NSW Mining Industry Expenditure Impact Survey 2016/17

Prepared for NSW Minerals Council

April 2018

lawrence consulting

EXECUTIVE SUMMARY

The New South Wales Minerals Council (NSWMC) analysed the expenditure patterns of 26 NSW exploration and mining companies to determine the economic contribution of the industry throughout NSW in 2016/17. The spending data, which included employee salaries and wages, business purchases, community contributions and local and state government payments, was collected by postcode where it was spent to allow local, regional and state-wide economic benefits to be assessed. This report is an extension of previous annual surveys completed over the last five years and includes one additional company from the survey conducted in 2015/16.

Direct expenditure

The 26 companies surveyed **directly spent an estimated $10.4 billion** in the NSW economy in 2016/17, comprised of:

- **$2.9 billion in wages and salaries** to approximately **22,821 full-time equivalent residing employees** (including contractors); representing an average salary level of $125,817 per annum across the sector;

- **$5.9 billion** in purchases of goods and services from approximately 6,681 local businesses, community contributions and payments to local government (including rates, developer contributions and other payments); and

- **$1.7 billion** in state government payments (including royalties, stamp duty, payroll tax and land tax).

In terms of annual trend, there was a strong increase in the total workforce of 8.7% over the previous year, although total spending in NSW by companies surveyed was 3.5% lower than 2015/16, despite a significant increase of 31.4% in royalties paid to the State Government.

The Hunter region recorded the highest direct expenditure in 2016/17, with $4.5 billion (or 43% of the total direct spend across NSW), followed by the Sydney ($2.2 billion, or 21%) and Illawarra ($0.7 billion, or 6%) regions.

Direct Stimulus by Region of Companies Surveyed

New South Wales, 2016/17

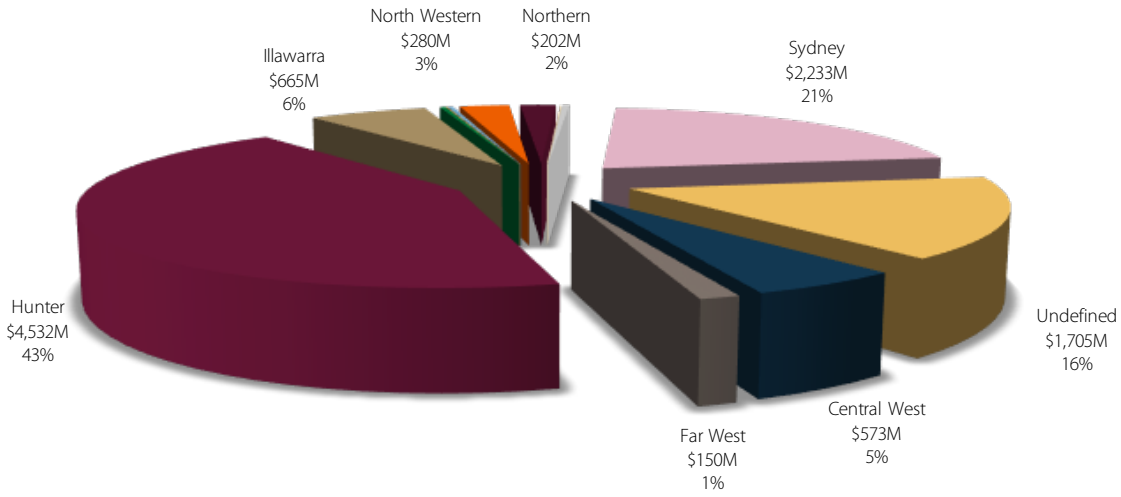


Table E1: Direct Impact of Surveyed Companies by Region, 2016/17

Region	Residing employees	Associated salaries	Business purchases & community contributions	No. of businesses	Total direct spending	% of total direct spend, NSW
	(FTEs)	($M)	($M)		($M)	
Central West	3,549	393.4	179.4	872	572.8	5.5%
Far West	462	51.1	99.0	157	150.1	1.4%
Hunter	12,604	1,720.7	2,811.7	3,070	4,532.5	43.4%
Illawarra	1,650	180.1	484.5	459	664.6	6.4%
Mid-North Coast	42	3.1	27.1	29	30.2	0.3%
Murray	19	2.2	4.3	27	6.5	0.1%
Murrumbidgee	65	3.9	24.0	54	28.0	0.3%
North Western	1,566	197.4	82.2	463	279.6	2.7%
Northern	975	115.4	86.1	385	201.5	1.9%
Richmond-Tweed	33	1.6	2.7	17	4.4	0.0%
South Eastern	23	2.0	38.7	44	40.7	0.4%
Sydney	1,820	198.6	2,034.4	2,349	2,233.0	21.4%
Unallocated[(a)]	14	1.5	3.2		1,705.3	16.3%
Total NSW	**22,821**	**2,871.2**	**5,877.4**	**6,681**	**10,449.2**	**100.0%**
Balance of Australia	3,225	320.4	3,704.1	2,669	4,024.5	-
Total Australia	26,046	3,191.6	9,581.5	9,350	14,473.7	-

Note: (a) Includes state government payments

Indirect and Total Economic Impacts

Economic modelling of the flow-on effects of the surveyed companies' direct expenditure allowed the indirect and total economic impact to be estimated. Across NSW, the total economic impact of the surveyed companies in 2016/17, based on Type II multipliers (i.e. including both indirect industry and consumption-induced effects), amounted to:

- ***$25.5 billion in output/turnover (***a measure of ***direct and supply chain purchases from businesses);***
- **$22.8 billion in value added (contribution to Gross State Product), amounting to 4.0% of GSP for NSW in 2016/17**, through $10.5 billion in direct effects and $12.4 billion in supply chain and consumption-induced effects;
- ***$9.8 billion*** in income (wages and salaries) paid to direct and indirect workers; and
- ***130,167 full time equivalent jobs supported, or 3.4% of total employment in NSW during 2016/17.***

Table E2: Economic Impact of Companies Surveyed, 2016/17

	New South Wales	Rest of Australia	Total Australia
Value Added ($M)			
Direct	*10,449*	*4,025*	*14,474*
% of GSP/GDP	*1.8%*	*0.3%*	*0.8%*
Indirect	*7,890*	*2,754*	*10,644*
Total value added (Type I)	*18,339*	*6,779*	*25,118*
% of GSP/GDP	*3.2%*	*0.6%*	*1.4%*
Consumption-induced	*4,493*	*1,622*	*6,115*
Total value added (Type II)	*22,832*	*8,401*	*31,232*
% of GSP/GDP	*4.0%*	*0.7%*	*1.8%*
Employment (FTEs)			
Direct	*22,821*	*3,225*	*26,046*
% of total state/national employment	*0.6%*	*0.0%*	*0.2%*
Indirect	*65,899*	*16,461*	*82,360*
Total employment (Type I)	*88,719*	*19,686*	*108,406*
% of total state/national employment	*2.3%*	*0.2%*	*0.9%*
Consumption-induced	*41,447*	*10,284*	*51,732*
Total employment (Type II)	*130,167*	*29,970*	*160,137*
% of total state/national employment	*3.4%*	*0.4%*	*1.3%*
Business spend (incl. community contributions and govt payments) ($M)			
Direct	*7,578*	*3,704*	*11,282*
Indirect	*6,238*	*2,841*	*9,078*
Total business spend (Type I)	*13,816*	*6,545*	*20,360*
Consumption-induced	*8,770*	*3,049*	*11,818*
Total business spend (Type II)	*22,585*	*9,593*	*32,179*
Wages & salaries ($M)			
Direct	*2,871*	*320*	*3,192*
Indirect	*4,329*	*1,410*	*5,739*
Total wages & salaries (Type I)	*7,200*	*1,731*	*8,930*
Consumption-induced	*2,585*	*746*	*3,331*
Total wages & salaries (Type II)	*9,785*	*2,477*	*12,262*

Note: Consumption-induced impacts seek to measure the change in consumption for all goods and services that arise from an increase in final output from the industry in question.

