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# **Default Price-Quality Path Starting Price Adjustments**

## A Report for Wellington Electricity



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## 1. Introduction

This report has been jointly prepared by Greg Houston and Hayden Green, Director and Senior Consultant, respectively, of NERA Economic Consulting (NERA), at the request of Wellington Electricity Lines Limited (Wellington Electricity).

### 1.1. Qualifications

Greg Houston is head of NERA's Australian operations, based in Sydney. Greg has a Bachelor of Science with First Class Honours in Economics from the University of Canterbury. He has over twenty years' experience in the economic analysis of markets and the provision of expert advice in litigation, business strategy, and policy contexts. Greg has particular depth of experience of the economic issues arising from the regulation of network infrastructure service providers, having directed a wide range of assignments in this area since joining NERA in 1989.

Hayden Green joined NERA's Sydney office in 2003. He has a Bachelor of Commerce with First Class Honours in Economics, a Bachelor of Commerce majoring in Economics and a Bachelor of Laws with Honours from the University of Auckland. Since joining NERA, Hayden has provided advice on a wide range of competition and regulatory economics assignments. He has particular depth of experience of the economic issues arising from the regulation of electricity distribution and transmission services, having undertaken myriad assignments involving such matters in Australia and New Zealand.

### 1.2. Purpose of Report

The subject of this report is the methodology proposed by the Commerce Commission (Commission) for adjusting electricity distribution businesses' (EDBs') starting prices under the default price-quality path (DPP) as set out in its recent Update Paper<sup>1</sup>. Specifically, we have been asked to:

1. review and critique the Commission's proposed methodology for adjusting starting prices under section 53P of the Commerce Act 1986;
2. advise on whether the Commission's proposed approach is:
  - (a) supported by the views articulated by the Commission in its Update Paper; and
  - (b) consistent with the principles set out in Part 4 of the *Commerce Act 1986*; and
3. outline modifications to the Commission's methodology which would enable it to conform to the requirements of Part 4 of the *Commerce Act 1986* and achieve the objectives of this regulatory regime.

The remainder of this report is structured as follows:

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<sup>1</sup> Commerce Commission, *2010-15 Default Price-Quality Path Starting Price Adjustments and Other Amendments: Update Paper*, April 2011 (hereafter: 'Update Paper').

- § **section two** provides an overview of the Commission’s decision contained in its Update Paper and the relevant background, including the applicable legislative requirements;
- § **section three** considers whether the Commission’s approach will result in starting prices for the DPP that are biased in favour of EDBs and so will accommodate suppliers in a reasonable range of circumstances;
- § **section four** proposes a modification to the Commission’s approach – the adoption of an ‘asymmetric returns band’ – that, in our opinion, would produce a methodology that better meets the purpose of the regime; and
- § **section five** concludes.

## 2. Background

This section summarises the Commission's decision on starting prices under the DPP as set out in its Update Paper. We begin by providing an overview of economic elements of the legislative framework underpinning that decision.

### 2.1. Legislative Framework

The *Commerce Act 1986* (the Act) requires the Commission to define a DPP that is to be applied to all 'non-exempt' EDBs, including Wellington Electricity. To do so, it must make two key decisions, ie:

- § the amount by which EDBs will be allowed to increase their prices under the DPP in each year of the relevant period, ie, the rate of change in prices; and
- § the starting prices that are to apply at the outset of the DPP period and the amount by which EDBs must consequently adjust their prices, ie, starting price adjustments.

The Act provides relatively clear guidance as to how the Commission must go about each of these tasks. The rate of change in prices is to be based on a CPI-X price path, where X is based on the long-run average productivity improvement by either or both of suppliers in New Zealand and suppliers in other comparable countries (s.53P(5)). Starting prices must be either:

- § the prices that applied at the end of the preceding regulatory period (s.53P(3)(a)); or
- § prices based on the current and projected profitability of each supplier (s.53P(3)(b)).

The Commission's decisions must ultimately be guided by the legislative purpose statement, ie, to promote the long-term benefit of consumers in markets by promoting outcomes that are consistent with those produced in workably competitive markets such that suppliers (amongst other things):

- § have incentives to innovate and to invest, including in replacement, upgraded, and new assets (s.52A(1)(a));
- § have incentives to improve efficiency and provide services at a quality that reflects consumer demands (s.52A(1)(b));
- § share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices (s.52(1)(c)); and
- § are limited in their ability to extract excessive profits (s.52A(1)(d)).

Against this legislative background, the following section summarises the Commission's proposed methodology for setting starting prices under the DPP, as set out in its recent Update Paper. It also highlights some important changes from the methodologies that the Commission had articulated in previous papers on this topic.

## 2.2. Commission's Decision on Starting Prices

The Commission has indicated its intention to base starting prices for the DPP on EDBs' *current and projected profitability*, rather than to maintain the prices from the preceding period.<sup>2</sup> It has released several papers describing its intended approach to setting starting prices. Although there were some changes along the way, until the Update Paper its proposed approach had involved:

- § estimating each EDB's historical return on investment (ROI) relative to the 75<sup>th</sup> percentile of the vanilla weighted average cost of capital (WACC) estimate; and
- § establishing a 'returns band' around the WACC point estimate, such that starting price adjustments would only be contemplated for those EDBs that fell outside that band.

