



Commerce Commission  
Desktop review of Transpower  
2006/07 Operating Expenditure Proposal  
October 2006



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## Glossary of Terms

**Table 1**      **Glossary of Terms**

<b>Abbreviation/Acronym</b>	<b>Description</b>
ACCC	Australian Consumer and Competition Commission
AMP	Asset Management Plan
CSA	Current State Assessment
EGR	Electricity Governance Rules
GOS	Grid Operators Services
HVDC	High Voltage Direct Current
ISSP	Information Systems Strategic Plan
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ITOMS	International Transmission Operations & Maintenance Study
IT & T	Information Technology and Telecommunications
MMS	Maintenance Management System
Opex	Operating expenditure
SVI	System Vision Investigation
TNSP	Transmission Network Service Provider
TPSLC	Transpower Solution Life Cycle



# Executive Summary

## Introduction

The Commerce Commission (Commission) published its intention to make a declaration of control under Part 4A of the Commerce Act 1986 (the Act), in respect of electricity transmission services supplied by Transpower New Zealand Limited (Transpower) in the New Zealand Gazette in December 2005. Transpower is the state-owned enterprise that owns and operates New Zealand's high-voltage electricity transmission grid.

Part 4A of the Commerce Act came into effect on 8 August 2001 and, among other things, requires the Commission to implement a targeted control regime for the regulation of large electricity lines businesses (lines businesses)—namely the 28 distribution businesses and Transpower.

The purpose of the targeted control regime (Purpose Statement) set out in s 57E of the Act is:

*to promote the efficient operation of markets directly related to electricity distribution and transmission services through targeted control for the long-term benefit of consumers by ensuring that suppliers—*

*(a) are limited in their ability to extract excessive profits; and*

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

*(c) share the benefits of efficiency gains with consumers, including through lower prices.*

Transpower responded to the Commission's intention to declare control in February 2006, disputing the Commission's claims of excess profits and sought to enter into an administrative settlement.

This review is predicated on the basis of Transpower implementing its growth strategy. GHD notes that major investments require the approval of the Electricity Commission. Should such approval be withheld this may affect the growth strategy and consequently have a significant impact on the matters discussed in this review.

## Purpose

GHD has been engaged by the Commission to investigate, assess and comment on the Transpower proposed 2006/07 Operating Expenditure. This desktop review is guided by the requirements specified by the Commerce Commission in *Regulation of Electricity Lines Businesses: Review of Documentation relating to Transpower Operating Expenditure*<sup>1</sup>.

This report provides GHD's opinions and recommendations on Transpower's administrative settlement proposal on operational expenditure based on GHD's desktop review of material related to that proposal.

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<sup>1</sup> ICNNZ Reference 15421, <http://www.gets.govt.nz>



## Background

During the 10 years prior to 2002, Transpower operated in a self-regulating environment. In this period, the Transpower Board aimed for the company to earn its Weighted Average Cost of Capital (WACC).

In 2002, an investigation was undertaken to review Transpower's current operating environment and future needs. This review culminated in the System Vision Investigation (SVI). SVI heralded a significant change in strategy<sup>2</sup>. As a result there has been a material increase in capability (i.e. headcount) and major changes particularly in the Transmission Investigations and Information Technology areas.

To review the proposed Transpower operational expenditure, GHD held discussions with representatives from the Commission and Transpower. In addition GHD reviewed a significant number of reports and documents provided by Transpower. Additional information in the public domain was also considered. This report has been developed to address the terms of reference provided by the Commission namely:

*GHD is required to provide an opinion and defend against any challenge on, the reasonableness of Transpower's proposed level of operating expenditure for the 2006/07 period. In forming an opinion GHD will undertake a comprehensive desk-study of documentation provided by Transpower. This will include, but is not limited to: internal reports, board papers, opinions, and consultancy reports.*

*A reasonable level of operational expenditure is a level that allows Transpower to meet its obligations based on the circumstances of its current environment. In testing this, GHD will need to review the assumptions made by Transpower when arriving at the current level of expenditure.*

There has been significant increase in capability to cope with future demand and a move away from Transpower's past strategy. Transpower indicated that current plans for upgrades are not confined to 2006/07 and advised that there are further increases to come that may impact on operating expenses beyond 2006/07.

The Commission has proposed to Transpower that 2002/03 costs may represent an efficient operating environment and therefore an appropriate starting point to establish the operational expenditure threshold for the period of the administrative settlement<sup>3</sup>. Transpower does not consider this an appropriate starting point and believes that the opening operating cost threshold should be set using the Transpower 2006/07 forecast year as an appropriate base level<sup>4</sup>. Transpower has proposed \$198 Million for operating expenses in 2006/07. This report reviews the reasonableness of the April 2006/07 operating expenditure proposal against the 2002/03 starting point. Transpower subsequently submitted a revised operating expenditure of \$201.3 Million. This is addressed separately in Section 5 National Grid and Grid Investigations.

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<sup>2</sup> Final Transpower 2005/06 Business Plan – Board Approval for Submission to Shareholding Ministers, Board Paper 8<sup>th</sup> June 2005, Transpower

<sup>3</sup> Draft Transpower New Zealand Ltd Operating Expenditure Discussion Paper, April 2006, Rf-060501OPEX\_Draft\_1May2006.pdf, Transpower

<sup>4</sup> Draft Transpower New Zealand Ltd Operating Expenditure Discussion Paper, April 2006, Rf-060501OPEX\_Draft\_1May2006.pdf, Transpower



## **Approach**

GHD attended briefings by the Commission and Transpower and had access to various internal management reports and Board papers. In addition to the briefings and the data provided, GHD received responses to some 49 written questions.

GHD has reviewed the larger individual cost groups of the Transpower 2006/07 Operating Expense Plan to assess costs in some detail.

## **Key Findings**

### **Individual Cost Groups**

The GHD review assessed two major cost categories representing an estimated 75% of the Transpower 2006/07 Operating Expenses namely:

#### **1. Departmental Costs that includes:**

- ▶ CEO / Public Affairs
- ▶ National Grid and Investigations
- ▶ Corporate Services
- ▶ People & Performance
- ▶ Information Technology

Costs incurred in these departments are; staff direct and indirect, third party, building and office.

In this cluster of costs, GHD has reviewed National Grid, Investigations and Information Technology.

GHD undertook qualitative and quantitative analysis of the trend and outlook of wages in the energy sector in New Zealand and Australia. In addition, discussions were held with specialist remuneration consultants and in GHD's opinion, the market place is very competitive and the Transpower salary levels are within expectation. A copy of a report from HayGroup, an international remuneration consultant, is included in the appendices for reference. HayGroup was selected because they are a worldwide company and they have a range of sector remuneration surveys that address the issues raised here. GHD notes that HayGroup is an advisor to many of the energy sector companies in Australia and New Zealand, including Transpower. GHD believes the remuneration commentary is balanced as it draws on the data supplied by major New Zealand energy companies including but not limited to: Contact Energy, Vector Limited, Meridian Energy Limited, Mighty River Power, Trustpower Limited and Swift Energy New Zealand Limited.

GHD also obtained remuneration data from another human resources consultant, Hays Personnel Services (Australia) Pty Limited.

Transpower has a remuneration policy in place and uses external consultants including HayGroup to assist it with the determination of forward budgets for salary increases.

#### **2. National Grid and Investigations:**

GHD analysed departmental costs and has concluded that the projected 2006/07 budget includes expenses in departmental costs that are attributable to the planned 400 kV transmission line. In particular, the proposed increase in personnel from 308 to 436 suggests that a major part of this increase may in fact be a result of Transpower gearing up for the proposed 400 kV project and other major capital programs.



For example, in April 2006, Transpower presented to the Commission:

*“ In National Grid some 30 additional staff has been recruited since 2002/03 to ensure that Transpower has the skills and resources (and business processes) necessary to plan, deliver and support the future capital investment programme and to ensure day- to- day compliance with Transpower’s increasingly complex regulatory obligations. This is considered to have been an essential prudent investment as the company has embarked upon a major period of growth.”<sup>5</sup>*

Going forward, although the 400 kV project has been deferred, new investigations may be required to provide alternative solutions and the additional resources may still be required.

If a project similar in scale to the 400 kV project is to be investigated for approval by the EC, then GHD acknowledges that the Transpower proposed staff increases of 31 FTE is not considered to be unreasonable. The staff cost increase of these 31 FTEs would represent approximately \$2 to \$2.5 Million per annum. However, GHD is of the opinion that major investigations of the nature of the 400 kV project are infrequent and require significant specialist technical skills. GHD questions why the work force has been employed on a full time basis rather than being employed on individual contracts. Employing staff on a contract basis allows appropriate skills to be engaged to investigate new projects to ensure efficiency of the department as projects are completed. This may provide confidence that skills are matched efficiently to investigations.

The remaining 25 staff increase (total of 56 proposed) would represent an additional cost of approximately \$1.5 to \$2 Million per annum. GHD note the remaining 25 staff have been recruited to cope with:

- Additional Regulatory requirements under Part F (Electricity Commission) and the EGR.
- Investigations to identify and assess future investment needs and options over the next 20-40 year timeframe.

Regardless of the uncertainty surrounding the 400kV project or its replacement, Transpower may require staff to undertake investigations. An exact forecast expenditure level to be included in 2006/07 cannot be determined until such time the uncertainty surrounding the 400 kV project and replacement projects is resolved.

Considering the additional requirements on Transpower’s resources and the potential for further major investigations arising from the EC decision on the proposed 400 kV project, GHD concludes that the proposed Operating Expenses related to capability requested by Transpower for 2006/07 are not unreasonable.

### **3. Information Technology:**

Transpower has forecast that the IT 2006/07 Operating Expense will be \$28.4 Million (IT Investigation \$6.7 Million, IT Personnel \$11.7 Million and IT&T \$ 10.0 Million). Increases in cost account for approximately \$3.5 Million of the difference between the 2006/07 Plan and the 2002/03 starting point. The balance is the growth during the period estimated at \$5.4 Million.

Prior and subsequent to 2002/03, in the area of information technology, specialist consultant reports indicated that a significant increase in capability was required to support any major change in business direction<sup>6</sup>. The reports highlight use of poor practices, use of unsupported legacy

<sup>5</sup> Draft Transpower New Zealand Ltd *Operating Expenditure Discussion Paper*, April 2006, pg 17, note 56

<sup>6</sup> A Review of Transpower’s Asset Management Strategies, System Operator Services and Related Practices, Beca Carter Hollings, 2001, Current State Assessment, Azimuth Consulting, 2004



technology and the ability to support small increments of change only. The reports suggest significant investment would be required should the business direction change. When Transpower embarked on a growth strategy, the existing IT organisation was forced to change significantly beyond existing capability.

The establishment and Board approval of the Information Systems Strategic Plan (ISSP) heralded an era of increased capability and capacity. The subsequent transformation of the IT organisation to become service delivery focussed required significant effort beyond the previous capacity. Further reviews in areas of operations, service sourcing and service delivery processes highlighted the depth of issues within Transpower IT. With the substantial increase in capacity and capability the IT organisation has demonstrated significant progress<sup>7</sup> on the issues raised.

GHD is of the opinion that IT staff costs could be significantly reduced in future years as projects are completed and system architectural initiatives are fully realised. Transpower anticipates a staff reduction of 10-11 roles through attrition over three areas in the next 5 years. This represents approximately \$1 Million of the total IT salary and the reduction is expected to commence in 2008/09 and is expected to be complete in 2010/11<sup>8</sup>. Given the state of IT in Transpower in 2002/03 and Transpower's future desired state, driven by the growth strategy, and assuming the plan for staff reduction is successful, GHD is of the opinion that the level of IT staff numbers and above premium median remuneration increase is not unreasonable.

**4. Maintenance – these are costs incurred by provision of Maintenance Engineering Services by external third parties.**

Transpower's projected \$82 Million maintenance costs account for 42% of the 2006/07 Operating Expenditure. This compares with 2002/03 when maintenance was 46% of the overall operating expenditure. The underlying philosophy of the asset management strategies has not changed since 2002/03.

Transpower has participated in the International Transmission Operations & Maintenance Study (ITOMS) benchmarking since 1994. The benchmarking study involves data comparison from Transmission Network System Providers (TNSP) from around the world. While the ITOMS results cannot be used to draw conclusions on absolute cost levels, they do support Transpower's contention that it is not out of step with international TNSPs in relation to maintenance costs for transmission lines and substations.

Transpower's maintenance expenditure budget is developed in line with the asset management strategies as outlined in the Asset Management Plan. GHD is of the opinion that the budget process is robust and that the practice of reviewing the AMP and budgets on a year-by-year basis is in line with industry practice.

The rate of increase since 2002/03 is in line with inflation and the 10-year Asset Management Plan forecast. The forecast of \$82 Million for 2006/07 is therefore not unreasonable. GHD is of the opinion that a more detailed analysis would not change the conclusions and as such do not recommend any further analysis in this area.

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<sup>7</sup> Response to GHD Q1-4 21/08/06

<sup>8</sup> Transpower Response to GHD Questions 22/08/06 Question 6



### **GHD's Findings: Summary**

The transition from the steady state environment to the growth path strategy represented a major step change that identified the need for significant investment.