The direct expenditure of the 26 companies surveyed has the highest overall impact in the Hunter region, with estimated total value added of $9.6 billion, meaning these companies contributed 19.1% to gross regional product ($50.5 billion) in 2016/17, although the largest proportional impact occurred in the Far West region, where the direct and indirect effects of the 26 companies surveyed contributed approximately 28.0% to the regional economy. The impact in the Hunter region was significantly higher than other regional economies, the next highest of which was Sydney ($4.7 billion in value added) and Illawarra ($1.6 billion).

Table E3: Total Economic Impact of Companies Surveyed by Region, 2016/17 (Type II)

Region	Total output ($M)	Total estimated value added ($M)	Gross regional product ($M)	Total value added as % of GRP
Central West	1,283	1,261	14,809	8.5%
Far West	416	384	1,376	28.0%
Hunter	10,612	9,646	50,496	19.1%
Illawarra	1,754	1,629	22,682	7.2%
Mid-North Coast	82	81	13,971	0.6%
Murray	17	16	6,157	0.3%
Murrumbidgee	45	44	11,213	0.4%
North Western	624	613	10,303	6.0%
Northern	437	430	11,253	3.8%
Richmond-Tweed	12	11	10,990	0.1%
South Eastern	105	104	10,957	0.9%
Sydney	5,501	4,661	414,575	1.1%
Undefined	4,569	3,952	-	-
Total NSW	**25,457**	**22,832**	**576,716**	**4.0%**

Note: Regions are based on 12 former Statistical Divisions in NSW

Number of Businesses Directly Supported by the Mining Industry

Supplier business details were analysed to determine the total number of businesses supported by survey respondents. Duplicates were removed to the best extent practicable to ensure an accurate estimation of the number of individual businesses supported.

An estimated 6,681 businesses in New South Wales received payments for goods and services supplied to survey respondents during 2016/17. The highest number of businesses was recorded in the Hunter (3,070 businesses) and Sydney (2,349 businesses) regions.

Table E4: Number of Businesses Supported by Region

Region	Number of businesses supported
Central West	872
Far West	157
Hunter	3,070
Illawarra	459
Mid-North Coast	29
Murray	27
Murrumbidgee	54
North Western	463
Northern	385
Richmond-Tweed	17
South Eastern	44
Sydney	2,349
Total NSW	**6,681**

Note: The total number of businesses supported for New South Wales is less than the aggregate for all regions due to the removal of duplicates.

Community Contributions

During 2016/17, survey respondents directly contributed $6.8 million to 997 community groups across New South Wales in a wide range of areas including health, education, environment and the arts.

The largest category of expenditure was education with $1.9 million in contributions by survey respondents, followed by indigenous ($1.5 million).

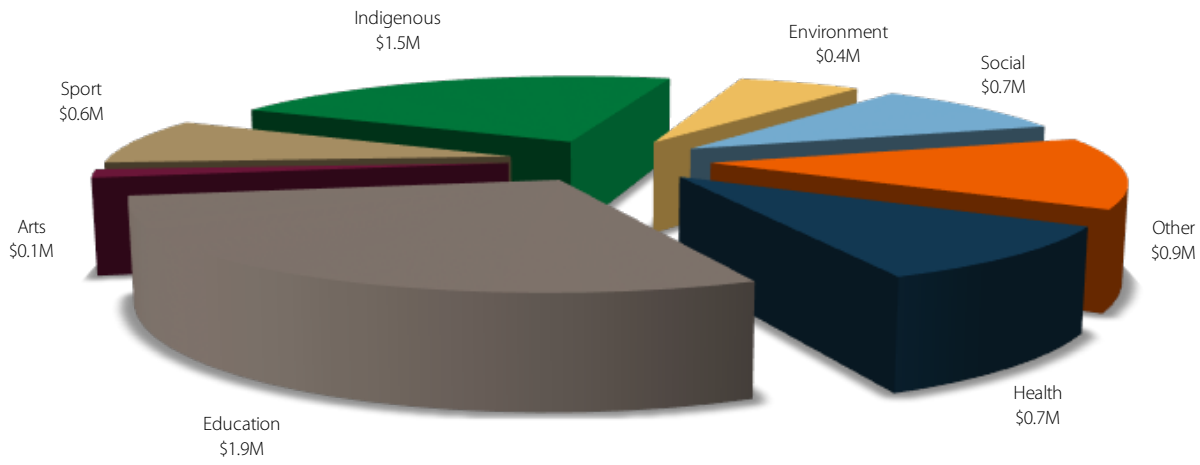
Table E5: Number of Community Groups Supported by Region

Region	Number of community groups	Total contributions ($)
Central West	*252*	*1,688,663*
Far West	*25*	*15,285*
Hunter	*416*	*2,822,995*
Illawarra	*35*	*340,812*
Mid-North Coast	*n.a.*	*n.a.*
Murray	*n.a.*	*n.a.*
Murrumbidgee	*n.a.*	*n.a.*
North Western	*95*	*627,389*
Northern	*74*	*590,451*
Richmond-Tweed	*n.a.*	*n.a.*
South Eastern	*n.a.*	*101,581*
Sydney	*95*	*629,814*
Total NSW	***997***	***6,819,492***

Note: The total number of community organisations supported for New South Wales is less than the aggregate for all regions due to the removal of duplicates.

Community Contributions by Category of Expenditure

New South Wales ($ million), 2016/17



Local Council Contributions

Mining companies contribute to local councils through the payment of rates, developer contributions agreed as a condition of planning approval, and through other payments such as water rates and payments for specific infrastructure upgrades.

During 2016/17, survey respondents reported direct contributions to local councils totalling $46.5 million, with rates ($27.4 million) comprising the largest proportion of local council payments, followed by Voluntary Planning Agreements (VPA)/developer contributions ($11.5 million) and other contributions ($5.1 million) and.

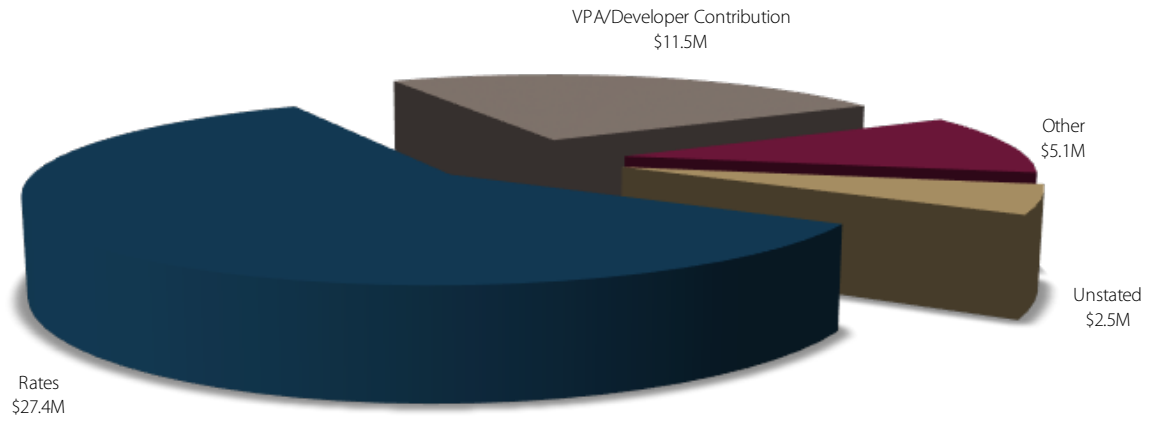
Table E6: Local Council Contributions by Region

