

MOOLARBEN COAL PROJECT

A P P E N D I X 14

Socio-economic Impact Assessment

**Estimates of Regional Economic Impacts
from the Construction and Operation
of the Proposed Moolarben Coal Project**

**A Socio-economic Profile of the
Likely 'Draw Area' for the Project's
Operational Workforce**

2006

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Estimates of Regional Economic Impacts from the Construction and Operation of the Proposed Moolarben Coal Project

A Socio-economic Profile of the Likely 'Draw Area' for the Project's Operational Workforce

Prepared for

Wells Environmental Services

On behalf of

Moolarben Coal Mines Pty Limited

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Executive summary

Background

The proposed Moolarbern Coal Project will be located near Ulan in the Mid-Western Regional Council Local Government Area (LGA). It will comprise three open cut mines and an underground mine, together with a coal preparation plant, coal handling and storage facilities, a rail loop and train loading system, and associated mine infrastructure and services. Development of the mines will be staged, with the open cut and underground mines to operate concurrently. The full seam will be recovered in the open cut mines and a partial section will be recovered in the underground mine. Thermal coal will be produced for the domestic and export markets.

Wells Environmental Services, on behalf of Moolarben Coal Mines Pty Limited, commissioned the Hunter Valley Research Foundation (HVRF) to estimate *regional* economic impacts resulting from construction of the new facilities and their subsequent operation, and to prepare a socio-economic profile of the area from which it is expected that the majority of the mines' operational workforce is likely to be drawn.

Economic impacts

Estimates of the economic impacts have been compiled using input-output (I-O) analysis and the I-O model of the Hunter Region economy developed by the Hunter Valley Research Foundation (HVRF). While Ulan is (now) outside the Hunter, the HVRF model has been used as the basis of the economic impact analysis since:

- (i) Ulan is close to the Hunter Region's western border. Prior to the amalgamation of local government areas in March 2004 Ulan was located within the Merriwa Shire which, in turn, formed part of the Hunter Regional Environmental Plan (1989).
- (ii) Given the relative importance of mining and agriculture to the Hunter's economy, the HVRF model is considered a reasonable approximation of the structure of the broader economy in which the project is proposed.
- (iii) Large power stations located in the Hunter's Singleton and Muswellbrook LGAs, and the Port of Newcastle in the Newcastle LGA mean that a proportion of 'flow-on' benefits from the project will be generated in the Hunter.
- (iv) In order to determine the magnitude of the regional economic impacts, the HVRF model is considered more appropriate than interpolative regional economic models which 'factor down' the multipliers derived from the national I-O model produced by the Australian Bureau of Statistics (ABS).

The project was divided into two stages for the determination of economic impacts: *construction* of the mines and associated infrastructure, and *operation* of the completed facility. Impacts were assessed in terms of the value of *output* and number of jobs (*employment*) generated in the local 'Region'. In this instance, the Region refers to the **combined Hunter Region and Mid-Western Regional Council area**. Total economic impacts comprise the *direct* (or initial) impacts (the amount of output and employment directly generated *because* of the Moolarben Coal Project) and the *induced* (or flow-on) impacts (generated throughout the whole of the Region). It is anticipated that a majority of the direct impacts, as well as a substantial proportion of the induced impacts, will accrue in the townships of Mudgee and Gulgong.

In the analysis:

- A job is defined as a full-time position which lasts for one year.
- All currency values are in terms of 2006 Australian dollars.
- Values are calculated to the nearest whole unit. However, the values of the impacts are estimates, and should be considered in terms of round numbers.

Construction of the Moolarben Coal Project

Construction of the facilities is expected to total \$150 million, with equal expenditure in each of the two financial years spanned by the construction period. At the time of writing, this period was expected to be during 2006-07 and 2007-08. Note that, while an assumption implicit in the model is that all jobs created will last for one year, it is anticipated that the elapsed time for construction will be around 13 to 14 months. If this schedule is adhered to the duration of the impacts specified will be lessened. If the construction period is extended beyond two years, the annual benefits will be reduced, though the total accumulated benefits will remain the same.

Output impacts from construction

Total expenditure of \$150 million over the construction period is expected to stimulate additional production in the Region valued at approximately \$73 million and additional consumption worth \$44 million: an induced benefit of \$117 million, providing a total benefit to the Region valued at \$267 million.

Output impacts over the whole of the construction period (\$ million)					
	Direct (i)	Induced		Total induced (iv)=(ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Total	\$150.000	\$72.718	\$44.352	\$117.070	\$267.070

Employment impacts from construction

Total expenditure of \$150 million is expected to directly create 222 full-time equivalent jobs in each year of the construction period. The induced production and consumption in the Region will each generate a further 108 jobs: an induced benefit of 216 jobs, providing a total employment benefit to the Region of 438 full-time equivalent positions in each year during which production proceeds.

Employment impacts in each year of the construction period (no. full-time jobs for one year)					
	Direct (i)	Induced		Total induced (iv)=(ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Total	222	108	108	216	438

Taxation impacts from construction

Over the whole of the construction period it is estimated that taxation revenue to the Federal Government will total approximately \$19 million: \$11 million from income tax, \$4 million from indirect taxes, and in excess of \$3 million from company tax. Payroll taxation revenue to the State Government is estimated at more than \$3 million, yielding a total public sector benefit of close to \$22 million.

Taxation revenues in each year of the construction period (\$ million)						
	Federal			Total Federal (iv) = (i)+(ii)+(iii)	State Payroll (v)	Total Federal and State (iv)+(v)
	Income (i)	Indirect (ii)	Company (iii)			
Total	\$11.310	\$3.992	\$3.435	\$18.737	\$3.167	\$21.904

Operation of the Moolarben Coal Project

Output impacts from the operation

When production revenue is maximised at \$356 million per annum in the fourth year of operation, the coal mining activities will stimulate further output in the Region valued at approximately \$308 million: \$162 million of which will result from additional production and \$146 million of which will be generated from additional consumption. The total annual output impact from Year 4 inclusive is expected to be valued at more than \$664 million.

Employment impacts from the operation

Employment in the Moolarben facilities is expected to be maximised from Year 11 inclusive, with direct annual employment at the mining operations equivalent to around 317 full-time positions. Additional production and consumption in the Region will generate a further 280 and 313 jobs respectively: an induced employment benefit of 593 jobs. In total, approximately 910 full-time equivalent positions will be created in the Region in each financial year of operation.

Output generated in each financial year from operation of the Moolarben Coal Project (\$ million)					
	Direct (mining sector) (i)	Induced		Total induced (iv) = (ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Year 1 (2007-08)	\$60.000	\$27.383	\$24.555	\$51.937	\$111.937
Year 2 (2008-09)	\$230.000	\$104.967	\$94.126	\$199.093	\$429.093
Year 3 (2009-10)	\$300.000	\$136.913	\$122.773	\$259.686	\$559.686
Year 4 (2010-11) and following years of maximum output	\$356.000	\$162.471	\$145.690	\$308.161	\$664.161

Employment generated in each financial year from operation of the Moolarben Coal Project (no. full-time jobs for one year)					
	Direct (mining sector) (i)	Induced		Total induced (iv) = (ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Year 1 (2007-08)	211	186	209	395	606
Year 2 (2008-09)	295	260	292	552	847
Year 3 (2009-10)	305	269	302	571	876
Year 4 (2010-11)	305	269	302	571	876
Years 5-7 (2011-12 - 2013-14)	309	273	305	578	887
Years 8-10 (2014-15 – 2016-17)	313	276	309	586	899
Year 11 (2017-18) and following years of operation	317	280	313	593	910

Taxation impacts from the operation

When production revenue is maximised in Year 4, Federal Government taxation receipts are estimated to total approximately \$59 million: \$37 million from income tax, \$13 million from indirect taxes, and \$9 million from company tax. Payroll taxation revenue to the State Government is estimated at more than \$10 million, yielding a total public sector benefit of more than \$69 million in each financial year of operation.

Taxation generated in each financial year from the operation of the Moolarben Coal Project (\$ million)						
	Federal			Total Federal (iv) = (i)+(ii)+(iii)	State Payroll (v)	Total Federal and State (iv)+(v)
	Income (i)	Indirect (ii)	Company (iii)			
Year 1 (2007-08)	\$6.261	\$2.210	\$1.440	\$9.911	\$1.753	\$11.664
Year 2 (2008-09)	\$24.002	\$8.471	\$5.519	\$37.993	\$6.721	\$44.713
Year 3 (2009-10)	\$31.307	\$11.050	\$7.199	\$49.556	\$8.766	\$58.322
Year 4 (2010-11) and following years of maximum output	\$37.151	\$13.112	\$8.543	\$58.806	\$10.402	\$69.208

Other State Government revenue from operation

Other revenues from the mining operations will accrue to the State Government based upon the tonnage of output in each year. These include rail freight charges, port charges, royalties and other taxes.

Royalty payments are estimated to increase progressively from approximately \$3 million per annum during the first year of output, to \$32 million per annum when output is maximised in the fourth financial year of operation. They will fall from around the year 2018 as production from the open cut mines declines. *It is estimated that a total of \$341 million will be paid in production royalties to the State Government over the 14 years between 2007 and 2020.*

Socio-economic profile

In March 2004 there was a redistribution of the boundaries of some NSW LGAs and an amalgamation of others. In the area of the Moolarben Coal Project, the new Mid-Western Regional Council now comprises 100 per cent of the former Mudgee Shire, 70 per cent of the former Rylstone Shire and 10 per cent of the former Merriwa Shire. While the bulk of the mines' operational workforce is expected to be drawn from the newly amalgamated LGA, particularly the townships of Mudgee and Gulgong, there is little statistical information currently available for it. Therefore, the profile presented in this report uses a combination of historical data for the **former** Mudgee, Merriwa and Rylstone LGAs, as well as a small amount of relatively recently published data for the Mid-Western Regional Council LGA. Consequently, the boundaries of the *workforce area* referred to below will depend on the source of the data used to describe it.

Demographic characteristics

Data from the last three population censuses indicates that:

- In 2001 the total population of the former Merriwa, Mudgee and Rylstone LGAs was approximately 23,600 persons, with a slightly higher proportion of males (51 per cent) than females (49 per cent). Mudgee (including the townships of Mudgee and Gulgong) was, by far, the most populous LGA, comprising 75 per cent of the area, followed by Rylstone (16 per cent) and Merriwa (10 per cent).
- Population growth in the area has been relatively slow over the ten-year period. Between 1991 and 1996 growth averaged 0.4 per cent per annum, compared with 1 per cent in both the neighbouring Hunter Region and the State as a whole. Between 1996 and 2001 the average annual rate of population increase rose slightly to 0.5 per cent, still lower than 0.8 per cent in the Hunter and 1.1 per cent in the State.

- Over the ten-year period the population has consistently declined in Rylstone. It has 'see-sawed' in Merriwa, and consistently increased in Mudgee, at a higher average rate than for the workforce area in total.

Population growth and distribution of workforce area – summary results										
LGA	1991	1996	Av. annual growth 1991-1996	2001						Av. annual growth 1996-2001
	Persons	Persons		Males		Females		Persons		
	No.	No.		No.	% area total	No.	% area total	No.	% area total	
Merriwa	2,356	2,252	-0.9%	1,190	10.0%	1,140	9.7%	2,330	9.9%	0.7%
Mudgee	16,252	17,038	0.9%	8,892	74.4%	8,757	74.9%	17,649	74.6%	0.7%
Rylstone	3,901	3,725	-0.9%	1,865	15.6%	1,799	15.4%	3,664	15.5%	-0.3%
Total area	22,509	23,015	0.4%	11,947	100.0%	11,696	100.0%	23,643	100.0%	0.5%

Current ABS assessments place the 'estimated resident population' of the new Mid-Western Regional Council LGA at 22,141 in June 2005, with a still slowing rate of growth. Between 2000 and 2005 the rate averaged 0.1 per cent per annum, though for the period from 2004 and 2005 it increased slightly to 0.2 per cent, still well below the rate for all of NSW of 0.8 per cent.

