



**Setting of Starting Prices for Gas Pipeline  
Businesses under the Initial Default Price-  
Quality Path**

**Discussion Paper**

**28 September 2011**

## INTRODUCTION

1. Powerco Limited (Powerco) welcomes the opportunity to make this submission on the Commerce Commission's (the Commission) *Discussion Paper: Setting of Starting Prices for Gas Pipeline Businesses under the Initial Default Price-Quality Path* (Discussion Paper). Specifically, this submission sets out Powerco's response on the following:
  - the method to calculate the assumptions in the Po model (real revenue growth, nominal opex and capex growth and CPI);
  - the general approach to the Po process; and
  - incorporating pass through costs in 2011.
  
2. Powerco's contact person in respect of this submission is:

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## EXECUTIVE SUMMARY

3. The gas Po and the electricity Po approaches are inherently linked. Powerco has made a number of submissions on the electricity Po process and approach, and refers the Commission to the arguments in our submission and cross submission on the 24 August and 5 September 2011 respectively. This submission focuses on the appropriate methodologies for forecasting real revenue growth, nominal opex growth, nominal capex growth and CPI.

### *Real Revenue Growth*

4. Powerco's analysis suggests there is no robust proxy for forecasting ICP and volume growth from 2010-2017. Historically, growth has been driven by retailers' approach to daily fixed charges, deindustrialisation, developers' hesitancy to invest in reticulating subdivisions and low consumer demand for gas fuelled by concerns of Maui depletion and climate change. None of these factors have a strong relationship to population, GDP or household growth.
5. **Powerco recommends** that ICP and volume growth are forecast based on the five-year historic trend.

### *Nominal Opex Growth*

6. The Commission is proposing to forecast opex using an industry-wide partial productivity factor, the supplier specific real revenue growth forecasts and a weighted labour cost index (LCI) and producer price index (PPI).
7. Economic Insights (EI) calculated Powerco's partial productivity calculation as -2.41%. This differs substantially from 0% and reflects the challenging conditions Powerco operates under. **Powerco recommends** that the Commission use supplier-specific partial productivity calculations, given the data is available in the EI report, and it is consistent with using supplier-specific real revenue growth forecasts.
8. **Powerco recommends** that the Commission uses growth in system length in the opex calculation, rather than real revenue growth. When customers leave the gas network, the gas pipe is still in the ground, still has to be filled with gas and still has to be maintained. Therefore the total amount of assets is a bigger driver than the volume passing through or the number of customers.

### *Nominal Capex Growth*

9. Given the lack of information and that historic information does not necessarily predict future spend, **Powerco recommends** that the Commission uses capex forecasts signed off by the Board of Directors.
10. **Powerco recommends** that the Commission uses a forecast of the pipelines Capital Goods Price Index (CGPI), rather than the All Industries CGPI.

## **PROPOSED APPROACH TO SETTING STARTING PRICES**

11. Section 3 of the Commission's Discussion Paper outlines the proposed approach for setting starting prices for gas distribution businesses (GDBs). This approach is broadly consistent with the approach in the July 2011 electricity distribution draft decision paper.<sup>1</sup>

## **ISSUES WITH THE ELECTRICITY DISTRIBUTION PO APPROACH**

12. Powerco's submission and cross submission to the electricity distribution draft decision paper raised a number of significant concerns. In summary:
- The Commission's approach does not address errors in forecasting information and the customised price path (CPP) is not a suitable mechanism to address this.
  - The mixed period discounting approach in the model is flawed.
    - The Commission bases its modelling of some items on a preference for greater precision (revenues and opex), while not accepting that other cash flow items (such as financing costs, depreciation, and tax) also vary throughout the year. An inconsistent modelling approach inevitably results in an arbitrary financial shock to the service provider and fails to achieve the financial capital maintenance (FCM) sought by the Commission.
  - The forecast growth in the Commission's Labour Cost Index (LCI) used for operating expenditure growth is lower than forecast growth in the CPI, and does not take into account the increasing costs facing EDBs due to labour shortages and an increasingly complex regulatory environment.
  - The Commission's forecast of real revenue growth is unduly positive and bears no resemblance to recent performance.
    - The Commission forecasts real revenue growth for the period 2011 to 2015 using an average annual growth rate of 1.42%. However, the cumulative growth rate in Powerco's region the last two years has been substantially lower, with negative growth forecast for 2010/11.
  - The Commission should consider the most recently available information on current profitability – in Powerco's case, the electricity business had a post tax return on investment of 7.38% for 2011 (when applying the input methodologies).
13. We refer the Commission to the detailed arguments presented on these points in our submissions on 24 August 2011 and 2 September 2011.<sup>2</sup>

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<sup>1</sup> Commerce Commission, 2010-2015 Default Price-Quality Path for Electricity Distribution Businesses: Draft Decision, July 2011.

<sup>2</sup> Powerco Limited, Submission and Cross Submission on the 2010-2015 Default Price-Quality Path for Electricity Distribution Businesses: Draft Decision, July 2011, 24 August 2011 and 2 September 2011.

