



## EMPLOYMENT AND SKILLS SNAPSHOT: ELECTRICITY, GAS, WATER AND WASTE SERVICES

### Overview – July 2010

The electricity, gas, water, and waste services sector employed approximately 13,100 people during the December 2009 quarter, or 0.6% of New Zealand's total workforce<sup>1</sup>.

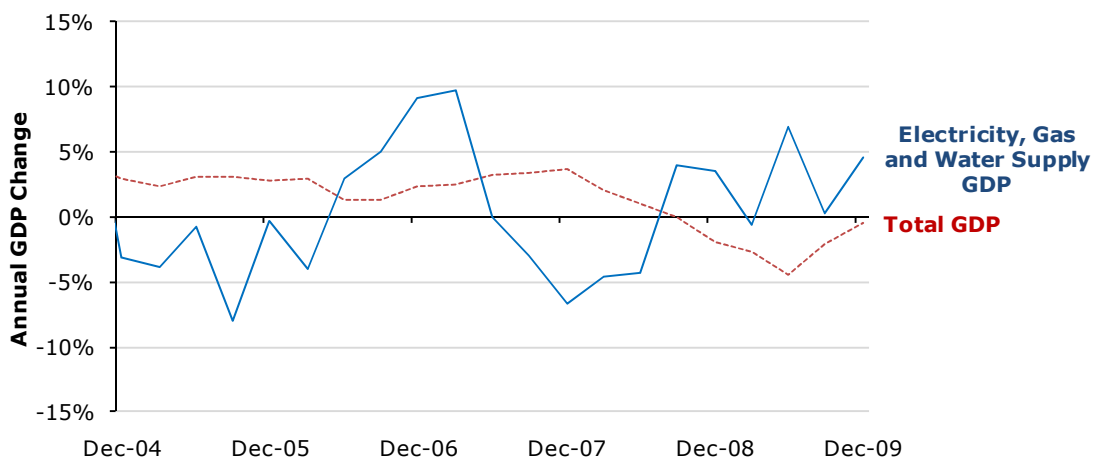
This *Employment and Skills Snapshot* breaks the sector down into four subsectors: electricity supply; gas supply; water supply, sewerage and drainage services; and waste collection, treatment and disposal services. It then takes a closer look at:

- employment within the various subsectors that make up this sector
- the qualifications of employees in these subsectors
- the demographic profile of these employees.

### Contribution to Gross Domestic Product

Over the last five years, GDP growth in the electricity, gas and water supply sectors Gross Domestic Product (GDP) has been more volatile than nationwide GDP (see Figure 1). GDP growth in the sector generally runs countercyclical to total GDP growth. This recession was no exception: GDP growth in the sector from March 2008 to December 2009 averaged 5.6% against a nationwide average of -1.8%.

**Figure 1: Total GDP and electricity, gas and water supply GDP change from previous year's quarter**



Source: Statistics New Zealand

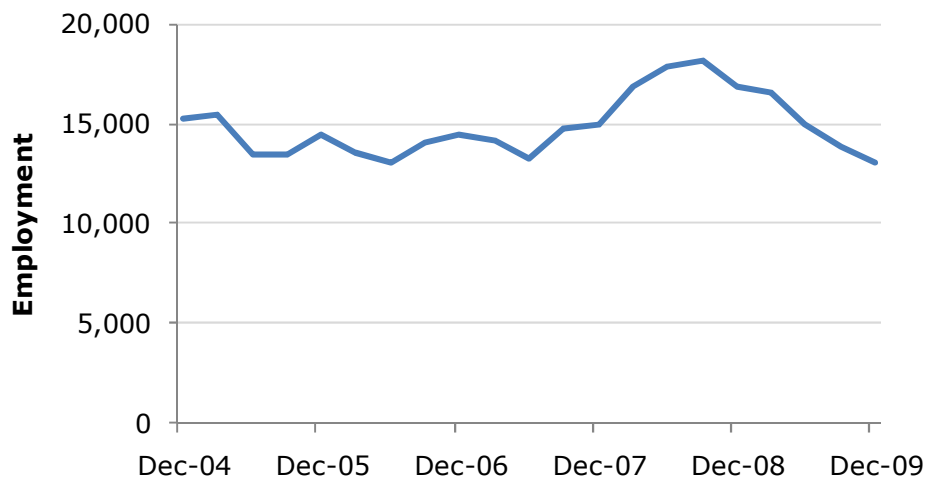
<sup>1</sup> Based on Department of Labour Employment Estimates



## Employment trends

New Zealand had 4% employment growth in the five years to December 2009. Over this period, employment within the electricity, gas, water and waste services sector decreased by 15%. More recently, employment within the sector has fluctuated markedly, as illustrated in Figure 2 below. A large increase between December 2007 and September 2008, followed by a steep decline after December 2008, was particularly noticeable. This decline was so marked that in December 2009, employment was 29% lower than 15 months earlier, yet during the same period GDP growth in the sector averaged 2.8%.