Region	Rates ($)	VPA/Developer ($)	Other ($)	Total contributions ($)
Central West	5,939,312	465,432	1,850,638	8,256,503
Far West	n.a.	n.a.	1,776,238	1,779,907
Hunter	11,857,319	3,269,221	170,802	17,502,352
Illawarra	818,610	n.a.	n.a.	823,092
Mid-North Coast	n.a.	n.a.	n.a.	n.a.
Murray	890,681	n.a.	n.a.	890,681
Murrumbidgee	n.a.	n.a.	n.a.	0
North Western	4,073,164	2,800,780	64,216	6,999,781
Northern	2,148,634	4,948,022	1,220,720	8,509,248
Richmond-Tweed	n.a.	n.a.	n.a.	n.a.
South Eastern	n.a.	n.a.	n.a.	n.a.
Sydney	1,701,793	n.a.	n.a.	1,702,561
Total NSW	**27,435,815**	**11,481,201**	**5,142,561**	**46,519,248**

Note: The total local government payments for each region may be less than the aggregate of contribution type due to unstated amounts and statistical or rounding errors from the original source.

Local Council Contributions by Category

New South Wales ($ million), 2016/17

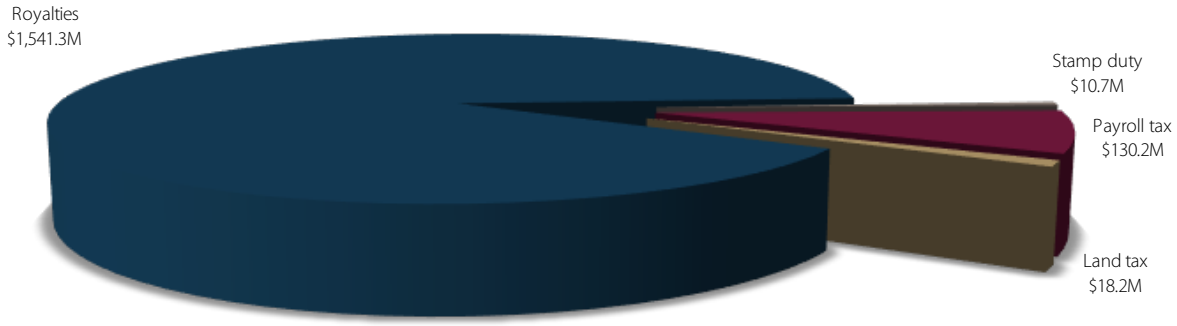


State Government Payments

During 2016/17, the direct contribution made by companies surveyed in state government payments was approximately $1.7 billion, comprised of royalties ($1.5 billion), payroll tax ($130.2 million), land tax ($18.2 million) and stamp duty ($10.7 million).

State Government Contributions by Category

New South Wales ($ million), 2016/17



Comparison to Previous Survey Results

Comparison with results from previous surveys is difficult due to a slight difference in the number of participating companies. Based on whole-of-survey totals, the direct expenditure in NSW of the companies surveyed in 2016/17 decreased by approximately $382.4 million, or 3.5% compared to 2015/16. In contrast, the total number of employees, both direct and contract workers, increased by 1,831 FTEs, or 8.7%.

Table E7: Comparison of Survey Results

	Level 2016/17	Level 2015/16	Level 2014/15	Level 2013/14	Level 2012/13	Level 2011/12	Annual % change 2015/16-2016/17
No. of companies surveyed	26	25	23	22	26	21	4.0%
DIRECT EMPLOYEES							
No. of direct employees (FTEs)	17,061	17,209	17,566	17,517	19,280	13,418	-0.9%
No. of apprenticeships and traineeships (FTEs)	247	261	284	227	418	241	-5.4%
Total wages/salaries paid ($M)	2,222.0	2,165.4	2,254.1	2,351.6	2,567.5	1,627.8	2.6%
BUSINESS PURCHASES							
No. of suppliers	6,681	8,078	7,694	8,202	10,547	n.a.	-17.3%
OPEX							
No. of contractors (FTEs)	5,673	3,291	2,931	2,907	3,515	7,524	72.4%
Payments to contractors ($M)	797.0	1,445.2	1,308.7	1,919.6	1,477.0	1,822.8	-44.9%
Other goods and services purchases ($M)	5,150.2	4,971.5	5,462.3	7,058.6	6,950.3	6,067.5	3.6%
Total opex spend ($M)	5,947.2	6,416.6	6,771.0	8,978.2	8,427.3	7,890.2	-7.3%
CAPEX							
No. of contractors (FTEs)	86	490	768	1,108	687	1,116	-82.4%
Payments to contractors ($M)	82.0	252.6	464.4	537.4	351.8	227	-67.5%
Other goods and services purchases ($M)	444.1	638.2	438.3	560.8	1,424.7	764.1	-30.4%
Total capex spend ($M)	526.1	890.8	902.6	1,098.2	1,776.5	991.2	-40.9%
Total business purchases ($M)	6,473.3	7,307.4	7,673.6	10,076.0	10,204.0	8,881.0	-11.4%
COMMUNITY CONTRIBUTIONS							
No. of community organisations supported	997	991	1,298	1,014	912	n.a.	0.6%
Total community contributions ($M)	6.8	9.9	12.3	11.2	16.1	8.3	-31.1%
LOCAL COUNCIL PAYMENTS							
Total local government payments ($M)	46.5	58.6	60.6	59.1	41.4	19.1	-20.6%
STATE GOVERNMENT PAYMENTS							
Total state government payments ($M)	1,700.6	1,290.3	1,323.6	1,141.6	n.a.	n.a.	31.8%

Table E7: Comparison of Survey Results

	Level 2016/17	Level 2015/16	Level 2014/15	Level 2013/14	Level 2012/13	Level 2011/12	Annual % change 2015/16-2016/17
TOTAL SPEND ($M)	10,449.2	10,831.6	11,324.3	13,639.9	12,828.8	10,536.6	-3.5%
TOTAL EMPLOYMENT (FTEs)	22,821	20,990	21,265	21,516	23,483	22,058	8.7%

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Prepared by:

INTRODUCTION

The NSW Minerals Council (NSWMC) commissioned Lawrence Consulting to determine the total direct, indirect and consumption-induced economic benefit to the state economy based on expenditure data provided by 26 exploration and mining companies operating in NSW. This report provides a detailed summary of the level of expenditure into the New South Wales economy by these companies in 2016/17 and the multiplier and consumption-induced effects that are generated by that initial stimulus. The analysis is an update of previous studies completed over the past five years, available to download at www.nswmining.com.au.

While the mining sector[1] makes a significant contribution to the New South Wales and Australian economies, information about the impacts of the sector on regional and metropolitan economies within New South Wales is limited. Impacts on regional and metropolitan areas of New South Wales occur through direct, indirect and consumption-induced effects. There are two key types of direct impacts:

- ***Wages for direct employment of workforce; and***
- ***Expenditure on business goods and services in local and regional economies.***

Business expenditure generates both upstream and downstream ripple effects through the supply chain as local businesses purchase goods and services from other businesses, often through several links in the supply chain. The net effect of subsequent rounds of economic activity in the business supply chain can be categorised as indirect effects. The increased employment generated through the direct effects (resources sector employment) and the indirect effects (business supply chain) generates a number of final consumption-induced effects to support the increased population base.