## **GAS AND ELECTRICITY DISTRIBUTION SHOULD BE CONSISTENT WHERE APPROPRIATE**

14. Powerco notes that gas and electricity distribution have a number of similar characteristics. We support the principle of the gas starting price approach aligning with the electricity starting price approach. It is, of course, important that the inherent differences between EDBs and GDBs are recognised and accommodated. This should be demonstrated through the Commission modelling process being applied with historical inputs for GDBs and the outputs matching those observed in the industry.
15. We also note Justice Clifford's ruling on Vector's appeal in the High Court and that the timelines for the electricity DPP and gas DPP are likely to be altered. We look forward to working with the Commission under the new timeline.

## **2010/11 DATA SHOULD BE USED TO INFORM THE FINAL DETERMINATION IF AVAILABLE**

16. In principle, Powerco supports using the most up to date available information to inform the Po decision. For electricity, Powerco calculated its post tax return on investment for 2010/11 (using the input methodologies) was only 7.38%. Considering the Po Draft Decision for Powerco was -8.5%, using 2009/10 information, using up to date information is highly relevant. If timelines shift out, a new disclosure may be even more warranted.
17. However, Powerco has already completed a large number of audited disclosures this year, and has very little capacity to disclose 2011 figures by the end of the year.
18. **Powerco recommends** that the situation continues to be monitored and discussed with GDBs. For example, if the timeframe allows, it may be appropriate for the Ministry of Economic Development gas disclosure, due in February 2012, to be replaced by an updated 2011 Po disclosure.

## PROJECTING REAL REVENUE GROWTH

19. The Commission proposes to use the same method to project real revenue growth for GDBs as it proposed for EDBs. In summary this is by:
- calculating the proportion of 2010 revenue that is from fixed, variable or demand charges;
  - matching these revenue components to revenue drivers; and
  - using independent regional forecasts for each revenue driver to estimate revenue growth over the regulatory period.

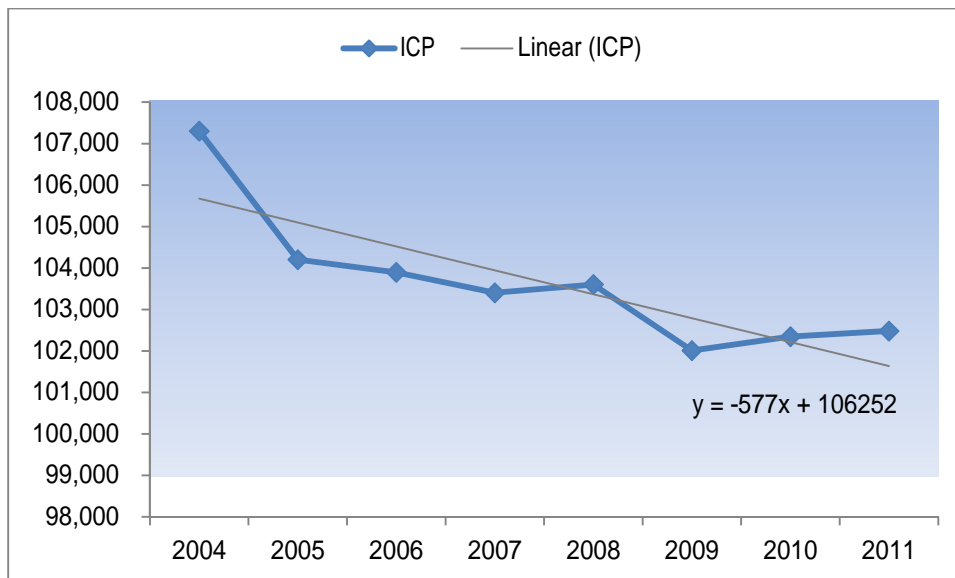
### Growth in fixed charges

20. The Commission proposes for domestic customers to use a measure of population growth (projections of household numbers) as the revenue driver, and multiply by an uptake factor, for example, regional household numbers/ regional ICPs.
21. The Commission proposes for industrial/ commercial customers to use either population growth; or regional GDP growth.

### Historic ICP growth

22. Revenue from fixed charges is determined by ICP growth. Powerco's ICP growth has declined over the past 6 years. Between 2004 and 2009 the average annual fall was 1% per year.<sup>3</sup>

**Graph One: Powerco ICP Numbers 2004-2011**



### Domestic Customers

23. Ninety-seven per cent of Powerco's ICPs are residential and small commercial customers (termed domestic ICPs). The decline in domestic customers is due to a number of factors. These are outlined below.

<sup>3</sup> Data from Powerco's annual gas information disclosure to the Ministry of Economic Development.