Employment structure

- Census data indicates that employment in the former Merriwa-Mudgee-Rylstone area in 2001 totalled 9,224 persons, a 10 per cent increase from 8,407 ten years earlier. This is double the rate of increase in the population of the area over the same period: a 5 per cent rise from 22,509 people in 1991 to 23,643 in 2001. The bulk of employment in 2001 was in the former Mudgee LGA (76 per cent), followed by Rylstone (14 per cent) and Merriwa (10 per cent).
- In 2001 the workforce area was substantially more dependent on the primary sector, and less dependent on the tertiary sector, than the State as a whole, despite a decline in the *relative* importance of mining in the area between 1991 and 2001.
- The three major industries in the area remained *agriculture, forestry and fishing; retail trade* and *manufacturing*. Over the ten-year period there was a decline in the proportion of employment in *agriculture etc.*, from 22 per cent in 1991 to 19 per cent in 2001. Employment in *retail trade* increased from 13 per cent of the total to 14 per cent in each year respectively, and in *manufacturing* there was a rise from 11 per cent to 12 per cent over the same period.
- The post 2001 establishment of the Wilpinjong Coal Mine and potential establishment of the Moolarben mines will increase the proportion of total employment in the mining industry and provide a substantial economic boost to the regional economy.

- Data published by the federal Department of Employment and Workplace Relations (DEWR) suggests that, on average, approximately 10,800 people were employed in the former Merriwa-Mudgee-Rylstone area in 2005, with an additional 700-odd seeking work. The estimated unemployment rate of 6.6 per cent for the year was slightly higher than the State average of 5.2 per cent (calculated from non-seasonally adjusted, quarterly data published by DEWR). The rate of unemployment was highest in Rylstone (an average of 8 per cent in 2005), followed by Mudgee (6.5 per cent); it was relatively low in Merriwa (3.6 per cent).
- Employment data suggests relatively strong economic growth over the past two years, with around 600 jobs created in the area between March 2004 and December 2005.

Occupational structure

- The primary industry orientation of the workforce area is reflected in a substantially different occupational structure than the State. Census data indicates that in 2001 there was a substantially higher proportion of *managers and administrators* (including farm owners) and *labourers* employed in the former Merriwa, Mudgee and Rylstone LGAs, as well as a moderately higher proportion of *tradespersons* and *intermediate production and transport workers*. Proportionally higher employment of people in the later three occupational categories will partly reflect the significance of mining in the area. Conversely, a lower proportion of *professionals*; *associate professionals*; and *clerical sales and service workers* in various categories were employed in the workforce area than in the State.

Educational attainment

- The relative dominance of the primary sector in the workforce area, and proportionally higher employment in mid to lower level occupational categories is matched by relatively lower levels of educational attainment. In 2001 a higher proportion of the population aged 15 and over in the former Merriwa, Mudgee and Rylstone LGAs had completed Year 10 or below (59 per cent) than in the State (44 per cent). Conversely, a lower proportion had completed Year 11 or Year 12: 29 per cent in the area compared with 43 per cent in the State.
- Post school educational attainment was also lower in the workforce area. In 2001 approximately 58 per cent of the population aged 15 and over in the former Merriwa, Mudgee and Rylstone LGAs did *not* have post school qualifications, compared with 51 per cent in the State. Among those with qualifications, in the workforce area vocational training was more prevalent than university education. Again, this is consistent with the industry and occupational structure of the area.

- In 2001, approximately 6 per cent of the population aged 15 and over in the workforce area held university degree qualifications compared with 14 per cent in the State, while 4 per cent in the area and 6 per cent in the State held diploma/advanced diploma qualifications. A higher proportion in the area held certificate qualifications: 18 per cent compared with 16 per cent in the State.

Income

- Census data suggests that income levels are lower in the workforce area than in the State on average. In 2001 there was a higher proportion of residents aged 15 and over in the combined Merriwa-Mudgee-Rylstone area with individual weekly income below \$600 (71 per cent compared with 62 per cent in the State), and a lower proportion with higher incomes (20 per cent compared with 31 per cent in the State).
- Comparison of the census and Australian Tax Office data indicates that a little over 40 per cent of residents in the former Merriwa, Mudgee and Rylstone LGAs were wage and salary (W&S) earners in 2000-01. In 2002-03, the latest year for which this data is available, the average W&S income for this area was \$34,210, about 14 per cent lower than the State average of \$39,607. The median W&S income in the area was \$29,921, around 12 per cent lower than the State median of \$34,007.

Housing

- Consistent with its non-metropolitan location, private housing in the workforce area is predominately 'low density'. In 2001 in the former Merriwa, Mudgee and Rylstone LGAs there was a higher proportion of separate houses (73 per cent compared with 64 per cent in the State as a whole), and a lower proportion of townhouse-type accommodation (2 per cent compared with 9 per cent in the State) and apartment-type accommodation (3 per cent compared with 16 per cent respectively). Other types of dwellings (mainly caravans) accounted for a slightly higher proportion in the workforce area (3 per cent) than in the State (2 per cent). *Unoccupied* private dwellings comprised 18 per cent of all private dwellings in the area, a substantially higher proportion than in the State (9 per cent).

Housing tenure

- Census data suggests that home ownership is higher in the former Merriwa, Mudgee and Rylstone LGAs than in the State as a whole (notwithstanding the relatively large variation in the proportion of residents in the workforce area who did not state their housing tenure, or who held atypical types of tenure such as rent-free accommodation or life tenure).

- For the workforce area in total, full ownership accounted for 47 per cent of occupied private dwellings, compared with 41 per cent in the State. The proportion of dwellings being purchased was highest in the former Mudgee LGA: 23 per cent, equivalent to the average for the State but higher than the average of 20 per cent for the whole of the workforce area. At 22 per cent, the proportion of dwellings being rented in the workforce area was substantially lower than the State average of 28 per cent. Rental tenure was also highest in Mudgee, at 23 per cent.

Building approvals

- Building approvals indicate that residential building recovered from a year-long contraction in the September quarter 2001. However, after a strong start the recovery was much more hesitant in the former Merriwa, Mudgee and Rylstone LGAs than in the State over the following two years until mid 2003. Thereafter, throughout most of 2003-04 and 2004-05 the real value of residential building approvals increased in the workforce area, while they generally declined in the State. In the June quarter 2005 the real value of residential approvals in the area was more than double the value of a year earlier. This data suggests that housing demand in the area is currently high, consistent with increasing employment and falling unemployment.
- Large increases in the real value of non-residential approvals in the workforce area over recent years suggests that the non-household sector is making a substantial contribution to activity in the local construction sector. Additionally, businesses are, on balance, increasing their investment in the area. However, increases in non-residential approvals since 2004 have not been as large as in earlier periods.

Indexes of socio-economic advantage

- Socio-Economic Indexes for Areas (SEIFA) summarise different aspects of the socio-economic conditions of LGAs. All indexes have been constructed so that relatively advantaged areas (for example, those with many high income earners) have high index values.
- In 2001 the workforce area represented by the former Merriwa, Mudgee and Rylstone LGAs was slightly less 'advantaged' (in socio-economic terms) than the broader Hunter Region.
- Advantage was clearly highest in the Mudgee LGA, and generally lowest in Rylstone.



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1 Introduction

1.1 The Moolarben Coal Project

The proposed Moolarben Coal Project will be located near Ulan in the Mid-Western Regional Council Local Government Area (LGA). It will comprise three open cut mines and an underground mine, together with a coal preparation plant, coal handling and storage facilities, a rail loop and train loading system, and associated mine infrastructure and services. Development of the mines will be staged, with the open cut and underground mines to operate concurrently. The full seam will be recovered in the open cut mines and a partial section will be recovered in the underground mine. Thermal coal will be produced for the domestic and export markets.

Wells Environmental Services, on behalf of Moolarben Coal Mines Pty Limited, commissioned the Hunter Valley Research Foundation (HVRF) to estimate *regional* economic impacts resulting from construction of the new facilities and their subsequent operation, and to prepare a socio-economic profile of the area from which it is expected that the majority of the mines' operational workforce is likely to be drawn.

1.2 Economic impacts of the project

Economic impacts generated from both the construction and ongoing operation of the Moolarben Coal Project were assessed by the HVRF using input-output (I-O) analysis. Impacts were identified according to **direct** and **induced** effects, measured in terms of the value of output generated and the number of jobs created in the regional economy (induced effects are sometimes referred to as *flow-on* effects). Estimates are also provided for taxation revenues generated for the Federal and State Governments. This analysis is presented in Section 2.

1.3 Socio-economic profile

The mines' operational workforce is expected to originate primarily from the Mid-Western Regional Council LGA, particularly the townships of Mudgee and Gulgong. The LGA was established in March 2004, comprising 100 per cent of the former Mudgee Shire, 70 per cent of the former Rylstone Shire and 10 per cent of the former Merriwa Shire. Since there is little statistical information currently available for the amalgamated Shire, the socio-economic profile presented in Section 3 contains a collection of data which describes characteristics of the population in the 'new' LGA, as well as the **former** Mudgee, Merriwa and Rylstone LGAs. The data is from published sources including the Census of Population and Housing, as well as other data from the Australian Bureau of Statistics (ABS) and readily available sources such as the Department of Employment and Workplace Relations.



2 Economic impact analysis

2.1 The HVRF input-output model

This section provides estimates of the economic impacts generated in the local 'Region' resulting from the construction and ongoing operation of the proposed Moolarben Coal Project. In this instance, the Region refers to the ***combined Hunter Region and Mid-Western Regional Council area***. The estimates have been compiled using input-output (I-O) analysis and the I-O model of the Hunter Region economy developed by the Hunter Valley Research Foundation (HVRF). The model is survey-based, comprising 29 sectors. Leakages from each sector are assessed using the information provided by firms in the survey sample. It is noted that the HVRF model has *not* incorporated major structural shifts in the regional economy since the closure of BHP's raw steel-making facilities in 1999.

While Ulan is (now) outside the Hunter, the HVRF model has been used as the basis of the economic impact analysis since:

- (i) Ulan is close to the Hunter Region's western border. Prior to the amalgamation of local government areas in March 2004 Ulan was located within the Merriwa Shire which, in turn, formed part of the Hunter Regional Environmental Plan (1989).
- (ii) Given the relative importance of mining and agriculture to the Hunter's economy, the HVRF model is considered a reasonable approximation of the structure of the broader economy in which the project is proposed.
- (iii) Large power stations located in the Hunter's Singleton and Muswellbrook LGAs, and the Port of Newcastle in the Newcastle LGA mean that a proportion of the 'flow-on' benefits from the project will be generated in the Hunter.
- (iv) In order to determine the magnitude of the regional economic impacts, the HVRF model is considered more appropriate than interpolative regional economic models which 'factor down' the multipliers derived from the national I-O model produced by the ABS. These types of models are thought to be less reliable because the assessment of leakages from the local economy (which reduce the size of the local economic impacts) are often based on secondary data (such as employment) or by assuming 'a reasonable' amount.

In the HVRF model:

- A job is defined as a full-time position which lasts for one year.
- All currency values are in terms of 2006 Australian dollars.
- Values are calculated to the nearest whole unit. However, the values of the impacts are estimates, and should be considered in terms of round numbers.