The focus of this report is to identify the geographical spread of impacts (direct, indirect and consumption-induced) from the mining industry across New South Wales at five geographic scales:

- ***State (the whole area of New South Wales);***
- Regional (represented by 12 former Statistical Divisions in NSW);
- Local (represented by 128 Local Government Areas in NSW);
- State electoral divisions (represented by 93 SEDs in NSW); and
- Commonwealth electoral divisions (represented by 47 CEDs in NSW).

[1] *For these purposes, mining is defined broadly as the ANZSIC industry division and includes mine operation (i.e. operating mines, quarries, or oil and gas wells, as well as mining sites under development) and mining support activities (i.e. businesses that perform mining services on a contract or fee basis, and exploration (except geophysical surveying)).*

METHODOLOGY

Data Collection

The process was initiated in July 2017 when NSWMC distributed an expenditure survey form to 34 exploration and mining companies, which were asked to disclose total operational spending in 2016/17 in the following categories:

- ***Employee salaries and wages (by place of residence) for full-time direct employees, along with the number of apprenticeships and traineeships;***
- ***Goods and services expenditure, including payments made to contractors (including identification of the number of contract FTEs employed on-site) as well as other goods and services providers***;
- ***Voluntary community contributions;***
- ***Local government payments, including council rates and infrastructure charges; and***
- ***State government payments, including royalties, stamp duty, payroll tax and land tax.***

Of the 34 companies surveyed, 26 returned the survey, ***representing the majority of the New South Wales mining sector based on current value of production.*** The data includes both operational expenditure (OPEX) data for current projects and capital expenditure (CAPEX) data from proposed investments currently under development. This data was supplied by the location where the salary was paid (residence of the worker or contractor) and where the community contributions and business expenditures were made by Australia postcode. The companies that provided expenditure data as part of the study are listed in Table 1.

Table 1: Companies Supplying Expenditure Data	
Alkane Resources Limited	*Malabar Coal Limited*
Bengalla Mining Company Pty Ltd	*Newcrest Mining Limited Cadia Valley Operations*
BHP Billiton NSW Energy Coal	*Peabody Energy Australia*
Bloomfield Collieries Pty Ltd	*Perilya Limited*
Centennial Coal Company Limited	*Regis Resources Limited*
CleanTeq Holdings Pty Ltd	*Rio Tinto Coal & Allied Australia*
CMOC Northparkes	*Shenhua Watermark Coal Pty Ltd*
Cristal Mining Australia	*Silver Mines Limited*
Evolution Cowal Gold	*South 32 Illawarra Coal*
Glencore Coal (NSW) Pty Ltd	*Thiess Pty Limited*
Gloucester Resources Limited	*Whitehaven Coal Limited*
Idemitsu Australia Resources Pty Ltd	*Wyong Areas Coal Joint Venture*
Mach Energy Australia Pty Ltd	*Yancoal Australia*

The postcode spend data was then aggregated using geographical concordance files[2] from the Australian Bureau of Statistics and the economic impacts (direct, indirect and consumption-induced impacts) of the survey respondents were analysed at five geographic levels:

- ***State (the whole area of New South Wales);***
- Regional (represented by 12 former Statistical Divisions in NSW);
- Local (represented by 128 Local Government Areas in NSW);
- State electoral divisions (represented by 93 SEDs in NSW); and
- Commonwealth electoral divisions (represented by 47 CEDs in NSW).

[2] *http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1259.0.30.001Main+Features1July%202010?OpenDocument*

Input-Output Modelling

Background

For this study, input-output (I-O) modelling has been used to estimate the sum of direct, indirect and consumption-induced effects of the companies surveyed on different regions of New South Wales. I-O techniques provide a solid approach for taking account of the inter-relationships between the various sectors of the economy in the short-term and hence are an appropriate tool for determining the direct, indirect and induced economic impact of economic stimuli.

Development of I-O Modelling

The I-O technique was developed by Wassily Leontief in the 1930s to describe how impacts in one sector of an economy interacted with other sectors to generate economic changes, with matrix algebra used to perform the complex calculations. More advanced forms of I-O models are computable general equilibrium models, which are used for analysis of larger national economies, but are generally not as applicable for smaller areas. The standard I-O model approach is particularly useful for predicting the impacts of events or projects in an economy, or analysing local or regional level economies (Loveridge 2004).

Outside of the previous analysis of the impact of mining in New South Wales completed in 2011/12 to 2015/16 – and similar studies undertaken by Lawrence Consulting and Central Queensland University in Queensland in recent years on behalf of the Queensland Resources Council and in Western Australia on behalf of the Chamber of Minerals and Energy of Western Australia (CMEWA) based on the same underlying methodology – there have been several studies applying input-output modelling techniques to analyse the contribution of resources industries to economic growth in different countries and regions. Previous modelling directly relevant to this study was carried out by ACIL Tasman in 2007, and reported by the State of Queensland (Department of Mines and Energy) (2007). In that report, the contribution of the mining and minerals processing sector to the Queensland economy, using 2004-05 data, was estimated with the use of I-O analysis and general equilibrium modelling. More recently, the Reserve Bank of Australia completed a study in 2013 that quantified the links from demand for Australia's natural resources to activity in other domestic industries using input-output tables (Rayner and Bishop, 2013).

Rubin and Solomon (1983) used economic base and regional multiplier analysis to estimate the impacts of coal liquification projects on 27 counties in Indiana and Kentucky in the United States. Stilwell et al. (2000) used the technique to estimate the contribution of the mining industry to South Africa over a 22-year period. Bangsund and Leistritz (2007) estimated the economic contribution of the petroleum industry to the state economy of North Dakota in the United States. Fannin et al. (2008) used community impact models to estimate the economic effects of oil and gas production from deepwater leases on growth on a regional area of Louisiana in the United States. Finally,
Leaming (2010) estimated the economic impacts from the copper industry to the Arizona economy in 2009.

I-O models can be used to capture only the indirect impacts that occur through other industry sectors (Type I models), or the indirect plus the consumption-induced effects (Type II models), which have been adopted for the current study. Further, the I-O models used in this study were based on the ABS model of the Australian economy generated from general equilibrium models.

A concept underlying I-O modelling is that an initial economic shock or stimulus can have multiplier effects through a series of successive spending rounds. The size of the economic multiplier in a local or regional area can be summarised in the following way (Jensen and West 2002):

- ***The extent to which project operators purchase inputs from the local or regional economy. Examples of inputs include wages for labour supplied from the local or regional area, and purchases of goods and services. The more that a project operator sources from the local or regional economy, the more money that is directly injected into the economy; and***

- *The extent to which money spent in a local or regional economy is retained within that economy. If there is not much opportunity for people receiving income to spend it on goods and services in their local or regional area, then not as much money will be kept in the local or regional area. Larger and more diverse regional economies tend to be better at keeping expenditures in their economy and not 'losing' it to other regions.*

To generate predictions, the economic contribution of an industry is applied to the relevant industry sectors of the input-output model of a regional economy. The stimulus from economic activity can be traced through the economy in several different ways:

- *The first round effects, or direct effects, are those from the expenditure in purchasing goods and services from other industries;*

- *The second round effects are those from supplying industries increasing their purchases to meet the additional demand. The second and subsequent rounds of purchasing are termed the indirect effects; and*