However, the Update Paper sets out a significantly different methodology. Specifically, the Commission is now proposing:

- § to estimate each EDB's historical return on investment (ROI) relative to the 75<sup>th</sup> percentile of the WACC estimate;
- § to forecast each EDB's depreciation profile over the term of the DPP and various 'industry-wide trends', ie, demand growth, nominal operating and capital expenditure growth, and the rate of change in the consumer price index (CPI); and
- § to estimate the starting price adjustments that would be needed to deliver 'normal returns' (as defined by the 75<sup>th</sup> percentile of the WACC) over the period, given the current firm-specific ROIs, each EDBs' forecast depreciation and the projected industry-wide trends.

Importantly, the Commission has abandoned the concept of a 'returns band', which had been a prominent feature of all previous incarnations of its methodology. It contends that comparing suppliers' (or, more accurately, industry-wide) forecast profitability with the 75<sup>th</sup> percentile of the estimated WACC range will produce starting price adjustments that are 'biased in favour of suppliers', obviating the need for a band.<sup>3</sup> It states that:<sup>4</sup>

'[T]he proposed approach does not need to provide further bias in favour of suppliers, by providing for uncertainty in profitability forecasts. In the situation that the DPP was not appropriate for a supplier, it may apply for a CPP.'

The Commission also reasons that its methodology will result in starting prices under the DPP that are 'set at a level that accommodates a reasonable range of circumstances that are comparable for each supplier'.<sup>5</sup> Presumably, the Commission's expectation is that this will limit the number of EDBs that are forced to apply for a customised price path (CPP).

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<sup>2</sup> A decision on the applicable *rate of change in prices* was ostensibly made some time ago. On 30 November 2009, the Commission published a decision that, amongst other things, set the rate of change in prices under the 2010-2015 DPP at CPI-0%, ie, it determined that the long-run industry-wide productivity estimate was not different from that in the wider economy.

<sup>3</sup> Update Paper, para 2.27.

<sup>4</sup> *Ibid.*

<sup>5</sup> Update Paper, para 2.26.

### 2.3. Summary

The Commission's overall rationale for its methodology for setting starting prices under the DPP – including its decision to abandon the concept of a returns band – can be summarised as follows:

- § there is an *intrinsic upward bias* in the regulatory WACC that can be expected to result in more favourable starting price adjustments for EDBs, ie, price reductions that are smaller than they would be otherwise (and vice versa); and
- § its methodology, combined with the use of the 75<sup>th</sup> percentile WACC estimate, will accommodate EDBs *in a reasonable range of circumstances* and those suppliers for which the DPP is not appropriate may apply for a CPP.

In the following sections we consider whether this rationale is robust from an economic perspective and, to the extent it is not, whether any modifications to that methodology may be warranted.

### 3. Assessment of Commission's Approach

This section considers whether the Commission is correct to contend that use of the 75<sup>th</sup> percentile WACC estimate will result in starting prices for the DPP that are 'biased in favour of suppliers' and will 'accommodate suppliers in a reasonable range of circumstances'. For the reasons set out below, in our opinion, it is not.

#### 3.1. Absence of Upward Bias

The Commission suggests in its Update Paper that there is an upward bias in the regulatory WACC that can be expected to result in more favourable DPP starting price adjustments for EDBs than would otherwise be the case.<sup>6</sup> In our opinion, that is not so. Of course, it would be correct to observe that use of the 75<sup>th</sup> percentile of the estimated WACC range will result in starting prices that are higher than would be the case if, say, the 50<sup>th</sup> or 25<sup>th</sup> percentile was adopted. However, were it to be made, such an observation would not be relevant.

The Commission's decision to select the 75<sup>th</sup> percentile was informed by a number of considerations, all of which related to the prospect for various errors to arise when estimating the WACC. The potential for such errors arises because one cannot observe the true cost of capital, or its components.<sup>7</sup> The potential risks that the Commission took into consideration in its deliberations included:<sup>8</sup>

- § the risk that the true (but unobservable) WACC was above the estimated mid-point (50<sup>th</sup> percentile) WACC;
- § the risk that the capital asset pricing model (CAPM) and the simplified Brennan-Lally CAPM (from which the Commission's estimate was derived) may under-estimate the returns on low-beta stocks;
- § the risk that the simplified Brennan-Lally CAPM may lead to higher estimates of the cost of capital than the International CAPM would for international investors; and
- § the risk of error in estimating individual parameters of the simplified Brennan-Lally CAPM, including the asset beta and the tax adjusted market risk premium.

At no stage did the Commission consider making further allowance in the regulatory WACC for *other factors* that may affect price-quality paths and so EDBs' profitability, such as:

- § the risk that the operating and capital cost forecasts underpinning a price-quality path (either the DPP or a CPP) might turn out to be wrong;
- § the risk that the revenue forecast underpinning a price-quality path (again, either the DPP or a CPP) might turn out to be wrong;

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<sup>6</sup> *Ibid.*

<sup>7</sup> Commerce Commission, *Input Methodologies (EDBs & GPBs) Reasons Paper*, 22 December 2010, para H11.6 (hereafter: 'Reasons Paper').

<sup>8</sup> Reasons Paper, para 6.7.11.

- § the risks arising from exogenous events such as extreme weather and natural disasters (the recent events in Christchurch being an obvious example), which would give rise to the forecasting errors described above; and
- § the risk of errors or inaccuracies in the myriad other variables intrinsic to price-quality paths, including regulatory asset values, depreciation and regulatory tax allowances, and CPI forecasts.

