

# **Regulatory Incentives and the Cost of Capital**

## **Working Paper**

Date: 23 June 2014

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## Purpose

1. The purpose of this paper is to lay out the overall balance of the regulatory regime in light of expected incentives to invest in network assets.<sup>1</sup> This focuses on the DPP reset due to occur at the end of this year.
2. This paper is only looking at parts of this balance and is not attempting to determine the optimal balance.

## Conclusions

3. There is an inherent conflict in RPI-X regimes between investment in network assets and cost reduction.
4. This is played out between short-term and long-term incentives upon suppliers and which regulatory risks the regime should concentrate on in light of this.
5. Within a low-cost DPP setting with a CPP option these risks imply:
  - 5.1 financing risk leading to under-investment justifies an uplift to the midpoint cost of capital;
  - 5.2 have sensible incentives across operating expenditure, capital expenditure and quality to maintain pressure for efficiency including providing the level of service demanded by consumers;
  - 5.3 use summary and analysis as a health check and to refine the balance where needed.
6. We note that observed concerns raised on regulatory regimes abroad in practice relate to both over-investment as well as under-investment, despite the inherent incentive framework raising the same tensions (mentioned in paragraph 4) we have in New Zealand.

## Overall investment incentives set under a DPP regulatory framework

7. The overall regulatory framework has to cope with multiple potential incentives on firms and balance difficult trade-offs between quality, network investment and price. In the New Zealand context we are putting this in place through a low cost DPP regime with the firm-exercised option of a CPP. Attachment 1 captures some of the main risks and barriers to achieving the regulatory objectives in this context.
8. Incentives to invest by a supplier can fall under incentives of investors (the long term value of the firm), the governance of the firm represented by the board (responding to incentives placed on them by investors), and management (responding to the reward incentives placed on them by the board).

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<sup>1</sup> In principle this can capture elements of operating expenditure which can be spent in maintaining assets of the network.

## Incentives of investors

9. Investors in electricity utilities (other than consumer owners) are likely to be attracted to low risk with a confident return that reflects that risk – hence they are more likely to be longer term investors such as pension funds<sup>2</sup> who are likely to see the key attributes of the regime as:
  - 9.1 a secure stable regulatory asset base (RAB) value which is not declining over time;<sup>3</sup> and
  - 9.2 a reasonable return.
10. Ultimately they are likely to care more about the long-term value of the firm (their investment) rather than any short-term gains or individual network investment projects. This mitigates any natural incentive to run down the network for short-term gain. Consequently the types of incentives they are likely to impose on the board are:
  - 10.1 don't significantly risk the regime, this implies in steady state they will not want to see the network degraded, as that could provoke a heavy regulatory response and would in any case see the RAB decline; nor would they want reported profits to appear too high, as that might also provoke a heavy regulatory response;<sup>4</sup>
  - 10.2 maintain their investment portfolio consistent with their appetite for risk—reinvest cash in the network rather than in unregulated potentially higher return/risk investments;<sup>5</sup>
  - 10.3 increase shareholder value by ensuring that the RAB increases, rather than decreases, over time;<sup>6</sup>

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<sup>2</sup> Our clearest example is Powerco whose owners are AMP and QIC.

<sup>3</sup> And ideally not declining in real terms. For example, we have inflation-indexed the RAB for EDBs in response to comments such as those from Powerco: “we are owned by companies that have a very long-term perspective on investment, and they do not want to have an asset base that moves or a return that moves significantly away from underlying inflation” (Paul Goodeve of Powerco at the IM Conference, Transcript, 17 September 2009, pp 368-369). Although some EDBs have criticised inflation-indexing of the RAB as pushing their cash returns into the future, this is at least partly offset by having a deferred tax approach and ‘net approach’ to capital contributions which both bring cash returns forward.

<sup>4</sup> If this incentive dominates we would expect to see targeting spend not far below the capital expenditure allowance.

<sup>5</sup> In a report for the Queensland Competition Authority (QCA), Dr Ross Barry goes further. He advises that automatic capital expenditure inclusion in the RAB creates strong incentives for investment given it is immediately revalued at a higher market value, which in his view reflects private asset owners lower discount rate and a future cash flow profile that includes incremental gains from gaming the system. Ross Barry, *The Split Cost of Capital*, Report to the Queensland Competition Authority, First Principles, 7 November 2013, page 19.