- *The consumption-induced effects identify the increase in economic activity generated to service the additional employment (and population) generated or sustained through the direct and indirect effects.*

Advantages and Assumptions in I-O Models

Key advantages of using input-output models are the fineness of detail available at a disaggregated industry level, the relative ease of application, particularly for sub-regional levels, and the ability to model effects in a timely manner (Loveridge 2004). However, care has to be taken in its application and interpretation of results. Key assumptions that underpin the application of I-O models are (Stilwell et al. 2000, Department of Mines and Energy 2007):

- *The inputs purchased by each industry are a function of the level of output of that industry. The input function is generally assumed linear and homogenous of degree one (which implies constant returns to scale and no substitution between inputs);*

- *Each commodity (or group of commodities) is supplied by a single industry or sector of production. This implies that there is only one method used to produce each commodity and that each sector has only a single primary output;*

- *The total effect of carrying on several types of production is the sum of the separate effects. This rules out external economies and diseconomies and is known simply as the additivity assumption;*

- *The system is in equilibrium at given prices. This would not be the case in an economic system subject to external influences;*

- *In the static input-output model, there are no capacity constraints so that the supply of each good is perfectly elastic. Each industry can supply whatever quantity is demanded of it and there are no capital restrictions. This assumption would come into play depending upon the magnitude of the changes in quantities demanded, brought about through changes in taxation levels; and*

- *The input-output model is an optimisation model that allocates resources between sectors to their most efficient use.*

Type II models involve additional assumptions about fixed relationships between income and consumption patterns. These factors mean that the results of I-O models should generally be treated as the upper bound of estimates, and that care has to be taken in interpreting the results of very large changes in demand or production.

I-O Model Outcomes

Predictions from I-O models are summarised in terms of multipliers and changes in four key variables:

Output

The output impact measures the increase in gross sales throughout the whole economy by summing all the individual transactions resulting, directly and indirectly, from the economic stimulus.

Income

The income impact measures the additional amount of wages and salaries paid to employees of the industry under consideration and to other industries benefiting from the stimulus to the economy.

Employment

The employment impact measures the combined number of existing jobs sustained and new jobs generated by the stimulus, both directly and indirectly, although allocation between these forms of employment is not separately identified.

Value Added

The value added or Gross Regional Product (GRP) impact measures only the net activity at each stage of production. GRP is defined as the addition of consumption, investment and government expenditure, plus exports of goods and services, minus imports of goods and services for a region. The GRP impacts are the preferred measure for the assessment and contribution of a stimulus to the economy.

I-O techniques provide a solid approach for taking account of the inter-relationships between the various sectors of the economy in the short-term – particularly at the small area and regional level – and hence are an appropriate tool for determining the direct, indirect and induced economic impacts of the NSW mining sector.

Construction of the NSW Regional I-O Models

For the derivation of the regional I-O tables based on the Statistical Divisions (SDs) in New South Wales, a variable interference non-survey technique was applied, involving a formalised non-survey method compilation. This allowed data on direct effects of the companies surveyed to be inserted at any stage of the compilation procedure. This approach is based primarily on the Generation of Regional Input-Output Tables (GRIT) technique as developed by Associate Professor Guy West and Professor Rod Jensen of the University of Queensland (Jensen *et.al.*, 1979), a widely used method of constructing local and regional input-output tables in Australia, America and Europe. The procedure utilises cross-industry location quotients (Flegg and Webber 2000) as well as superior data (including expenditure patterns of within the primary company data) for the regionalisation of the national direct requirements matrix (DRM) or at the elements of other final payments and demand, which are at the core of any I-O table.

In summary, the construction of the local and regional I-O models employed the following steps:

- ***Adjustment to the latest available national I-O table;***
- ***Computation of the regional direct requirement matrix;***
- ***Aggregation of regional sectors (if necessary); and***
- ***Computation of the complete regional I-O table.***

All the necessary data for the regionalisation procedure were collected from the Australian Bureau of Statistics as well as other reliable sources for secondary data such as regional household expenditure patterns, income and productivity measures. The latest available national I-O tables was 2014-15, which consisted of 114 sectors of economic activity, at the 4-digit level, compiled following the industry-technology assumption, product-by-product, with total flows and valued at basic values in current prices.

For estimating the regional I-O tables, and especially in the interpretation of results, relevant limitations of the I-O approach (static, linear production function, no substitution or scale economy effects, infinite elasticity of supply) were taken into consideration. Once the I-O models were generated, predictions of impact were estimated for each regional area of interest in New South Wales using the available data on salary and business expenditure.

The predictions of the I-O models for each SD and LGA were estimated in two separate groups. The first group involved the economic impacts of expenditure on business goods and services (business suppliers), while the second involved economic expenditure of the labour force. Each stimulus group was modelled using expenditure coefficients and household consumption patterns applicable for each region, also taking into account the nature of the expenditure (i.e. operating or capital expenditure). The outputs of the models can be classified into First Round and Indirect Effects, representing industry impacts through the business chain, and Final Consumption-Induced effects, which represent the economic activity needed to support the increased workforce from Direct, First Round and Indirect Effects.

The data collection and the methodology applied in this study are notable in three key aspects:

- ***First, the data collected on actual spending by the resources industry allowed an assessment of impacts by spending in the economy in comparison to the more traditional approach of predicting economic impacts from total revenue changes;***

- ***Second, the collection of primary data by local area allowed a much more accurate assessment of the direct impacts by geographic area than had previously been available; and***

- ***Third, the application of the I-O modelling framework down to the LGA level, when combined with the accuracy of the primary data, meant that relatively accurate models of local impacts from the 25 NSWMC full-member companies surveyed could be generated.***

The outcomes of the data collection and modelling approach meant that the assessment of direct, indirect and consumption-induced effects could be expected to be more detailed and accurate at the LGA level than could be achieved with standard applications of general equilibrium models.

ECONOMIC BENEFITS

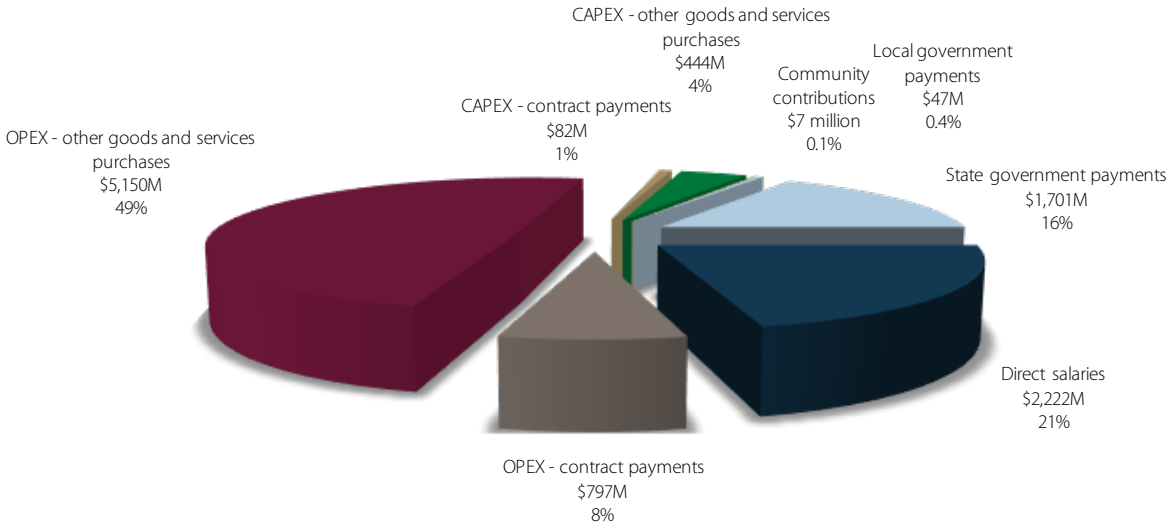
State Impact

Direct Spending

Expenditure data provided by the 26 companies surveyed indicated that these companies **contributed an estimated $10.4 billion** in direct spending to the NSW economy in 2016/17, comprised of:

- **$2.9 billion in wages and salaries** to approximately **22,821 full-time equivalent residing employees** (including contractors); representing an average salary level of $125,817 per annum across the sector;
- **$5.9 billion** in purchases of goods and services from approximately 6,681 local businesses, community contributions and payments to local government (including rates, developer contributions and other payments); and
- **$1.7 billion** in state government payments (including royalties, stamp duty, payroll tax and land tax).