The Commission's selection of the 75<sup>th</sup> percentile of the WACC range was therefore motivated solely by its desire to arrive at an appropriate value for the regulatory WACC, given the uncertainties *intrinsic in the estimation of the WACC itself*.<sup>9</sup> It was not intended to compensate for *other sources of risk and uncertainty* that might affect price-quality paths, such as the potential for error when forecasting cost and revenues. This is reinforced by the fact that the 75<sup>th</sup> percentile is adopted *for both the DPP and for CPPs*, since:

- § the use of *industry-wide* cost and revenue growth forecasts under the DPP will mean that supplier-specific circumstances will not be as well reflected as under a CPP, as the Commission acknowledges;<sup>10</sup> and
- § the industry-wide forecasts underpinning the DPP are therefore *more likely to be wrong for a particular EDB* than the firm-specific forecasts that would be applied to the same supplier under a CPP.

It follows that if the WACC was indeed intended to compensate for uncertainties in cost and revenue forecasts underpinning price-quality paths<sup>11</sup> one might expect the WACC point estimate for the DPP to be *higher* than for a CPP. But it is not. The clear implication is that the 75<sup>th</sup> percentile estimate represents the Commission's best estimate of the regulatory WACC that is required *under the DPP and a CPP* in order to meet the applicable legislative requirements. In the Commission's words:<sup>12</sup>

‘In balancing the risk between setting the WACC too high or too low, the Commission assessed the consequences of possible errors ... Incentives for dynamic efficiency can have significant benefits for consumers over the long term, and so it is important to preserve incentives to invest and innovate. Accordingly, this consideration is given greater weight than limiting suppliers' ability to extract excessive profits. Weighing the arguments, and having regard to the Part 4 Purpose, and in particular, that there are incentives for EDBs, GPBs, and Transpower to invest and innovate, the Commission adopts the 75<sup>th</sup> percentile estimate of the cost of capital as the cost of capital for price-quality regulation.’

Put another way, the 75<sup>th</sup> percentile point estimate of the WACC range ostensibly represents the Commission's best estimate of what is required for an EDB to attract capital and to invest efficiently and, by implication, to earn a normal economic profit. Use of the 75<sup>th</sup> percentile

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<sup>9</sup> Reasons Paper, para H11.6.

<sup>10</sup> See: Update Paper, para 2.24.

<sup>11</sup> In addition to model error in the estimation of the WACC itself, for which the selection of the 75<sup>th</sup> percentile clearly was intended to address.

<sup>12</sup> Reasons Paper, paras 6.7.10 and 6.7.12.

therefore *does not* introduce an upward bias in the WACC estimate in the manner suggested by the Commission in its Update Paper.

In particular, there can be no assumption that there is 'headroom' in the WACC estimate that would allow an EDB to earn returns below this level while still recovering its true cost of capital and retaining incentives to invest efficiently. Rather, the Commission could *not* be confident that a supplier in such a position would be able to achieve these outcomes, and to advance the long term interests of consumers, consistent with the legislative purpose statement. Indeed, if it could, the Commission would presumably have established a lower WACC.

The Commission's mischaracterisation of the regulatory WACC undermines several of the important propositions underpinning its methodology. This error then contributes to two particular problems with that methodology that we describe in the following two sections.

### 3.2. Insufficient Consideration of Projected Profitability

The Act requires starting prices under the DPP to be either the prices that applied at the end of the preceding regulatory period (s.53P(3)(a)) or prices based on the current and projected profitability of each supplier (s.53P(3)(b)). The Commission's methodology does not appear to give effect to *either* option. Although it *does* take into account the *current* profitability of each supplier, it does not account for supplier-specific *projected* profitability. Instead, the Commission proposes that:<sup>13</sup>

'[G]iven the common rate of change, starting prices be set at a level that accommodates a reasonable range of circumstances that are comparable for each supplier. Under this approach, each supplier's costs over the regulatory period would be modelled by applying input methodologies, to the extent practicable, *alongside assumptions around future movements in capital expenditure, operating expenditure and demand.*' [Emphasis added]

Importantly, the Commission's assumptions about projected movements in costs and demand, and so *projected profitability*, are at an *industry-wide level*. Specifically, its preliminary industry-wide growth rate assumptions are real revenue growth of 1.5 per cent per annum, nominal capital and operating cost growth of 3.3 and 3.8 per cent per annum, respectively, and CPI inflation of 2.3 per cent per annum.<sup>14</sup> These rates are then used (amongst other factors) to calculate a starting price for each EDB, *regardless of their particular circumstances*. These arrangements give rise to two critical observations:

- § first, these forecasts will not, in most cases, reflect the projected profitability of *individual EDBs*, since they are averages across the whole industry, ie:
- some EDBs may have *lower than average* forecast real revenue growth and *higher than average* forecast costs;

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<sup>13</sup> Update Paper, para 2.26.

<sup>14</sup> Update Paper, para X.15.

- any such EDBs will consequently have a forecast *actual* rate of change in projected profits that is *below* that implied by the industry-wide forecasts; and
- EDBs with *lower than average* forecast real revenue growth and *higher than average* forecast costs will find themselves in the opposite position, ie, with a forecast *actual* rate of change in projected profits that is *above* that implied by the industry-wide forecasts; and

§ second, we explain further in section 3.3 that, because there is no intrinsic upward bias in the regulatory WACC, this means that:

- there is no allowance in the WACC that can be relied upon to compensate for any outturn divergences in individual suppliers' projected profitability – the WACC was simply not set with this objective in mind (as we explain in section 3.1 above); and
- those businesses with a forecast *actual* rate of change in their projected profits that is *below* that implied by the industry-wide forecasts cannot be expected to attract capital, to invest efficiently and to earn a normal economic profit.