The table following summarises GHD's findings on the areas it has reviewed. The conclusions are based on a comparison with the 2002/03 expenditure base proposed by the Commission of the proposed additional expenditure relative to that base and Transpower's justification for the proposed increases.



**Table 2 Transpower's 2006/07 proposed Operating Expenditure**

<b>\$Million</b>	<b>Headcount</b>	<b>2006/07 Department Cost</b>	<b>Transpower Justification</b>	<b>GHD Findings</b>
Departmental Cost Categories:				
CEO & Public Affairs	15	\$7.5	Above CPI plus additional staff required to meet improved customer relations	General Agreement. GHD notes that since 2002/03 all Transpower operating costs have been directly affected by a number of significant factors including: intervening period CPI and general cost escalations, the implementation of the System Vision Investigation strategy and other cost drivers identified by Transpower.
National Grid and Investment	241	\$28.9	Above CPI plus new growth strategy requires new recruitment	As above
Corporate Services	57	\$14.9	CPI plus additional staff to meet increases in Regulatory obligations, accounting for increased capital expenditure and changes to meet IFRS	As above
People & Performance**	96	\$13.6	Above CPI plus additional staff to meet increased activities	As above
IT	27	\$11.7	System Vision Investigation identifies significant changes required in IT delivery	As above
<b>Departmental</b>	<b>436</b>	<b>\$76.6</b>		



<b>\$Million</b>	<b>Headcount</b>	<b>2006/07 Department Cost</b>	<b>Transpower Justification</b>	<b>GHD Findings</b>
Intercompany & security		\$14.0	CPI increases have been partially offset by changes to activities that have reduced costs	As above
Investigations		\$10.4	CPI plus major investigations identified including the 400 kV project	As above
IT&T		\$9.9	Above CPI and new strategy	As above
Comms & control		\$4.5	Above CPI and new strategy	As above
Maintenance		\$82.4	Assumes 2002/03 is efficient plus interim CPI	As above
<b>Total</b>	<b>436</b>	<b>\$197.9</b>		

Source: Transpower



# 1. Introduction

The Commerce Commission (Commission) published its intention to make a declaration of control under Part 4A of the Commerce Act 1986 (the Act), in respect of electricity transmission services supplied by Transpower New Zealand Limited (Transpower) in the New Zealand Gazette in December 2005. Transpower is the state-owned enterprise that owns and operates New Zealand's high-voltage electricity transmission grid.

Part 4A of the Commerce Act came into effect on 8 August 2001 and, among other things, requires the Commission to implement a targeted control regime for the regulation of large electricity lines businesses (lines businesses)—namely the 28 distribution businesses and Transpower.

The purpose of the targeted control regime (Purpose Statement) set out in s 57E of the Act is:

*to promote the efficient operation of markets directly related to electricity distribution and transmission services through targeted control for the long-term benefit of consumers by ensuring that suppliers—*

*(a) are limited in their ability to extract excessive profits; and*

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

*(c) share the benefits of efficiency gains with consumers, including through lower prices.*

Transpower responded to the Commission's intention to declare control in February 2006, disputing the Commission's claims of excess profits and sought to enter into an administrative settlement.

This review is predicated on the basis of Transpower implementing its growth strategy. GHD notes that major investments require the approval of the Electricity Commission. Should such approval be withheld this may affect the growth strategy and consequently have a significant impact on the matters discussed in this review.

## 1.1 Purpose

GHD has been engaged by the Commission to investigate, assess and comment on the Transpower proposed 2006/07 Operating Expenditure.

This desktop review is guided by the requirements specified by the Commerce Commission in *Regulation of Electricity Lines Businesses: Review of Documentation relating to Transpower Operating Expenditure*<sup>9</sup>.

The purpose of this report is to provide GHD's opinions and recommendations on Transpower's administrative settlement proposal on operational expenditure using a desktop review approach.

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<sup>9</sup> ICNNZ Reference 15421, <http://www.gets.govt.nz>.



## 1.2 Background

During the 10 years prior to 2002, Transpower operated in a self-regulating environment. In this period, the Transpower Board aimed for the company to earn its Weighted Average Cost of Capital (WACC).

In 2002, an internal investigation was undertaken to review Transpower's current operating environment and future needs. This review culminated in the System Vision Investigation (SVI) and a significant change in strategy<sup>10</sup>. As a result there has been a material increase in capability (i.e. headcount) and major changes particularly in the Transmission Investigations and Information Technology Investigations.

To review Transpower's proposed operational expenditure, GHD held discussions with representatives from the Commission and Transpower and reviewed a significant amount of reports and documents provided by Transpower. Additional information in the public domain was also considered. This report has been developed to address the terms of reference provided by the Commission:

*GHD is required to provide an opinion and defend against any challenge on, the reasonableness of Transpower's proposed level of operating expenditure for the 2006/07 period. In forming an opinion GHD will undertake a comprehensive desk-study of documentation provided by Transpower. This will include, but is not limited to: internal reports, board papers, opinions, and consultancy reports.*

*A reasonable level of operational expenditure is a level that allows Transpower to meet its obligations based on the circumstances of its current environment. In testing this, GHD will need to review the assumptions made by Transpower when arriving at the current level of expenditure.*

There has been significant increase in capability to cope with expected future demand. Transpower has indicated that current plans for upgrades are not confined to 2006/07 and has indicated there are further increases to come that will impact on operating expenses beyond 2006/07.

The Commission has proposed to Transpower that 2002/03 costs may represent an efficient operating environment and therefore an appropriate starting point to establish the operational expenditure threshold for the period of the administrative settlement<sup>11</sup>. Transpower does not consider this an appropriate starting point and believes that the opening operating cost threshold should be set using the Transpower 2006/07 forecast year as an appropriate base level<sup>12</sup>. Transpower has proposed \$198 Million for operating expenses in 2006/07. This report reviews the reasonableness of the April 2006/07 operating expenditure proposal against the 2002/03 starting point.

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<sup>10</sup> Final Transpower 2005/06 Business Plan – Board Approval for Submission to shareholding Ministers, Board Paper 8<sup>th</sup> June 2005, Transpower

<sup>11</sup> Draft Transpower New Zealand Ltd Operating Expenditure Discussion Paper, April 2006, Rf-060501OPEX\_Draft\_1May2006.pdf, Transpower

<sup>12</sup> Draft Transpower New Zealand Ltd Operating Expenditure Discussion Paper, April 2006, Rf-060501OPEX\_Draft\_1May2006.pdf, Transpower



### 1.3 Approach

GHD attended briefings by the Commission and Transpower and had access to various internal management reports and Board papers. In addition to the briefings and the data provided, GHD received responses to some 49 written questions.

GHD has approached this review in two distinct ways. Firstly, without assessing the reasonableness of the Commission's choice of comparison year, GHD has used the 2002/03 operating expenditure as an overall basis for comparison with the Transpower projections for 2006/07. In order to assess the Transpower proposal, a basic escalator has been applied that allows for CPI uplift plus increases in labour costs, that have been paid above the CPI for Transpower. From the steady state cost adjusted 2002/03 base, GHD was able to estimate the additional cost attributable to new growth strategy implemented post 2002/03. GHD considers that this is a useful yardstick against which the reasonableness of the overall 2006/07 proposed operating expenditure can be tested. This is set out in Table 5.

Secondly, GHD has also reviewed the larger **individual cost groups** of the 2006/07 proposal to assess costs in some detail.

### 1.4 Terms of Reference

GHD was required to provide an opinion and defend against any challenge on, the reasonableness of Transpower's proposed level of operating expenditure for the 2006/07 period. In forming an opinion GHD was to undertake a comprehensive desk-study of documentation provided by Transpower and information available in the public domain. This included, but is not limited to: internal reports, board papers, opinions, and consultancy reports.

A reasonable level of operational expenditure is a level that allows Transpower to meet its obligations based on the circumstances of its current environment. In testing this, GHD reviewed the assumptions made by Transpower when arriving at the current level of expenditure and cost allocation assumptions.

In order to achieve this objective GHD was required to provide specialist advice in the following areas:

#### Departmental expenditure:

- ▶ Review the reasonableness of and provide an opinion on Transpower's proposed level of departmental expenditure for 2006/07 relating to the following areas;
  - Corporate Services:
    - Finance, regulatory, business planning, legal and treasury
  - IT:
    - Includes service delivery, planning, production, application services, systems development and assurance, outsourcing levels, strategy and architecture.
  - National Grid
  - P&P (HR)

#### Investigation and feasibility expenditure:



- ▶ Review the reasonableness of Transpower's proposed level of expenditure relating to investigation and feasibility work for 2006/07 not attributable to a particular transmission project.

Maintenance expenditure:

- ▶ Review the reasonableness of Transpower's proposed level operational expenditure relating to transmission and substation maintenance for the 2006/07 year.

## **1.5 Limitations and Assumptions**

GHD prepared this report based on the following methodology, assumptions and limitations:

- ▶ The data made available to GHD, namely Transpower management reports, was true, accurate and current.
- ▶ GHD's conclusions and recommendations are based on an analysis that was limited to reviewing information provided to it by Transpower during the course of the desktop review (and other information provided by the Commission as well as information available in the public domain). GHD is aware that other more detailed information may exist but given the scope of the desktop review and the time afforded by the overall review programme GHD is unable to confirm whether this data would have a material impact on the overall conclusions of the review. Where GHD believes that further inspection of information at a more detailed level would be appropriate this has been identified in the report.
- ▶ This report does not make specific comment on qualifications or skills of personnel.
- ▶ All values in the body of the Report quoted are in 2006 prices and New Zealand dollars unless otherwise indicated. Values in Tables are nominal \$ as per Table heading.
- ▶ GHD believes that it is reasonable to rely on the information on which it has relied and that it is reasonable to make the assumptions it has made.
  - ▶ GHD's analyses, opinions and conclusions are its own impartial and unbiased professional analyses, opinions and conclusions.
  - ▶ Its engagement and remuneration were not contingent on developing or reporting predetermined results and GHD is independent of the Commission.

## **1.6 GHD Profile**

GHD is an international professional services company providing leadership in business advisory services, management, engineering, the environment, planning and architecture. It ranks in the world's top 50 engineering and architecture firms.

This project was completed by GHD personnel who have significant experience in infrastructure electricity transmission due diligences reviews undertaken in New Zealand, Australia and South East Asia.



## 2. Allocation of Costs

GHD looked at more general Opex matters including accounting practices and the separation of expenditure between regulated and unregulated services as these would have a bearing on the figures being proposed by Transpower for 2006/07.

### 2.1 Accounting Practices

Transpower complies with the NZ Generally Accepted Accounting Principles (GAAP) and GHD has confirmed that Transpower has presented, where appropriate, its responses with regard to these standards.

GHD has also reviewed the Transpower Capitalisation Policy and procedure.

### 2.2 GHD's Opinion

Following confirmation from the Company auditors, GHD is satisfied that Transpower applies appropriate treatment to assess the correct classification of capital expenditure. Transpower adopts the following accounting principles when determining capitalisation policy:

- ▶ Expenditure on an item of property, plant and equipment is capitalised when it is probable that future economic benefit associated with the item will flow to Transpower and the cost of the item can be reliably measured.
- ▶ Capitalisation typically commences at \$1,000 for assets that have a life expectancy greater than 12 months.

Transpower has a hierarchical approval process that ensures capital expenditure is appropriately authorised based on capital value.

Because of the complexity often associated with determining whether certain expenditure should be treated as capital, Transpower has developed a step-by-step analysis tree to assist staff. GHD has received a copy and agrees that the process leads to appropriate capitalisation conclusions that conform to the NZ equivalent of the International Financial Reporting Standards.

### 2.3 Separation of Regulated and Unregulated Expenditure

GHD has reviewed the policy and procedures employed by Transpower to ensure that costs are appropriately allocated. Appendix A explains regulated services.

### 2.4 GHD's Opinion

GHD is of the opinion that Transpower has in place an appropriate process to ensure that the Regulated and Unregulated Expenditure is allocated correctly.



### 3. Transpower Forecast 2006/07 Operating Expenditure

#### 3.1 Proposed and Historic Expenditure Review

GHD was provided with management reports. The key data from those reports outlines the proposed 2006/07 and historical expenditure in 2002/03. This is set out in Table 3 below.

**Table 3 Actual 2002/03 and Proposed 2006/07 Expenditure, \$M**

Functional Cost Category	2002/03	2006/07	Change, \$M	Change, %
Departmental costs	54	77	23	41%
Maintenance	74	82	8	12%
IT & T	8	10	2	33%
Investigations	6	10	4	82%
Intercompany / security	16	14	-2	-13%
Comms and control	3	5	2	32%
<b>Total</b>	<b>161</b>	<b>198</b>	<b>37</b>	<b>23%</b>

Source: Cost data by Transpower

The \$198 Million figure in Table 3 is for regulated services, excluding System Operator costs. Transpower considers that this should be used as the base Opex costs for its settlement negotiations. GHD requested a further breakdown of departmental costs to enable a finer grained analysis to be conducted<sup>13</sup>. This breakdown is set out in Table 4.