*Retailers will not lower fixed charges, leading low volume customers to disconnect*

24. In areas with established gas networks, the number of connections is declining. The main reason is that consumers face significant fixed charges of about \$1.30 per day from the retailers. For consumers with low levels of consumption, this fixed charge makes the overall cost of gas expensive relative to electricity. For example, for a consumer using, say, 10 GJ per annum (about 2,780 kWh per annum), the fixed charge represents  $365 \times \$1.30/10 \text{ GJ} = \$47/\text{GJ} = \$47/278 \text{ kWh} = 17\text{cents per kWh}$ , before the energy charge itself.. At this level of fixed charges it is better for many consumers to rely entirely on electricity and to disconnect from gas. Other homes without gas will not connect to gas for the same reason. The impact of the fixed charge on the overall cost to the consumer is reinforced by the decline in household size over time.
25. As a result, new connections tend to be to larger homes. These homes have higher consumption of energy, say, over 50 GJ per annum (about 14,000 kWh per annum), for such purposes as hot water and gas fired central heating. At this level of consumption the saving in energy costs (per GJ) is sufficient to justify the daily charge for gas supply. These new connections tend to be in the higher socio-economic areas, where houses tend to be larger and where house owners are willing to pay for gas appliances that are more expensive than their electricity counterparts.

*Developers may not invest to reticulate new subdivisions*

26. New subdivisions offer some potential for new connections, but gas pipelines are often not installed. The capital expenditure required to reticulate a new subdivision, however, is sufficiently high that it is normally uneconomic at the initial take up rates expected (about 30 to 40 percent). Developers are asked to contribute to this investment, but seldom do so because their first priority is the electricity supply, which is a local body requirement.
27. The impacts of new domestic consumer and developers choices are further affected by their location in relation to the network and inherent network capacity. There may be a desire to install gas, but the practical and economic realities related to individual cases prevent uptake. A single regional uptake factor as a means of predicting growth appears too coarse to accurately reflect observed behaviours.
28. In addition, reticulated gas is experiencing competition from LPG. Gas and electricity retailers also supply LPG, and promote LPG ahead of reticulated natural gas where volumes are likely to be low. There is also competition from solar water heating.

*Perceptions that gas is running out or an environmental problem*

29. In recent years there has been little promotion of gas in the media, possibly because the gas retailers are also electricity retailers and find it more profitable to promote electricity ahead of gas. There is a public perception that, as Maui gas is depleted, gas supplies for residential, commercial and industrial consumption will become tight, with a consequential rise in prices. Although gas will continue to be available to these consumers, supply will become less flexible and the price will rise. The significant reductions are likely to be in the use of gas for electricity generation. Finally, there is also a negative connotation towards gas associated with the Government's messages over climate change.

**Commercial and industrial customers**

30. The remaining 3% of Powerco's customers (around 2,800 ICPs) are medium/large commercial and industrial customers. There are three main reasons for declining gas volumes to industrial customers.

### *Deindustrialisation of New Zealand*

31. First, gas volumes to industrial customers are declining as a consequence of the deindustrialisation of New Zealand. In particular, there have been a number of plant closures in the Powerco network regions, including South Pacific Tyres, Griffins and Ag Research.

*Like domestic customers, a perception that gas will get more expensive as Maui is depleted*

32. Secondly, a concern shared with domestic customers is that gas will become more expensive as Maui gas production is phased out. This perception discourages firms from making the investment needed to convert from other forms of fuel to gas. In fact, some gas customers, such as sawmills, have moved to alternative fuels (eg biomass), which is available to them as part of their production process.

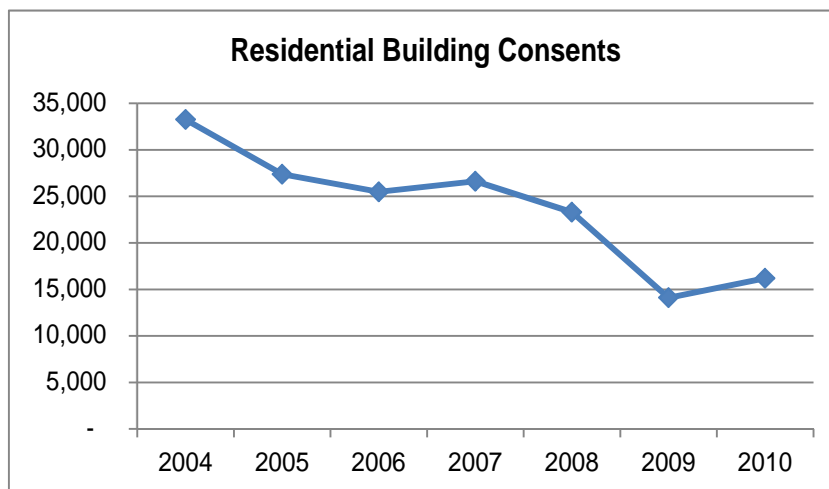
*Bypass competition from Nova Gas*

33. In addition, Powerco is subject to competition from Nova Gas, which provides by-pass pipelines to larger industrial and commercial customers in Wellington and Hastings. There is therefore a loss of gas volume from Powerco for this reason.