The problem with the Commission's approach is that s.53P(3)(b) refers explicitly to starting price adjustments that are based on the current and (most importantly) projected profitability *of each supplier*. Although the Commission's methodology does consider *industry-wide* projected profitability, it does *not* make any allowance (including through the regulatory WACC) for *each supplier's* projected profitability. For this reason, the methodology appears not to meet the requirements of the Act.

In section 4 we suggest a modification to the Commission's proposed approach that *would* allow supplier-specific profitability to be taken into account, so as to ensure consistency with the governing legislation. This revision would also address the second problem with the Commission's methodology, which we describe below.

### 3.3. Risk of Proliferation of CPP Applications

The previous two sections have established that there is no upward bias in the regulatory WACC and that the Commission's methodology does not make any allowance for the divergence in the projected profitability of individual suppliers. A consequence of these two factors is that, if the Commission's approach was implemented, there would be a significant risk of a proliferation of CPP applications.

Because the projected profits for each EDB are based in large part on industry-wide averages,<sup>15</sup> there will be some suppliers for which the implied rate of change in projected profits is *too high*, given their particular circumstances. This will include suppliers with *lower than average* forecast demand growth and/or *higher than average* forecast capital and operating expenditure. Figure 2.1 below provides a simple illustration:

§ initially, EDB<sub>1</sub> has a historical ROI that is *below* the regulatory WACC and EDB<sub>2</sub> has a ROI that is *above* the WACC; and

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<sup>15</sup> The other determinants being historical ROIs and EDB-specific depreciation forecasts.

§ the Commission's methodology would estimate the starting price adjustments that would be needed to deliver returns equal to the regulatory WACC over the period, given the current *firm-specific* ROIs and projected *industry-wide* cost and demand trends.

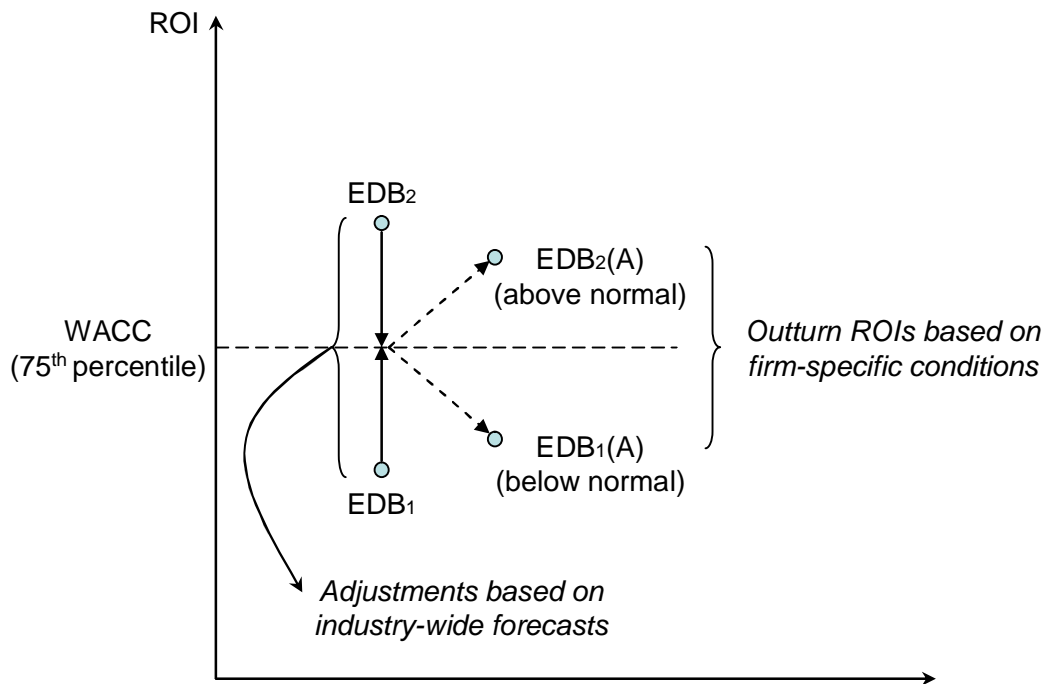
However, in practice the outturn ROI that each firm expects to obtain over the period, given its particular circumstances, may differ significantly from that implied by the starting price adjustment that is derived on the basis of industry-wide forecasts. In this example:

§ EDB<sub>1</sub> has *lower than average* forecast demand growth and *higher than average* forecast capital and operating expenditure, and so it cannot obtain a return commensurate with the regulatory WACC (EDB<sub>1</sub>A); and

§ EDB<sub>2</sub> has *higher than average* forecast demand growth and *lower than average* forecast capital and operating expenditure, and so it is able to earn returns that exceed the regulatory WACC (EDB<sub>2</sub>A).

In other words, EDB<sub>1</sub> would expect to be *undercompensated* by the DPP under the Commission's methodology, since it is not forecast to earn a return equal to the WACC, given its own supplier-specific projections. The only way for the business to attract capital, to invest efficiently and to earn a normal economic profit would be to apply for a CPP. In other words, a CPP is the only way for EDB<sub>1</sub>'s bespoke, forward-looking circumstances to be taken into consideration in the determination of its price-quality path.