**Table 4 Departmental Costs by function, 2006/07 Plan, \$M**

Functional Cost Category	2002/03	2006/07	Change, \$M	Change, %
Departmental costs	54	77	+23	41%
Made up of:				
CEO & Public Affairs	6	7	+1	17%
National Grid and Investigations	22	29	+7	31%
Corporate Services	13	15	+2	15%
People and performance	7	14	+7	100%
IT	6	12	+6	100%
<b>Total</b>	<b>54</b>	<b>77</b>	<b>23</b>	<b>41%</b>

Source: Transpower

<sup>13</sup> This with supporting explanation and data was provided. Summary details are set out in Table 4.



GHD requested a full breakdown of the above costs with an explanation of the drivers for cost escalation; and particularly the cost elements that were in place in 2002/03 but not in place in 2006/07. A significant component of the cost increases between 2002/03 and 2006/07 is attributable to CPI and Labour Cost Index. To estimate and isolate the cost attributable to growth GHD has recast the proposed costs in Table 5. The adjusted values implies that the estimated cost attributable to growth is \$13.3M.

**Table 5 Costs by Business Function, Estimated Growth, \$M**

<b>Business Function</b>	<b>2002/03</b>	<b>Cost Escalated Base<sup>14</sup></b>	<b>2006/07</b>	<b>Estimated Growth \$M</b>
CEO & Public Affairs	5.8	6.8	7.6	0.8
National Grid & Investment	22.4	26.3	28.9	2.6
Corp. Services	13.0	15.2	14.9	(0.3)
People & Performance	6.8	8.00	13.6	5.6
IT	6.3	7.4	11.7	4.3
<b>Total cost</b>	<b>54.3</b>	<b>63.6</b>	<b>76.7</b>	<b>13.0</b>
Maintenance	74.0	81.4	82.0	0.6
IT&T	8.00	9.5	10.0	0.5
Investigations	6.00	7.1	10.0	2.9
Intercompany/ security	16.0	19.0	14.0	(5.0)
Comms and control	3.0	3.6	5.0	1.4
<b>Total</b>	<b>161.0</b>	<b>184.3</b>	<b>197.7</b>	<b>13.3</b>

Source: Transpower

The remainder of this paper seeks to assess the reasonableness of the estimated growth cost.

<sup>14</sup> Cost Escalation Base is derived from cost escalation data provided by Transpower and reviewed by GHD and is considered to be within expectations. For example 80% of the 2002/03 Departmental costs were attributable to salaries and wages and the balance to costs that are affected by CPI. Therefore 80% is adjusted by Transpower's actual Labour costs compounded at 4.5% during the period 2002/03 and 2006/07 and 20% by CPI (Table 15 Summary Cost Escalations). External maintenance contracts have been escalated by 2.5% in line with CPI.



## 3.2 System Vision Investigation

During the 10 years prior to 2002, Transpower operated in a self-regulating environment. In this period, the Transpower Board aimed for the company to earn its Weighted Average Cost of Capital (WACC).

In 2002/03 an investigation was undertaken to review Transpower's current operating environment and future needs. This review culminated in the System Vision Investigation (SVI) and a significant change in strategy. As a result there has been a material increase of capability, measured by headcount.

The System Vision Investigation instigated major changes particularly in the Transmission Investigations and Information Technology departments.

### 3.2.1 FTE numbers

To achieve the new vision, significant organisational changes were undertaken, resulting in staff numbers increasing from 308 FTE in 2002/03 to 436 FTE in 2006/07 as set out in Table 6.

**Table 6 Department FTE, 2002/03 and 2006/07**

	<b>2002/03 Actual</b>	<b>2006/07 Forecast</b>	<b>Change</b>
CEO office	4	5	+1
Public Affairs	6	10	+4
Investigations/National Grid	186	241	+56 <sup>15</sup>
Corporate Services	38	57	+19
IT	57	96	+39
P & P (HR)	17	27	+10
<b>Total</b>	<b>308</b>	<b>436</b>	<b>+128</b>

Source: Transpower

The significant issues identified resulted in a "Step Changes" program<sup>16</sup> that moved Transpower from a strategy that focused on maintaining operations in basically an "as is" environment to a "build and maintain" strategy that "provides improved access to all forms of generation...". To meet this new strategy it was identified that a number of major capital investments were required including a 400 kV transmission line. For example the 400 kV was to be a major capital programme of some \$736 Million in the 4 years 2006/7 to 2009/10 plus a further investment in land of \$264 Million during the same period. This strategy, as Transpower described it, "would have a direct and significant impact on current and future operating costs".

<sup>15</sup> Rounded to 56 as per Transpower calculations

<sup>16</sup> Transpower Business Plan 2005-06, Executive Summary p6



However, the plan to implement a 400 kV transmission line was reassessed after a ruling by the Electricity Commission was made as a draft 'no' decision. Transpower have advised that they have withdrawn the 400kV proposal and intend to submit a revised proposal.

In GHD's opinion, given that Transpower will need to undertake further investigation to develop a suitable alternative proposal that will require further investigation, it is unlikely that there will be material changes to the 2006/07 Plan in terms of staff needs.

To obtain an understanding of the Transpower state of operation prior to the development of the new strategy, GHD reviewed the Beca Carter Hollings and Ferner Limited report prepared for Transpower in September 2001. Their report concluded:

*"The findings of this review are that Transpower's Asset Management and System Operation processes have performed well to date and compare well with Transpower's international peer group for physical performance. However there are a number of areas of concern for the future. These arise from identified organisational issues, which are placing stress on the grid, its operation, and the Transpower staff. This makes a number of incremental changes important at this time to ensure the grid is "fit for purpose" to meet the future needs of the industry."*<sup>17</sup>

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<sup>17</sup> A Review of Transpower's Asset Management Strategies, System Operator Services and Related Practices, Beca Carter Hollings, 2001



## 4. Departmental Costs

### 4.1 Background

Transpower has consolidated certain internal expenses under the heading Departmental Costs, refer Table 7 below. Department Costs include:

Personnel, Consultants / advisory, Levies, Travel and accommodation, Insurance and other incidental matters.

To assist with this analysis GHD requested a cost breakdown to the next level of detail, in particular to understand the movement of costs between the two periods under review, 2002/03 actual and 2006/07 Plan. This request required Transpower to detail high level cost changes by category. GHD was seeking to identify major expenditure in place in 2002/03 that was non-repetitive and no longer in place in 2006/07, and new costs are envisaged for 2006/07 not included in 2002/03.

**Table 7 Department Costs, 2002/03 and 2006/07, \$M**

<b>Business Function</b>	<b>2002/03</b>	<b>Cost Escalated Base</b>	<b>2006/07</b>	<b>Real Cost Growth \$M</b>
CEO & Public Affairs	5.8	6.8	7.6	0.8
National Grid & Investment	22.4	26.3	28.9	2.6
Corp. Services	13.0	15.2	14.9	(0.3)
People & Performance	6.8	8.0	13.6	5.7
IT	6.3	7.4	11.7	5.0
<b>Total cost</b>	<b>54.3</b>	<b>63.7</b>	<b>76.7</b>	<b>13.0</b>

Source: Transpower

The cost escalation component is estimated to account for \$9.4 Million (\$63.7 Million - \$54.3 Million)<sup>18</sup>. The balance \$13.0 Million can be considered the estimated real cost growth for 2006/07 that is attributable to additional staff engaged to meet new regulatory needs, investigations and major IT development.

In its own statements to account for the cost increases Transpower cited two major factors:

- ▶ Increased staff numbers to satisfy the additional requirements under the new regulatory environment and investigate potential growth
- ▶ Increased costs associated with employing these staff.

<sup>18</sup> April Report



GHD has reviewed National Grid / Investments and IT Departmental Costs. From 1019 in 2002 the electricity, gas and water private sector labour cost salary and wage indices increased to 1117 points in 2006, see Appendix B. That is, an annual average rate of 2.3% (the Public Sector equivalent rate was 3.2% (but that would include Transpower)).

Similarly, professional salary and wage labour costs in the private sector during the same period increased at an annual average rate of 3.0%.

Transpower advised that the above industry average payments were required during this period in order to retain existing staff and attract new staff.

Therefore, on average Transpower has paid up to 2% p.a. above the comparable Labour Cost Indices during the review period. This required further external investigation. As part of this investigation GHD held discussions with employment consultants familiar with Transpower and the electricity industry in NZ and Australia who confirm that the two countries experienced significant salary pressure and that increases of 4.5% p.a. is not unreasonable. Moreover, they commented that companies in the energy infrastructure area that did not pay this level of increase would not retain staff. Therefore, GHD is of the opinion that the quoted increases of 4.5% pa is not unreasonable.

## **4.2 Transpower Salaries**

GHD obtained information about Transpower's salaries.

Transpower is a State Owned Enterprise (SOE) however, the salaries need to be paid at a level to meet the market conditions etc. Many staff are highly employable in other countries. Ultimately it is the Transpower Board that drives salary levels as the Board expects the Chief Executive to be employing the right Staff to meet its planned direction and as part of that ensure a level of profitability.

GHD has had difficulty establishing a method of comparing the salaries to a benchmark. Information from the Crown Company Monitoring Unit (CCMAU) is that there is not another SOE similar enough to make valid comparisons. In any event as mentioned above there is no direction from the shareholder (the Crown) about what salary levels should or should not be.

GHD concentrated the comparison of salaries in higher level remuneration categories in Transpower. These categories are nominated as D1 and D2. The D1 and D2 categories are generally described as:

- ▶ D1: Managers, Senior Engineers/Advisors/Analysts
- ▶ D2: Senior Managers

Senior staff considered experienced in their field are also remunerated in the higher bands such as D1 and D2 because of their specialisation and sought after skills. In each of the categories, D1 and D2, a high and low in the range has been nominated by Transpower. The high and low range values given include the maximum potential bonus payable.

GHD then sought to compare these salary bands to the energy industry sector. To assist in assessing the reasonableness of Transpower's approach, GHD held discussions with external New Zealand consultants HayGroup and obtained general salary ranges data from CSi The Remuneration Specialists and the Association Consulting Engineers Australia (ACEA).



**Table 8 Salary comparison**

Entity	Band	Remuneration Low \$	% to Transpower Remuneration Low	Remuneration High \$	% to Transpower Remuneration High
Transpower*	D1	92,225	100.0%	138,337	100.0%
ACEA**	D1 Equivalent	N/A	N/A	148,900	107.6%
HayGroup***	600 points	N/A	N/A	126,050	91.3%
Transpower*	D2	121,593	100.0%	182,390	100.0%
ACEA**	D2 Equivalent	N/A	N/A	185,240	101.6%
HayGroup***	800 points	N/A	N/A	189,330	103.8%

\*Source: Transpower

\*\*Source: Association Consulting Engineers Australia, Salaries and Benefits Survey April 2, 2006

\*\*\*Source: <http://www.hays.com.au/salary/pdfs06/InformationTechnology.pdf>, HayGroup, see appendix

The remuneration information received from HayGroup has been included in the appendices. It includes median salaries and specific commentary regarding the differences in remuneration between the Energy sector specifically and the general industry average. However, GHD notes that certain jobs in demand can attract a skills loading in the energy sector of up to 50%. The closest equivalent salary ranges for D1 and D2 in the HayGroup information are the 600 point and 800 point ranges, which are described as:

- ▶ 600 Hay points: Senior professional with 15+ years of experience, Mid level manager or large project manager
- ▶ 800 Hay points: Third tier functional/divisional manager involved in setting departmental standards and translating strategies into tactics, Programme manager

GHD notes that the HayGroup includes percentage point differences between the energy sector remuneration and the broader industry averages. These have been nominated as 5.8% for the 600 point group and 10.3% for the 800 point group. The Professional Engineer Remuneration Survey Report (June 2006) by Engineers Australia and Association of Professional Engineers, Scientists and Managers Australia reports a 5.9% increase in salary in the electricity and gas supply industry in Australia. As the New Zealand and Australian energy markets are closely integrated and require similar skill resources, there is pressure on the New Zealand companies to match these general cost escalations. Furthermore a recent report by CSi The Remuneration Specialists<sup>19</sup> stated that New Zealand's skill shortage was pushing up annual wage increases for information technology workers, as New Zealand

<sup>19</sup> The pay market in Australia and New Zealand in 2006, Csi The Remuneration Specialists



employers were forced to pay staff more to prevent staff leaving. The newspaper cited CSi Remuneration Specialists who suggested that the base salaries in New Zealand rose 6.1% on average in 2005/06.

As the energy sector requires specific/unique skills and experience particularly at the professional management level, Transpower has to compete against both Australian and New Zealand companies. Consequently the salary uplift is significantly above CPI, which places pressure on New Zealand employment resources. Table 8 above compares Transpower salaries in two band levels D1 and D2 with HayGroup 600 and 800 bands and the ACEA equivalent bands. The Australian data is converted for comparative purposes at the rate of \$1NZ = \$0.85 AU.