**Figure 2: Electricity, gas, water and waste sector employment**



Source: Department of Labour Employment Estimates

The electricity, gas, water and waste services sector is divided into the subsectors shown in Table 1<sup>2</sup> on the following page. This table shows that all subsectors experienced significant declines in employment over the past five years:

- employment in the electricity supply subsector decreased by 15% (960 workers) in the five years to December 2009
- employment in the gas supply subsector decreased by 46% (240 workers)
- employment in the water supply, sewerage and drainage services subsector decreased by 31% (690 workers)
- employment in the waste collection, treatment and disposal services subsector decreased by 7% (420 workers).

<sup>2</sup> The Department of Labour reports industry employment statistics based on the Australia and New Zealand Industry Classification System (ANZSIC), 2006.

**Table 1: Employment by subsector**

Subsector	Employment (Dec. 09)	Share of industry employment (Dec. 09)	Employment growth (2004 - 2009)	Absolute employment growth (2004 - 2009)
Electricity supply	5,600	43%	-15%	-960
Gas supply	300	2%	-46%	-240
Water supply, sewerage, drainage services	1,600	12%	-31%	-690
Waste collection, treatment and disposal services	5,600	43%	-7%	-420
<b>Combined subsectors</b>	<b>13,100</b>	-	<b>-15%</b>	<b>-2,310</b>
<b>Total New Zealand employment</b>	<b>2,175,000</b>	-	<b>4%</b>	<b>91,800</b>

Source: Department of Labour Employment Estimates

The subsectors with the largest declines in absolute terms (that is, in terms of numbers of jobs shed rather than percentage change) were the electricity supply subsector and the water supply, sewerage and drainage services subsector. Consultation with stakeholders in these subsectors indicates a number of drivers behind these declines.

Recently within the electricity supply subsector, a number of key players in electricity transmission and distribution have consolidated employment. However, the future will likely see investment in critical infrastructure projects of national significance increasing the demand for skilled workers within the subsector. Skills shortages may become a pressing issue as a result, especially given that industry training within the subsector has decreased.

Within the water supply, sewerage and drainage services subsector, the employment fall was largely driven by decreased investment in water distribution and drainage services, with water supply employment remaining unchanged.



## Qualifications

The mix of employees' qualification across the entire sector approximately matches that of the New Zealand workforce as a whole. However, the mix within subsectors varies considerably, as shown in Table 2 below.

**Table 2: Qualifications by subsector**

Subsector	No formal qualification	School qualification	Cert. or diploma	Bachelor degree or higher
Electricity supply	8%	25%	44%	22%
Gas supply	5%	26%	27%	42%
Water supply, sewerage and drainage services	15%	23%	34%	28%
Waste collection treatment and disposal services	43%	33%	18%	6%
<b>Electricity, gas, water and waste services total</b>	<b>23%</b>	<b>28%</b>	<b>31%</b>	<b>18%</b>
<b>New Zealand total</b>	<b>19%</b>	<b>35%</b>	<b>27%</b>	<b>19%</b>

Source: Census of Population and Dwellings, 2006

In 2006, the electricity, water and gas supply subsectors had much higher proportions of employees with post-school qualifications than the total workforce. In fact, the gas supply subsector had over twice the national rate of employees with bachelor degrees or higher. In contrast, the waste collection, treatment and disposal services subsector had a much higher proportion of employees with school-only or no qualifications.

## Demographic profile

Workers in each of the electricity, gas, and water supply, sewerage and drainage services subsectors have broadly similar demographic characteristics in terms of their age and gender distributions, while workers in the waste collection, treatment and disposal services subsector have a somewhat different demographic. Given this, we examine these two groups separately in this section.