**Figure 3.1**  
**Application of Commission's Methodology**



The problem that arises is that as many as half or more of the 17 non-exempt EDBs can expect to find themselves in the position of EDB<sub>1</sub> in Figure 2.1. This could be because they

are on the 'wrong side' of the industry-wide forecasts at the outset of the period (like EDB<sub>1</sub>) or because of unforeseen fluctuations in costs and revenues throughout the period (extreme weather being one potential precipitating factor). Most or all of those businesses can be expected to apply for a CPP.

For this reason, we disagree with the Commission's contention that its methodology will be capable of accommodating suppliers in a 'reasonable range of circumstances' and, by implication, will contain the number of CPP applications. Quite the opposite. The methodology, if implemented, can be expected:

- § to result in a proliferation of CPP applications at every DPP reset – from as many as half or more of the affected suppliers; and
- § to result in applications being lodged by EDBs in far from exceptional circumstances, including by suppliers that simply find themselves on the 'wrong side' of a number of industry averages.

This is problematic because it would result in EDBs – and, ultimately, their customers – incurring significant (and needless) additional costs. In our opinion, the suggestion from the Commission in its Update Paper that the costs associated with preparing a CPP are likely to be limited, and can be passed on to customers in any event,<sup>16</sup> is not credible. Past experience indicates clearly that the time and expense involved in a participating in a regulatory building block determination are considerable.

For example, under the previous thresholds regime, the Commission announced its intention to declare control of Unison on 9 September 2005 and finally accepted an administrative settlement on 11 May 2007. The intervening period had many similarities to a building block-based regulatory review, as various control paths were considered. The costs incurred during this period – including on legal, economic and engineering advice, and on internal resources – would have been substantial.

The experience in Australia supports this view. By way of indication, in 2010 the Australian Energy Regulator (AER) allowed the five Victorian electricity distribution businesses to include between A\$1.7 and A\$4.4 million (A\$3.06 million, on average) in their revenue allowances to reflect the costs associated with preparing their regulatory proposals (the Australian equivalent of a CPP application).<sup>17</sup> This translates to between NZ\$2.3 and \$5.97 million (or NZ\$4.15 million, on average), at the current exchange rate.<sup>18</sup>

Moreover, the fact that a supplier can pass some of the costs of preparing an application to its customers is irrelevant. First, it is not in the long-term interest of consumers to pay for needless costs. Second, suppliers are, in fact, unlikely to be in a position to pass on many of the costs incurred preparing an application. Although it may be able to recover the *external*

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<sup>16</sup> Update Paper, para 2.27.

<sup>17</sup> Australian Energy Regulator, *Final decision – appendices, Victorian electricity distribution network service providers, Distribution determination 2011-15*, October 2010, p.343.

<sup>18</sup> Exchange rate sourced from <<http://www.xe.com>> on 9 May 2011. Exchange rate: 1 NZD = 0.737511 AUD.

costs (eg, of independent verifiers and so on), it is not obvious that it would be compensated for the *internal* resources deployed during the exercise, which are likely to be significant.

In our opinion, the widespread imposition of such costs would be inconsistent with the original purpose of the regime. Section 53K of the Act describes the purpose of default/customised price-quality regulation in the following way:

‘The purpose of default/customised price-quality regulation is to provide a relatively low-cost way of setting price-quality paths for suppliers of regulated goods or services, while allowing the opportunity for individual regulated suppliers to have alternative price-quality paths that better meet their particular circumstances.’

Because default/customised price-quality regulation is intended to be relatively low cost overall, it follows that the DPP must be capable of accommodating businesses in a reasonable range of circumstances. The Commission’s approach would not achieve that objective. Rather, it defining the DPP in a way that is likely to force a significant number of EDBs – perhaps half or more – to incur the substantial costs of applying for a CPP, often simply because they find themselves on the ‘wrong side’ of an industry average.

In our opinion, the expectation was that CPP applications would not be the norm, and limited to those businesses with genuinely exceptional circumstances. This is reinforced by the fact that the Commission is only required to consider four per year. Indeed, the Commission’s approach may result in a significant backlog of applications, which would also be undesirable, since it would require potentially complex applications of clawback and so on.

The fact that a significant number of businesses will be likely to seek a CPP if the Commission’s methodology is implemented represents a conspicuous shortcoming in its proposed approach.

### 3.4. Summary

The Commission’s proposed methodology for setting starting prices for the DPP rests on two key propositions:

- § first, that there is an *intrinsic upward bias* in the regulatory WACC that can be expected to result in more favourable starting price adjustments for EDBs, ie, price reductions that are smaller than they would be otherwise (and vice versa); and
- § second, that this supposed bias in the WACC estimate, when factored into its methodology, will result in a DPP that can accommodate EDBs *in a reasonable range of circumstances*, presumably reducing the need for suppliers to seek CPPs.

In our opinion, neither contention is correct. First, there is no intrinsic bias in the Commission’s estimate of the regulatory WACC; rather:

- § the 75<sup>th</sup> percentile of the WACC range ostensibly reflects its best estimate of what is required for an EDB to attract capital, to invest efficiently and to earn a normal economic profit given the potential for error in the estimation process; and

§ it follows there can be no assumption that there is ‘headroom’ in the regulatory WACC estimate that would allow an EDB to earn returns below this level and still recover its true cost of capital, retain incentives to invest efficiently and so on.