### **Powerco recent efforts to increase uptake**

34. Powerco has made a large investment in the last year to encourage new uptake. This effort has helped to reduce the decline in customers. However, given the extensive challenges detailed above the numbers of ICPs remains static. For example, there has been a rapid decline in building consents over the last six years, and this is expected to continue (with the exception of Christchurch), given the current economic climate.

**Graph Two: Decline in national residential building consents**

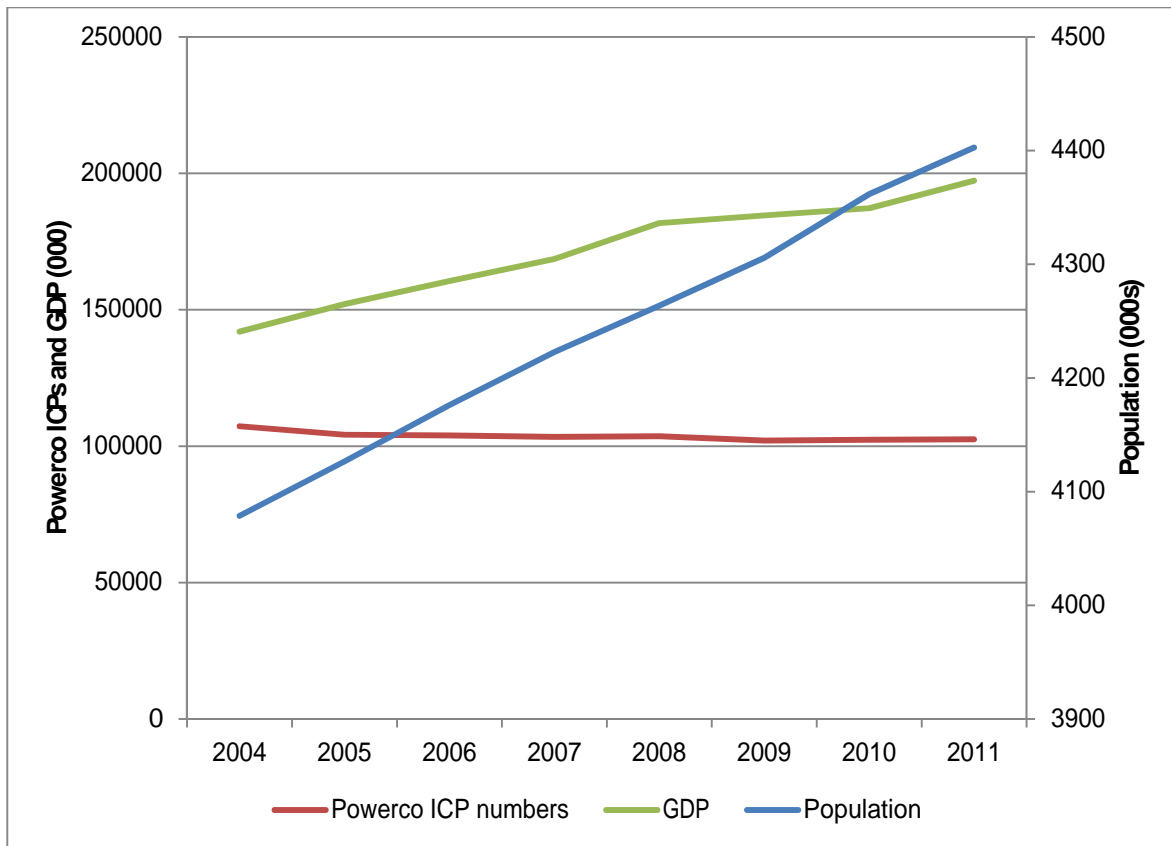


### **Factors to forecast ICP growth**

35. The following possible proxies to forecast ICP growth and are examined in this section:
- population growth, household growth, and household growth multiplied by an uptake rate of household numbers/ ICPs; and
  - GDP.
36. Graph three shows there is little relationship between population growth, household growth and GDP. While population and GDP growth have been high, Powerco's ICP growth has declined.



**Graph Three: Population, GDP and ICP numbers**



***Powerco recommends that the Commission should assume the past will continue***

- 37. There is no strong proxy to forecast the ICP growth rate in to 2017. This is to be expected given the decline has been driven by retailers’ approach to daily fixed charges, deindustrialisation, developers’ hesitancy to invest in reticulating subdivisions and low consumer demand for gas fuelled by concerns of Maui depletion and climate change. None of these factors have a strong relationship to population, GDP or household growth.
- 38. **Powerco recommends** using the historical average growth over the last five years to forecast ICP growth.