Direct Expenditure by Type for Companies Surveyed
New South Wales ($ million), 2016/17



Further analysis of the workforce employed by the 26 companies surveyed shows that there were 17,061 direct full-time employees, or 74.8% of the total workforce – of which 1,147 direct workers, or 6.7% were female – with another 5,673 contract workers (24.9%) employed for mining operations and 86 FTEs (0.4%) engaged on capital projects.

The direct economic stimulus provided by the 26 mining companies in 2016/17 also extended to other states, with an additional $4.0 billion in direct spending, which combined with the impact in New South Wales for a total impact of $14.5 billion for the whole of Australia, comprised of:

- ***$3.2 billion in wages and salaries to approximately 26,046 full-time residing employees; and***
- ***$11.3 billion in purchases of goods and services from local businesses, government (state and local) and community contributions.***

The total direct spending stimulus to the New South Wales economy by the companies surveyed in 2016/17 can be disaggregated into the following areas:

- ***$2.2 billion in wages and salaries to 17,061 direct employees;***

- ***$5.9 billion in operating expenditure (OPEX), comprised of:***
  - ***$797.0 million in contract payments (including 5,673 contract workers);***
  - ***$5.2 billion in purchases of other goods and services;***

- ***$526.1 million in capital expenditure (CAPEX), comprised of:***
  - ***$82.0 million in contract payments (including 86 contract workers);***
  - ***$444.1 million in purchases of other goods and services;***

- ***$6.8 million in community contributions;***

- ***$46.5 million in local government payments; and***

- ***$1.7 billion*** in state government payments.

The 26 companies surveyed made payments to 6,681 separate businesses in New South Wales in 2016/17 and a further 2,669 businesses across the rest of Australia for a total number of businesses supported of 9,350.

The companies surveyed supported 997 community organisations across New South Wales through voluntary contributions across a number of categories, including:

- ***Health – 118;***
- ***Education – 236;***
- ***Arts – 34;***
- ***Sport – 151;***
- ***Indigenous – 53;***
- ***Environment – 29;***
- ***Social – 363; and***
- ***Other – 12.***

Comparison with results from previous surveys is difficult due to a slight difference in the number of participating companies. Based on whole-of-survey totals, the direct expenditure in NSW of the companies surveyed in 2016/17 decreased by approximately $382.4 million, or 3.5% compared to 2015/16. In contrast, the total number of employees, both direct and contract workers, increased by 1,831 FTEs, or 8.7%.

Table 2: Comparison of Survey Results

	Level 2016/17	Level 2015/16	Level 2014/15	Level 2013/14	Level 2012/13	Level 2011/12	Annual % change 2015/16-2016/17
No. of companies surveyed	26	25	23	22	26	21	4.0%
DIRECT EMPLOYEES							
No. of direct employees (FTEs)	17,061	17,209	17,566	17,517	19,280	13,418	-0.9%
No. of apprenticeships and traineeships (FTEs)	247	261	284	227	418	241	-5.4%
Total wages/salaries paid ($M)	2,222.0	2,165.4	2,254.1	2,351.6	2,567.5	1,627.8	2.6%
BUSINESS PURCHASES							
No. of suppliers	6,681	8,078	7,694	8,202	10,547	n.a.	-17.3%
OPEX							
No. of contractors (FTEs)	5,673	3,291	2,931	2,907	3,515	7,524	72.4%
Payments to contractors ($M)	797.0	1,445.2	1,308.7	1,919.6	1,477.0	1,822.8	-44.9%
Other goods and services purchases ($M)	5,150.2	4,971.5	5,462.3	7,058.6	6,950.3	6,067.5	3.6%
Total opex spend ($M)	5,947.2	6,416.6	6,771.0	8,978.2	8,427.3	7,890.2	-7.3%
CAPEX							
No. of contractors (FTEs)	86	490	768	1,108	687	1,116	-82.4%
Payments to contractors ($M)	82.0	252.6	464.4	537.4	351.8	227	-67.5%
Other goods and services purchases ($M)	444.1	638.2	438.3	560.8	1,424.7	764.1	-30.4%
Total capex spend ($M)	526.1	890.8	902.6	1,098.2	1,776.5	991.2	-40.9%
Total business purchases ($M)	6,473.3	7,307.4	7,673.6	10,076.0	10,204.0	8,881.0	-11.4%
COMMUNITY CONTRIBUTIONS							
No. of community organisations supported	997	991	1,298	1,014	912	n.a.	0.6%
Total community contributions ($M)	6.8	9.9	12.3	11.2	16.1	8.3	-31.1%
LOCAL COUNCIL PAYMENTS							
Total local government payments ($M)	46.5	58.6	60.6	59.1	41.4	19.1	-20.6%
STATE GOVERNMENT PAYMENTS							
Total state government payments ($M)	1,700.6	1,290.3	1,323.6	1,141.6	n.a.	n.a.	31.8%
TOTAL SPEND ($M)	**10,449.2**	**10,831.6**	**11,324.3**	**13,639.9**	**12,828.8**	**10,536.6**	**-3.5%**
TOTAL EMPLOYMENT (FTEs)	**22,821**	**20,990**	**21,265**	**21,516**	**23,483**	**22,058**	**8.7%**

Indirect and Consumption-Induced Spending

The I-O modelling conducted for this project has estimated the direct and indirect (Type I) and consumption-induced (Type II) effects flowing from the business expenditure, community and government contributions of $7.6 billion, and the employment expenditure of $2.9 billion. These impacts have been modelled separately but simultaneously for each region and then aggregated to identify the level of impacts on output, incomes, employment and industry value added in New South Wales. In 2016/17, the $10.4 billion in direct spending in New South Wales by the 26 companies surveyed supported additional combined supply chain and consumption-induced effects of ***107,346 full-time equivalent jobs*** *and* ***$21.9 billion in aggregate spending*** *($6.9 billion in wages and salaries and $15.0 billion in purchases of goods and services).*

Table 3: Economic Impact of Companies Surveyed, 2016/17

	New South Wales	Rest of Australia	Total Australia
Value Added ($M)			
Direct	10,449	4,025	14,474
% of GSP/GDP	1.8%	0.3%	0.8%
Indirect	7,890	2,754	10,644
Total value added (Type I)	18,339	6,779	25,118
% of GSP/GDP	3.2%	0.6%	1.4%
Consumption-induced	4,493	1,622	6,115
Total value added (Type II)	22,832	8,401	31,232
% of GSP/GDP	4.0%	0.7%	1.8%
Employment (FTEs)			
Direct	22,821	3,225	26,046
% of total state/national employment	0.6%	0.0%	0.2%
Indirect	65,899	16,461	82,360
Total employment (Type I)	88,719	19,686	108,406
% of total state/national employment	2.3%	0.2%	0.9%
Consumption-induced	41,447	10,284	51,732
Total employment (Type II)	130,167	29,970	160,137
% of total state/national employment	3.4%	0.4%	1.3%
Business spend (incl. community contributions and govt payments) ($M)			
Direct	7,578	3,704	11,282
Indirect	6,238	2,841	9,078
Total business spend (Type I)	13,816	6,545	20,360
Consumption-induced	8,770	3,049	11,818
Total business spend (Type II)	22,585	9,593	32,179
Wages & salaries ($M)			
Direct	2,871	320	3,192
Indirect	4,329	1,410	5,739
Total wages & salaries (Type I)	7,200	1,731	8,930
Consumption-induced	2,585	746	3,331
Total wages & salaries (Type II)	9,785	2,477	12,262

Note: Consumption-induced impacts seek to measure the change in consumption for all goods and services that arise from an increase in final output from the industry in question.