2.2 Input-output analysis

I-O analysis essentially identifies and evaluates linkages between sectors in the economy. The analysis uses the expenditure by a firm on its final product as a starting point, and then tracks backward through the various sectors in the economy to identify the contribution each sector makes to that final product. As the connections are traced backwards, the analysis is made in terms of the **direct** (or initial) impacts of the final expenditure and the **induced** (or flow-on) impacts as all sectors provide inputs to enable the final production. The impacts are quantified using multiplier coefficients derived from the model, in terms of the value of the goods and services and the number of jobs which result from production of the specified good or service and the expenditure of salaries and other income earned due to that production. Estimates are also provided for taxation revenues generated for the Federal and State Governments.

For the Moolarbern Coal Project, economic impacts will first result from **construction** of the mining facilities over the planned two-year period. During this period, the direct output impact is measured by the value of the capital expenditure on the facilities. Direct and induced impacts result as jobs are created on the construction and related sites, and as firms which manufacture the materials and components necessary to construct the facilities buy, from various suppliers, the raw materials and services required for the production of their own products. In turn, these suppliers purchase inputs for the production of their products and services and employment increases to enable the production of these required raw materials and services at all stages of production. These effects are referred to as *production induced* impacts. Additional, *consumption induced* impacts will occur during construction of the facilities as the recipients of income derived (in the form of profits, dividends, wages and salaries) make purchases which generate output and employment.

The direct (annual) output impact of the **operation** of the proposed mining facilities is measured by the value of the coal output. Employment is generated onsite to operate and maintain the facilities, and elsewhere in the Region as raw material inputs (spare parts, fuel, utilities etc.) and services are purchased from various suppliers. In turn, these suppliers need to purchase inputs necessary for the production of their own products. Employment increases to enable production of these required raw materials and services at all stages of production, and income will be generated, and spent, in each stage.

During both construction and ongoing operation of the project, it is anticipated that majority of the direct impacts, as well as a substantial proportion of the induced impacts, will accrue in the townships of Mudgee and Gulgong in the Mid-Western Regional Council LGA.

Stimulating output and employment throughout the regional economy will also increase government revenue through increased **taxation receipts**. Federal and State Government taxation revenues are calculated by the HVRF I-O model under relatively conservative assumptions. The estimates are, therefore, considered to represent the lower bounds of potential receipts. *Additional* revenue will also be derived by local Councils (particularly the Mid-Western Regional Council) through rate payments and fees associated with the approval of investment plans, though this revenue is *not* projected by the model.

2.3 Construction impacts

Construction of the facilities is expected to total \$150 million, with equal expenditure in each of the two financial years spanned by the construction period. At the time of writing, this period was expected to be during 2006-07 and 2007-08. Expenditure will be in 16 of the 29 sectors described by the HVRF I-O model. Note that, while an assumption implicit in the model is that all jobs created will last for one year, it is anticipated that the elapsed time for construction will be around 13 to 14 months. If this schedule is adhered to the duration of the impacts specified will be lessened. If the construction period is extended beyond two years, the annual benefits will be reduced, though the total accumulated benefits will remain the same.

The estimated output and employment impacts resulting from the construction are shown in Table 1 (page 6) and Table 2 (page 7) respectively, in each financial each year of the period as well as for the whole of the construction period. Estimates of Federal and State Government taxation receipts are presented in Table 3 (page 8).

(i) Output impacts

Since the size of the multipliers differ in each sector of the model, Table 1 shows the total cost of the facilities (\$75 million in each of the two years) apportioned according to the sector of the economy in which the expenditure is made. The induced impacts were assessed using the different multipliers for each of these sectors. Approximately half of the total construction cost is expected in the *fabricated metal products* sector, and a further 25 per cent in the *construction* sector.

Total expenditure of \$150 million over the whole of the construction period is expected to stimulate additional production in the Region valued at approximately \$73 million and additional consumption worth \$44 million: an induced benefit of \$117 million, providing a total benefit to the Region valued at \$267 million. In the fabricated metal products sector alone, direct expenditure of \$75 million will induce further production and consumption worth \$57 million, a total benefit of \$132 million. In the construction sector, expenditure of

\$37.5 million on the mining facilities will generate an additional \$30 million worth of production and consumption to yield a total benefit of \$68 million.

(ii) Employment impacts

Table 2 shows the number of full-time equivalent jobs generated from the initial, direct, expenditure on the mining facilities in each of the specified sectors. Given the equal apportioning of expenditure in each of the two years during which construction will proceed, the same number of jobs will be created in each year.

Total expenditure of \$150 million is expected to directly create 222 full-time equivalent jobs in each financial year during which construction proceeds. The induced production and consumption in the Region will each generate a further 108 jobs: an induced benefit of 216 jobs, providing a total employment benefit to the Region of 438 full-time equivalent positions in each year of the construction period. The majority of jobs will result from direct expenditure in the fabricated metal products sector, with 107 directly created and a further 98 induced by the additional production and consumption in the Region, a total of 205 positions in each year. From direct expenditure in the construction sector, 63 positions will be directly created, predominately onsite, with an additional 57 jobs generated by the induced production and consumption: a total of 120 jobs in each year of construction.

(iii) Federal and State Government taxation revenues

Table 3 details estimates of revenues that will accrue to the Federal and State Governments as a result of the direct and induced generated output and employment generated from the initial, direct, capital expenditure on the mining facilities in each of the specified sectors.

Over the whole of the construction period it is estimated that taxation revenue to the Federal Government will total approximately \$19 million: \$11 million from income tax, \$4 million from indirect taxes, and in excess of \$3 million from company tax. Payroll taxation revenue to the State Government is estimated at more than \$3 million, yielding a total public sector benefit of close to \$22 million.

Table 1: Value of output generated from construction of the Moolarben facilities

Output impacts in each year of the construction period (\$ million)					
	Direct (i)	Induced		Total induced (iv)=(ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Agriculture, forestry and fishing	\$0.750	\$0.398	\$0.212	\$0.610	\$1.360
Mining	\$1.500	\$0.685	\$0.614	\$1.298	\$2.798
Chemical products	\$0.750	\$0.360	\$0.161	\$0.521	\$1.271
Non-metallic mineral products	\$0.750	\$0.557	\$0.207	\$0.764	\$1.514
Basic iron and steel	\$1.500	\$0.167	\$0.221	\$0.388	\$1.888
Fabricated metal products	\$37.500	\$18.105	\$10.258	\$28.363	\$65.863
Transport equipment	\$1.500	\$0.831	\$0.501	\$1.332	\$2.832
Miscellaneous manufactured products	\$3.750	\$1.117	\$1.215	\$2.333	\$6.083
Electricity, gas and water	\$3.750	\$3.273	\$0.908	\$4.181	\$7.931
Construction	\$18.750	\$9.035	\$6.091	\$15.126	\$33.876
Wholesale trade	\$0.750	\$0.117	\$0.170	\$0.287	\$1.037
Transport and storage	\$0.375	\$0.169	\$0.164	\$0.333	\$0.708
Communication services	\$0.375	\$0.180	\$0.043	\$0.223	\$0.598
Finance and insurance	\$1.875	\$0.705	\$0.758	\$1.463	\$3.338
Property and business services	\$0.375	\$0.327	\$0.161	\$0.488	\$0.863
Govt administration and defence	\$0.750	\$0.333	\$0.492	\$0.826	\$1.576
Total	\$75.000	\$36.359	\$22.176	\$58.535	\$133.535
Output impacts over the whole of the construction period (\$ million)					
	Direct (i)	Induced		Total induced (iv)=(ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Agriculture, forestry and fishing	\$1.500	\$0.796	\$0.423	\$1.219	\$2.719
Mining	\$3.000	\$1.369	\$1.228	\$2.597	\$5.597
Chemical products	\$1.500	\$0.719	\$0.323	\$1.042	\$2.542
Non-metallic mineral products	\$1.500	\$1.115	\$0.413	\$1.528	\$3.028
Basic iron and steel	\$3.000	\$0.335	\$0.442	\$0.777	\$3.777
Fabricated metal products	\$75.000	\$36.210	\$20.516	\$56.726	\$131.726
Transport equipment	\$3.000	\$1.662	\$1.001	\$2.664	\$5.664
Miscellaneous manufactured products	\$7.500	\$2.235	\$2.430	\$4.665	\$12.165
Electricity, gas and water	\$7.500	\$6.546	\$1.817	\$8.363	\$15.863
Construction	\$37.500	\$18.071	\$12.182	\$30.252	\$67.752
Wholesale trade	\$1.500	\$0.234	\$0.340	\$0.574	\$2.074
Transport and storage	\$0.750	\$0.337	\$0.328	\$0.665	\$1.415
Communication services	\$0.750	\$0.359	\$0.086	\$0.445	\$1.195
Finance and insurance	\$3.750	\$1.410	\$1.516	\$2.925	\$6.675
Property and business services	\$0.750	\$0.654	\$0.322	\$0.976	\$1.726
Govt administration and defence	\$1.500	\$0.666	\$0.985	\$1.651	\$3.151
Total	\$150.000	\$72.718	\$44.352	\$117.070	\$267.070

Table 2: Number of jobs generated from construction of the Moolarben facilities

Employment impacts in each year of the construction period (no. full-time jobs for one year)					
	Direct (i)	Induced		Total induced (iv)=(ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Agriculture, forestry and fishing	4	2	1	3	7
Mining	3	3	3	6	9
Chemical products	1	1	1	2	3
Non-metallic mineral products	1	2	1	3	4
Basic iron and steel	2	1	1	2	4
Fabricated metal products	107	48	50	98	205
Transport equipment	4	3	2	5	9
Miscellaneous manufactured products	16	4	6	10	25
Electricity, gas and water	5	9	4	14	19
Construction	63	28	30	57	120
Wholesale trade	1	0	1	1	2
Transport and storage	2	1	1	2	3
Communication services	1	1	0	1	2
Finance and insurance	5	4	4	8	13
Property and business services	1	1	1	2	3
Govt administration and defence	5	1	2	4	8
Total	222	108	108	216	438

Table 3: Taxation revenues generated from construction of the Moolarben facilities