GHD considers benchmarking a useful method for general comparison and recognises that many factors are required for accurate analysis. Given that remuneration is highly dependent of specific role duties, a difference of 10% at the top end of D2 is not considered significant in Transpower's total salary compensation to its staff. Overall GHD concludes that Transpower's staff compensation bands are within expectation.

GHD notes that the HayGroup median remuneration for engineering and IT staff generally falls within the low and high ranges, suggesting that Transpower's compensation to its staff is not unreasonable.

#### **4.2.1 Corporate Services costs 2007/08 onwards**

As an aspect of the Review GHD requested an indication of the future costs that can be expected once the IFRS have been implemented. Transpower advised that the 2006/07 Corporate costs relating to IFRS expenses relate essentially to: contractor salary of approximately \$100k, and an Opening Balance Audit costs estimated around \$150k. In addition there has been some other related costs for consultants to providing accounting advice and valuations of approximately \$40k and IFRS audit for tax changes \$40k.

Following the initial compliance costs the 2007/08 and beyond costs can be expected to diminish eventually to nil for the contractor. Audit costs are also expected to reduce but will still be higher than normal as IFRS is more complex and disclosure is more detailed. Transpower indicated that they would also probably look at a reasonable additional audit cost of the Dec 07 interim accounts (first published IFRS accounts) – of an extra \$15k. Transpower anticipates that there would be a net drop in Audit costs i.e. a \$75k increase in audit costs per IFRS (+ \$15k extra for interims).

As an estimate Transpower would spend approx \$30k in accounting and (derivative) valuation advice on an ongoing basis over and above any spending now. There is also another anticipated \$20k in tax advice as Transpower is moving to a deferred tax environment as most issues have a tax impact.

This is set out in the following tables.



**Table 9 2006/07 IFRS compliance costs**

<b>Expense</b>	<b>\$Million</b>
FRS Contractor	\$0.1
Opening balance audit	\$0.15
Accounting and valuations consultants	\$0.04
Tax audit	\$0.04
Total:	\$0.33

Source: Transpower

**Table 10 2007/08 and annually thereafter**

<b>Expense</b>	<b>\$Million</b>
FRS Contractor	\$0.0
Audit	\$0.09
Accounting and valuations consultants	\$0.03
Tax audit	\$0.02
Total:	\$0.14

Source: Transpower

GHD has reviewed Transpower's forecast and held discussions with Transpower personnel and conclude that Transpower's forecasts are not unreasonable given that in the ensuing 4 years post 2006/07 Corporate Costs attributable to IFRS are expected to decline by approximately \$0.76 Million (\$0.33 Million-\$0.14 Million \* 4 years)



## 5. National Grid and Grid Investigations

### 5.1 Background

During the period 2002/03 to 2005/06 Transpower major investigation expenditure was approximately \$16.5 Million made up of: \$10.6 Million for the 400KV line and \$5.9 Million on the HVDC inter island link. In addition during this period \$25.4 Million was expensed on investigation into projects designated as business as usual: policy and standards \$9.3 Million, system studies to identify grid issues \$6.0 Million, customer driven connection issues \$3.7 Million and network development capital plans \$6.0 Million. During the investigations process projects are evaluated and where appropriate a business case is submitted to the Electricity Commission for approval as a capital project. If the project is approved the expenditure from this point is capitalised. All costs prior to this point are part of operating cost approved by the Commerce Commission. GHD investigated the process to ensure the appropriate capitalisation process has been followed as set out in The International Financial Reporting Standard IFRS paragraph 5.7, which states:

*“The cost of an item of property, plant and equipment does not include expenditure incurred in deciding whether the item should be acquired or constructed; for example feasibility costs or the costs incurred in evaluating a number of proposals for acquisition or construction. Such amounts are pre-acquisition costs and are never capitalised because they are not directly attributable to bringing the item to working condition for its intended use.”*

GHD has reviewed Transpower's process and is of the opinion that it employs a robust capitalisation process that meets requirements of the IFRS 3.

### 5.2 Transpower

In addition to financial cost breakdowns, Transpower also provided the following chart on the National Grid FTEs.

**Table 11 National Grid, FTE, 2002/03 and 2006/07**

National Grid and Grid investment functional areas	FTE's 2002/03	FTE's 2006/07	Change
	Actual	Forecast	
Grid plan, development and investment	52	83	+ 31
Property and Environment	12	30	+ 18
National grid – Engineering services	11	24	+ 13
National grid – Field services	86	88	+ 2



National Grid and Grid investment functional areas	FTE's 2002/03 Actual	FTE's 2006/07 Forecast	Change
Stakeholder services and pricing	25	16	-9
<b>Total<sup>20</sup></b>	<b>186</b>	<b>241</b>	<b>56<sup>21</sup></b>

Source: Transpower

Transpower has advised that:

*“ In National Grid some 30 additional staff have been recruited since 2002/03 to ensure that Transpower has the skills and resources (and business processes) necessary to plan, deliver and support the future capital investment programme and to ensure day to day compliance with Transpower’s increasingly complex regulatory obligations. This is considered to have been an essential prudent investment as the company has embarked upon a major period of growth.”<sup>22</sup>*

### 5.3 Analysis

The addition of 56 staff in the National Grid are according to Transpower, required in part to support the “ *by far the largest investigation project of its type*”<sup>23</sup>, the 400 kV project.

Transpower’s justification for the increase is predicated on the assumption that the existing 2002/03 staff level is fully and efficiently engaged on activities that are ongoing and have not been superseded by new tasks such as the requirements of Part F (Electricity Commission) and other regulatory requirements.

Transpower on request provided an analysis of the proposed 2006/07 Investigation Plan of \$10.4 Million. This is reproduced in Table 12 below:

**Table 12 Investigation proposed 2006/07, \$M**

Investigation Type	\$M
Grid Investigations (Non EC)	3.7
IT investigations (transmission)	6.7
<b>TOTAL</b>	<b>10.4</b>

Source: Transpower

Transpower identified the following cost drivers in the investigations costs:

- Network – Capital plans including development

<sup>20</sup> Transpower Integration Summary(2) dis-060603

<sup>21</sup> Rounded

<sup>22</sup> Page 17 Draft Transpower New Zealand Ltd Operating Expenditure discussion paper April 2006

<sup>23</sup> Transpower’s 2006/07 Operation Cost – A Discussion Paper April 2006



- ▶ Policy and Standard Development – Revising policy and standards to meet changing asset configuration and age
- ▶ IT investigations (transmission) – Investigations required to meet IT enhancements identified in the ISSP and day to day policy and standard development.

#### 5.4 GHD's Opinion

If a project similar in scale to the 400 kV project is to be investigated for approval by the EC then GHD is of the opinion that the Transpower proposed staff increases of 31 FTE is not unreasonable. The staff cost increase of these 31 would represent approximately \$2 - 2.5 Million per annum.

The remaining 25 staff increase (total of 56 proposed) would represent an increase of approximately \$1.5 - 2 Million per annum. GHD notes the remaining 25 staff have been recruited to cope with:

- ▶ Additional Regulatory requirements under Part F (Electricity Commission) and the EGR
- ▶ Investigations to identify and assess future investment needs and options over the next 20-40 year timeframe outside the 400 kV project.

GHD is of the opinion that the Transpower proposed staff increases of 25 FTE is not unreasonable.

#### 5.5 Review of Subsequent Operating Cost Submission

Following discussions with the Commerce Commission, Transpower advised that the Commission required that they resubmit the proposed Operating Expenditure for 2006/08 with the EC Investigation allowances included in the Operating Cost Base. Transpower revised the proposed Operating Costs and resubmitted a new Operating Cost Base in July 2006 that concluded that they required an additional \$3.4m over and above the original Base Operating Expense \$198 Million, that is \$201.3 Million, refer Table 14. The April proposal is set out in Table 13.

**Table 13 Base Operating Expenditure submitted in April 2006**

<b>Category</b>	<b>Millions \$</b>
Total in Opex	232
Less Pass Through	15.4
Less Investigations	10.8
Less Opex	7.8
Base Opex	197.9*

\* Includes Investigations \$104 m



Transpower's revised base is set out in the following table. The \$10.4 Million attributable to Investigations is allocated between Grid Investigations (Non EC) and IT and Gas investigations as set out in Table 12.

**Table 14 Revised Base Operating Cost 2006/07**

<b>Category</b>	<b>Millions \$</b>
Base 1 previously	197.9
Investigation	3.4
Revised Base	201.3

Transpower's rationale for the increase of \$3.4 Million is the inclusion of the following additional estimates for EC investigation in Major Projects: 400kV and HVDC upgrades \$1 Million, further \$1 Million for Grid Planning issues identified in system studies and \$1.4 Million for Network Investigations identified in the Capital Plan. No material substantiation was provided for these additional funds

On review GHD is not convinced that addition funds over and above the \$197.9 Million Base Opex are necessary. When GHD reviewed the original numbers and associated costs a significant justification for the increases stated by Transpower had been for added significant resources within investigation. Transpower themselves in their April report cited the 400kV as a major justification for investigations in 2005 and 2006. Therefore if they were geared up for 2005 and basically the same for 2006 and as most of the work has been done even if a new investigation is necessary as an alternative to the 400kV. GHD is therefore of the opinion that additional funds over Base Operating Expenses of \$197.9 Million are not considered necessary.



## 6. Information Technology

### 6.1 Background

IT services are an integral part of running a modern day business. A transmission business has specific requirements over and above a run of the mill business due to its requirement for maintaining infrastructure that requires monitoring to deliver their service. Extensive telecommunications, monitoring equipment, automated processing and specialist personnel are all required for successful service delivery.

A significant driver of change in Transpower was the System Vision Investigation (SVI)<sup>24</sup>. This reviewed the Transpower business strategy going forward, moving to one of growth. In terms of IT there was a review and development of the Information Technology Capabilities of the company. This review resulted in a number of major changes that have been set out in Figure 1. The most significant milestones in terms of reviews were:

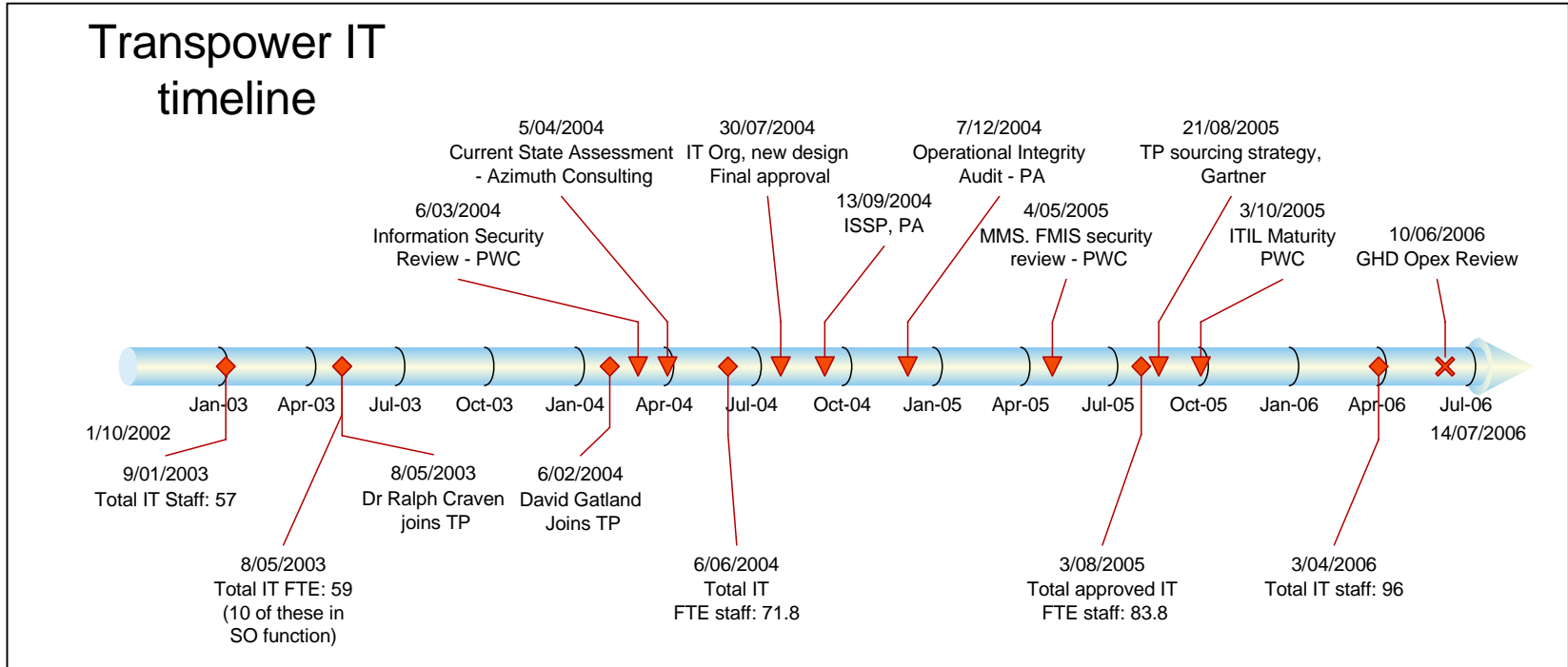
- ▶ Appointment of the CIO in February 2004
- ▶ Information Security Review by PriceWaterhouseCoopers in March 2004
- ▶ Current Assessment Review by Azimuth Consulting in April 2004
- ▶ IT Organisation Review approved in July 2004
- ▶ Revised Information Systems Strategy Plan by PA Consulting in September 2004
- ▶ Sourcing Roadmap for Infrastructure Services by Gartner Consulting in August 2005.

