel calculations is far from a mechanical exercise. Many judgements are needed, the judgements are not obvious, and errors can slip in. It is for this reason that regulators in Australia and the United Kingdom consult on the financial model itself.

We find that so far the Commission has been co-developing the model, the reset methodology, and the draft Po adjustments for each company. This stands in contrast to Australia and the United Kingdom, where the rule is to develop the reset methodology and the model first, consult on these, and then when they are sound, prepare draft

decisions. The approach taken by the Commission in New Zealand has therefore not achieved the level of quality assurance and predictability found in the other jurisdictions we surveyed.

In practical terms, the failure to follow good practice in consulting on the financial model so far means that EDBs, their owners, and customers, have not had an opportunity to understand the model and comment on the structure before the draft price determination was made. The process also did not allow EDBs to understand how changes in parameters flow into regulated prices or quality standards in a predictable way.

The Commission is of course still consulting, and has not yet made its decision. The Commission therefore has the opportunity to correct these flaws, and could do so by publishing the financial model it intends to use to make any DPP reset decision, and consulting on it.

To correct flaws in the process so far, the Commission should:

- Prepare another draft of its financial model in response to comments received from PowerCo and other stakeholders
- Have that model independently audited, to certify that it complies with the regulatory methodologies, accounting standards, and is error free
- Issue the model for a further round of consultation
- Finalize the model and lock it
- Retake its decision using the finalised model.



T: +1 (202) 466-6790  
F: +1 (202) 466-6797  
1700 K Street NW Suite 410  
WASHINGTON DC 20006  
United States of America

T: +61 (2) 9231 6862  
F: +61 (2) 9231 3847  
36 – 38 Young Street  
SYDNEY NSW 2000  
Australia

T: +64 (4) 913 2800  
F: +64 (4) 913 2808  
Level 2, 88 The Terrace  
PO Box 10-225  
WELLINGTON 6143  
New Zealand

T: +33 (1) 45 27 24 55  
F: +33 (1) 45 20 17 69  
7 Rue Claude Chahu  
PARIS 75116  
France

----- [www.castalia-advisors.com](http://www.castalia-advisors.com)