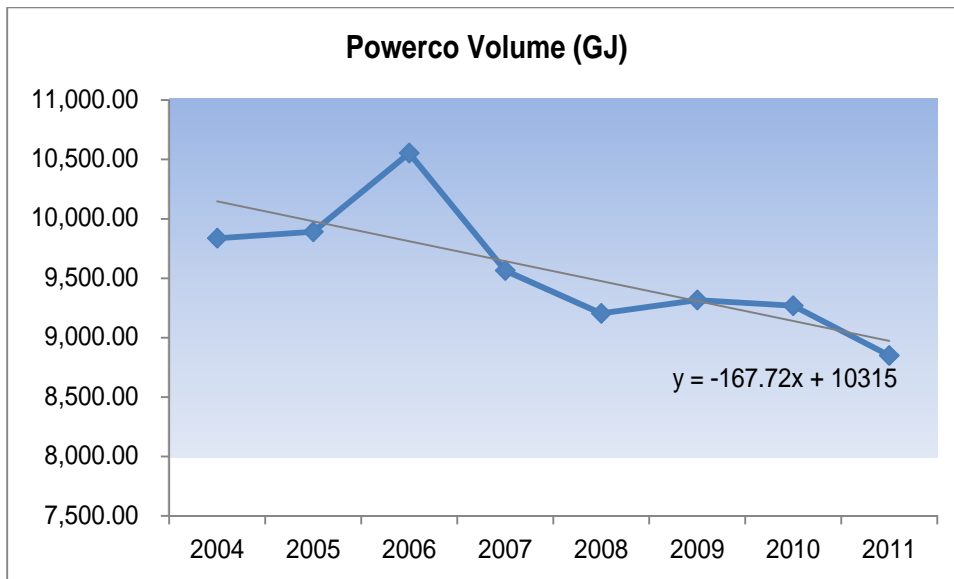
**Growth in variable charges**

- 39. The Commission is planning on commissioning independent expert advice on a preferred option for forecasting variable charges. This section examines Powerco’s historical volume growth, potential proxies for forecasting growth and recommends again, using the historical average growth of the last five years to forecast ICP growth.

***Historic volume growth***

- 40. Revenue from variable charges is determined by gas volume growth. Overall Powerco’s historic gas gate volume growth has declined over the past six years. This is shown in graph four.

**Graph Four: Historical Powerco Volume Growth**



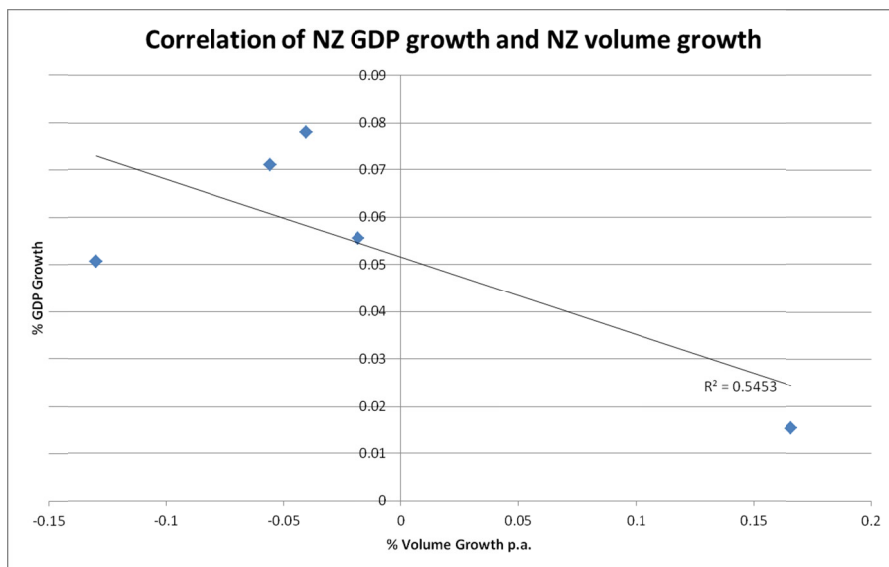
41. Although 97% of Powerco’s total ICPs are residential and small commercial customers (domestic ICPs), this segment of customers only account for 30% of volume. The decline in domestic gas volume is in line with the decline in the ICP counts, and the reasons are also mainly the same. In addition, residential gas volume is also affected by temperature. The warmer the temperature, the lower the consumption. Based on observation, 1 degree Celsius of temperature difference affects around 70TJ of consumption at Powerco’s footprint.
42. The 3% medium commercial and industrial ICPs accounts for 70% of gas volume. The consumption decline for this segment is again, the result of the reasons detailed in the earlier section. Powerco expects this trend to continue.

**Factors to forecast volume growth**

43. Powerco is not aware of any robust regional forecast of volume growth. Given gas volume forecasting is more challenging than electricity forecasting, it is unlikely the Commission will be able to complete a robust forecast model in the short timeframe. This section explores potential drivers of future gas consumption, and if there are any suitable proxies to forecast growth.