These reviews and the consequential findings and recommendations moved IT from planning and implementation to a focus on service delivery. The split between the planning function and implementation of the planning was replaced with an end-to-end service delivery model. The accountability for the whole process was thus consolidated in an effort to remove the “silos” that had appeared between the planning and implementation functions. Transpower concludes that in the medium to long term (4 to 5 years) by removing the “silos”, efficiencies should be gained. However, by moving to a service delivery model implies that the end user stakeholder is the primary customer and has an influence on the IT service delivery. Therefore, the cost of delivery would be expected to increase in the short term. In the medium to longer term the cost of service delivery would not be expected to increase as a consequence, as long as the required service had been delivered satisfactorily in the past. The review<sup>25</sup> concludes that service delivery has been inadequate and that to deliver adequate services an increase in capability is required.

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<sup>24</sup> The name for the direction under current management

<sup>25</sup> Current Assessment Review by Azimuth Consulting in April 2004



**Figure 1: Transpower IT timeline**



To create the future vision for IT, an Information Systems Strategic Plan was undertaken by PA Consulting. As a result the Information Technology staff was increased by 12 in 2004<sup>26</sup> on the basis of the Current State Assessment and the Information Systems Strategic Plan.

The Information Technology section has grown from 57 staff in 2002/03 to 96 staff in 2006/07. The staff growth has been significant with a 68% increase in three years. The forecast in IT investigations for the next two years shows a decrease in expenditure<sup>27</sup>. The IT operational expenditure forecast for the next two years shows a plateau<sup>28</sup>.

GHD has reviewed the independent studies and the subsequent recommendations and has summarised the key findings under each report heading. GHD has then sought to assess Transpower's progress towards implementing the recommendations. The GHD analysis has been undertaken at a high enough level to assess whether the Corporate Strategy and IT focus are aligned. A detailed analysis is outside the scope of the review

### **6.1.1 The Current State Assessment (CSA)**

Azimuth Consulting completed the Current State Assessment review in March 2004. Its conclusion was that current service availability was adequate and would operate reliably in the short term as long as the rate of change was low. A number of deficiencies were highlighted with respect to inflexible Information Technology infrastructure. Specifically it suggested changing the Information Technology structure from a split in planning and delivery to a portfolio approach that would include an increase in Information Technology staff and building capability in enterprise architecture<sup>29</sup>.

The review was critical in the areas of:

- ▶ Information Technology: not strategically aligned with the business
- ▶ Information Technology capabilities: not aligned with business needs
- ▶ Information Technology: does not have effective governance and lacks effective performance measures and reporting.

The report recommended:

- ▶ Establishing executive and board level Information Technology governance
- ▶ Establishing Information Technology performance measures, targets and reporting
- ▶ Establishing a solution delivery unit and establish clear accountabilities.

Since the CSA, Transpower has established an Executive and Board level Information Technology governance structure.

### **6.1.2 The Information Systems Strategic Plan (ISSP)**

PA Consulting was contracted to create the ISSP in 2004 with the final version delivered in September 2004. In line with Information Technology becoming a service-oriented organisation the ITIL best practice framework was suggested as one process framework to explore. The ISSP points out that

<sup>26</sup> IT Organisation – New Design: Final Approval, Internal Memorandum, Appendix 1, Transpower

<sup>27</sup> Transpower Operating Expenditure Discussion paper, Draft, April 2006, p17-18

<sup>28</sup> Transpower Business Plan 2005/06, Final, p61

<sup>29</sup> 2607 App2 IT Organisation Design.doc, Appendix 2, Slide 8, CSA Summary, Azimuth consulting



Transpower's business objectives are too high level to directly guide the ISSP<sup>30</sup>. PA Consulting's view was that, due to disconnection between key elements of Transpower's strategic direction and focus, it would be difficult to justify any effort being expended in the Information and Communications Technology (ICT) area<sup>31</sup>.

A number of projects were suggested for Transpower to execute in order to transform the Information Technology organisation to follow an ITIL best practice process framework.

A number of areas were recommended to increase capability including enterprise architecture. The plan has taken care to structure the improvement initiatives according to priority and to retrain existing staff for new roles where possible. The implementation project plan started 2004/05 and ends in 2007/08. By 2006/07 projects are expected to be dropping off and by 2007/08 they are anticipated to be completed<sup>32</sup>. The ISSP proposed project timeline has been revised to take into account Transpower's slower than expected rate of change and higher than expected workload<sup>33</sup>. GHD is of the opinion that IT staff costs could be significantly reduced in future years as projects are completed and system architectural initiatives are fully realised. Refer to section 6.4 for details.

Significant progress has been made on the ISSP projects with notable achievements including:

- ▶ Transpower Business Strategy – strategic objectives have reviewed and clarified for the 2007/07 planning round. Similar IT objectives have been revised to continue business alignment.
- ▶ Enterprise Architecture Establishment – the full architecture design has been completed and products selected in most areas.

The majority of projects are underway and most with significant progress<sup>34</sup>.

### 6.1.3 Operational Integrity Audit

PA Consulting completed an operational audit in December 2004. Key recommendations of this audit were to reduce dependency on unsupported technology platforms, remove single points of failure and update or introduce disaster recovery plans. Removing unsupported platforms and reducing the number of platforms should allow a more cost effective support solution.

Remediation of vulnerabilities identified would have the following impact<sup>35</sup>:

- ▶ Increased capital investment
- ▶ Minor enhancement work, using internal staff resources
- ▶ Increased expenditure in support contracts to maintain legacy systems until remediated.

GHD is of the opinion that operational expenditure should reduce once the reliance on legacy systems is diminished and finally discontinued. Existing staff employed to maintain legacy systems would then

<sup>30</sup> ISSP, 1.1 Business strategy and future requirements, 3.2.2 Transpower has identified its stakeholders and stakeholders ambitions, but has yet to align its key performance indicators.

<sup>31</sup> ISSP, 3.2 Transpower's current strategic plans are still evolving, PA Consulting

<sup>32</sup> ISSP, 1.4 The required work programme and resources, PA Consulting

<sup>33</sup> Response to GHD Questions 17-08-06 Q1 and Q4

<sup>34</sup> Report on the progress against the 2004 ISSP – May 2006 v05 Final

<sup>35</sup> Information Technology Operational Integrity report, Final Report, PA Consulting



represent excess capacity, which could be retrained for new duties or retrenched as appropriate. PA Consulting estimated the new externally supported systems would be in place by 2007/08. Transpower has made significant progress toward the points made in the operational audit and have as at April 2006 completed 87% of the items raised and although the remaining items are considered non critical work is underway to complete all items<sup>36</sup>.

#### **6.1.4 Transpower Sourcing Roadmap for Infrastructure Services**

Gartner completed an infrastructure services sourcing strategy for Transpower in August 2005. Key observations by Gartner specifically in the context of sourcing included<sup>37</sup>:

- ▶ No process for service level management
- ▶ No formal processes in place for governance activities
- ▶ Lack of clarity regarding which process framework is to be used (ITIL, TPSLC or other project management tools) and the context to allow service providers to comply
- ▶ The relationship with current service providers (Sequel and Fujitsu) has low maturity levels.

The Gartner report for Transpower recommended a comprehensive set of actions for a future desired state of only one infrastructure service provider and includes strategic advice, database administration and infrastructure services<sup>38</sup>. The suggested actions also concern internal processes and their integration along with the development of explicit service level agreements that are tied to business centric service level agreements.

Following the Gartner report, Gartner was contracted to assist Transpower to develop the contractual framework. Transpower has since gone to market for the Infrastructure Services Contract and signed with the selected partner in August 2006.

#### **6.1.5 Information Technology Infrastructure Library (ITIL) Maturity Audit**

ITIL is a best practice framework for IT service delivery. It is customisable and contains a set of best practice recommendations for common definitions and terminology to leverage performance in the IT sector. The parameters that define ITIL insist on having consistent, documented and repeatable processes to better serve the businesses aligned with IT. It is a framework of the globally accepted IT sector practices for IT service management.

PWC Consulting undertook an assessment of 11 ITIL framework processes in late 2005. The findings concluded that Transpower has very low maturity in 8 of the processes reviewed. Three of the 11 processes are considered more mature: Financial management of Information Technology, Information Technology continuity management and Service Desk. PWC Consulting conclude the main reasons for low maturity levels in the remaining 8 reviewed processes were<sup>39</sup>:

- ▶ Lack of end to end accountability for each process
- ▶ No clearly identified process owner

<sup>36</sup> Response to GHD Questions 17-08-06 Q1 and Q4

<sup>37</sup> Transpower Pty Ltd, Sourcing Roadmap for Infrastructure Services, Key Findings, Gartner

<sup>38</sup> Transpower Pty Ltd, Sourcing Roadmap for Infrastructure Services, Recommendations, Gartner

<sup>39</sup> ITIL maturity Assessment Phase 1 Report, p2, PWC Consulting



- ▶ Absence of process related targets/objectives and related monitoring and review activities.

Since the ITIL maturity audit, Transpower has identified owners for each process and has completed another 2 processes with partial completion of a further 2. The remaining processes have been started or scheduled and are due for completion in early 2007<sup>40</sup>. The ITIL Service Catalogue<sup>41</sup> is significantly complete at 80% and due for 100% completion in September 2006.

#### 6.1.6 Information Technology Business Plan 2005/06

The 2005/06 Information Technology Business Plan was provided as the latest approved Business Plan for Information Technology. The 2005/06-Business Plan briefly describes the transformation of the Information Technology organisation to a service delivery oriented organisation. The Information Technology objectives are cross-referenced with the Transpower objectives for the purposes of demonstrating alignment with the business objectives. However, in GHD's opinion, the listed objectives<sup>42</sup> are too general to drive the information technology strategy. This is in line with PA's opinion in the ISSP<sup>43</sup>. Further alignment with the business objectives is reflected in the IT objectives that have been revised for this purpose<sup>44</sup>.

The Transpower Business Plan 2005/06 refers to Information Technology investment with respect to the 400 kV transmission line initiative:

"... comprehensive ICT to be put in place to support the project from the development phase right through to operation and maintenance of the resulting asset"<sup>45</sup>.

The Transpower Information Technology Business Plan 2005/06 refers to achievements in 2004/05 with respect to the 400 kV transmission line:

"Development of services which support the information management around the 400 kV grid initiatives (eg Grid Tracker)"<sup>46</sup>.

Information was requested with respect to historical resources spent on Information Technology as well as planned expenditure to support the initiative in the future<sup>47</sup>. Transpower has responded that "there have been no significant direct IT costs associated with the 400 kV transmission line other than the application and data management costs for a system called Grid Tracker"<sup>48</sup>.

Transpower has recently changed to a growth-focused strategy and as a consequence IT has had to grow as well. The 400 kV project has been deferred, and the growth strategy is underway which affects

<sup>40</sup> Response to GHD Questions 17-08-06 Q1 and Q4

<sup>41</sup> As the foundation for defining services and communicating with the business, the Service Catalogue is an essential element for ITIL or any process-based IT transformation initiative. The IT Service Catalogue offers a way to document and publish the portfolio of available services, standardise service deliverables, establish service level expectations, and market service offerings to internal customers. The Service Catalogue is the first step for IT operations to become more customer-focused and service-driven, and is the cornerstone of Service Portfolio Management.

<sup>42</sup> Information Technology Business Plan 05/06, p17

<sup>43</sup> ISSP, 1.1 Business strategy and future requirements

<sup>44</sup> Response to GHD Questions 17-08-06 Q1 and Q4

<sup>45</sup> TP Business Plan 05/06, p34

<sup>46</sup> TP Information Technology Business Plan 05/06, Final, v4.1, p17

<sup>47</sup> GHD question log, Q32

<sup>48</sup> Transpower response to GHD question 32.



the present IT initiatives. In GHD's opinion, given the Transpower growth strategy, the IT resources are required for their planned major grid investment initiatives<sup>49</sup>.

## 6.2 IT Business Plan 2006/07

The following section comments on the 2006/07 IT Business Plan. As the plan has not been approved, it does not impact the overall review and should be considered as a standalone section. Specifically, the comments regarding the IT organisation in all other sections have been predicated on the April Draft Operating expenditure discussion paper. In the April draft proposal, the headcount is proposed to be 96 including the 10-11 staff that are anticipated to be lost due to attrition in the next 4-5 years.

Transpower advised that its business planning process and timeline for 2006/07 had been amended to reflect the uncertainties surrounding its administrative settlement discussions and a pending final decision by the EC on its 400kV project proposal. Transpower had agreed with its Shareholding Minister to submit an initial business plan in June, based on provisional operating expenditure numbers, with a final business plan being submitted in October reflecting both the outcome of its settlement discussions and a confirmed decision on the 400kV project<sup>50</sup>. Transpower provided GHD with a draft of its 2006/07 IT business plan in August<sup>51</sup>.