### ***Demographic profile of the electricity, gas and water supply subsectors***

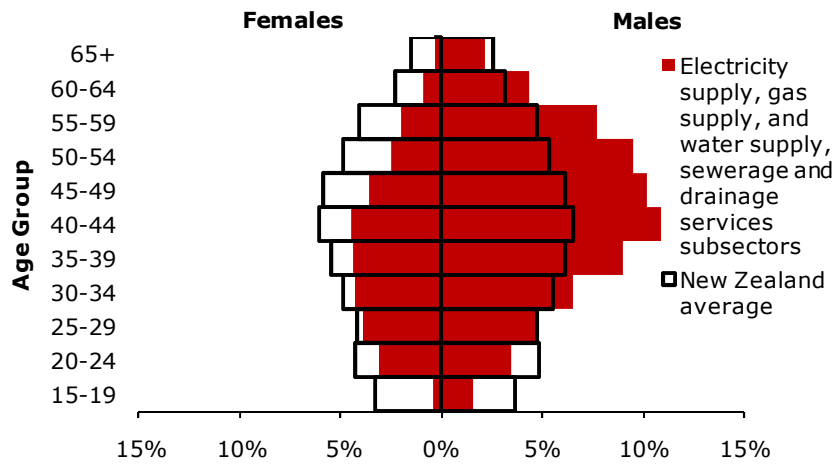
Figure 3 below shows the age and gender profile of workers within the electricity, gas and water supply subsectors. These subsectors together employed a much larger share of males (72%) compared to the national average across all industries (52%). This gender bias was predominantly amongst people over the age of 35 years, with a fairly even gender balance for employees aged 34 years and under.

Youth are significantly under-represented in the workforce of these three subsectors in comparison to the national average, and compared to the waste collection, treatment and disposal services subsector. This might be partially explained by the higher qualification levels within the electricity, water and gas supply subsectors, given that many younger workers may still be gaining the



overall higher level of qualifications prevalent within these subsectors (and possibly a pre-requisite for entry-level employment in these subsectors).

**Figure 3: Age and gender profile of electricity, gas and water supply workers**



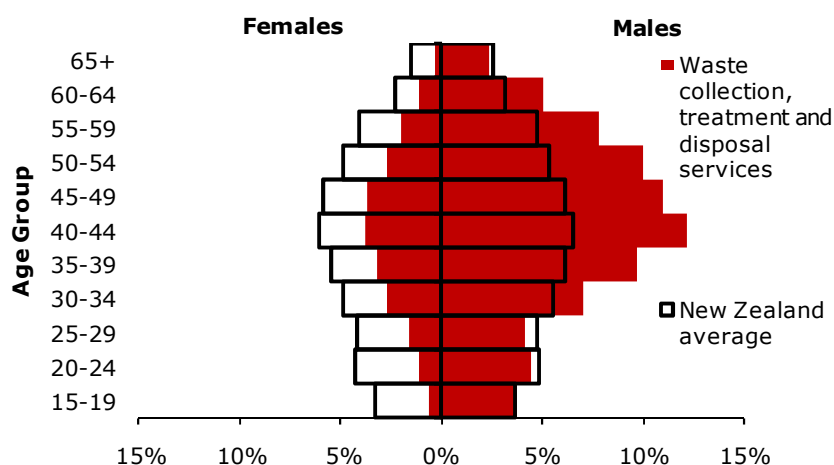
Source: Census of Population and Dwellings, 2006

**Demographic profile of the waste collection, treatment and disposal services subsector**

Figure 4 below shows the age and gender profile of workers in the waste collection, treatment and disposal services subsector. This subsector employed a larger share of males (77%) compared to the electricity, gas and water supply subsectors covered above (72%) and compared to the national average (52%), with males significantly over-represented in most age brackets. The subsector also had a significantly higher proportion of male workers between 30 and 64 years of age (62%) compared to 37% overall.

Youth are more highly represented in this subsector than in the electricity, gas and water supply subsectors; which is likely due to the lower qualifications held by employees, as shown in Table 2 above.

**Figure 4: Age and gender profile of waste collection, treatment and disposal services workers**



Source: Census of Population and Dwellings, 2006



## Forecast employment

The Department of Labour prepares periodic updates of employment projections for industries and occupations for the next three years<sup>3</sup>. The forecasts are based on GDP forecasts by industry produced by the New Zealand Institute of Economic Research, recent productivity trends within industries, and past employment trends from the Census. Please note that a degree of uncertainty is attached to these industry employment projections.

In the three years to 2013, we expect employment in the sector to decline very slightly, by 0.2% per annum. This compares with an annual average forecast growth rate of 0.7% across all sectors during the same period.

## Summary

Over the last five years, the electricity, gas and water supply sector has seen employment decrease by 15%. Firms within this sector generally had much higher proportions of employees with post-school qualifications than the total workforce, and 72% of the sector's employment was male. Employment prospects in the sector remain weak with a slight decline expected, compared to a slight increase expected across all sectors.

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<sup>3</sup> Department of Labour Employment Projections, 2008-2013