Second, the Commission’s methodology would *not* accommodate EDBs in a reasonable range of circumstances, since it makes no allowance for divergences in the projected profitability of *individual suppliers*. This creates two problems:

- § s.53P(3)(b) requires starting price adjustments to be based on the current and projected profitability of *each supplier*, and so the methodology (which is based on industry-wide forecasts of projected profitability) appears not to comply with the Act; and
- § implementation of the methodology can be expected to result in a proliferation of CPP applications from EDBs that will be undercompensated by the DPP – often simply because they fall on the ‘wrong side’ of the industry-wide forecasts.
- § those suppliers may not be able to be accommodated by the DPP, which may lead to a proliferation of CPP applications at each DPP reset – an outcome that would be inconsistent with the original design of the regime.

In short, the Commission’s methodology is not supported by the views that it articulates in its Update Paper, is inconsistent with the principles set out in Part 4 of the Act and, ultimately, does not represent a coherent regulatory package. In the following section we describe a modification to the methodology that can overcome these shortcomings.

## 4. Proposed Modification

This section describes a modification to the Commission's proposed methodology for setting starting price for the DPP that, in our opinion, is consistent with the purpose of the regime. The initial steps could remain unchanged, ie, the Commission could begin by:

- § estimating each EDBs' historical return on investment (ROI) relative to the 75<sup>th</sup> percentile of the WACC estimate; and
- § forecasting various industry-wide trends over the term of the DPP, ie, demand growth, nominal cost growth and the rate of change in the CPI.

However, starting price adjustments would only be contemplated for those EDBs that are projected to have an ROI over the period (given its current firm-specific ROI and the industry-wide forecasts) that fell outside a pre-defined 'returns band'.

### 4.1. Defining the Band

The returns band would comprise a lower and upper bound. In our opinion, the *lower bound* would need to be set at the prevailing regulatory WACC, ie, the 75<sup>th</sup> percentile of the estimated WACC range (currently, 8.77 per cent). Setting the lower band below this level would present the same problems as those arising in the Commission's proposal, ie, it can be expected to result in a significant number of suppliers earning less than the regulatory WACC if they remain on the DPP, with the attendant consequences.

Defining an appropriate *upper bound* represents a greater challenge. However, the Commission would not be starting from a 'blank slate'. For example, an earlier paper included worked examples with upper bands set at 1 and 1.25 per cent above the regulatory WACC.<sup>19</sup> Thompson and van Zijl (2010) have also proposed an upper band that is two standard deviations (of the forecasting error in the ROI) above the regulatory WACC.<sup>20</sup> Both approaches appear to be reasonable.

Once the boundaries of the returns band are defined, it could then operate in the manner illustrated in Figure 3.1, ie:

- § for a firm that was projected to have an ROI over the period that was above the upper band (ie, EDB<sub>1</sub> in Figure 3.1), the starting price adjustment would be just sufficient to reduce the firm's ROI to the top of the band;
- § for a firm that was projected to have an ROI over the period that was within the band (ie, EDB<sub>2</sub> in Figure 3.1), there would be no starting price adjustment; and

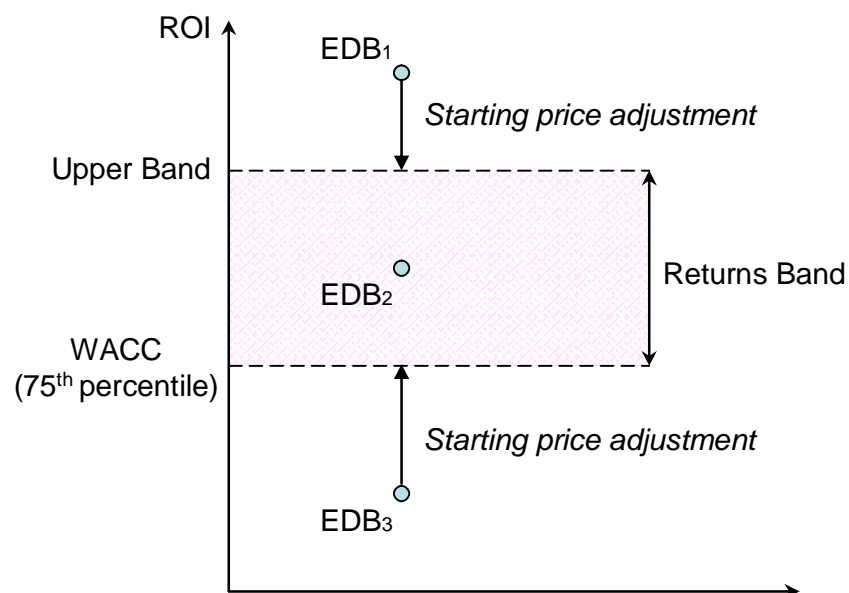
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<sup>19</sup> See: Commerce Commission, *Starting Price Adjustments for Default Price-Quality Paths Discussion Paper*, 5 August 2010, p.33.

<sup>20</sup> Thompson & van Zijl, *A statistical forecasting framework and models for the determination of starting price adjustments for default price-quality paths: A report undertaken for the Energy Networks Association*, 8 December 2010, p.19.

§ for a firm that was projected to have an ROI over the period that was beneath the lower band (ie, EDB<sub>3</sub> in Figure 3.1), the starting price adjustment will be just sufficient to increase the firm's ROI to the bottom of the band.

**Figure 4.1**  
**Operation of Returns Band**



Introducing a returns band that was defined in this manner would offer a number of important advantages over the methodology proposed by the Commission in its Update Paper. We elaborate below.