The results of the I-O modelling allow predictions to be made about the total size of impacts from the surveyed companies' direct expenditure on both the New South Wales and Australian economies. For each key measure, the total impact on the economy is the sum of the direct effects from industry, the indirect effects through the business chain, and the consumption-induced effects. The total economic impact (i.e. direct, indirect and induced, or Type II impact) from the surveyed companies to the New South Wales economy in 2016/17 amounted to:

- ***$25.5 billion in output/turnover (or purchases from supplying businesses);***
- ***$22.8 billion in value added (contribution to gross state product);***
- ***$9.8 billion in income (wages and salaries); and***
- ***130,167 full-time equivalent jobs.***

Estimates of the contribution to Gross State Product (GSP) require an estimate of the initial contribution of the industry in terms of direct value added – defined as compensation of employees plus gross operating surplus plus other taxes less subsidies on production – plus the value added effects generated through the business chain and consumption-induced effects. A precise measure of direct value added for the companies surveyed is not available from the data; an estimated value added of $10.4 billion – equivalent to the sum of input and labour costs, or total direct spending – has instead been adopted.

When business supply and employment effects are considered, the 26 companies surveyed generated approximately $22.8 billion in value added ($10.4 billion in direct effects, and $12.4 billion in supply chain and consumption-induced effects) in 2016/17, and sustained approximately 130,167 jobs (of which 22,821 were in direct employment and 107,346 in additional employment). This means that the activity generated by these companies contributed 4.0% of Gross State Product ($576.7 billion) and 3.4% of total employment (3,832,086 persons) in New South Wales in 2016/17. Under the more conservative Type I scenario (i.e. excluding consumption-induced effects), direct spending by the companies surveyed and flow-on impacts contributed 3.2% to GSP and 2.3% of total state employment.

Over the past six years, the New South Wales minerals and energy sector, as represented through the companies participating in the NSWMC survey, has generated approximately $145.2 billion in value added, including $68.4 billion in direct spending, and has supported an average workforce of approximately 140,688 jobs per annum.

Regional Impact

As specified earlier, the postcode expenditure data provided by companies was aggregated using geographical concordances at the regional (SD) and local (LGA) levels. Surveyed companies' direct expenditure, split across salaries, supplier, local government and community contribution spend, varied considerably across regional areas. The level of employment, and direct expenditure on employees and business purchases in 2016/17 is summarised for the 12 major regions in New South Wales in Table 4.

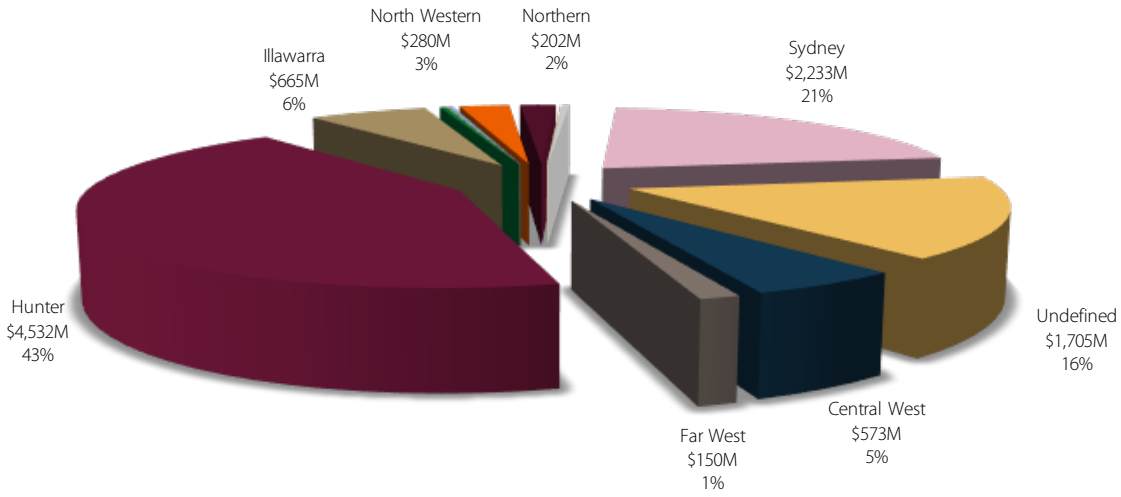
The data illustrates that the largest proportion of direct expenditure from the 26 companies surveyed in New South Wales in 2016/17 was in the Hunter region ($4.5 billion), followed by the Sydney ($2.2 billion), Illawarra ($664.6 million) and Central West ($572.8 million) regions. With regard to employment, the largest share of direct full-time resident employees across New South Wales was also recorded in the Hunter region (12,604 FTEs, or 55.2%), followed by the Central West (3,549 FTEs, or 15.6%), Sydney (1,820 FTEs, or 8.0%) and Illawarra (1,650 FTEs, or 7.2%).

Table 4: Direct Impact of Surveyed Companies by Region, 2016/17

Region	Residing employees	Associated salaries	Business purchases & community contributions	No. of businesses	Total direct spending	% of total direct spend, NSW
	(FTEs)	($M)	($M)		($M)	
Central West	3,549	393.4	179.4	872	572.8	5.5%
Far West	462	51.1	99.0	157	150.1	1.4%
Hunter	12,604	1,720.7	2,811.7	3,070	4,532.5	43.4%
Illawarra	1,650	180.1	484.5	459	664.6	6.4%
Mid-North Coast	42	3.1	27.1	29	30.2	0.3%
Murray	19	2.2	4.3	27	6.5	0.1%
Murrumbidgee	65	3.9	24.0	54	28.0	0.3%
North Western	1,566	197.4	82.2	463	279.6	2.7%
Northern	975	115.4	86.1	385	201.5	1.9%
Richmond-Tweed	33	1.6	2.7	17	4.4	0.0%
South Eastern	23	2.0	38.7	44	40.7	0.4%
Sydney	1,820	198.6	2,034.4	2,349	2,233.0	21.4%
Unallocated[(a)]	14	1.5	3.2	-	1,705.3	16.3%
Total NSW	**22,821**	**2,871.2**	**5,877.4**	**6,681**	**10,449.2**	**100.0%**

Note: (a) Includes state government payments

Direct Stimulus by Region of Companies Surveyed
New South Wales, 2016/17



The economic modelling conducted for this project has estimated the indirect and consumption-induced effects flowing from the two key direct impacts on the economy, i.e. those generated by business supply chain expenditure in each SD and those generated by consumption-induced spending in each region. These impacts have been modelled separately but simultaneously for each region and then aggregated to identify the level of impacts on output, incomes, employment and industry value added, the results of which are outlined in Table 5.