<sup>6</sup> For example, one of Wellington Electricity's shareholders—Power Assets (owned by the Hong Kong-based Cheung Kong Group)—states that it has a strategic focus of seeking growth and is committed to increasing shareholder value: [http://www.powerassets.com/pahWeb/OurGlobalPresence/Index\\_en](http://www.powerassets.com/pahWeb/OurGlobalPresence/Index_en)

- 10.4 maintain pressure for the regulatory regime and WACC<sup>7</sup> to be stable and relatively risk free; and
  - 10.5 seek incremental efficiency gains where that can raise returns subject to the first three points.
11. The risks are nonetheless:
- 11.1 in periods of instability (e.g. legislative change or cashflow problems due to failure of non-regulated businesses), they may see benefit in concentrating on short-term gains;<sup>8</sup>
  - 11.2 they will see the regulatory WACC as the key regulatory variable (assuming the RAB is guaranteed) and will always seek a higher regulatory WACC and a predictable and stable regulatory WACC;<sup>9</sup>
  - 11.3 short-termism within the investment community, an extreme example are the events which led to the Global Financial Crisis;
  - 11.4 to the extent the regulatory WACC is below investors' perceived 'reasonable rate' – the incentives to raise returns through other means will increase<sup>10</sup>; and
  - 11.5 where significant asymmetry of information exists between existing and prospective investors on the regulatory regime and on the state of network assets, there can be an incentive to increase cashflows by running down the network and selling on before the impact of running down the network is realised.<sup>11</sup>
12. Key messages for regulation are:
- 12.1 a significant focus on setting the correct WACC;
  - 12.2 any margin on WACC might be most effective at this level of incentivisation, which works by reducing the risk that investors move towards maximising across a shorter time horizon through constraining investment against the

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<sup>7</sup> For example pressure to use more stable measures such as historic averages for components of the WACC.

<sup>8</sup> For example, there was notable shorter term private sector ownership activity in EDBs during the 1990s, prior to the move away from light-handed regulation after 2001.

<sup>9</sup> "The primary source of downside risk in regulatory assets is the risk of change to the WACC-setting process and regulator's disposition toward each new regulatory determination and the way investor sentiment is impacted by any such change", Ross Barry, The Split Cost of Capital: Report to the Queensland Competition Authority, 7 November 2013, page 13.

<sup>10</sup> Which can be through gaming the regulatory framework, reducing investment or improving efficiency. One obvious method is deferral of capital expenditure as far as possible until the next consideration of the regulatory WACC. Alternatively if the individual investors require a higher WACC than other investors then you would expect them to sell.

<sup>11</sup> Due diligence should mitigate this to some extent, but this might not be able to fully reveal all significant risks about the condition of the acquired network.

regulatory capital expenditure allowance. In particular, the percentile used rationale is not to incentivise investment but minimise the risk that under-estimating the WACC leads to under-investment;

12.3 regulatory consistency on RAB and WACC; and

12.4 good public information on the regulatory regime and network assets.

13. In this respect – investors are unlikely to concentrate on incremental incentives for investment (good or bad) but the longer term view of the value of the firm which is primarily dictated by: the RAB, the long-term view on the regulatory WACC and investment in the RAB over time.<sup>12</sup>
14. A key plank of this is the long term safe nature of the assets, if the regulatory regime distorted this to the extent short-term profit incentives dominated (e.g. it becomes much more valuable to minimise capital expenditure and run down the network), you would expect longer term investors to sell to more short-term investors who would find the firm more valuable. A key indicator of this is the share ownership of the firms in question. In principle we would expect the incentive to maintain the RAB and safeness of the investment to dominate.

### **Incentives of the board**

15. The boards of utilities will be appointed by the shareholders and will be concerned about investors' valuation of the firm.<sup>13</sup> They will set high level incentives on management such as the approach to approving significant capital expenditure spend and efficiency initiatives and policy towards relationship with the regulator.<sup>14</sup> At a high level they will be concerned with whether investment (and operating expenditure) runs down, maintains or enhances the network and the relative profitability (longer term) of that level of decision.
16. Another consideration which may bear on the board and management is the reputational damage of 'letting the lights go out' or safety failures. This, in practice, may differ by firm, for example the two key EDBs Vector and Powerco, one is largely community owned, the other is owned by long-term asset investors.<sup>15</sup>
17. Key messages for regulation are:
- 17.1 investor incentives matter; and
- 17.2 the clarity of high-level regulatory signals which boards can engage with – ie focus on legitimate efficiency gains.

<sup>12</sup> Other expectations may also matter, such as expectations on the regulatory approach going forward towards efficiency savings.

<sup>13</sup> Typically senior management will have rewards directly linked to share performance.

<sup>14</sup> Under the Energy Companies Act (s 36(1)), energy companies have a principal objective to "operate as a successful business", and the "directors of an energy company shall be persons who, in the opinion of those appointing them, will assist the company to achieve its principal objective" (s 37(1)).