Taxation revenues in each year of the construction period (\$ million)						
	Federal			Total Federal (iv) = (i)+(ii)+(iii)	State Payroll (v)	Total Federal and State (iv)+(v)
	Income (i)	Indirect (ii)	Company (iii)			
Agriculture, forestry and fishing	\$0.054	\$0.019	\$0.017	\$0.091	\$0.015	\$0.106
Mining	\$0.157	\$0.055	\$0.036	\$0.248	\$0.044	\$0.292
Chemical products	\$0.041	\$0.015	\$0.016	\$0.072	\$0.012	\$0.084
Non-metallic mineral products	\$0.053	\$0.019	\$0.019	\$0.091	\$0.015	\$0.106
Basic iron and steel	\$0.056	\$0.020	\$0.024	\$0.101	\$0.016	\$0.116
Fabricated metal products	\$2.616	\$0.923	\$0.847	\$4.386	\$0.732	\$5.119
Transport equipment	\$0.128	\$0.045	\$0.036	\$0.209	\$0.036	\$0.245
Miscellaneous manufactured products	\$0.310	\$0.109	\$0.078	\$0.497	\$0.087	\$0.584
Electricity, gas and water	\$0.232	\$0.082	\$0.102	\$0.415	\$0.065	\$0.480
Construction	\$1.553	\$0.548	\$0.436	\$2.537	\$0.435	\$2.972
Wholesale trade	\$0.043	\$0.015	\$0.013	\$0.072	\$0.012	\$0.084
Transport and storage	\$0.042	\$0.015	\$0.009	\$0.066	\$0.012	\$0.077
Communication services	\$0.011	\$0.004	\$0.008	\$0.023	\$0.003	\$0.026
Finance and insurance	\$0.193	\$0.068	\$0.043	\$0.304	\$0.054	\$0.359
Property and business services	\$0.041	\$0.014	\$0.011	\$0.067	\$0.011	\$0.078
Govt administration and defence	\$0.126	\$0.044	\$0.020	\$0.190	\$0.035	\$0.225
Total	\$5.655	\$1.996	\$1.718	\$9.368	\$1.583	\$10.952
Taxation revenues over the whole of the construction period (\$ million)						
	Federal			Total Federal (iv) = (i)+(ii)+(iii)	State Payroll (v)	Total Federal and State (iv)+(v)
	Income (i)	Indirect (ii)	Company (iii)			
Agriculture, forestry and fishing	\$0.108	\$0.038	\$0.035	\$0.181	\$0.030	\$0.211
Mining	\$0.313	\$0.110	\$0.072	\$0.496	\$0.088	\$0.583
Chemical products	\$0.082	\$0.029	\$0.033	\$0.144	\$0.023	\$0.167
Non-metallic mineral products	\$0.105	\$0.037	\$0.039	\$0.182	\$0.030	\$0.211
Basic iron and steel	\$0.113	\$0.040	\$0.049	\$0.201	\$0.032	\$0.233
Fabricated metal products	\$5.232	\$1.846	\$1.694	\$8.772	\$1.465	\$10.237
Transport equipment	\$0.255	\$0.090	\$0.073	\$0.418	\$0.071	\$0.490
Miscellaneous manufactured products	\$0.620	\$0.219	\$0.156	\$0.995	\$0.174	\$1.168
Electricity, gas and water	\$0.463	\$0.164	\$0.204	\$0.831	\$0.130	\$0.961
Construction	\$3.106	\$1.096	\$0.871	\$5.074	\$0.870	\$5.944
Wholesale trade	\$0.087	\$0.031	\$0.027	\$0.144	\$0.024	\$0.168
Transport and storage	\$0.084	\$0.030	\$0.018	\$0.131	\$0.023	\$0.155
Communication services	\$0.022	\$0.008	\$0.015	\$0.045	\$0.006	\$0.051
Finance and insurance	\$0.387	\$0.136	\$0.086	\$0.609	\$0.108	\$0.717
Property and business services	\$0.082	\$0.029	\$0.022	\$0.133	\$0.023	\$0.156
Govt administration and defence	\$0.251	\$0.089	\$0.041	\$0.380	\$0.070	\$0.451
Total	\$11.310	\$3.992	\$3.435	\$18.737	\$3.167	\$21.904

2.4 Operational impacts

Output and employment impacts resulting from the ongoing operation of the Moolarben Coal Project facilities will be directly generated in the *mining* sector of the I-O model. Production is expected to commence toward the end of 2007/early 2008, with output from the first of the open cut mines. It will be progressively 'ramped up' until 2017-18 when all open cut mines and the underground mine are at full production.

(i) Output impacts

Table 4 presents estimates of the value of output in each financial year generated directly from the Moolarben mines as output is progressively increased to full capacity in the fourth year of operation. Also shown is the value of additional production and consumption induced throughout the regional economy as a consequence of the mining operations. Note that revenue has been assumed to be maximised in the fourth year of operation. This is a conservative assumption since additional productive capacity is scheduled to come 'on-line' over the next seven years, facilitated by small increases in employment during that period. While the value of the additional output will be dependent on market factors which are difficult to quantify at the current time, any increase in output value above \$356 million per year will induce additional benefits in the Region in the same proportion as those shown in the table below.

When production revenue is maximised at \$356 million per annum in the fourth year of operation, the coal mining activities will stimulate further output in the Region valued at approximately \$308 million: \$162 million of which will result from additional production and \$146 million of which will be generated from additional consumption. The total annual output impact from Year 4 inclusive is expected to be valued at more than \$664 million.

Table 4: Output generated in each financial year from operation of the Moolarben Coal Project (\$ million)

	Direct (mining sector) (i)	Induced		Total induced (iv) = (ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Year 1 (2007-08)	\$60.000	\$27.383	\$24.555	\$51.937	\$111.937
Year 2 (2008-09)	\$230.000	\$104.967	\$94.126	\$199.093	\$429.093
Year 3 (2009-10)	\$300.000	\$136.913	\$122.773	\$259.686	\$559.686
Year 4 (2010-11) and following years of maximum output	\$356.000	\$162.471	\$145.690	\$308.161	\$664.161

(ii) Employment impacts

Employment in the Moolarben facilities is scheduled to increase rapidly over the first three years of operation, and then to increase slowly until the eleventh year, at which time the number of jobs is expected to be maximised. Table 5 shows that *from Year 11 inclusive direct annual employment at the mining operations will be equivalent to around 317 full-time positions. Additional production and consumption in the Region will generate a further 280 and 313 jobs respectively: an induced employment benefit of 593 jobs. In total, approximately 910 full-time equivalent positions will be created in the Region in each financial year of operation.*

Table 5: Employment generated in each financial year from operation of the Moolarben Coal Project (no. full-time jobs for one year)

	Direct (mining sector) (i)	Induced		Total induced (iv) = (ii)+(iii)	Total (i)+(iv)
		Production induced (ii)	Consumption induced (iii)		
Year 1 (2007-08)	211	186	209	395	606
Year 2 (2008-09)	295	260	292	552	847
Year 3 (2009-10)	305	269	302	571	876
Year 4 (2010-11)	305	269	302	571	876
Years 5-7 (2011-12 - 2013-14)	309	273	305	578	887
Years 8-10 (2014-15 – 2016-17)	313	276	309	586	899
Year 11 (2017-18) and following years of operation	317	280	313	593	910

(iii) Federal and State Government taxation revenues

Table 6 (over) details estimates of revenues that will accrue to the Federal and State Governments as a result of the direct and induced output and employment generated from the mining operations. Again, conservative assumptions have been employed, and the government revenue estimates have been calculated on the basis of production revenue being maximised in Year 4. The implication of this assumption is that estimates of government revenue derived from the HVRF I-O model will also be maximised at this point, despite the continued increase in employment.

When production revenue is maximised in Year 4, Federal Government taxation receipts are estimated to total approximately \$59 million: \$37 million from income tax, \$13 million from indirect taxes, and \$9 million from company tax. Payroll taxation revenue to the State Government is estimated at more than \$10 million, yielding a total public sector benefit of more than \$69 million in each financial year of operation.

Table 6: Tax revenues generated in each financial year from operation of the Moolarben Coal Project (\$ million)

	Federal			Total Federal (iv) = (i)+(ii)+(iii)	State Payroll (v)	Total Federal and State (iv)+(v)
	Income (i)	Indirect (ii)	Company (iii)			
Year 1 (2007-08)	\$6.261	\$2.210	\$1.440	\$9.911	\$1.753	\$11.664
Year 2 (2008-09)	\$24.002	\$8.471	\$5.519	\$37.993	\$6.721	\$44.713
Year 3 (2009-10)	\$31.307	\$11.050	\$7.199	\$49.556	\$8.766	\$58.322
Year 4 (2010-11) and following years of maximum output	\$37.151	\$13.112	\$8.543	\$58.806	\$10.402	\$69.208

(iv) Other State Government revenue

It is noted that other revenues from the mining operations will accrue to the State Government based upon the tonnage of output in each year. These include rail freight charges, port charges, royalties and other taxes. The estimated value of royalties follows. No estimates have been made for the revenue derived from other sources.

Royalty payments are estimated to increase progressively from approximately \$3 million per annum during the first year of output, to \$32 million per annum when output is maximised in the fourth financial year of operation. They will fall from around the year 2018 as production from the open cut mines declines. *It is estimated that a total of \$341 million will be paid in production royalties to the State Government over the 14 years between 2007 and 2020.*



3 Socio-economic profile

3.1 Amalgamation of local government areas and the workforce region

In March 2004 there was a redistribution of the boundaries of some NSW LGAs and an amalgamation of others. In the area of the Moolarben Coal Project, the new Mid-Western Regional Council LGA now comprises 100 per cent of the former Mudgee Shire, 70 per cent of the former Rylstone Shire and 10 per cent of the former Merriwa Shire. While the bulk of the mines' operational workforce is expected to be drawn from the newly amalgamated LGA, particularly the townships of Mudgee and Gulgong, there is little statistical information currently available for it. Therefore, the profile presented in this section uses a combination historical data for the **former** Mudgee, Merriwa and Rylstone LGAs, as well as a small amount of relatively recently published data for the Mid-Western Regional Council LGA. Consequently, the boundaries of the *workforce area* referred to below will depend on the source of the data used to describe it.

3.2 Demographic characteristics

(i) Census data

Table 7 (over) provides a summary of the population composition of former LGAs in the workforce area over the last three census periods: 1991, 1996 and 2001. Key points are:

- In 2001 the total population of the workforce area was approximately 23,600 persons, with a slightly higher proportion of males (51 per cent) than females (49 per cent). Mudgee (including the townships of Mudgee and Gulgong) was, by far, the most populous LGA, comprising 75 per cent of the area, followed by Rylstone (16 per cent) and Merriwa (10 per cent).
- Population growth in the area has been relatively slow over the ten-year period. Between 1991 and 1996 growth averaged 0.4 per cent per annum, compared with 1 per cent in both the neighbouring Hunter Region and the State as a whole. Between 1996 and 2001 the average annual rate of population increase rose slightly to 0.5 per cent, still lower than 0.8 per cent in the Hunter and 1.1 per cent in the State.
- Over the ten-year period the population has consistently declined in Rylstone. It has 'see-sawed' in Merriwa, and consistently increased in Mudgee, at a higher average rate than for the workforce area in total.

Table 7: Population growth and distribution in former LGAs in the workforce area – summary results

LGA	1991	1996	Av. annual growth 1991-1996	2001						Av. annual growth 1996-2001
	Persons	Persons		Males		Females		Persons		
	No.	No.		No.	% area total	No.	% area total	No.	% area total	
Merriwa	2,356	2,252	-0.9%	1,190	10.0%	1,140	9.7%	2,330	9.9%	0.7%
Mudgee	16,252	17,038	0.9%	8,892	74.4%	8,757	74.9%	17,649	74.6%	0.7%
Rylstone	3,901	3,725	-0.9%	1,865	15.6%	1,799	15.4%	3,664	15.5%	-0.3%
Total area	22,509	23,015	0.4%	11,947	100.0%	11,696	100.0%	23,643	100.0%	0.5%

Source: ABS, *Census of Population and Housing*, 1991, 1996 and 2001

The age composition of each former LGA in the workforce area is detailed in Table 9 (over). A major point of note is that in all LGAs the population of the younger age groups has tended to fall over the ten-year period, while the rate of growth in the older age groups (particularly from age 45 and older) has increased to be well above growth rates for each LGA and the area as a whole. In other words, the population in the workforce area is ageing relatively rapidly, particularly in Rylstone. This may have implications for the supply of labour to the Moolarben mines over their long-term period of operation. Notwithstanding this point, it is also noted that in 2001, in all LGAs, the 0-14 years age group accounted for a relatively high proportion of the population. As the period of the mines' operation progresses it is likely that an increasing proportion of its workforce will be drawn from both males and females currently in this group, particularly within the Mid-Western Regional Council area.