## 4.2. Potential Advantages

The first advantage offered by a returns band (defined in the manner described above) is that it is likely to enable the Commission's approach to meet the requirement in s.53P(3)(b). Specifically, it would allow the methodology to be sufficiently flexible to account for divergences in the projected profitability of *each supplier* and, particularly, to allow for the possibility that firm-specific projections will be less favourable than the industry forecasts. This can be expected to give rise to two further benefits, ie:

- § it would improve the prospects of an EDB being able to earn a sufficient return – as represented by the regulatory WACC – to remain on the DPP and would therefore accommodate suppliers in a 'reasonable range of circumstances',<sup>21</sup> and
- § it would be likely to limit the *number* of CPP applications, and the *circumstances in which they are received*, ie, applications are more likely to be lodged by EDBs with truly exceptional circumstances, eg, suppliers with substantial capital requirements.

<sup>21</sup> See: Update Paper, para 2.26.

Both of these outcomes appear to be more consistent with the purpose of the regime than the outcomes that would be produced in the absence of a returns band. Figure 3.2 below provides a simple illustration of how the proposed modification might deliver these improvements:

- § initially, EDB<sub>1</sub> has a historical ROI that is below the lower band (the regulatory WACC) and EDB<sub>2</sub> has a ROI that is above the upper bound (say, 1 or 1.25 per cent or two standard deviations above the regulatory WACC<sup>22</sup>); and
- § the operation of the returns band would result in starting price adjustments that increased EDB<sub>1</sub>'s projected ROI (based on its current ROI, depreciation profile and industry-wide forecasts) to the lower band and reduced EDB<sub>2</sub>'s projected ROI to the upper band.

The ROI that each firm would *actually* expect to obtain over the period, given their particular circumstances, may again be *higher or lower* than that implied by the starting price adjustment, ie:

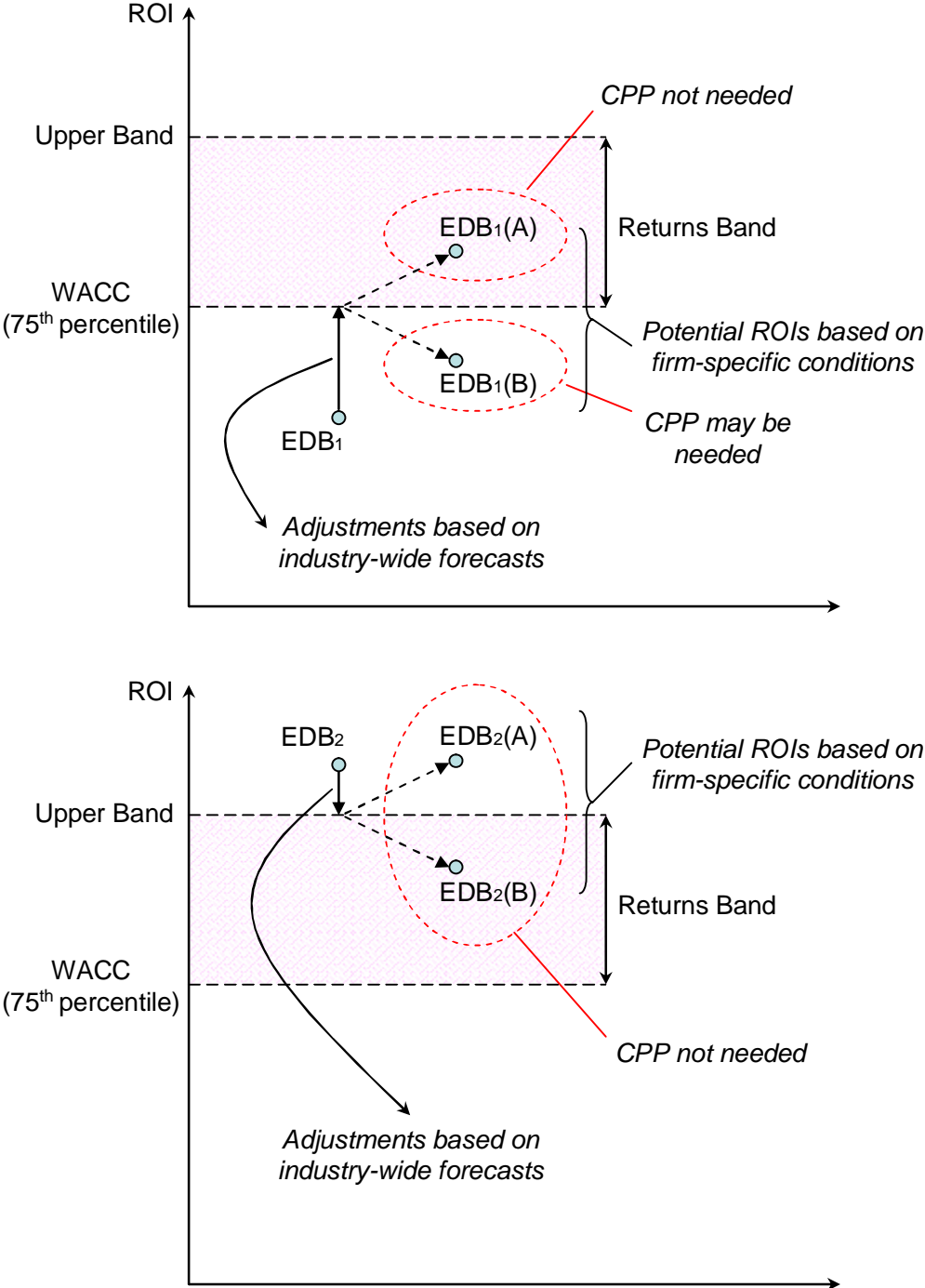
- § EDB<sub>1</sub>'s outturn ROI following this starting price adjustment may be greater (EDB<sub>1</sub>(A)) or less than (EDB<sub>1</sub>(B)) the lower band; and
- § EDB<sub>2</sub>'s outturn ROI following this starting price adjustment may also be greater (EDB<sub>2</sub>(A)) or less than (EDB<sub>2</sub>(B)) the upper band.