<sup>15</sup> Major outages may result in repercussions for both directors and management (eg, [www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=152846](http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=152846)).

## Incentives on management

18. Management will face multiple incentives and may possibly have a shorter term perspective. These incentives can vary and may not line up with the regulatory regime's long-term goals.
19. This will be subject to the high-level incentives set by the board – i.e. maintain the network or prioritise short-term cash-flow. As there are potentially principal-agent issues,<sup>16</sup> these high level incentives will not work in all circumstances/occasions, which raises regulatory risks. Hence the level of the regulatory WACC may have only an indirect impact at this level of decision making. All CPI-X type regimes put strong incentives on firms to reduce costs and use quality measures to safeguard against the wrong type of cost cutting, and regulatory WACC is secondary to that – but it may be important in the long-term to the incentives which feed through.
20. Regulation seeks to do several basic things in ensuring value for money for consumers so they get the quality they want at least cost (and a given price).
  - 20.1 Increase the efficiency of the firm so the outputs can be delivered with the least inputs – this will reduce the price to consumers over time.
  - 20.2 Ensure a stable regulatory regime which over time will bring down the cost of capital.
  - 20.3 Monitor and enforce quality to ensure what appears to be efficiency will not, over time, lead to a run down of networks leading to an inefficient timing of capital expenditure to catch-up.
21. These all potentially feed into incremental decisions subject to the higher level incentives set by investors/the board.
22. A key factor in this is asymmetry of information so that setting absolute targets can lead to significant error, setting the right incentives mitigates this risk whilst moving firms to the regime's long-term goals. A second factor is visibility, as far as possible, in the firm's performance including state of network assets. In this context, even generous targets may be beneficial to consumers in the longer term by revealing actual efficient costs.<sup>17</sup>
23. In addition, management will have a number (and some cases conflicting) incentives depending on the type and nature of the capital expenditure activities to undertake:
  - 23.1 unlike other types of capital expenditure, under a price cap the incremental returns of making new customer connections and associated upstream reinforcement (above those implicitly provided for in the price path) may be positive relative to other capital expenditure activities due to the likely increase in billed quantities and therefore revenue – in addition, the

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<sup>16</sup> There are several high profile overseas examples of management enriching themselves at the expense of shareholders.

<sup>17</sup> Setting effective targets at the least cost is preferable.

incremental cost of customer connections can be partially funded via (cash) capital contributions;

- 23.2 renewal capital expenditure will assist in maintaining the value of the RAB and in not breaching quality standards, but may also assist in reducing operating expenditure below that provided for in the price path. An increasing trend in renewal capital expenditure is also helpful in convincing the regulator to allow further increases in the future;
- 23.3 management will likely favour investments that reduce their exposure to high impact low probability events (ie major outages (Orion) and removal of high safety risk equipment (Transpower 33kV outdoor switchyards));
- 23.4 there may also be incentives from other non-regulated business activities ie investment that helps enable other revenue streams, such as installation of domestic PV or UFB roll out; and
- 23.5 there may be pressure due to delivery issues, such as maintaining steady volume of work to contractors to ensure contractors remain active in geographic area or make investment in training and development.

#### **Which incentives dominate?**

- 24. This is not an easy question to answer. Which incentives dominate may vary from firm to firm and the ownership structure of the firm in question will give different regulatory risk profiles.
- 25. We can note the following from international experience:
  - 25.1 all CPI-X regimes face the conflict of pressure to reduce costs whilst protecting quality through investment (and innovation);
  - 25.2 in Australia which has IRIS mechanisms for operating expenditure and recently introduced for capital expenditure, the main concern of late has been that the industry has over-invested;<sup>18</sup>
  - 25.3 in the UK which has historically moved through progressive phases of regulation, the focus has been on whether there is enough innovation—a concern leading to the RIIO framework.
- 26. In the context of a DPP/ CPP regime we note that:
  - 26.1 ensuring the longer-term incentives for investors to support investment would be important to get right; and

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<sup>18</sup> For example see AER, Economic regulation of transmission and distribution network service providers AER's proposed changes to the National Electricity Rules, September 2011 and Australian Productivity Commission, Electricity Network Regulatory Frameworks, April 2013.



- 26.2 given the low-cost nature of the regime, using incentives to reveal information over time would be the most productive route. So we should seek to have sensible incentives across operating expenditure, capital expenditure and quality to maintain pressure for efficiency, including providing the level of service demanded by consumers.
27. The levels of uncertainty on investment draws out the key role of summary and analysis in better understanding how the firms are performing and responding to regulatory incentives over time.

### **The wider interaction of incentives under the current DPP regulatory framework**

28. There are two important inter-relationships within the regulatory framework from investment between capital expenditure incentives and quality incentives.