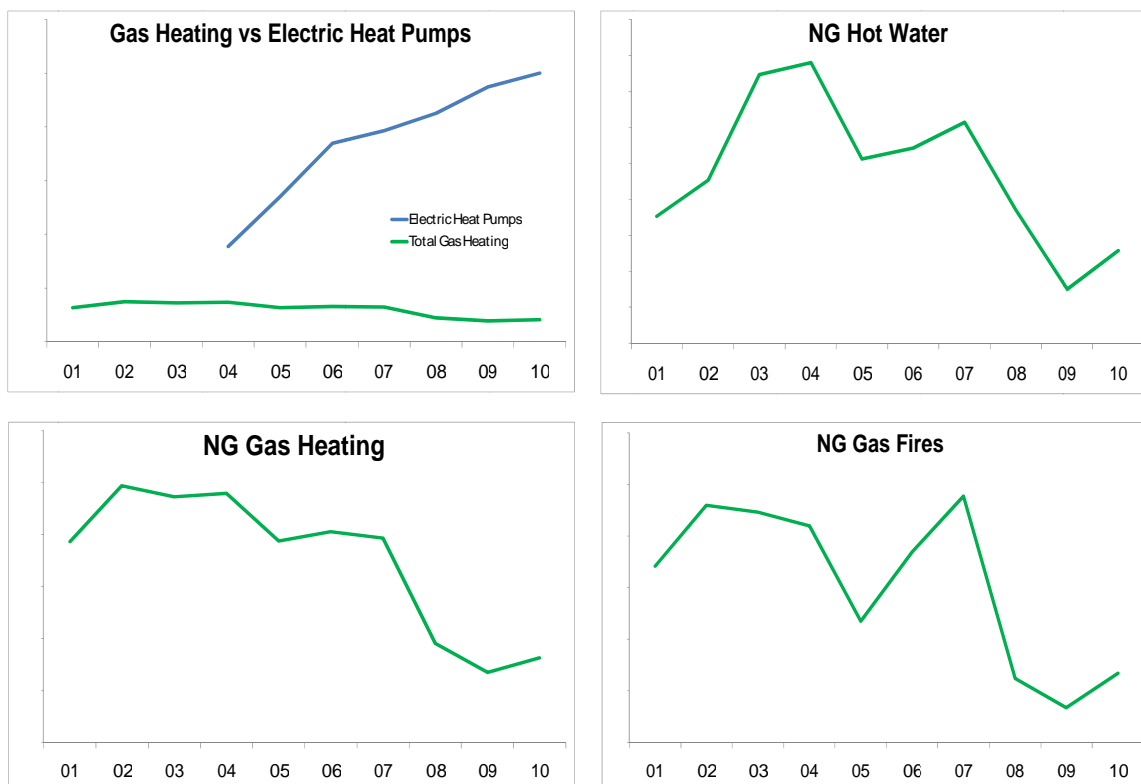
**GDP growth rates**

44. The graph below plots NZ volume growth per year against NZ GDP growth per year from 2005-2009. It shows the opposite relationship of what should be expected, that as GDP growth increases, volume decreases. This suggests a weak relationship between gas volume growth and GDP growth. This is to be expected given the reasons mentioned earlier.



**Appliance Uptake and growth of heat pumps**

45. The graphs below show the trends in sales of gas appliances by Rinnai New Zealand over the last ten years. They demonstrate a very challenging market, particularly against the rapid growth of heat pumps. All gas appliances have shown a downward trend since 2002. Given the rapid rise in heat pumps, this trend is expected to continue for gas heating.



**Recommended methodology for volume growth**

46. Despite increases in GDP and population growth, gas consumption has been decreasing. There is no evidence to suggest that the declining trend will not continue. As there is no

good proxy for forecasting volume growth, Powerco recommends that the Commission use the historical five year average trend in volume growth.

**Revenue driver for capacity based charges**

47. Powerco does not have any capacity based charges for its gas distribution service, so has no comment on the best forecast method.

**Weighting growth by region**

48. Ideally, forecasts should be completed at the gas gate level, rather than the regional level. However, given this will be challenging, Powerco recognises that a weighting approach based on ICP numbers or volume in regions will need to be used. This will be a difficult task to complete accurately as gas, unlike electricity, is not universal across regions.
49. Given these challenges, Powerco recommends the Commission compare the regional approach with what has occurred on the network over the last five years. If there are large discrepancies, the approach should be modified where necessary.

*Issues with the regional approach for gas*

50. Some issues with the regional approach are firstly, it assumes that growth translates uniformly over a region. This is unlikely to be true as not only does connection to a gas network have various locational issues. For example, the network expansion (new mains and service and any upstream reinforcement) must be economically viable to reach any new consumer who decides to connect to gas. Just because a consumer wants to connect to gas does not mean they can do it economically.
51. Secondly, the assumption that growth is equally spread in regions where there are two GDBs is also unlikely to be true. Growth is often linked to specific industry developments and TLA/developer progress against their plans and goals. There is a strong possibility that growth experienced in one GDB network will not be matched by another supplier in the same region. For example growth (population or GDP) in the Kapiti Coast area of the Wellington region would not be reflected in Powerco revenue.