However, in three out of the four scenarios depicted in Figure 3.2, the relevant EDB is able to earn a sufficient return whilst remaining on the DPP. It is only when EDB<sub>1</sub> has lower than projected profitability (scenario EDB<sub>1</sub>(B)) that its outturn ROI is less than the regulatory WACC, creating an incentive for it to apply for a CPP. This might again occur if it has forecast demand growth that is lower than and/or forecast operating and capital expenditure that is higher than the levels implied by the industry-wide forecasts.

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<sup>22</sup> See footnotes 17 and 18.

**Figure 4.2**  
**Limitation of CPP Applications**



In other words, if an EDB is on the ‘wrong side’ of the industry-wide forecasts at the outset of the period (like EDB<sub>1</sub>), or experiences unforeseen changes in costs and revenues throughout the period, it will not necessarily have to seek a CPP. The existence of the returns band means that there is more flexibility in the starting price adjustment process to allow for the divergences in each supplier’s projected profits. Although CPP applications can still be expected, they are likely to be fewer in number and received more commonly from suppliers with truly exceptional circumstances.

### 4.3. Summary

In our opinion, the Commission’s methodology would be materially improved if starting price adjustments were contemplated for those EDBs’ that are projected to have an ROI over the period that is outside a pre-defined returns band, where:

- § the lower band is set at least at the regulatory WACC, ie, the 75<sup>th</sup> percentile of the estimated WACC range (currently, 8.77 per cent); and
- § the upper band is established at some point above the regulatory WACC, say, 1 or 1.25 per cent or two standard deviations above that level.

Starting price adjustments could then be implemented to return suppliers to the nearest band, given their current ROI, depreciation forecast and projected industry-wide movements in costs and revenues. The potential advantages of such a modification are that:

- § it would enable the methodology to account for divergences in the projected profits of individual suppliers, consistent with the requirement in s.53P(3)P(b) of the Act;
- § it would improve the prospects of an EDB earning a return sufficient to remain on the DPP, ie, a return at least equal to the regulatory WACC; and
- § it would be likely to limit the number of CPP applications, and the circumstances in which they are received, ie, they are more likely to be lodged by EDBs with truly exceptional circumstances.

In short, introducing a returns band would enable the Commission’s proposed methodology to conform to the requirements of Part 4 of the Act and produce a more coherent regulatory package. At present, neither of these objectives is met.

## 5. Conclusion

The Commission suggests in its Update Paper that use of the 75<sup>th</sup> percentile WACC estimate will result in starting prices for the DPP that are ‘biased in favour of suppliers’ and that its methodology will accommodate suppliers in a ‘reasonable range of circumstances’. In our opinion, neither contention is correct.

First, there is no intrinsic bias in the Commission’s estimate of the regulatory WACC that would result in starting prices that are favourable, on average, to suppliers; rather:

- § the 75<sup>th</sup> percentile of the WACC range ostensibly reflects its best estimate of what is required for an EDB to attract capital, to invest efficiently and to earn a normal economic profit given the potential for error in the estimation process; and
- § there can therefore be no assumption that there is ‘headroom’ in the regulatory WACC estimate that would allow an EDB to earn returns below this level and still recover its true cost of capital, retain incentives to invest efficiently and so on.

Second, the Commission’s methodology would *not* accommodate EDBs in a reasonable range of circumstances, since it makes no allowance for divergences in the projected profitability of *individual suppliers*. This creates two problems:

- § s.53P(3)(b) requires starting price adjustments to be based on the current and projected profitability of *each supplier*, and so the methodology (which is based on industry-wide forecasts of projected profitability) appears not to comply with the Act;
- § implementation of the methodology can be expected to result in a proliferation of CPP applications from EDBs that will be undercompensated by the DPP – often simply because they fall on the ‘wrong side’ of the industry-wide forecasts; and
- § those suppliers may not be able to be accommodated by the DPP, which may lead to a proliferation of CPP applications at each DPP reset – an outcome that would be inconsistent with the original design of the regime.

The Commission’s methodology is therefore not supported by the views that it articulates in its Update Paper, is inconsistent with the principles set out in Part 4 of the Act and, ultimately, does not represent a coherent regulatory package. However, these shortcomings can potentially be addressed by introducing a ‘returns band’.

Specifically, starting price adjustments could be contemplated only for those EDBs that are projected to have an ROI over the period that is outside a pre-defined range, the lower band being at least equal to the regulatory WACC. The potential advantages of such a modification are that:

- § it could enable the methodology to account for divergences in the projected profits of individual suppliers, consistent with the requirement in s.53P(3)(b) of the Act;
- § it would improve the prospects of an EDB earning a return sufficient to remain on the DPP, ie, a return at least equal to the regulatory WACC; and

§ it would be likely to limit the number of CPP applications, and the circumstances in which they are received, ie, they are more likely to be lodged by EDBs with truly exceptional circumstances.

In our opinion, such a modification would represent a material improvement upon the Commission's proposed methodology, which would enable it to conform to the requirements of Part 4 of the Act and achieve the objectives of the regulatory regime.

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