Transpower advised as of August 2006, the overall business 2006/07 plan, including the component divisional plans (IT included) are in draft form. However, the capital expenditure and investigative work for 2006/07 has been budgeted for and work is progressing in these areas. Operating budgets for 2006/07 are still in draft form and have not been through the necessary challenge and review sessions. These are to be confirmed in light of the outcome of its administrative settlement discussions with the Commission. Transpower has advised that the numbers presented to GHD therefore reflect the current position<sup>52</sup>.

The draft IT business plan for 2006/07 sets out the direction ahead for IT. IT spending has a proposed 18% increase from the 2005/06 forecast with the key drivers for this increase is attributed to need for additional security and salaries. Transpower IT is regularly assessed against benchmarks, such as the CIO Executive Board which reports the IT spend as a percentage of revenue for energy and utilities in Australia and New Zealand. During 2005 this was running between 2.86% to 4.99%. In contrast the 2005 spend for Transpower IT was 6.7% of revenue. The difference is attributed to the remediation of legacy systems as identified in the ISSP

In GHD's opinion, such benchmarking is not a definitive KPI and therefore needs to be considered in context, as an average, that cannot fully express the differences between organisations. Transpower's growth strategy and remediation of legacy systems would account for a significant part of the over benchmark figures.

The business plan identifies the initiatives for the 2006/07 year and proposes a further 11 FTEs in order to deliver the planned projects. The plan is considered a draft and in GHD's opinion requires further detail overall in order to make a definitive judgment as to whether the proposed extra 11 staff are justified.

<sup>49</sup> Response to GHD Questions 17-08-06 Q1 and Q4

<sup>50</sup> Transpower comments on GHD report – information provision.pdf

<sup>51</sup> Email from Transpower 23/08/2006

<sup>52</sup> Transpower comments on GHD report – information provision.pdf



### 6.3 IT Salaries

Table 15 below compares two categories of salaries within Transpower. These categories are nominated as D1 and D2. The D1 and D2 categories are generally described as:

- ▶ D1: Managers, Senior Engineers/Advisors/Analysts
- ▶ D2: Senior Managers

Senior staff considered experienced in their field are also remunerated in the higher bands such as D1 and D2 because of their specialisation and sought after skills. In each of the categories, D1 and D2, a high and low in the range has been nominated by Transpower. The high and low range values given include the maximum potential bonus payable.

GHD then sought to compare these salary bands to the energy industry sector. Information was gained from two large organisations considered qualified to comment in this area of remuneration analysis: HayGroup and Hays Personnel Services (Australia) Pty Limited. Both of these separate worldwide companies have strong representation in Australia and New Zealand.

The remuneration information received from HayGroup has been included in the appendices. It includes median salaries and specific commentary regarding the differences in remuneration between the Energy sector specifically and the general industry average. The closest equivalent salary ranges for D1 and D2 in the HayGroup information are the 600 point and 800 point ranges which are described as:

- ▶ 600 Hay points: Senior professional with 15+ years of experience, Mid level manager or large project manager
- ▶ 800 Hay points: Third tier functional/divisional manager involved in setting departmental standards and translating strategies into tactics, Programme manager

GHD notes that the HayGroup includes percentage point differences between the energy sector remuneration and the broader industry averages. These have been nominated as 5.8% for the 600 point group and 10.3% for the 800 point group.

The Hays salary survey information includes IT specific salary ranges. The information is based on the broader industry averages rather than the specific energy industry. The ranges chosen from the Hays salary survey have been equated to the Transpower D1 and D2 salary ranges. The categories include:

- ▶ IT Architects
- ▶ IT Specialists
- ▶ IT Managers (including project, programme and other managers)

The table below compares Transpower's D1 and D2 ranges to the selected Hays equivalent categories. The HayGroup uplift factors of 5.8% and 10.3% applied respectively to the industry average as stated by Hays. GHD notes that the HayGroup median remuneration for engineering and IT staff generally falls within the low and high ranges, suggesting that Transpower's compensation to its staff is not unreasonable.



**Table 15 Salary comparison**

Entity	Band	Remuneration Low \$	% to Transpower Remuneration Low	Remuneration High \$	% to Transpower Remuneration High
Transpower*	D1	92,225	100.0%	138,337	100.0%
Hays**	D1 Equivalent	85,000	92.2%	130,000	94.0%
HayGroup***	600 points	89,930	97.5%	137,540	99.4%
Transpower*	D2	121,593	100.0%	182,390	100.0%
Hays**	D2 Equivalent	120,000	98.7%	150,000	82.2%
HayGroup***	800 points	132,360	108.9%	165,450	90.7%

\*Source: Transpower

\*\*Source: <http://www.hays.com.au/salary/pdfs06/InformationTechnology.pdf>

\*\*\*Source: <http://www.hays.com.au/salary/pdfs06/InformationTechnology.pdf>, HayGroup, see appendix

The comparison shows that Transpower's D1 remuneration range is considered by this analysis to be within the industry specific benchmark. At the low end it is within 2.5% below (100%-97.5%) and at the top end it is within 0.6% below (100%-99.4%).

The comparison for Transpower's D2 remuneration band is lower at the bottom end by 8.9% (100%-108.9%) and higher at the top end by 9.3% (100%-90.7%).

GHD considers benchmarking a useful method for general comparison and recognises that many factors are required for accurate analysis. Given that remuneration is highly dependent of specific role duties, a difference of 10% at the top end of D2 is not considered significant in Transpower's total salary compensation to its staff. Overall GHD concludes that Transpower's staff compensation bands are within expectation.

## 6.4 Recruitment policy and staff levels

Transpower has consciously positioned its staff compensation at the higher end of the New Zealand market<sup>53</sup>. In some areas of IT functions are recruited as permanent full time positions despite an expectation of 3-4 year duration. Following this period, Transpower expects that these staff roles would be reduced through attrition. Attrition is expected where the nature of the role is such that the incumbent staff will likely seek more exciting opportunities once the steady state has been reached<sup>54</sup>.

GHD is of the opinion that employees may not seek more exciting opportunities within New Zealand or internationally, especially if they are highly paid, and that Transpower may have difficulty to arrive at the

<sup>53</sup> Transpower remuneration policy, June 2005, section 8.4

<sup>54</sup> Transpower Response to GHD Q1-5 21/08/06



desired steady state staff level when prudent. Transpower recognises the risk in using attrition as a staff reduction mechanism and has mitigation strategies in place<sup>55</sup>. Specifically where attrition rates are not as high as expected, IT would manage its headcount within its available salary budget and should this not be possible, Transpower advised that a restructure of the IT Division could be undertaken.

Transpower anticipates a staff reduction of 10-11 roles through attrition over three areas in the next 5 years. This represents approximately \$1 Million of the total salary and the reduction is expected to commence in 2008/09 and expected to be complete in 2010/11<sup>56</sup>.

GHD is of the opinion that IT staff costs could be significantly reduced in future years as projects are completed and system architectural initiatives are fully realised and concur with Transpower that 10-11 role reduction is appropriate in the next 5 years.

## 6.5 GHD Opinion

Transpower has forecast that the IT 2006/07 Operating Expense will be \$28.4 Million (IT Investigation \$6.7 Million, IT Personnel \$11.7 Million and IT&T \$ 10.0 Million). Increases in cost account for approximately \$3.5 Million of the difference between the 2006/07 Plan and the 2002/03 starting point. The balance is the growth during the period estimated at \$ 5.4 Million.

Prior and subsequent to 2002/03, in the area of information technology, specialist consultant reports indicated that a significant increase in capability was required to support any major change in business direction<sup>57</sup>. The reports highlight use of poor practices, use of unsupported legacy technology and the ability to support small increments of change only. The reports suggest significant investment would be required should the business direction change. When Transpower embarked on a growth strategy, the existing IT organisation was forced to change significantly.

Board approval of the Information Systems Strategic Plan (ISSP) heralded an era of increased capability and capacity. The subsequent transformation of the IT organisation to become service delivery focussed required significant effort beyond the previous capacity. Further reviews in areas of operations, service sourcing and service delivery processes highlighted the depth of issues within Transpower IT. With the substantial increase in capacity and capability the IT organisation has demonstrated significant progress<sup>58</sup> on the issues raised.

GHD held discussions with specialist IT remuneration consultants. Their opinion was that the market place is very competitive and the Transpower salary levels are within expectation. Transpower has a remuneration policy in place and uses external consultants to determine forward budgets for salary increases. Therefore GHD is of the opinion that remuneration is not unreasonable.

GHD considers the recruitment approach by IT unorthodox for certain functions, by relying on attrition to reduce staff levels to a steady state<sup>59</sup>: GHD is of the opinion that employees may not seek more exciting opportunities within New Zealand or internationally especially if they are highly paid, and that Transpower

<sup>55</sup> Transpower Response to GHD Questions 22/08/06 Question 6

<sup>56</sup> Transpower Response to GHD Questions 22/08/06 Question 6

<sup>57</sup> A Review of Transpower's Asset Management Strategies, System Operator Services and Related Practices, Beca Carter Hollings, 2001, Current State Assessment, Azimuth Consulting, 2004

<sup>58</sup> Response to GHD Q1-4 21/08/06

<sup>59</sup> Transpower response to GHD questions 1-4 21/08/06



may have difficulty to arrive at the desired steady state when prudent. Transpower recognises the risk in using attrition as a staff reduction mechanism and has mitigation strategies in place<sup>60</sup>.

GHD is of the opinion that IT staff costs could be significantly reduced in future years as projects are completed and system architectural initiatives are fully realised and concur with Transpower that 10-11 role reduction is appropriate in the next 5 years.

Transpower anticipates a staff reduction of 10-11 roles through attrition over three areas in the next 5 years. This represents approximately \$1 Million of the total IT salary and the reduction is expected to commence in 2008/09 and is expected to be complete in 2010/11<sup>61</sup>. Given the state of IT in Transpower in 2002/03 and Transpower's future desired state, driven by the growth strategy, and assuming the plan for staff reduction is successful, GHD is of the opinion that the level of IT staff increase numbers and the above premium median remuneration increase is not unreasonable.

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<sup>60</sup> Transpower Response to GHD Questions 22/08/06 Question 6

<sup>61</sup> Transpower Response to GHD Questions 22/08/06 Question 6



## 7. Maintenance

### 7.1 Background

The Maintenance cost category as defined by Transpower accounts for 42% of the total Opex costs for 2006/07 forecast. This compares with 46% in the 2002/03 figures. The 2006/07 maintenance total of \$82.4 Million is split into two major categories: transmission lines, \$32.3 Million, and substations, \$50.1 Million.<sup>62</sup> Since 2002/03 the overall maintenance costs have increased generally in line with CPI.<sup>63</sup>

As was the case in 2002/03, in 2006/07 Transpower contracts out all fieldwork to third parties on a competitive basis. The existing contracted maintenance companies are asked to bid on tender documents prepared by Transpower. To make sure it is truly competitive, other companies that are not currently engaged by Transpower can also tender. As the first contracts were let in 1988, Transpower has built up significant experience in this area. The most recent change in this process has been the shift from letting 3-year contracts to the latest contracting out in 2003, where contracts were let for 5 years with a 5-year extension based on performance.

Transpower provided a Board Paper<sup>64</sup> that showed existing contractors were asked to submit prices for the upcoming maintenance contracts. One other large firm made enquiry. However, after receipt of documentation, that firm decided not to bid. The contracts were let for 5 years with fixed pricing for 3 years. Transpower reviewed the re-pricing negotiations at the end of that 3-year period and summarised the findings in an internal memo<sup>65</sup>. That paper indicates the process of review and the reasonableness of the re-pricing.

The review of Maintenance costs has been categorized as follows:

- ▶ Asset Management Plans (AMP)
- ▶ Budget Process
- ▶ Benchmarking.

Transpower's maintenance philosophy is based on long-term plans with details forecast for at least 10 years. The AMP states: "While the proposed major project spend increases dramatically, the majority of the underlying asset spend continues at a relatively constant rate"<sup>66</sup>. Transpower states that their planning objective is to maintain service quality and quantity obligations in a least cost methodology. To meet these objectives the AMP outlines the asset management strategies based on historical performance, operating duty, asset condition and maintainability in the anticipated system environment. The same philosophy was in place in 2002/03.

<sup>62</sup> Transpower New Zealand Ltd Operating Expenditure Discussion Paper (draft) April 2006 p 6

<sup>63</sup> Asset Management Overview Operating Expenditure – Transpower presentation 6 June 2006 slide 7

<sup>64</sup> Board Paper from GM Service Delivery to The Board of Directors Transpower dated 1 October 2003.

<sup>65</sup> Transpower Internal Memorandum Transmission Lines, Substations, HVDC and Metering maintenance and Transformer Refurbishment Rates Variation Claim July 2006 – June 2008 - dated 9 May 2006.