(ii) Current estimated resident population data

Current ABS assessments place the 'estimated resident population' of the new Mid-Western Regional Council LGA at 22,141 in June 2005, with a still slowing rate of growth. Between 2000 and 2005 the rate averaged 0.1 per cent per annum, though for the period from 2004 and 2005 it increased slightly to 0.2 per cent, still well below the rate for all of NSW of 0.8 per cent. Table 8 provides details.

Table 8: Current estimated resident population, Mid-Western Regional Council LGA

	2000 No.	2004 No.	2005 No.	Av. annual growth 2000-2005	Growth 2004-2005
Mid-Western Regional Council LGA	22,037	22,087	22,141	0.1%	0.2%

Source: ABS, *Regional Population Growth, Australia - Companion Data*, Cat. No. 3218.0.55.001

Table 9: Population growth and distribution - detailed results for each former LGA in the workforce area

LGA and age group	1991	1996	Av. annual growth 1991-1996	2001						Av. annual growth 1996-2001
	Persons	Persons		Males		Females		Persons		
	No.	No.		No.	% LGA total	No.	% LGA total	No.	% LGA total	
Merriwa										
0-14	557	496	-2.3%	254	21.3%	236	20.7%	490	21.0%	-0.2%
15-29	447	378	-3.3%	199	16.7%	185	16.2%	384	16.5%	0.3%
30-44	465	465	0.0%	230	19.3%	215	18.9%	445	19.1%	-0.9%
45-59	456	454	-0.1%	273	22.9%	224	19.6%	497	21.3%	1.8%
60-74	323	340	1.0%	179	15.0%	191	16.8%	370	15.9%	1.7%
75+	108	119	2.0%	55	4.6%	89	7.8%	144	6.2%	3.9%
Total	2,356	2,252	-0.9%	1,190	100.0%	1,140	100.0%	2,330	100.0%	0.7%
Mudgee										
0-14	4,142	4,181	0.2%	2,184	24.6%	1,970	22.5%	4,154	23.5%	-0.1%
15-29	3,170	2,925	-1.6%	1,457	16.4%	1,404	16.0%	2,861	16.2%	-0.4%
30-44	3,575	3,632	0.3%	1,888	21.2%	1,892	21.6%	3,780	21.4%	0.8%
45-59	2,700	3,224	3.6%	1,813	20.4%	1,713	19.6%	3,526	20.0%	1.8%
60-74	1,831	2,133	3.1%	1,147	12.9%	1,116	12.7%	2,263	12.8%	1.2%
75+	834	943	2.5%	403	4.5%	662	7.6%	1,065	6.0%	2.5%
Total	16,252	17,038	0.9%	8,892	100.0%	8,757	100.0%	17,649	100.0%	0.7%
Rylstone										
0-14	899	813	-2.0%	379	20.3%	355	19.7%	734	20.0%	-2.0%
15-29	735	577	-4.7%	256	13.7%	242	13.5%	498	13.6%	-2.9%
30-44	842	768	-1.8%	362	19.4%	358	19.9%	720	19.7%	-1.3%
45-59	699	808	2.9%	431	23.1%	397	22.1%	828	22.6%	0.5%
60-74	539	553	0.5%	342	18.3%	294	16.3%	636	17.4%	2.8%
75+	187	206	2.0%	95	5.1%	153	8.5%	248	6.8%	3.8%
Total	3,901	3,725	-0.9%	1,865	100.0%	1,799	100.0%	3,664	100.0%	-0.3%

Source: ABS, *Census of Population and Housing*, 1991, 1996 and 2001

(iii) NSW Government population projections

Projections released in 2004 by the State Government, presented in Table 10 (over), suggest a continually declining population over the next 25 years in the former Merriwa and Rylstone LGAs. In the former Mudgee LGA the rate of growth is expected to increase from the currently low level to around 0.7 per cent per annum from 2011.

In all three former LGAs (as for the nation as a whole) the population is expected to continue to age, with the proportion of 0-14 year olds falling from around 20 per cent for the whole of the workforce area in 2006 to about 15 per cent in 2031. On the other hand, the proportion of persons aged 65 and older is expected to approximately double from about 16 per cent currently to around 30 per cent in 2031.

Table 10: Population growth projections for former LGAs in the workforce area, 2001 - 2031

	2001-06	2006-11	2011-16	2016-21	2021-26	2026-31	
Average annual growth rate							
Merriwa	-0.3%	-0.5%	-0.5%	-0.5%	-0.5%	-0.5%	
Mudgee	0.4%	0.5%	0.7%	0.7%	0.7%	0.6%	
Rylstone	-0.3%	-0.4%	-0.3%	-0.2%	-0.2%	-0.3%	
	2001	2006	2011	2016	2021	2026	2031
Proportion of 0-14 year olds							
Merriwa	21%	19%	18%	17%	16%	15%	15%
Mudgee	23%	21%	19%	18%	17%	16%	16%
Rylstone	19%	18%	17%	15%	14%	14%	13%
Proportion of persons aged 65 and over							
Merriwa	16%	17%	19%	20%	23%	26%	28%
Mudgee	14%	15%	17%	19%	22%	24%	27%
Rylstone	17%	20%	24%	29%	32%	35%	37%

Source: NSW Department of Infrastructure, Planning and Natural Resources (Transport Data Centre), *NSW SLA Population Projections, 2001 to 2031, 2004 Release - Detailed Data, Version 1.0*

(iv) Private sector population projections

Around a year after their release, the relatively conservative State Government projections were reviewed by Ratio Consultants Pty Limited (hereafter referred to as *Ratio*) on behalf of the Mid-Western Regional Council. Detailed projections were prepared for major townships and rural balance areas in the former Mudgee and Rylstone LGAs. The review took into account four major projects planned for the area:

- Wilpinjong Coal Mine
- Moolarben Coal Project
- Re-opening of the Mudgee Regional Abattoir
- Mudgee-Gulgong Vineyard Resort.

The *Ratio* analysis suggests an increase in the Shire's population of 42 per cent between 2001 and 2031: an average annual increase over the period of close to 1.2 per cent per annum, substantially more optimistic than the State Government projections. The bulk of this growth is expected to be concentrated in the Mudgee township and rural localities outside the township. The population of the Gulgong township is projected to remain stable over the period. While the ageing of the population was also considered, *Ratio* predicted a slightly lower rate of growth in the proportion aged 65 and over than did the Government.

The more optimistic predictions have implications for State and Local Government planning and, among other things, employment and housing requirements in the area, noted briefly in sections 3.3 and 3.7 below. At the time of writing (April 2006), the Wilpinjong mine had commenced operations and the Moolarben Coal Project was scheduled to commence as soon as approval was granted; the status of the other projects was uncertain. Therefore, it is likely that population growth in the workforce area will occur at rates higher than currently predicted by the State Government, though possibly not as high as the *Ratio* projections.

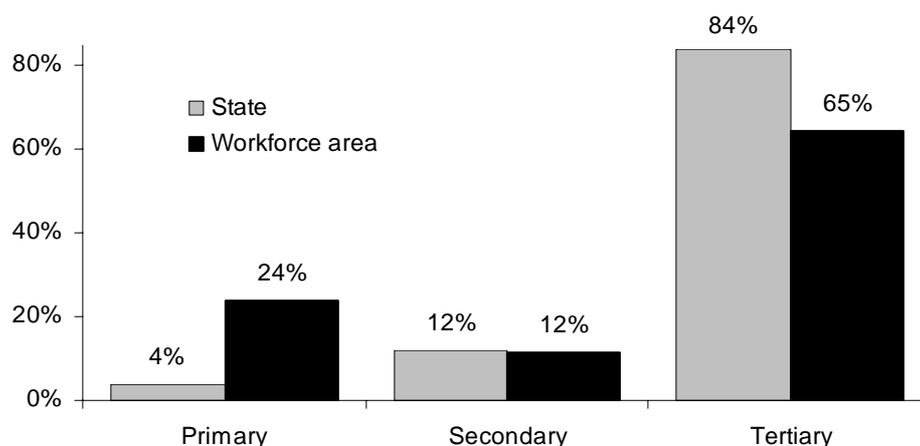
3.3 Employment and industry structure

(i) Census data

Census data indicates that employment in the former Merriwa, Mudgee and Rylstone LGAs in 2001 totalled 9,224 persons, a 10 per cent increase from 8,407 ten years earlier. This is double the rate of increase in the population of the area over the same period: a 5 per cent rise from 22,509 people in 1991 to 23,643 in 2001. The bulk of employment in 2001 was in Mudgee (76 per cent), followed by Rylstone (14 per cent) and Merriwa (10 per cent).

The workforce area was substantially more dependent on the primary sector, and less dependent on the tertiary sector, than the State as a whole. Figure 1 indicates that in 2001, while secondary industry (*manufacturing*) had the same relative importance (in terms of employment) in both the workforce area and the State, primary industry (*agriculture, forestry and fishing; and mining*) was significantly more important in the area, accounting for 24 per cent of total employment in Merriwa-Mudgee-Rylstone compared with 4 per cent in NSW. On the other hand, tertiary (service) industries were relatively less important, representing 65 per cent of employment in the area and 84 per cent in the State.

Figure 1: Broad industry structure of the workforce area (former LGAs of Merriwa, Mudgee and Rylstone) and State, 2001 (proportion of total employment)



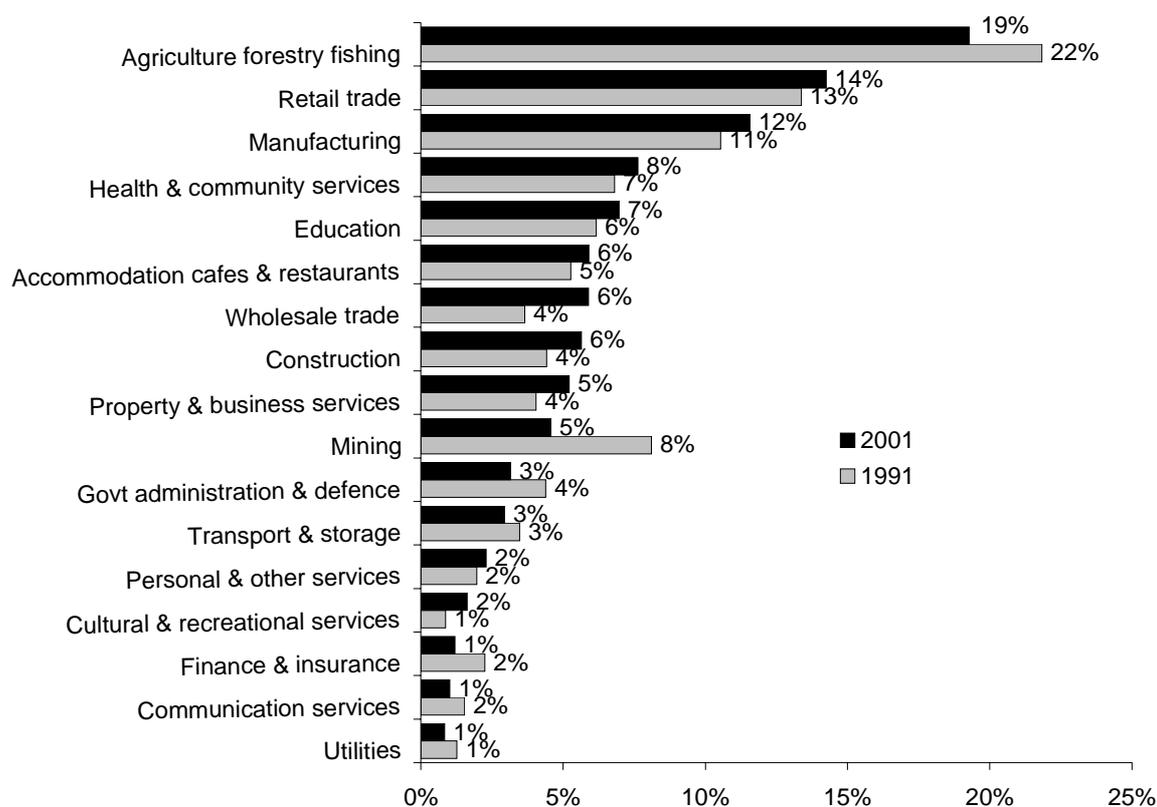
Source: ABS, *Census of Population and Housing*, 2001

Figure 2 (over) presents a more detailed industry breakdown for the workforce area in 1991 and 2001. Major points of note are that:

- The three major industries in the area remained *agriculture, forestry and fishing; retail trade* and *manufacturing*. Over the period there was a decline in the proportion of employment in *agriculture etc.*, from 22 per cent in 1991 to 19 per cent in 2001. Employment in *retail trade* increased from 13 per cent of the total to 14 per cent in each year respectively, and in *manufacturing* there was a rise from 11 per cent to 12 per cent over the same period.