#### **Investment and capital expenditure**

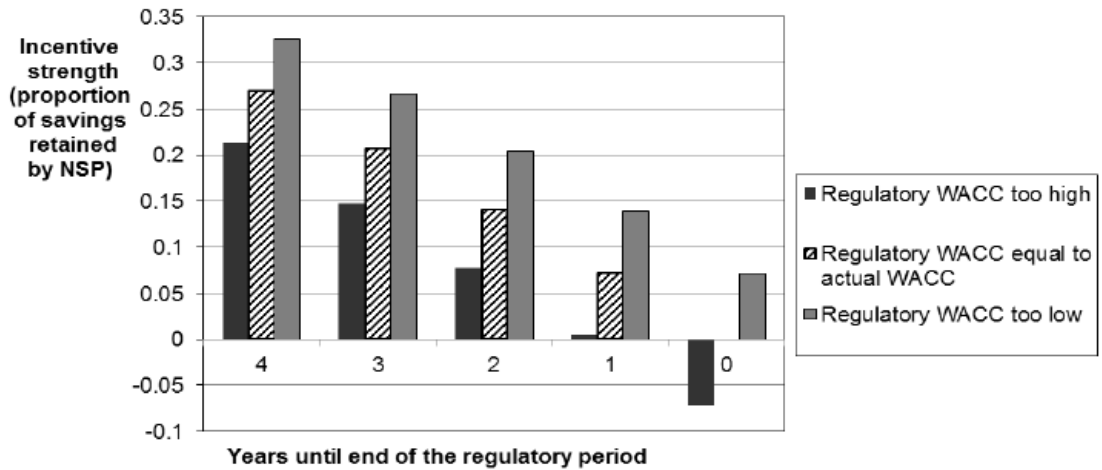
29. Under our regulatory framework we set *ex ante* capital expenditure allowances which firms can seek to outperform. There are four stages to this:
- 29.1 setting a baseline capital expenditure allowance prior to a reset;
  - 29.2 the decision of a firm to apply (or not) for a CPP based on the capital expenditure allowance;
  - 29.3 performance against the capital expenditure allowance during a regulatory control period; and
  - 29.4 summary and analysis of performance against the capital expenditure allowance.
30. Under the current regime suppliers will benefit at the margin from any reduction in either capital expenditure or operating expenditure (no matter how they are performing relative to the allowance). Given this is subject to a reset, this marginal benefit declines over the regulatory period.
31. Firms also have an incentive to seek a capital and operating expenditure allowance greater than their needs. This provides the ability to increase profitability with no downside from compromising quality.<sup>19</sup>
32. Within a regulatory control period there is an incentive to spend as little capital expenditure as profitable consistent with the quality regime in place and the long-term performance of the company. This sits alongside the other short-term drivers, for example maintaining safety, connection customers etc. In particular, in relation to any positive margin between the regulatory WACC and the firm's view of its WACC:

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<sup>19</sup> This incentive may be tempered by the prospect of large reported profits leading to a tougher regulatory arrangement at the next reset.

- 32.1 to some extent this counters the incentive to underspend given the foregone margin on long lived assets;<sup>20</sup>
- 32.2 given the savings from underspend are smaller than for operating expenditure, there is likely to be an incentive to substitute capital expenditure for operating expenditure and the expected margin on WACC over time is likely to enhance this;
- 32.3 towards the end of the period the expected WACC margin would become relatively more important; and
- 32.4 overall this creates an incentive to delay capital expenditure spend towards the end of the period. This is illustrated in the Australian Productivity Commission analysis below which is illustrated against potential error in the regulatory WACC.<sup>21</sup>

**Figure 1: Incentive strength on capital expenditure and WACC**



<sup>a</sup> This assumes an asset life of 50 years and an actual WACC of 9 per cent compared with a regulatory WACC of 8.5 per cent in the low case and 9.5 per cent in the high case.

Data source: Commission estimates.

Source: Australian Productivity Commission

- 33. This incentive to minimise capital expenditure will be further controlled by the potential damage to the value of the firm if this is related to running down the network assets leading to a requirement for higher capital expenditure in future periods against a potentially tougher regulatory regime.
- 34. The table below provides evidence from our regime on out-turn capital expenditure against predicted based on the year of forecast. As can be seen there is a 13% saving

<sup>20</sup> Given the incremental profitability from not investing includes both the cost of and on capital, the WACC margin would have to be very substantive to eliminate this incentive. Increasing the WACC to these levels may be counter-productive as it could create strong incentives to over-invest.