<sup>66</sup> Comprehensive Plan for Asset Management and Operation of the Grid September 2005 Transpower New Zealand Ltd



## 7.2 Asset Management Plans

Transpower provided a document, "Comprehensive Plan for Asset Management and Operation of the Grid"<sup>67</sup>, dated September 2005 covering the 10-year period from 2005/06. The document indicates it is an update of the 2001/02 Asset Management Plan (AMP). Transpower also provided the 1999/00, 2000/01 and 2001/02 AMPs. GHD has used these AMPs as a basis of its analysis.

### 7.2.1 Analysis

GHD was provided with samples of Transpower's Service Specifications as listed in the AMP. The following were provided:

- ▶ TP.SS 02.24 Issue 1 Oct 2002 Outdoor reclosers and vacuum circuit breaker maintenance
- ▶ TP.SS 03.11 Issue 4 Mar 2006 Condition assessment for IT equipment and facilities
- ▶ TP.SS 02.44 Issue 3 Oct 2005 Disconnecter and earthing switch maintenance.

GHD was satisfied that the information provided in relation to the samples selected showed the asset management process was working as described.

All AMPs include 10-year forecasts. While the dollars are in the year of the report, the figures in Table 16 allow a high level comparison of the maintenance figures being reviewed by GHD for 2006/07.

**Table 16 Asset Management Plan Maintenance Costs**

Maintenance Category	2000/01 AMP <sup>68</sup> (\$2000)	2001/02 AMP <sup>69</sup> (\$2001)	2005/06 AMP <sup>70</sup> (\$2005)	2006/07 Forecast <sup>71</sup> (\$2006)
AC stations	34.4	34.2	46	50.1
HVDC stations	5.4	6.1	7	0.0
Transmission lines	42.7	41.6	32	32.3
Total	82.5	81.9	85	82.4

Source: Transpower

From 2001/02 to 2005/06 the transmission maintenance cost decreased significantly, while the cost of maintenance for AC Stations increased at a rate above inflation. The change in the transmission cost was due to a change in accounting policy on 1<sup>st</sup> July 2003. Some items that were previously expensed were capitalised, reducing the transmission line maintenance figure. Previously Transmission lines were treated as one category. Post July 2003 the accounting went to component level. GHD's review of the transmission line maintenance actual expenditure from 2002/03 to 2004/05 has shown the rate of

<sup>67</sup> Comprehensive Plan for Asset Management and Operation of the Grid September 2005 Transpower New Zealand Ltd

<sup>68</sup> Asset Management Plan 2000/01 Transpower New Zealand Ltd p 8

<sup>69</sup> Asset Management Plan 2001/02 Transpower New Zealand Ltd p 7

<sup>70</sup> Comprehensive Plan for Asset Management and Operation of the Grid September 2005 Transpower New Zealand Ltd p 7

<sup>71</sup> Draft Transpower New Zealand Ltd Operating Expenditure Discussion Paper April 2006 p 6



increase was in line with inflation. The 2006/07 proposal is in line with the actual expenditure trend after the accounting policy change.

The change in AC Stations was a result of the 2006/07 forecast having the HVDC stations rolled into the AC stations category as well as the inflationary affects since 2001/02.

A roll forward of projected 2006/07 expenditures in real dollars from the 2001/02 AMP to the 2006/07 figure showed a 7% discrepancy between the 2001/02 AMP roll forward and the 2006/07 budget, with the 2006/07 budget being higher than the roll-forward. Transpower explained this as a forecast error between what was predicted in 2001/02 for 2006/07 and the current plan.

The actual costs from 2001/02 were also provided. They show that up to 2005/06 the yearly total rate of increase has been consistent from year to year and the figures proposed for 2006/07 were consistent with the actual cost increase. The rate of increase is in line with inflation and increases in maintenance contracts.

### **7.2.2 GHD Opinion**

GHD is of the opinion that the AMP process is sound and is satisfied with the information and explanations provided by Transpower in relation to the differences in the figures provided in the prior and latest September 2005 AMP and the 2006/07 forecast. The rate of increase is in line with inflation and in line with the 10-year forecast in the AMPs. The 2006/07 maintenance forecast is considered not unreasonable.

GHD is of the opinion that a more detailed analysis would not change the conclusions and would not recommend any further analysis in this area.

## **7.3 Budget Process**

### **7.3.1 Background**

Transpower provided explanations that the maintenance budget is derived from outputs of their maintenance management system, the strategies as outlined in the AMP and rates from their experience and the competitively based maintenance contracts.

The maintenance budget is built up from activities as listed in:

- ▶ Maintenance Management System (MMS). Part of its function is to set up job orders for all maintenance
- ▶ Refurbishment projects. These are identified in the AMP. The budget uses generic rates developed from past experience.

Transpower provided a 2006 YTD period 11 report from the MMS showing the breakdown of the whole maintenance budget against over 200 account codes.<sup>72</sup>

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<sup>72</sup> MMS – Maintenance Budget Variance Report by Budget Manager, Activity All costs for financial year/period 2006/11 printed on 19 June 2006



### **7.3.2 Analysis**

GHD notes that with the experience gained from many years of outsourcing maintenance, Transpower has developed access to contract costs that cover both fixed priced maintenance and schedule of rates maintenance for all the activities that need to be carried out. These costs are used to develop the budgets.

The replacement type projects are scheduled on a 10-year program in the AMPs. However, each year the program is reviewed, to fit in with the budgets allocated for maintenance. If some unexpected maintenance costs have occurred then the replacement projects are treated as discretionary and slipped to the next year, provided there is not going to be an impact on the network operation and supply quality.

### **7.3.3 GHD Opinion**

GHD is of the opinion that the budget process is robust and that the practice of reviewing the AMP and budgets on a year-by-year basis is in line with industry practice.

GHD is of the opinion that a more detailed analysis would not change the conclusions and would not recommend any further analysis in this area.

## **7.4 Benchmarking**

### **7.4.1 Background**

Transpower has pointed to the benchmarking they have been involved in the International Transmission Operations & Maintenance Study (ITOMS) and an internal study to compare Transpower with the Transmission Network Service Providers (TNSPs) in Australia using the data in the ACCC Transgrid revenue reset report.

Transpower provided GHD with an extract of the last study results from 2005. Transpower has been part of the ITOMS since its inception in 1994. The study consists of benchmarking interested TNSPs from around the world. These studies have involved a significant number of organisations from around the world, including heavy participation from New Zealand and Australia.

Transpower has provided this benchmark data to support their case that the maintenance costs are reasonable. This section of GHD's report relates to the transmission line and substation maintenance, which represent about half of the overall operating and maintenance costs. However, the benchmarking relates to overall operating and maintenance costs.

As recognised by Transpower and KPMG the benchmarking needs to be treated with caution. Accordingly GHD has placed little reliance on most of the benchmark data.

### **7.4.2 Analysis**

The ITOMS study shows comparative results but not who the companies are in relation to each other. Australia/New Zealand is well represented with only Western Australia not taking part. The results are presented as scatter plots with cost and service levels being on the X and Y axis (Refer to Figure 2 through to Figure 4 noting Transpower are point 'F'). The best performers would have low costs and high service level and be in the top right quadrant. The ITOMS report contains trend graphs for the last three studies (2001, 2003 and 2005) covering overhead transmission line and substation maintenance.



For overhead transmission line maintenance in 2005, the Transpower service level has decreased and costs increased compared with 2001 and 2003. Substation maintenance has trended the other way, i.e. improved, with increased service levels and lower costs. The overall result for Transpower is that they are above average in terms of participating TNSPs, with stronger service levels and lower costs.<sup>73</sup>

Transpower has advised that the ITOMS results do not factor in the asset age in the comparison and also excludes their HVDC activities. Transpower also consider the results to be an indication rather than an absolute measure.<sup>74</sup>

The other benchmarking report supplied by Transpower was one by KPMG, reviewing Transpower's own comparisons against Australian TNSPs<sup>75</sup> Transpower advises that the results, which should be treated with caution, show:

- ▶ Transmission lines costs are very comparable with Australian TNSPs
- ▶ Substation costs are in the middle of the group
- ▶ Opex per GWh, with costs associated with lower voltage and HVDC assets excluded, are marginally higher than Australian TNSPs.

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<sup>73</sup> Overview ITOMS 2005 Report - UMS Group pp 17, 19 and 21

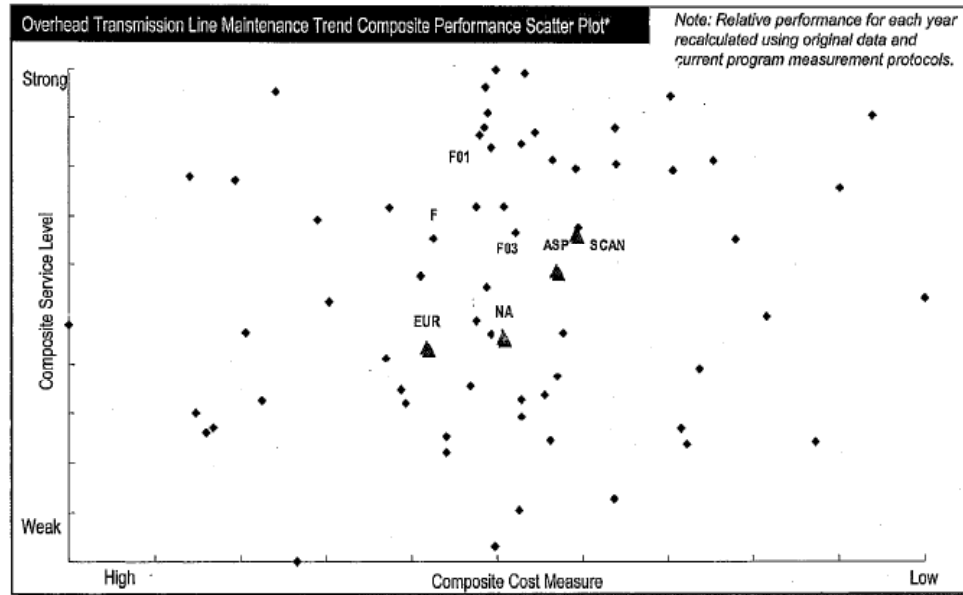
<sup>74</sup> Commerce Commission Administrative Settlement Operating Expenditure, Maintenance Expenditure Overview – Bob Simpson 25 May 2006 p 11

<sup>75</sup> Review of Transpower's Benchmarking Analysis of Transmission Operating and Maintenance Costs – KPMG May 2006





### Transmission Trend – Weighted Average\*\*



\*\*Weighted average indicates that each sub-function component score was weighted by the % spend in that sub-function

\*Includes Overhead Line Patrol & Inspection 100-199 kV and 200+ kV, Overhead Line Maintenance 100-199 kV and 200+ kV, and Right-of-Way Maintenance.

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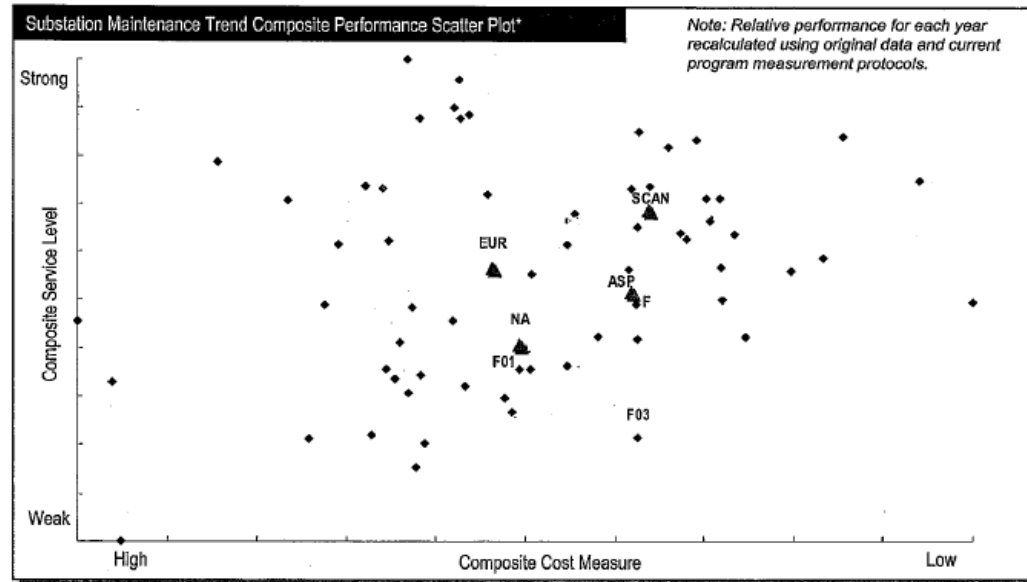
Data Revision Date: 3/14/2006

Composite Scatter Analysis Revision Date: 3/16/2006 Overall Charting Revision Date: 5/1/2006

Figure 3: Transmission Trend - Weighted Average



### Substation Trend – Weighted Average\*\*



**\*\*Weighted average indicates that each sub-function component score was weighted by the % spend in that sub-function**  
 \* Includes Breaker Maintenance, Transformer Maintenance, Relay, SCADA & Communications System Maintenance, Compensation Equipment Maintenance, Disconnecter & Earth Switch Maintenance, Instrument Transformer & Other Circuit End Equipment Maintenance, Substation Site & Auxiliary Plant Equipment Maintenance, Substation Field Operations.