- The next most important industries were *health and community services* (8 per cent of total employment in 2001), *education* (7 per cent), *accommodation, cafes and restaurants* (6 per cent), *wholesale trade* (6 per cent) and *construction* (6 per cent).
- The *increase* over the ten-year period in the number of people employed in each sector was proportionally greatest in *cultural and recreational services*; *wholesale trade*; *property and business services* and *construction*. The *decline* in employment was proportionally greatest in *finance and insurance* and *mining*.
- Despite the decline in the relative importance of mining in the area between 1991 and 2001, the subsequent establishment of the Wilpinjong Coal Mine and potential establishment of the Moolarben mines will reverse this trend and provide a substantial economic boost to the regional economy.
- The *Ratio* analysis referred to in Section 3.2 estimates that the four major projects considered for the area (including the Wilpinjong and Moolarben coal mines) will create up to 1,992 jobs in the former LGAs of Mudgee and Rylstone.

Figure 2: Detailed industry breakdown of the workforce area (former LGAs of Merriwa, Mudgee and Rylstone), 1991 and 2001 (proportion of total employment)



Note: Percentages shown are rounded to the nearest whole number, calculated from the total in each year excluding 'not stated' and 'not classifiable'; industry breakdown is according to the 1993 ANZSIC classification

Source: ABS, *Census of Population and Housing*, 2001

(ii) Current data

Current data for 'small area labour markets' is published by the federal Department of Employment and Workplace Relations (DEWR) using the pre-March 2004 LGA boundaries. This data for employment and unemployment in 2005 in each of the former Merriwa, Mudgee and Rylstone LGAs is provided in Table 11. Figure 3 (over) shows the total level of employment in the combined area during 2004 and 2005.

The DEWR data suggests that, on average, approximately 10,800 people were employed in the workforce area in 2005, with an additional 700-odd seeking work. The estimated unemployment rate of 6.6 per cent for the year was slightly higher than the State average of 5.2 per cent (calculated from non-seasonally adjusted, quarterly data published by DEWR). The rate of unemployment was highest in the former Rylstone LGA (an average of 8 per cent in 2005), followed by Mudgee (6.5 per cent); it was relatively low in Merriwa (3.6 per cent).

The employment data shown in Figure 3 suggests relatively strong economic growth over the past two years, with around 600 jobs created in the area between March 2004 and December 2005.

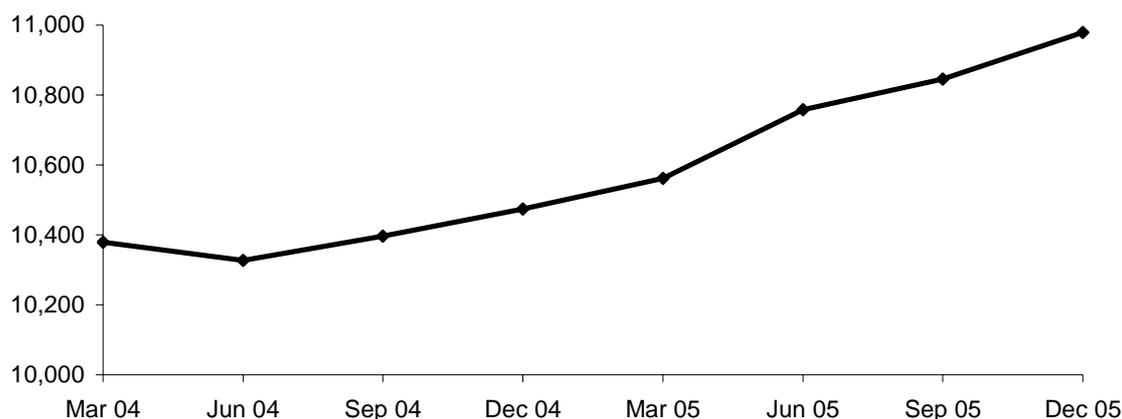
Table 11: Employment and unemployment in former LGAs in the workforce area, 2005

	March	June	September	December	Year average*
No employed*					
Merriwa	1,187	1,180	1,147	1,109	1,156
Mudgee	7,853	8,022	8,121	8,265	8,065
Rylstone	1,522	1,556	1,578	1,605	1,565
Total	10,562	10,758	10,846	10,979	10,786
No unemployed					
Merriwa	45	39	39	47	43
Mudgee	606	567	526	535	559
Rylstone	147	139	128	131	136
Total	798	745	693	713	737
Unemployment rate					
Merriwa	3.7%	3.2%	3.3%	4.1%	3.6%
Mudgee	7.2%	6.6%	6.1%	6.1%	6.5%
Rylstone	8.8%	8.2%	7.5%	7.5%	8.0%
Total*	7.3%	6.7%	6.2%	6.2%	6.6%
No. in labour force (employed + unemployed)					
Merriwa	1,232	1,219	1,186	1,156	1,198
Mudgee	8,459	8,589	8,647	8,800	8,624
Rylstone	1,669	1,695	1,706	1,736	1,702
Total	11,360	11,503	11,539	11,692	11,524

* Derived by the HVRF

Source: Department of Employment and Workplace Relations, *Small Area Labour Markets*

Figure 3: Total employment in the workforce area (former LGAs of Merriwa, Mudgee and Rylstone), 2004 - 2005

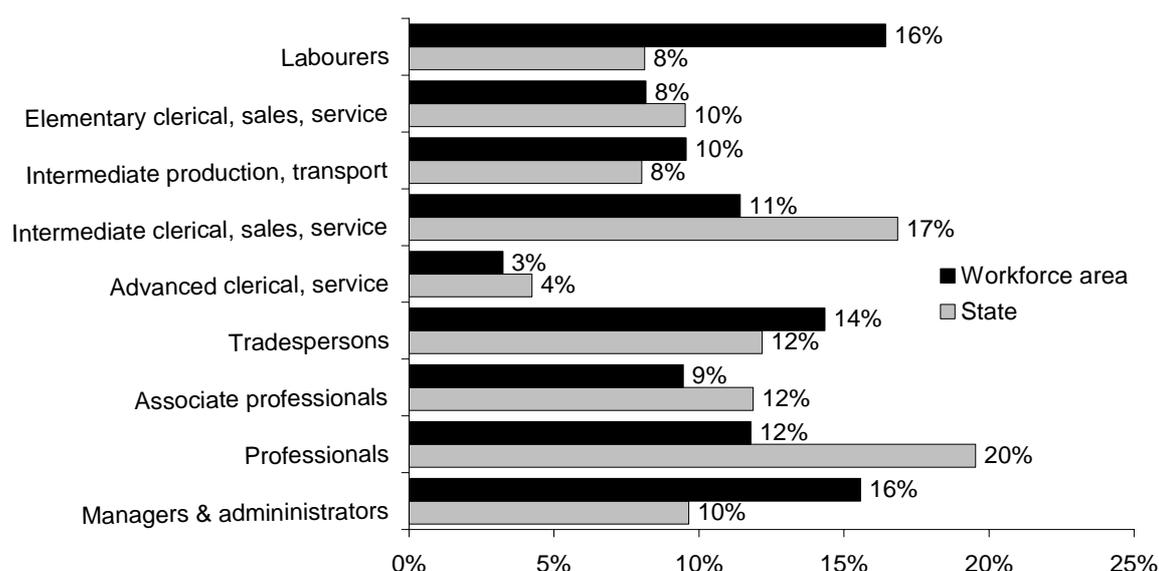


Source: Department of Employment and Workplace Relations, *Small Area Labour Markets*

3.4 Occupational structure

The primary industry orientation of the workforce area is reflected in a substantially different occupational structure than the State, presented in Figure 4. Census data indicates that in 2001 there was a substantially higher proportion of *managers and administrators* (including farm owners) and *labourers* employed in the former Merriwa, Mudgee and Rylstone LGAs, as well as a moderately higher proportion of *tradespersons* and *intermediate production and transport workers*. Proportionally higher employment of people in the later three occupational categories partly reflects the significance of mining in the area. Conversely, a lower proportion of *professionals*; *associate professionals*; and *clerical sales and service workers* in various categories were employed in the workforce area than in the State.

Figure 4: Occupational structure of the workforce area (former LGAs of Merriwa, Mudgee and Rylstone) and State, 2001



Note: Percentages shown are rounded to the nearest whole number, calculated from the total in each year excluding 'not stated' and 'not classifiable'.

Source: ABS, *Census of Population and Housing*, 2001

3.5 Educational attainment

School education

The relative dominance of the primary sector in the workforce area, and proportionally higher employment in mid to lower level occupational categories is matched by relatively lower levels of educational attainment. In 2001 a higher proportion of the population aged 15 and over in the former Merriwa-Mudgee-Rylstone area had completed Year 10 or below (59 per cent) than in the State (44 per cent). Conversely, a lower proportion had completed Year 11 or Year 12: 29 per cent in the area compared with 43 per cent in the State. Table 12 provides details.

**Table 12: Highest level of schooling completed in former LGAs in the workforce area, 2001
Population aged 15 and over**

	Merriwa		Mudgee		Rylstone		Workforce area		% State total
	No.	% LGA total	No.	% LGA total	No.	% LGA total	No.	% area total	
Year 8 or below	286	16%	1,558	12%	450	15%	2,294	13%	9%
Year 9*	202	11%	1,612	12%	373	13%	2,187	12%	8%
Year 10*	571	31%	4,661	35%	979	33%	6,211	34%	27%
Year 11*	76	4%	721	5%	168	6%	965	5%	5%
Year 12*	420	23%	3,316	25%	614	21%	4,350	24%	38%
Still at school	58	3%	458	3%	84	3%	600	3%	3%
Did not go to school	16	1%	58	0%	15	1%	89	0%	1%
Not stated	215	12%	1,111	8%	245	8%	1,571	9%	8%
Total	1,844	100%	13,495	100%	2,928	100%	18,267	100%	100%

* Or equivalent

Source: ABS, *Census of Population and Housing*, 2001

Post school education

Table 13 (over) shows that post school educational attainment was also lower in the workforce area. In 2001 approximately 58 per cent of the population aged 15 and over in the former Merriwa, Mudgee and Rylstone LGAs did *not* have post school qualifications, compared with 51 per cent in the State. Among those with qualifications, in the area vocational training was more prevalent than university education. Again, this is consistent with the industry and occupational structure of the workforce area.