## PROJECTING NOMINAL OPERATING EXPENDITURE GROWTH

53. The Commission proposes to forecast nominal opex using:
- the industry wide projected growth in the opex input price index, a weighted average of input price indices for labour costs and non-labour costs;
  - minus the industry wide projected growth in opex partial productivity;
  - plus the supplier-specific projected output quantity growth.

### **Opex is driven by system length, not volume**

54. Powerco considers that operating costs for the gas business are more strongly linked to the length of pipeline to be maintained, rather than number of ICPs or volume. This is due to the discretionary nature of gas a fuel choice, as opposed to the universal EDB network.
55. In the case of gas, the number of consumers is declining. New customers are being connected, although disconnections are greater. This leads to a net loss. (Powerco's first focus is on stopping customers disconnecting and attracting back old customers, however, as the customer relationship is with the retailer, this is challenging.)
56. In order to connect new consumers, Powerco must extend its existing networks to areas where new customers are, and this increases operating costs. These additional facilities require additional maintenance under the Standards required for network management and legislative compliance.
57. Similarly, when a consumer on the existing Powerco network chooses to disconnect, the assets used to supply must still be maintained for safety reasons even though there is no gas being taken. At some point the assets used to supply disconnected consumers need to be decommissioned in order to reduce the risk to the public; this is an operational expenditure and increases as the number of consumer declines.
58. Powerco recommends opex is linked to pipeline length, rather than real revenue growth.
59. The Commission should also be aware of the new requirements of the Gas (Safety and Measurement) Regulations 2010 for an audited safety management system (SMS) will lead to an increase in the operating costs of the affected GDBs.

### **Opex partial productivity growth**

60. The Commission has proposed to use a productivity growth rate of zero. This is based on the Economics Insights analysis on productivity.
61. Economic Insights (EI) calculated Powerco's partial productivity calculation as -2.41%. This differs substantially from 0% and reflects the more challenging conditions Powerco operates under compared to the two other GDPs. Powerco recommends that the Commission use supplier-specific partial productivity calculations, given the data is available in the EI report, and it is consistent with using supplier-specific real revenue growth forecasts.

## PROJECTING NOMINAL CAPITAL EXPENDITURE GROWTH

62. The Commission is proposing to assess capital expenditure (capex) by examining historical capex, and that a supplier can consider applying for a CPP if it faces a step change in investment. This differs to the approach in electricity as no asset management capex forecasts have been produced by gas distributors as part of regulatory information disclosure.
63. This section:
- provides detail on Powerco's historical capital expenditure;
  - discusses future drivers of capex from 2012-2017; and
  - proposes that capex is based on a forecasts signed off by Directors.