<sup>21</sup> Australian Productivity Commission, Electricity Network Regulatory Frameworks, April 2013, Figure 5.3.

against the baseline overall. The table shows forecasting accuracy of the industry (on average for network capital expenditure. It is more difficult to assess whether this is due to forecasts that would maximise revenue rather than reflects the underlying network need or efficiency.

**Table 1: Accuracy of network capital expenditure forecasting by EDBs**

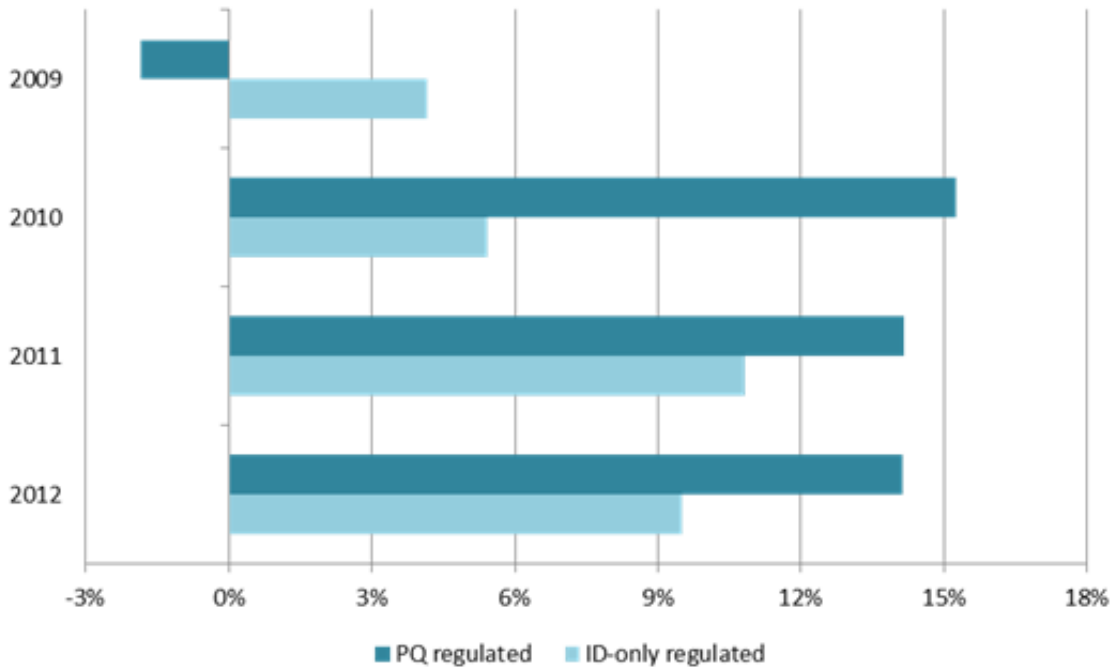
Industry	2012 (1 year) <sup>4</sup>	2011 (2 years) <sup>3</sup>	2010 (3 years) <sup>2</sup>	2009 (3 years) <sup>1</sup>
Total capex forecast (\$m)	639.2	1202.9	1784.9	1478.3
Actual (\$m)	555.8	1042.1	1552.1	1482.2
Difference (\$m)	83.4	160.8	232.7	-3.9
Difference (%)	13%	13%	13%	0%

- (1) EDB forecasts of network capital expenditure in 2009 compared to actual expenditure in 2010, 2011 and 2012
  - (2) EDB forecasts of network capital expenditure in 2010 compared to actual expenditure in 2011, 2012 and 2013
  - (3) EDB forecasts of network capital expenditure in 2011 compared to actual expenditure in 2012 and 2013
  - (4) EDB forecasts of network capital expenditure in 2012 compared to actual expenditure in 2013
35. Splitting this between those suppliers who are exempt and non-exempt suggests some of this may be forecasting that maximise revenues rather than reflecting the underlying network need.<sup>22</sup>

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<sup>22</sup> There are significant differences by individual suppliers.