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**Data Revision Date: 3/14/2006**  
**Composite Scatter Analysis Revision Date: 3/16/2006**  
**Overall Charting Revision Date: 5/1/2006**

Figure 4: Substation Trend - Weighted Average



## **7.5 GHD Opinion**

As all the maintenance is contracted out to third parties on a competitive basis, GHD is of the opinion that proposed 2006/07 maintenance costs are not unreasonable. Maintenance expenditures have been increasing at CPI, which is not unreasonable.

From the desktop review undertaken by GHD, GHD is of the opinion that the current and previous AMPs are in line with industry practice. In making this observation it needs to be recognised that GHD did not review the details behind the documentation provided and GHD did not undertake an audit as to whether the plans are implemented as indicated. Provided the AMPs have been researched and developed as indicated, it is GHD's opinion that it is not unreasonable to conclude that the quantity of maintenance has been appropriately optimised. GHD is of the opinion, based on the desktop review and information provided for historical and the forecast maintenance, that 2006/07 forecast costs as allocated by documented asset management strategies are not unreasonable.

This conclusion is reached based on the AMP, Maintenance Management System and the maintenance budget process as explained by Transpower. The ITOMS benchmarking also supports the view that Transpower is not out of step with International TNSPs.

GHD is of the opinion that a more detailed analysis would not change the conclusions and as such does not recommend any further analysis in this area.



## Appendix A



## Regulated Services

The services that are regulated are the “specified services” as set out in Gazette Notices.

Below an extract from a 26 June 2006 Notice shows what is and what is not a specified (regulated) service

**“Specified services** means, in relation to Transpower, all goods and services, provided in New Zealand, that are electricity transmission goods or services or are directly related to the provision of electricity transmission, and includes—

(a) the provision, operation, and maintenance of electricity works such as the high voltage direct current inter-island link and lines, cables, and substations that facilitate the national conveyance of electricity throughout the national grid; and

(b) the sale of electricity conveyance services to customers—

but does not include—

(c) any goods and services described in paragraph (a) or (b), if Transpower demonstrates beyond reasonable doubt that there is workable or effective competition for the provision of those goods and services; or

(d) non-conveyance goods and services, such as consultancy or information goods or services not directly related to the provision of electricity transmission, if Transpower demonstrates beyond reasonable doubt that those goods and services are not directly related to the provision of electricity transmission; or

(e) the provision of system operator services, if Transpower demonstrates beyond reasonable doubt that there is workable or effective competition for the provision of those services; or

(f) services for which loss and constraint rentals are paid, if Transpower demonstrates beyond reasonable doubt that amounts received for those services are passed on transparently and in full to its customers; or

(g) financial services related to transmission (known as “financial transmission rights”), if Transpower demonstrates beyond reasonable doubt that the amounts arising from settlement of those services are passed on transparently and in full to its customers; or

(h) goods and services provided by Transpower under new investment contracts but, in the case of new investment contracts entered into after 5 June 2003, only if the other party agrees in writing that the terms and conditions are reasonable or reflect contestable provision of the goods and services; or

(i) goods and services provided by Transpower as a result of new investment, if Transpower demonstrates beyond reasonable doubt that the new investment was approved under a process (whether regulatory or otherwise) that provides for affected customers to make and approve price-quality trade offs and opportunity for competitive provision of new investment by parties other than Transpower “



Appendix B  
Summary Transpower Cost Escalators



**Table 17 Transpower's Cost Escalations Information**

Cost escalation	2002/03	2003/04	2004/05	2005/06	2006/07
Transpower's labour costs	100%	105%	109%	114%	119%
Labour Costs: average annual compounding	4.5%				
CPI	100%	103%	105%	108%	110%
CPI: Annual compounding	2.5%				

Source: Transpower

To assess the impact of inflation component of the increase cost between 2002/03 and 2006/07 GHD has developed the Cost Escalation model set out in Table 18 below.

The Cost Escalation Model is derived from data provided by Transpower. For example 80% of the 2002/03 Departmental costs were attributable to salaries and wages, and the balance to costs that are affected by CPI. Therefore 80% is adjusted by Labour costs compounded at 4.5% during the period 2002/03 and 2006/07 and 20% by CPI.

During the period under review, Transpower have increased labour costs on average between 4 – 5% p.a.<sup>76</sup>. GHD has reviewed this against NZ Labour Cost Index increases during this period and note that comparable wages increase during this period were between 2.3% and 3.0%. However, when reviewed against categories more illustrative of Transpower labour structure the labour cost growth is closer to a range between 3.1% to 3.6% as shown in the table below.

**Table 18 Average annual increase in labour costs between 2002 and 2006**

LCI Salaries and Wages	2002	2006	Average Annual Increase
Electricity, Gas & Water	1019	117	2.3%
Public Professional	1022	1152	3.0%

Source: Statistics New Zealand

The above two categories have been selected to illustrate movements in a comparable labour cost.

Transpower advised that the above industry average payments were required during this period in order to retain existing staff and attract new staff.

Therefore, on average Transpower has paid up to 2% p.a. above the general Labour Cost Index during the review period. This required further external investigation. As part of this investigation GHD held discussions with employment consultants familiar with Transpower and the electricity industry in NZ and Australia who confirm that the two countries experienced significant salary pressure and that increases of

<sup>76</sup> April Report



4.5% p.a. is not unreasonable. Moreover, they commented that companies in the energy infrastructure area that did not pay this level of increase would not retain staff. Therefore, GHD is of the opinion that the quoted increases of 4.5% pa are not unreasonable.



Appendix C  
HayGroup Letter

6 September 2006

Mr. Clement Fisk  
GHD Consultants  
L8, 180 Lonsdale Street  
Melbourne  
VICTORIA 3000  
Australia.

Dear Clement,

**Re: New Zealand Electricity Industry – Market Remuneration Commentary**

I refer to our recent telephone discussions and your request for a commentary from Hay Group on the remuneration issues and practices of organisations in the Electricity Sector. This commentary will form part of a wider report by GHD commissioned by the Commerce Commission into Transpower.

Transpower has been a client of Hay Group since its inception; however this commentary does not breach our client confidentiality agreement as we are not being asked to divulge our client's policy or practices.

The Electricity industry forms part of Hay Group's Energy and Utilities market sector for remuneration survey purposes. This sector currently comprises twenty clients and a list of these organisations is attached to this report. Our All Organisations database comprises over 180 organisations and more than 74,000 evaluated positions, and is by far the largest remuneration database in New Zealand.

As you are aware, New Zealand currently has a very low unemployment rate of 3.6%, with organisations in every sector finding it increasingly difficult to recruit and retain skilled staff, at all levels.

For many years the electricity sector has paid a premium over the wider market reflecting intense competition for skilled people from not only other electricity and utilities companies but also from oil and gas exploration and production facilities, the Refining Company at Marsden Point, and of course from the growing resources sector in Australia.

Despite the industry leading the New Zealand pay market with the highest premiums; our clients are consistently losing skilled people to competitors. This trend has heightened recently due to major infrastructure projects in new generation capacity at the same time that oil exploration is back on the local agenda, new gas production facilities come on-stream and development of the Maari oil and gas field is well under way. For example, the latest pressure point comes from Genesis Energy looking to take on several additional Generation Controllers for its plant expansion at Huntly. These new roles are most likely to come out of a population of less than 20 similar positions within Mighty River Power, Meridian Energy, Contact Energy and Transpower.

The table below contrasts market median remuneration for both the All Organisations and Energy Sectors and demonstrates the current premium payable, compared with the same situation four years ago. The premium showed at market median is sustained at other market intercepts.

The jobs sizes given are for representative levels as follows:

200 Hay Points – Senior Administrator, Technician or Operator

400 Hay Points – Professional Engineer, Accountant, Product Manager with 3-5 years experience

600 Hay Points – Senior Professional with 15+ years of experience, Mid-level Manager or large Project Manager

800 Hay Points – Third tier Functional/Divisional Manager involved in setting departmental standards and translating strategies into tactics, Programme Manager.

### Market Comparisons

#### All Organisations vs Energy and Utilities Sector

2006						
Hay Points	All Organisations Median Fixed Package	Median Total Package	Energy Sector Median Fixed Package	Median Total Package	Fixed % Differential	Total % Differential
200	42,700	43,710	47,140	47,200	10.4	8.0
400	76,310	77,930	82,450	87,490	8.0	12.3
600	112,330	117,710	118,900	129,440	5.8	10.0
800	146,660	157,340	161,700	185,150	10.3	17.7

2002						
Hay Points	All Organisations Median Fixed Package	Median Total Package	Energy Sector Median Fixed Package	Median Total Package	Fixed % Differential	Total % Differential
200	39,690	40,211	44,850	49,180	13.0	22.3
400	69,250	71,750	77,000	85,500	11.2	19.2
600	100,870	106,400	113,330	125,800	12.4	18.2
800	131,400	140,250	142,120	161,200	8.2	14.9

#### Market movement over 4 years

200	7.6	8.7	5.1	-4.0
400	10.2	8.6	7.1	2.3
600	11.4	10.6	4.9	2.9
800	11.6	12.2	13.8	14.9

The overall market movements for the four year period, as shown above, disguises a significant reduction in skills and experience in roles of comparable size. i.e. when an experienced person leaves the role, they will be replaced by a person with less experience, usually at a lower salary. In contrast, the median fixed package increases for “Same Incumbents” in the Energy Sector over the same four year period were:

200	19.7%
400	19.6%
600	15.4%
800	16.4%

The second table, below, compares the overall sector market practice with two of the key functions in the sector. As these are based on “All Jobs” comparisons in the functions they do not necessarily show premiums that may need to be paid for specific skills, where supply and demand issues will apply. An example of this would be Enterprise Architects in the IT function where remuneration would be about 50% higher at the 600 point level. Equally, Project Management roles are in high demand and, depending on the size, criticality and technology involved, may warrant a significant premium to attract or retain the right person. We cannot be more specific in relation to this type of role as market practice varies so widely.

Hay Points	2006		
	Energy Sector Median Fixed Package	Information Technology	Engineering
200	47,140	53,000	58,250
400	82,450	83,250	84,810
600	118,900	106,920	116,500
800	161,700	N/A	175,120
	Median Total Package		
200	47,200	53,000	59,580
400	87,490	87,970	90,250
600	129,440	116,640	126,050
800	185,150	N/A	189,330

You have asked for commentary on New Zealand practices relating to contracting – or fixed term employment agreements and also in relation to redundancy provisions. The example given was employment for a three year term and the extent of any premium that might exist. When employing an employee on a fixed term agreement employers must exercise caution as the Employment Relations Act 2004 makes the fixed term unenforceable unless there are genuine reasons based on reasonable grounds for specifying the employment is for a fixed term only. Before entering into the agreement the employee must be advised that their employment is for a fixed term, when or how it will end, and the exact reasons why their employment ceases at the expiry of the fixed term.

In the case of a three year fixed term contract, we would not expect the amount of any premium that might be paid for a much shorter contract term (say up to 1 year) to exist. We would generally advocate that any “premium” should take the form of a completion bonus rather than an addition to salary.

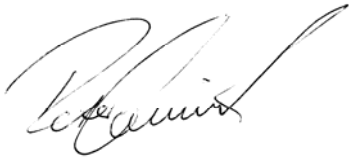
In respect of redundancy, this can be made only for genuine commercial reasons and employers must demonstrate that these reasons exist. Ideally there should be a consultation process, genuine consideration of alternatives, a fair selection process when only some employees doing the same role are to be made redundant and a strong communication process. A redundant employee is entitled to notice but will only be entitled to redundancy

compensation if there is a contractual entitlement to it. Where compensation is not stated, the extent of reasonable notice must take into consideration a range of factors including the length of service and seniority. The Employment Court will also consider the relative bargaining power and capacity of parties at the time the contract was established and may award compensation in some circumstances, even though none was specified in the contract.

If there are aspects of this report that require further elaboration or explanation, please do not hesitate to contact me.

Yours sincerely,

HayGroup Limited

A handwritten signature in black ink, appearing to read 'Peter Cornish', is written over a thin vertical red line.

Peter Cornish  
Director Executive Reward

## **Hay Group - Reward Information Services - New Zealand**

### **Energy - Participants - June 2006**

Air Liquide New Zealand Ltd	BOC Gases New Zealand Limited
BP Oil New Zealand Ltd	Caltex New Zealand Ltd
Contact Energy Ltd	Meridian Energy Ltd
Methanex New Zealand Limited	Mighty River Power
Natural Gas Corporation	New Zealand Oil Services Ltd
New Zealand Refining Company Ltd, The	OMV New Zealand Ltd
Rockgas Ltd	Shell New Zealand Limited
Shell Todd Oil Services Ltd	Swift Energy New Zealand Ltd
Transfield Worley (NZ) Ltd	TrustPower Limited
Vector Limited	Waste Management NZ Ltd



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**Document Status**

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