In 2001, approximately 6 per cent of the population aged 15 and over in the area held university degree qualifications compared with 14 per cent in the State, while 4 per cent in the area and 6 per cent in the State held diploma/advanced diploma qualifications. A higher proportion in the area held certificate qualifications: 18 per cent compared with 16 per cent in the State.

Table 13: Highest level of post school education completed in former LGAs in the workforce area, 2001 (population aged 15 and over)

	Merriwa		Mudgee		Rylstone		Workforce area		% State total
	No.	% LGA total	No.	% LGA total	No.	% LGA total	No.	% area total	
Postgraduate Degree	8	0%	76	1%	9	0%	93	1%	2%
Graduate Diploma and Graduate Certificate	13	1%	130	1%	23	1%	166	1%	1%
Bachelor Degree	76	4%	725	5%	120	4%	921	5%	10%
Advanced Diploma and Diploma	70	4%	620	5%	113	4%	803	4%	6%
Certificate - level not specified	4	0%	74	1%	13	0%	91	0%	1%
Certificate III and IV	239	13%	2,026	15%	413	14%	2,678	15%	13%
Certificate I and II	41	2%	414	3%	72	2%	527	3%	3%
Not stated	275	15%	1,724	13%	370	13%	2,369	13%	12%
Not applicable*	1,117	61%	7,706	57%	1,796	61%	10,619	58%	51%
Total	1,843	100%	13,495	100%	2,929	100%	18,267	100%	100%

* Includes persons who do not have a qualification and persons who have a qualification and qualifications out of scope of the Australian Standard Classification of Education.

Source: ABS, *Census of Population and Housing, 2001*

3.6 Income

(i) Census data

Census data suggests that income levels were lower in the workforce area than in the State on average. Table 14 (over) indicates that in 2001 there was a higher proportion of residents (aged 15 and over) in the former Merriwa, Mudgee and Rylstone LGAs with individual weekly income below \$600 (71 per cent compared with 62 per cent in the State), and a lower proportion with higher incomes (20 per cent compared with 31 per cent in the State).

(ii) Australian Tax Office data

Table 15 (over) presents data provided by the Australian Tax Office to the ABS. Comparison of the census and ATO data indicates that a little over 40 per cent of residents in the workforce area were wage and salary (W&S) earners in 2000-01. In 2002-03, the latest year for which this data is available, the average W&S income in the combined Merriwa-Mudgee-Rylstone area was \$34,210, about 14 per cent lower than the State average of \$39,607. The median W&S income in the area was \$29,921, around 12 per cent lower than the State median of \$34,007.

Table 14: Residents aged 15 and over in former LGAs in the workforce area and State with weekly individual income in each of the brackets shown, 2001

	Workforce area				NSW	
	Merriwa	Mudgee	Rylstone	Total	% total	% total
	No.					
Negative or nil	131	824	220	1,175	6%	7%
\$1-\$199	472	3,221	853	4,546	25%	20%
\$200-\$399	420	3,259	716	4,395	24%	20%
\$400-\$599	309	2,284	395	2,988	16%	15%
\$600-\$799	157	1,124	195	1,476	8%	11%
\$800-\$999	59	619	106	784	4%	7%
\$1,000-\$1,499	69	687	175	931	5%	8%
\$1,500 or more	21	405	67	493	3%	5%
Not stated	211	1,077	212	1,500	8%	8%
Total no. persons aged 15 and over	1,849	13,500	2,939	18,288	100%	100%

Source: ABS, *Census of Population and Housing*, 2001

Table 15: Wage and salary earners and income in former LGAs in the workforce area and State, 2002-03

	No.	Total income	Average income	Median income
Merriwa	705	\$21,086,229	\$29,910	\$27,526
Mudgee	5,545	\$181,762,056	\$32,779	\$28,671
Rylstone	1,274	\$44,596,205	\$35,005	\$29,972
Workforce area*	7,524	\$247,444,490	\$34,210	\$29,921
NSW	2,538,731	\$100,552,616,676	\$39,607	\$34,007

* Derived by the HVRF

Source: ABS, *Regional Wage and Salary Earner Statistics, Australia*, Cat. No. 5673.0.55.003

3.7 Housing

(i) Census data

Type of private housing

Consistent with its non-metropolitan location, private housing in the workforce area is predominately 'low density'. Table 16 (over) shows that in 2001 there was a higher proportion of separate houses in the former Merriwa, Mudgee and Rylstone LGAs (73 per cent compared with 64 per cent in the State as a whole), and a lower proportion of townhouse-type accommodation (2 per cent compared with 9 per cent in the State) and apartment-type accommodation (3 per cent compared with 16 per cent respectively). Other types of dwellings (mainly caravans) accounted for a slightly higher proportion in the area (3 per cent) than in the State (2 per cent). *Unoccupied* private dwellings comprised 18 per cent of all private dwellings in the workforce area, a substantially higher proportion than in the State (9 per cent).

Table 16: Types of private housing in former LGAs in the workforce area and State, 2001

	Workforce area				NSW	
	Merriwa	Mudgee	Rylstone	Total	% total	% total
	No.					
Occupied private dwellings						
Separate house	888	5,783	1,462	8,133	73%	64%
Semi-detached, row or terrace house, townhouse, etc	3	240	13	256	2%	9%
Flat, unit or apartment	18	339	27	384	3%	16%
Other dwelling	16	261	31	308	3%	2%
Not stated	9	93	4	106	1%	1%
Total	934	6,716	1,537	9,187	82%	91%
Unoccupied private dwellings	244	1,208	512	1,964	18%	9%
Total dwellings	1,178	7,924	2,049	11,151	100%	100%

Source: ABS, *Census of Population and Housing*, 2001

Housing tenure

Census data suggests that home ownership is higher in the workforce area than in the State as a whole (notwithstanding the relatively large variation in the proportion of residents in workforce area LGAs who did not state their housing tenure, or who held atypical types of tenure such as rent-free accommodation or life tenure). Table 17 (over) shows that in 2001 home ownership was proportionally highest in the former Rylstone LGA, where 54 per cent of all occupied private dwellings were fully owned. For the workforce area in total, full ownership accounted for 47 per cent of occupied private dwellings, compared with 41 per cent in the State. The proportion of dwellings being purchased was highest in Mudgee: 23 per cent, equivalent to the average for the State but higher than the average of 20 per cent for the whole of the workforce area. At 22 per cent, the proportion of dwellings being rented in the workforce area was substantially lower than the State average of 28 per cent. Rental tenure was also highest in the former Mudgee LGA, at 23 per cent.

The *Ratio* analysis referred to in Section 3.2 predicts that the four major projects considered (including the Wilpinjong and Moolarben coal mines) will increase housing demand by between 461 and 757 dwelling units that will be developed in the former Mudgee LGA. Approximately 163 of these units are expected to be rental accommodation.

**Table 17: Housing tenure in former LGAs in the workforce area and State, 2001
Occupied private dwellings**

	Merriwa		Mudgee		Rylstone		Workforce area		State % total
	No.	% LGA total	No.	% LGA total	No.	% LGA total	No.	% area total	
Fully owned	467	50%	2,994	45%	836	54%	4,297	47%	41%
Being purchased	127	14%	1,527	23%	217	14%	1,871	20%	23%
Rented	153	16%	1,576	23%	284	18%	2,013	22%	28%
Other types of tenure/not stated	187	20%	617	9%	201	13%	1,005	11%	8%
Total occupied private dwellings	934	100%	6,714	100%	1,538	100%	9,186	100%	100%

Source: ABS, *Census of Population and Housing*, 2001

(ii) Current building approvals

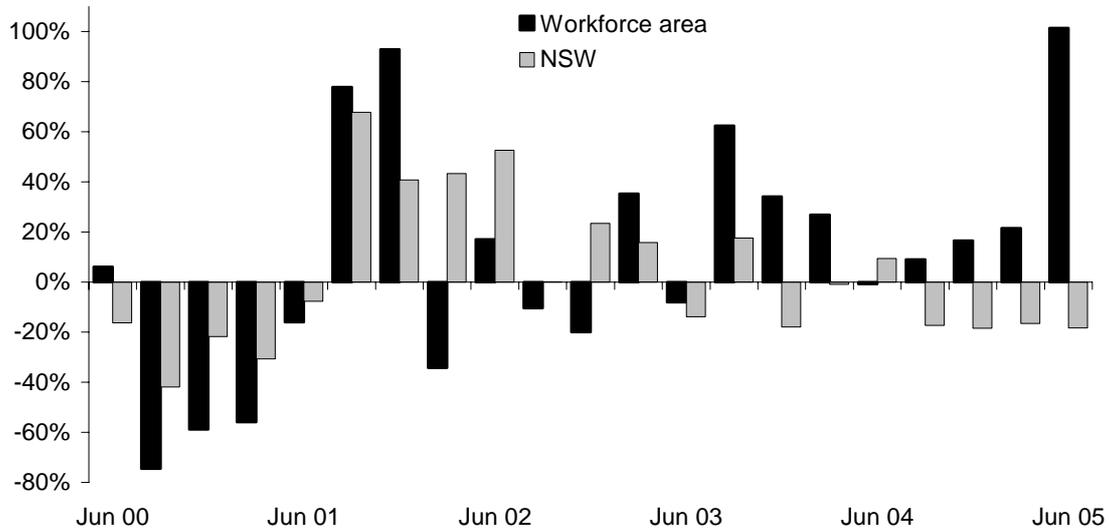
Current data on the number and value of residential and non-residential building approvals is published by the ABS for the former LGAs of Merriwa, Mudgee and Rylstone until June 2005. Thereafter data is published for the amalgamated Mid-Western Regional Council area. Since insufficient time series data for the Mid-Western Regional Council LGA is available, this review of 'current' building activity is restricted to the 'old' boundaries of the workforce area until 2004-05.

Residential building

Figure 5 (over) shows the annual change in the real value of residential approvals in both the workforce area and the State. Real values have been calculated by deflating the current dollar values by the ABS *Price index of materials used in house building* so that the effects of inflation are eliminated (as much as possible).

The figure indicates that residential building recovered from a year-long contraction in the September quarter 2001. However, after a strong start the recovery was much more hesitant in the workforce area than in the State over the following two years until mid 2003. Thereafter, throughout most of 2003-04 and 2004-05 residential building approvals increased in the area, while they generally declined in the State. In the June quarter 2005 the real value of residential approvals in the area was more than double the value of a year earlier. This data suggests that housing demand in the area is currently high, consistent with increasing employment and falling unemployment.