**Figure 2: Network capital expenditure forecasting by exempt and non-exempt EDBs**

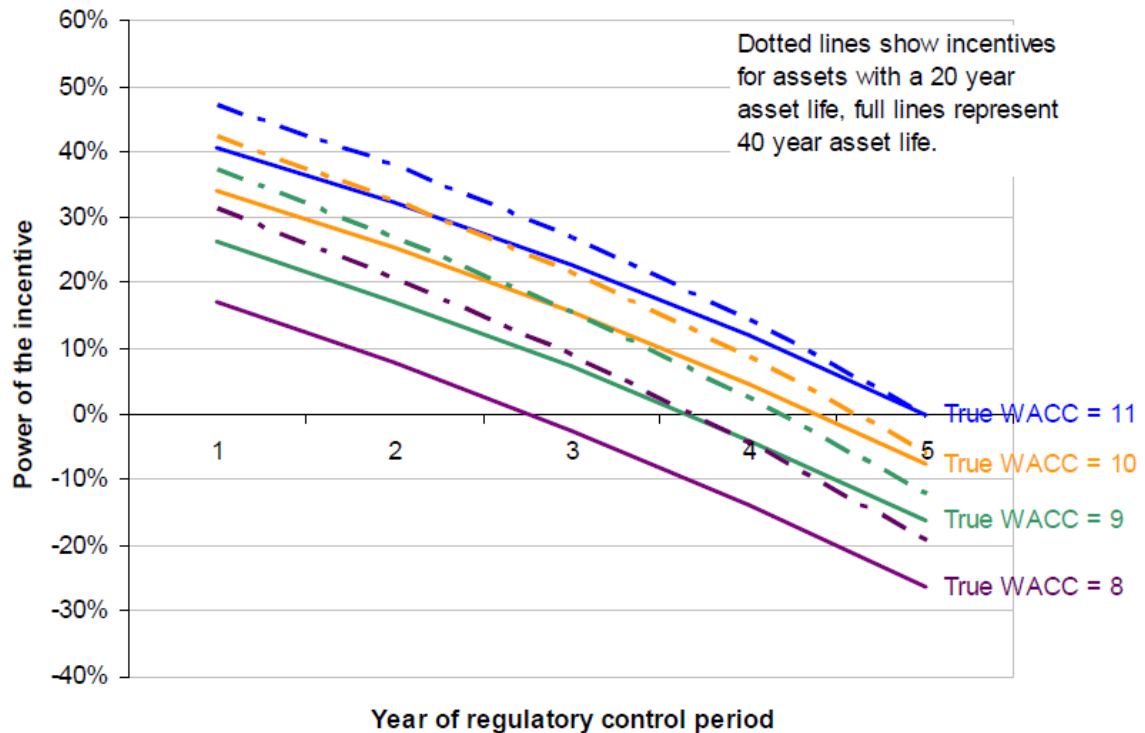


36. As part of the current DPP reset considerations we are investigating moving to the use of a capital expenditure IRIS mechanism. If the IRIS was set to equalise incentives across the regulatory period and across operating expenditure and capital expenditure we could expect the short-term incentives to change:
- 36.1 there will be an equal incentive across the period to save capital expenditure against the baseline allowance. Hence the incentive to delay capital expenditure within period will be eliminated as will the incentive to substitute capital expenditure for operating expenditure where that is not efficient; and
- 36.2 as such the influence of the WACC margin will be lowered in the short-term.<sup>23</sup> It may be increased in the longer-term given the incentives will be more focused on investing or not, rather than investing now or at the end of the period. Otherwise we would expect the firm to be more short-term focused.
37. The baseline incentives will remain unchanged and are an inherent part of CPI – X forms of regulation. It is worth noting in this respect that there has been work on this issue by the Australian Energy Regulator (AER) and the Australian Productivity Commission from the reverse proposition that, without equal incentives, the problem of over-investment is likely to eventuate. The diagram below (based on a regulatory WACC of 11%) is taken from an AER report.<sup>24</sup>

<sup>23</sup> It is important to note it is not the IRIS per se which affects the influence of the WACC margin, but the incentive strength of the IRIS mechanism.

<sup>24</sup> AER submission to the AEMC, Economic regulation of transmission and distribution network service providers AER's proposed changes to the National Electricity Rules, September 2011, Figure 6.2.

**Figure 3: AER examination of incentive strengths and WACC  
(assuming a regulatory WACC of 11%)**



Source: Australian Energy Regulator

38. There was a concern in Australia that without IRIS, suppliers' incentives may be to inefficiently substitute capital expenditure for operating expenditure and to delay investment.<sup>25</sup> It is less clear that an IRIS leads to under-investment from Australia's experience given most concerns appear to be related to over-investment. This would tend to suggest that either the ownership structure is determinative<sup>26</sup> or longer-term incentives tend to dominate.
39. The AER did have a concern about under-investment and in implementing its symmetric IRIS scheme (called the Capital Expenditure Sharing Scheme) which related to the potential for firms to defer capital expenditure from one regulatory control period to another. Here they have put in place a mechanism to allow them to adjust the payments where material amounts of capital expenditure are deferred.<sup>27</sup> In the context of a DPP system this would be similar to having some form of linkage

<sup>25</sup> For example the Australian Productivity Commission were concerned with this. See page 203.

<sup>26</sup> For example several of the EDBs in Australia are publicly owned.