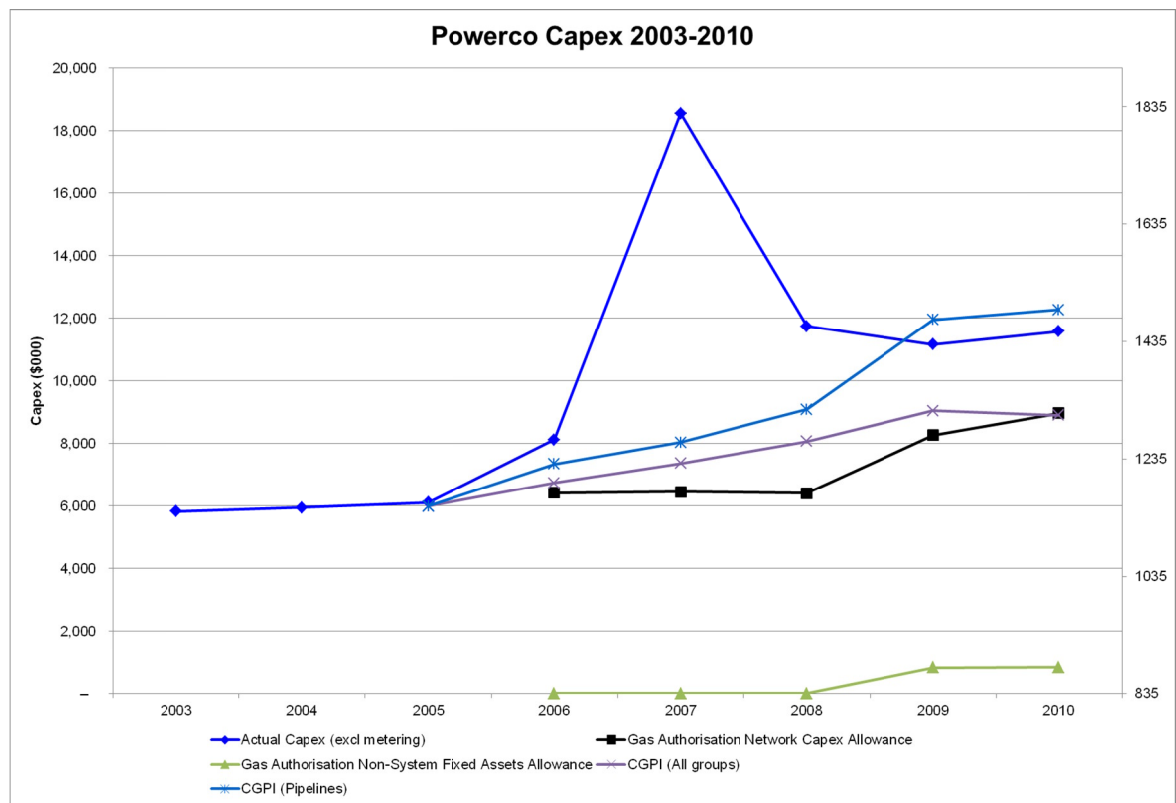
### **Powerco's historical capex**

64. The blue line in graph six shows Powerco's capital expenditure (excluding metering) from 2003 to 2011.<sup>4</sup> From 2005 to 2010 capex nearly doubled from around \$6M to \$11.5M. This represents a constant average growth rate of 11.3%. Some reasons for this increase are:
- inflationary costs;
  - connecting new customers;
  - increased costs of traffic management;
  - improvements in systems to manage the network; and
  - requirement to remove asbestos in the network.
65. The black line on the graph below shows the capex (system fixed assets for network) allowance in the Gas Authorisation model. This line has a similar CAGR of 8.7%, although Powerco's actual capex has been much higher.

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<sup>4</sup> This information is sourced from Powerco's gas Po request, to be supplied to the Commission by 30 September 2011. In information disclosure, the year 2005 reported a 15 month period. This has been pro-rated down to 12 months. The high figure for 2007 represents a financial anomaly. The budgeted capex for the year was around \$9.6M.

**Graph Six: Powerco historical capex and GGPI**



**Future drivers of capex from 2012-2017**

66. Capex forecasting for GDB's is highly uncertain due to the inherent and inherited characteristics of the GDB networks and discretionary nature of the fuel; step changes can be introduced as a results of consumer choice. Given this uncertainty, Powerco recommends a low cost and simple mechanism to forecast capex.
67. System length keeps increasing in order to connect new consumers to mitigate the effects of the declining overall consumer base. This growth occurs at the extremities of the network and requires the existing asset to be reinforced, as well as extended, in order to supply new consumers without impacting on the quality of their supply.
68. Therefore the drivers of capex in the future are a combination of:
  - “business as usual” work;
  - investment to gain new customers to counteract gas disconnections; and
  - inflation in capex.
69. There is no guarantee that historic capex will predict forecast capex. Therefore **Powerco recommends** that the Board of Directors sign-off the capex forecast from 2011-2017. The accuracy of this forecast will be highly transparent in 2016 when the next DPP is reviewed. This will act as an incentive for the business and Directors to produce a robust forecast. As Powerco’s capex under the Gas Authorisation shows, Powerco has continued to invest sustainably in the network and will continue to do so in the future.

***Capital Goods Price Index***

70. The Commission proposes to use the Capital Goods Price Index to adjust for inflation in capex. The Commission has asked if indices tailored to the gas sector should be used to accommodate for specific factors, such as the difference between steel and polyethylene pipelines.
71. The CGPI (All Groups) and CGPI (Pipelines) is shown on the graph above. The CAGR (All Goods) from 2005 to 2011 has only been 2.6% p.a. This is much lower than the overall growth in Powerco's capex. The GCPI (Pipelines) has grown by 4.6% p.a., which is more reflective of Powerco's growth in costs.



## **PROJECTING CPI**

72. Powerco supports electricity and gas having the same approach to projecting CPI for the respective Po's. We refer the Commission to our submission on the electricity DPP Draft Decision where Powerco recommended the following changes to the treatment of inflation indexation:
- for years when the Reserve Bank of New Zealand (RBNZ) does not forecast CPI, inflation should be forecast using the midpoint of the RBNZ target range for inflation (i.e. 2%);
  - a constant rate of inflation should be assumed, rather than uneven annual rates of inflation; and
  - include the one-off increase in inflation arising from the change in the GST rate.

## **TRANSITION FROM THE GAS AUTHORISATION: PASS THROUGH COSTS**

73. In Powerco's submission on 27 May 2011, we raised a concern over the reclaiming of pass through costs for the period 1 July 2010 to 30 June 2011.<sup>5</sup> Powerco estimates 2010/11 pass through costs to be around \$150,000 less than allowed in the Gas Authorisation. Given the number is low, we do not consider this a significant issue.

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<sup>5</sup>Under the Authorisation, pricing for October 2011 – September 2012 uses pass through costs from July 2009 – June 2010. The proposed equation in the DPP uses  $K_t$  and  $K_{t-1}$  which means for the initial DPP of July 2012 – October 2012, the pass through costs used will be those from July 2012 – October 2012. This means that pass through costs from July 2010 – June 2011 are not covered by either the Gas Authorisation or the DPP.