Figure 5: Annual change in real value of residential building approvals in the workforce area (former LGAs of Merriwa, Mudgee and Rylstone) and the State, 2000-01 – 2004-05

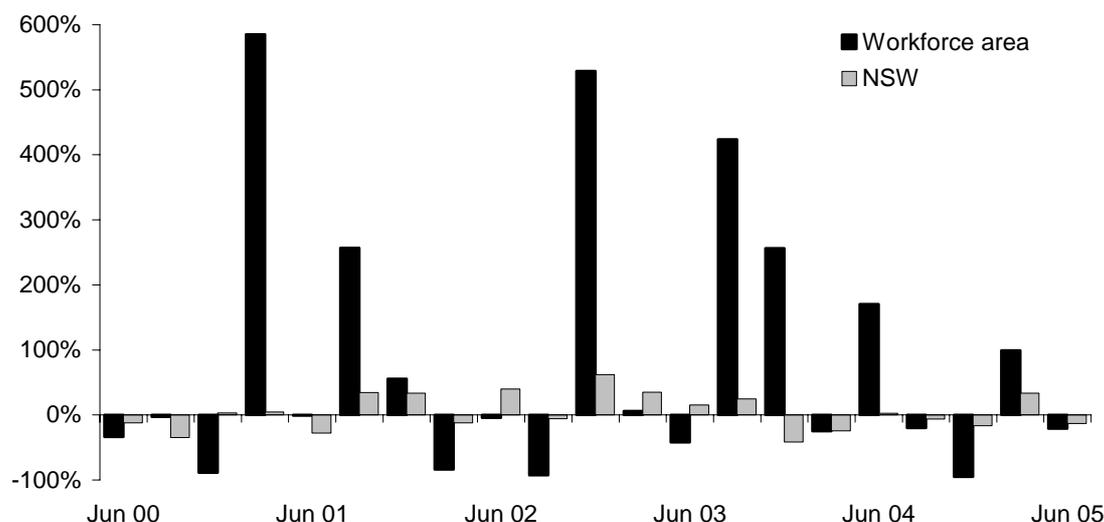


SOURCE: ABS, *Building Approvals, Australia*, electronic data cubes and Cat. Nos 8731.1 and 6427.0

Non-residential building

Figure 6 (over) shows the annual change in the real value of non-residential approvals in both the workforce area and the State, again deflated (by a combination of indexes) to remove the effects of inflation. This data, particularly at small area levels, tends to be volatile because large projects have a substantial influence in the quarter in which they are approved. Nonetheless, its value as an economic indicator is twofold: first, it is a leading indicator of actual building activity generated by the non-household sector and, second, it is an indicator of business willingness to invest in plant and infrastructure. Large increases in the real value of non-residential approvals in the workforce area over recent years suggests that the non-household sector is making a substantial contribution to activity in the local construction sector. Additionally, businesses are, on balance, increasing their investment in the area. However, increases in non-residential approvals since 2004 have not been as large as in earlier periods.

Figure 6: Annual change in real value of non-residential building approvals in the workforce area (former LGAs of Merriwa, Mudgee and Rylstone) and the State, 2000-01 – 2004-05



SOURCE: ABS, *Building Approvals, Australia*, electronic data cubes and Cat. Nos 8731.1 and 6427.0

3.8 Socio-economic indexes for areas

Table 18 (page 28) presents Socio-Economic Indexes for Areas (SEIFA) compiled by the ABS. Each index summarises a different aspect of the socio-economic conditions of LGAs. All indexes have been constructed so that relatively advantaged areas (for example, those with many high income earners) have high index values. For the Index of Relative Socio-Economic Disadvantage this means that relatively disadvantaged areas have lower index numbers.

The indexes are 'ordinal measures', not 'interval measures'. That is, they can be used to order areas in terms of disadvantage, but any other arithmetic relationships between index values may not be meaningful. For example, an area with an index value of 1,200 does not have twice the wellbeing of an area with an index value of 600. Similarly, the socio-economic difference between two areas with index values of 800 and 900, is not necessarily the same as the difference between two with index values of 1,050 and 1,150. A technical explanation of this is given in the *Census of Population and Housing: Socio-Economic Indexes for Area's (SEIFA), Australia - Technical Paper (ABS, Catalogue No. 2039.0.55.001)*. See also the *Census of Population and Housing: Socio-Economic Indexes for Area's (SEIFA), Australia - Information Paper (ABS, Catalogue No. 2039.0)*. This publication lists the variables summarised by the four indexes, including the weights for each variable, and provides examples of ways in which the indexes may be applied.

Index of Relative Socio-Economic Advantage/Disadvantage

A higher score on this index indicates that an area has attributes such as a relatively high proportion of people with high incomes or a skilled workforce.

Index of Relative Socio-Economic Disadvantage

This index is derived from attributes such as low income, low educational attainment, high unemployment, jobs in relatively unskilled occupations and variables that reflect disadvantage. A high score here reflects lack of disadvantage, rather than high advantage, a subtly different concept.

Index of Relative Economic Resources

This index reflects the profile of the economic resources of families within the areas. The census variables summarised by the index reflect the income and expenditure of families, such as income and rent. Variables which reflect wealth, such as dwelling size, are also included. The income variables are specified by family structure, since this affects disposable income. This index excludes education and occupation variables because they are not direct measures of economic resources. It also misses some assets such as savings or equities which, although relevant, could not be included because the information was not collected in the 2001 census. A higher score on the index indicates that the area has a higher proportion of families on high income, a lower proportion of low income families, and more households living in large houses (i.e. four or more bedrooms).

Index of Education and Occupation

This index is designed to reflect the educational and occupational structure of communities. The education variables included show either the level of qualification achieved or whether further education is being undertaken. The occupation variables classify the workforce into the major groups of the Australian Standard Classification of Occupations (ASCO) and the unemployed. No income variables are included. An area with a high score on this index would have a high concentration of people with higher education qualifications or undergoing further education, with a high percentage of people employed in more skilled occupations.

Major points of note from Table 18 (over) are:

- In 2001 the workforce area as a whole was slightly less 'advantaged' (in socio-economic terms) than the broader Hunter Region.
- Advantage was clearly highest in the Mudgee LGA, and generally lowest in Rylstone.

Table 18: SEIFA indexes, 2001

	SEIFA Indexes of Relative...				
	Population	Advantage/ disadvantage	Disadvantage	Economic resources	Education and occupation
Merriwa	2,339	905	963	885	915
Mudgee	17,682	935	972	938	935
Rylstone	3,674	902	926	898	906
Workforce area*	23,695	927	964	926	929
Hunter*	563,586	961	971	965	960

* Derived by the HVRF

Source: ABS, *Census of Population and Housing*, 2001



4 Summary

4.1 The proposed project

The proposed Moolarbern Coal Project will be located near Ulan in the Mid-Western Regional Council Local Government Area (LGA). It will comprise three open cut mines and an underground mine, together with a coal preparation plant, coal handling and storage facilities, a rail loop and train loading system, and associated mine infrastructure and services. Development of the mines will be staged, with the open cut and underground mines to operate concurrently. The full seam will be recovered in the open cut mines and a partial section will be recovered in the underground mine. Thermal coal will be produced for the domestic and export markets.

This report assessed the economic implications of this project and identified a socio-economic profile of the area in which the project would operate.

4.2 Economic impacts

(i) The analysis

Estimates of the economic benefits from the project have been generated using input-output (I-O) analysis and the I-O model of the Hunter Region economy developed by the Hunter Valley Research Foundation (HVRF).

The project was divided into two stages for the determination of economic impacts: *construction* of the mines and associated infrastructure, and *operation* of the completed facility. Impacts were assessed in terms of the value of *output* and number of jobs (*employment*) generated in the local 'Region'. In this instance, the Region refers to the **combined Hunter Region and Mid-Western Regional Council area**. Total economic impacts comprise the *direct* (or initial) impacts (the amount of output and employment directly generated *because* of the Moolarben Coal Project) and the *induced* (or flow-on) impacts (generated throughout the whole of the Region). It is anticipated that majority of the direct impacts, as well as a substantial proportion of the induced impacts, will accrue in the townships of Mudgee and Gulgong.

In the I-O analysis:

- A job is defined as a full-time position which lasts for one year.
- All currency values are in terms of 2006 Australian dollars.
- Values are calculated to the nearest whole unit. However, the values of the impacts are estimates, and should be considered in terms of round numbers.

(ii) Economic impacts during the construction stage

Output impacts

Total expenditure of \$150 million over the construction period is expected to stimulate additional production in the Region valued at approximately \$73 million and additional consumption worth \$44 million: an induced benefit of \$117 million, providing a total benefit to the Region valued at \$267 million.

Employment impacts

Total expenditure of \$150 million is expected to directly create 222 full-time equivalent jobs in each year of the construction period. The induced production and consumption in the Region will each generate a further 108 jobs: an induced benefit of 216 jobs, providing a total employment benefit to the Region of 438 full-time equivalent positions in each year during which production proceeds.

Taxation impacts

Over the whole of the construction period it is estimated that taxation revenue to the Federal Government will total approximately \$19 million: \$11 million from income tax, \$4 million from indirect taxes, and in excess of \$3 million from company tax. Payroll taxation revenue to the State Government is estimated at more than \$3 million, yielding a total public sector benefit of close to \$22 million.

(iii) Economic impacts during the operation stage

Output impacts

When production revenue is maximised at \$356 million per annum in the fourth year of operation, the coal mining activities will stimulate further output in the Region valued at approximately \$308 million: \$162 million of which will result from additional production and \$146 million of which will be generated from additional consumption. The total annual output impact from Year 4 inclusive is expected to be valued at more than \$664 million.

Employment impacts

Employment in the Moolarben facilities is scheduled to increase rapidly over the first three years of operation, and then to increase slowly until the eleventh year, at which time the number of jobs is expected to be maximised. From Year 11 inclusive direct annual employment at the mining operations will be equivalent to around 317 full-time positions. Additional production and consumption in the Region will generate a further 280 and 313 jobs respectively: an induced employment benefit of 593 jobs. In total, approximately 910 full-time equivalent positions will be created in the Region in each financial year of operation.

Taxation impacts

When production revenue is maximised in Year 4, Federal Government taxation receipts are estimated to total approximately \$59 million: \$37 million from income tax, \$13 million from indirect taxes, and \$9 million from company tax. Payroll taxation revenue to the State Government is estimated at more than \$10 million, yielding a total public sector benefit of more than \$69 million in each financial year of operation. Royalty payments to the State Government are estimated to total \$341 over the 14 years between 2007 and 2020.

(iv) Summary of the economic impacts

The proposed Moolarben Coal Project will generate economic benefits that can be estimated in terms of the value of output generated and the number of people employed. Multiplier effects imply that the initial expenditures generated because of the Moolarben Coal Project will generate additional output and employment beyond that directly created by the initial expenditure.

In total, the construction stage of the proposed project will generate output impacts with an estimated value of \$267 million. The construction stage will also generate a total of 438 jobs. When production revenue is maximised (Year 4), the total annual output impact is estimated to be worth \$664 million; when employment is maximised (Year 11), about 910 full-time equivalent jobs will be created in each financial year of operation.

4.3 The socio-economic profile

In March 2004 there was a redistribution of the boundaries of some NSW LGAs and an amalgamation of others. In the area of the Moolarben Coal Project, the new Mid-Western Regional Council LGA now comprises 100 per cent of the former Mudgee Shire, 70 per cent of the former Rylstone Shire and 10 per cent of the former Merriwa Shire. While the bulk of the mines' operational workforce is expected to be drawn from the newly amalgamated LGA (particularly the townships of Mudgee and Gulgong), there is little statistical information currently available for it. Therefore, the profile presented in this report uses a combination of historical data for the **former** Mudgee, Merriwa and Rylstone LGAs (the 'workforce area'), as well as a small amount of relatively recently published data for the Mid-Western Regional Council LGA. Key points from the socio-economic profile are:

- Population growth in the workforce area between 1991 and 2001 was relatively slow. Over the ten-year period the population consistently declined in the former Rylstone LGA, 'see-sawed' in Merriwa, and consistently increased in Mudgee.
- Compared with the State, the workforce area is characterised by relatively high employment in primary industry. This industry structure is associated with a substantially higher proportion of people employed in the area than in the State in occupational categories such as *managers and administrators* (including farm owners) and *labourers*, as well as a moderately higher proportion of *tradespersons* and *intermediate production and transport workers*.
- Compared with the State, the workforce area is characterised by relatively lower levels of educational attainment. The proportion of people holding post school qualifications is lower in the workforce area than in the State as a whole.
- The industry, occupation and qualification characteristics of the workforce area are factors contributing to income levels in the workforce area than in the State.
- Despite lower incomes home ownership in the workforce area is higher than in the State.



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