<sup>27</sup> AER, Capital Expenditure Incentive Guideline for Electricity Network Service Providers, Explanatory Statement, November 2013. Pages 43 to 47. A similar scheme has recently been put in place for Northern Ireland Electricity Limited, see Competition Commission, Northern Ireland Electricity Limited price determination: A reference under Article 15 of the Electricity (Northern Ireland) Order 1992, Final determination, March 2014, paragraphs 5.112 and 5.113.

between significant underspend against forecast capital expenditure in a previous period and the capital expenditure allowance in the next period.<sup>28</sup>

40. Key decisions on the regulatory regime:
  - 40.1 Whether we are more content to minimise risk to under or over-investment at the cost of efficiency (in terms of timing of investment and capital expenditure / operating expenditure substitution)
  - 40.2 The extent to which we believe longer-term management decisions and the effectiveness of the quality regime contains short-term under-investment risk.

### **Investment and quality**

41. A key feature of all CPI-X type regulatory regimes is that the strong incentives to reduce costs can place quality at risk.<sup>29</sup>
42. In principle the incentives on quality should:
  - 42.1 provide incentives to deliver the level of quality valued by consumers
  - 42.2 provide incentives for incremental improvements in quality where cost is less than the value placed on it by consumers (or vice versa)
  - 42.3 reduce the ability to increase profit by reducing both cost and quality where it is not in the long term interest of consumers.
43. Renewal investment in the network will maintain quality of the network. Quality standards set as part of the overall regime mitigate the extent under-investment may occur.
44. Quality is a much more difficult concept to regulate given:
  - 44.1 the price-quality trade off should reflect consumers demand. It is not necessarily clear whether current quality levels achieve this in either direction;
  - 44.2 the measures of quality are unlikely to capture all dimensions of quality that consumers care about;
  - 44.3 there is typically a lag between underinvestment (or over-investment) feeding through to quality measures; and
  - 44.4 where under-investment has occurred it can be difficult for a regulator to not allow increases in a capital expenditure allowance to allow catch-up (where

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<sup>28</sup> This can be problematic in determining the reasons for under-spend.

<sup>29</sup> This is the trade off with a rate of return regime which carries the risk of over-investment and inefficiency. This property of RPI-X regulation was recognised by Littlechild in 1983.

they are in the consumers interests) potentially allowing double-recovery of at least some of this capital expenditure spend.

45. In practice, quality is an area where asymmetry of information is high, especially in the context of a low cost DPP regime. Here the use of incentives which result in firms revealing information may be more productive than setting pure thresholds for compliance.
46. We have limited information about the state of the networks in relation to consumers' price-quality trade-off. Summary and analysis, including of asset management information, should improve our information across time and provide a warning of under-investment.
47. How effective are our quality controls?
  - 47.1 We currently have SAIDI and SAIFI limits on all price-quality regulated EDBs. A summary of their results is shown in table 2.
  - 47.2 Across both SAIFI and SAIDI 7 companies' performance has worsened and 8 have improved comparing the 2010-14 period with the 2005-09 period. There have been eight instances of non-compliance with the quality standards across the current regulatory period, which are attributable to 5 different companies.<sup>30</sup>
  - 47.3 Financial penalties are more effective against small rather than large EDBs. The maximum court-awarded penalty for the most egregious behaviour is \$5 million. For Vector who earned \$633 million in 2013, this is unlikely to be an effective deterrent. Although court-ordered penalties may be supplemented by court-ordered compensation, appropriate levels of compensation may be difficult to determine, and might not act as a significant deterrent.
  - 47.4 Criminal sanctions can only be imposed where a supplier intentionally fails to comply with the quality standards..
  - 47.5 The most effective deterrent may well be the threat of a tougher regulatory environment being potentially triggered by a run down in the network.

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<sup>30</sup> The table does not accurately reflect the test for compliance with quality standards. In the 2012 assessment period, 4 EDBs were non-compliant (Eastland Network, Aurora Energy, Electricity Invercargill and Orion). In each of the 2013 and 2014 assessment periods, 2 EDBs were non-compliant (Orion and Wellington Electricity).

**Table 2: Performance across SAIDI and SAIFI by EDBs**

	SAIDI			SAIFI		
	2010-14	Change on 05-09	Limit 05-09	2010-14	Change on 05-09	Limit 05-09
Alpine Energy	199	+42%	164	1.61	+13%	1.69
Aurora Energy	94	+11%	98	1.37	-6%	1.67
Centralines	154	-8%	198	3.35	-2%	4.25
Eastland Network Electricity	321	+28%	302	3.38	-3%	4.26
Ashburton Electricity	191	-2%	222	1.76	+6%	2.00
Invercargill						
Horizon Energy	39	+24%	46	0.84	+3%	1.13
Nelson Electricity	174	-4%	220	2.21	+8%	2.40
Network Tasman	52	+11%	72	0.61	-11%	1.13
OtagoNet	149	+9%	163	1.47	-1%	1.74
Powerco	290	-16%	361	2.61	-6%	3.12
The Lines Company	207	+9%	210	2.36	-9%	2.80
Top Energy	262	-4%	308	3.24	-13%	4.15
Unison Network	418	-15%	580	5.10	-21%	7.66
Vector Lines	119	-10%	148	1.89	-24%	2.72
Wellington Electricity	103	-8%	127	1.17	-29%	1.86
	49	+44%	41	0.70	+36%	0.60

48. For the next reset we are currently considering putting in place an incentive scheme which rewards and penalises under or over performance on quality. This should achieve:

48.1 early gains through low hanging fruit, where quality can be increased at small cost (either through operating expenditure or capital expenditure), then this behaviour will be incentivised;<sup>31</sup>

48.2 this response to the incentives should also reveal the gains that can be made to quality; and

48.3 it will increase incremental incentives to invest where that provides some reward through quality rather than providing the minimum investment to meet a quality threshold.

49. However, it is recognised that such incentives cannot fully insure against the risks of under-investment. This is because of the lag between a decision to run down the network and the impact on quality measures, and may also be because the penalties would need to be set at a significantly higher level which may not be sensible for

<sup>31</sup> Potentially where large costs can be avoided through a small reduction in quality, this could also be incentivised to the benefit of consumers in the longer term.



when the scheme is first put in place especially given the uncertainty surrounding the starting position of quality.<sup>32</sup>

50. A key regulatory tool here is the role of information disclosure over time. This can work as an early warning on the risk of under-investment eventually feeding through to quality. It also works at the higher level on investors perceived riskiness of the regulatory regime – early warning indicators may be precursors to a harsher regulatory settlement. This has been addressed through the development of wider ‘output measures’ including measures of asset health.

## Key considerations

51. When considered in the context of the decisions before us on:
- 51.1 The regulatory WACC percentile; and
  - 51.2 any incremental changes to incentive schemes.
52. The key considerations to draw out are:
- 52.1 incremental changes to incentive schemes are likely to be second order long-term considerations which go more to achieving more efficient firms over time. From an investor perspective this is more likely to add some potential upside given we do not set stretch targets<sup>33</sup> rather than being seen as a way to increase returns through gaming which adds risk to the RAB and regime overall;
  - 52.2 to the extent we believe short-term considerations dominate then the regulatory WACC is unlikely to have a large impact other than at the end of the regulatory period under a system with no IRIS mechanism. In this setting we would also expect inefficient capital expenditure for operating expenditure substitution and delaying of capital expenditure;
  - 52.3 if longer-term considerations dominate, the choice of the regulatory WACC percentile comes back to considerations on the asymmetric risk of under-investment comprising of the likelihood of under-investment and the cost of under-investment. Breaking this down:
    - 52.3.1 to what extent will a lower valuation of the firm lead to direction to the company to cut back capital expenditure spend or provide forecasts that maximise revenues rather than reflect the underlying network need (and vice versa); and

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<sup>32</sup> If we knew the target SAIDI and SAIFI limits reflected the price-quality trade-off of consumers we could be more confident, where we do not, placing more modest incentives to move in the right direction appears sensible. But even if we did, the magnitude of penalties (if for example valued in VOLL terms) might significantly place the financial position of the firm at risk, which is why some quality incentive regimes are designed to ensure that suppliers still earn at least their cost of debt.

<sup>33</sup> Under a DPP we are not allowed to carry out benchmarking for example to determine how far away firms are from the efficiency frontier.

52.3.2 to what extent would such underinvestment lead to greater costs than over-investment;

52.4 a last consideration here is where investors are long-term investors primarily concerned with a safe return over time, a key consideration is not just the level of any premium to the WACC but the commitment to a premium over time.

53. The other main consideration is the ongoing role of summary and analysis to inform resets and the regulatory regime.

**Does the IRIS make this situation worse?**

54. Even if short-term incentives dominate then the introduction of an IRIS unto itself will not make the situation worse except that the end of period incentive to invest would be reduced. The power of the incentives the IRIS is set at, will be most determinative on the incentives for incremental investment. This, however, also has interactions with operating expenditure / capital expenditure substitutions.

**Do the quality standards matter or matter most?**

55. Quality standards do matter. In practice the reputational damage from long-term steady decline of the network and the potentially knock-on implications to the toughness of the regulatory regime are a potent threat to companies.

# Attachment 1: Regulatory Map