Table 5: Type II Indirect and Consumption-Induced Impacts of Companies Surveyed by Region, 2016/17

Region	Indirect full-time employees (FTEs)	Associated salaries ($M)	Supply of goods and services ($M)	Total indirect value added ($M)
Central West	*8,552*	*323.1*	*710.3*	*687.9*
Far West	*2,965*	*128.2*	*265.6*	*234.4*
Hunter	*50,293*	*2,945.9*	*6,079.4*	*5,113.5*
Illawarra	*10,833*	*557.2*	*1,089.4*	*964.1*
Mid-North Coast	*634*	*22.7*	*51.3*	*50.6*
Murray	*120*	*5.2*	*10.7*	*9.4*
Murrumbidgee	*182*	*7.6*	*17.0*	*16.3*
North Western	*4,148*	*157.0*	*344.7*	*333.8*
Northern	*2,833*	*106.9*	*235.8*	*228.6*
Richmond-Tweed	*75*	*3.8*	*7.4*	*6.6*
South Eastern	*786*	*28.2*	*63.9*	*63.0*
Sydney	*14,895*	*1,196.9*	*3,267.7*	*2,427.7*
Undefined	*11,029*	*1,430.7*	*2,864.2*	*2,246.7*
Total NSW	***107,346***	***6,913.5***	***15,007.4***	***12,382.5***

Table 6 shows that the direct expenditure of the 26 companies surveyed has the highest overall impact in the Hunter region, with estimated total value added of $9.6 billion, meaning these companies contributed 19.1% to gross regional product ($50.5 billion) in 2016/17. The impact in the Hunter region was significantly higher than other regional economies, the next highest of which was Sydney ($4.7 billion in value added) and Illawarra ($1.6 billion). The Far West region recorded the highest proportion of GRP contributed by the companies surveyed (28.0%), followed by the Hunter (19.1%), Central West (8.5%), Illawarra (7.2%) and North Western (6.0%) regions.

Table 6: Total Economic Impact of Companies Surveyed by Region, 2016/17 (Type II)

Region	Total output ($M)	Total estimated value added ($M)	Gross regional product ($M)	Total value added as % of GRP
Central West	1,283.1	1,260.7	14,809.4	8.5%
Far West	415.7	384.5	1,375.5	28.0%
Hunter	10,611.9	9,645.9	50,496.1	19.1%
Illawarra	1,753.9	1,628.6	22,682.5	7.2%
Mid-North Coast	81.5	80.8	13,970.6	0.6%
Murray	17.2	16.0	6,157.3	0.3%
Murrumbidgee	45.0	44.2	11,213.2	0.4%
North Western	624.3	613.4	10,302.9	6.0%
Northern	437.3	430.2	11,253.0	3.8%
Richmond-Tweed	11.8	10.9	10,990.2	0.1%
South Eastern	104.6	103.7	10,956.7	0.9%
Sydney	5,500.7	4,660.7	414,575.4	1.1%
Undefined	4,569.5	3,952.0	-	-
Total NSW	**25,456.6**	**22,831.7**	**576,716.0**	**4.0%**

With regard to employment, the companies surveyed again had the greatest impact on jobs in the Hunter region, supporting 62,897 FTEs, comprising 18.0% of the total regional workforce. The Sydney (16,715 FTEs), Illawarra (12,482 FTEs) and Central West (12,101 FTEs) regions recorded the next highest number of employees.

Table 7: Total Employment Impact of Surveyed Companies by Region, 2016/17 (Type II Impact)

Region	Total direct, indirect and induced employees (FTEs)	Total regional employment (FTEs)	% of total employment
Central West	12,101	98,598	12.3%
Far West	3,427	8,946	38.3%
Hunter	62,897	349,855	18.0%
Illawarra	12,482	200,869	6.2%
Mid-North Coast	676	116,169	0.6%
Murray	139	43,432	0.3%
Murrumbidgee	248	81,793	0.3%
North Western	5,714	79,641	7.2%
Northern	3,808	82,524	4.6%
Richmond-Tweed	107	107,186	0.10%
South Eastern	810	106,438	0.8%
Sydney	16,715	2,556,638	0.7%
Undefined	11,043	-	-
Total NSW	**130,167**	**3,832,086**	**3.4%**

Central West

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $573 million in direct spending through:

- *$393 million in wages and salaries to 3,549 direct full-time employees (including contractors);*
- *$169 million in purchases of goods and services from 872 local businesses (includes contractors);*
- *$1.7 million in contributions to 252 community organisations; and*
- *$8.3 million in local government payments.*

Indirect contribution

This $573 million in direct spending generated:

- *$710 million in additional supply chain goods and services purchases; and*
- *$323 million in wages and salaries associated with 8,552 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$880 million in supplying business purchases;*
- *$717 million in total wages and salaries paid to workers;*
- *$1.3 billion in value added, or 8.5% of total GRP in this region ($14.8 billion); and*
- *12,101 full-time equivalent jobs, or 12.3% of the entire workforce in this region.*

Far West

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $150 million in direct spending through:

- *$51 million in wages and salaries to 462 direct full-time employees (including contractors);*
- *$97 million in purchases of goods and services from 157 local businesses (includes contractors) and contributions to 25 community organisations; and*
- *$1.8 million in local government payments.*

Indirect contribution

This $150 million in direct spending generated:

- *$266 million in additional supply chain goods and services purchases; and*
- *$128 million in wages and salaries associated with 2,965 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$363 million in supplying business purchases;*
- *$179 million in total wages and salaries paid to workers;*
- *$385 million in value added, or 28.0% of total GRP in this region ($1.4 billion); and*
- *3,427 full-time equivalent jobs, or 38.3% of the entire workforce in this region.*

Hunter

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $4.5 billion in direct spending through:

- *$1.7 billion in wages and salaries to 12,604 direct full-time employees (including contractors);*
- *$2.8 billion in purchases of goods and services from 3,070 local businesses (includes contractors);*
- *$2.8 million in contributions to 416 community organisations; and*
- *$17.5 million in local government payments.*

Indirect contribution

This $4.5 billion in direct spending generated:

- *$6.1 billion in additional supply chain goods and services purchases; and*
- *$2.9 billion in wages and salaries associated with 50,293 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$8.9 billion in supplying business purchases;*
- *$4.7 billion in total wages and salaries paid to workers;*
- *$9.6 billion in value added, or 19.1% of total GRP in this region ($50.5 billion); and*
- *62,897 full-time equivalent jobs, or 18.0% of the entire workforce in this region.*

Illawarra

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $665 million in direct spending through:

- *$180 million in wages and salaries to 1,650 direct full-time employees (including contractors);*
- *$483 million in purchases of goods and services from 459 local businesses (includes contractors) and contributions to 35 community organisations; and*
- *$0.8 million in local government payments.*

Indirect contribution

This $665 million in direct spending generated:

- *$1.1 billion in additional supply chain goods and services purchases; and*
- *$557 million in wages and salaries associated with 10,833 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$1.6 billion in supplying business purchases;*
- *$737 million in total wages and salaries paid to workers;*
- *$1.6 billion in value added, or 7.2% of total GRP in this region ($22.7 billion); and*
- *12,482 full-time equivalent jobs, or 6.2% of the entire workforce in this region.*

Mid-North Coast

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $30 million in direct spending through:

- *$3 million in wages and salaries to 42 direct full-time employees (including contractors); and*
- *$27 million in purchases of goods and services from 29 local businesses (includes contractors), community contributions and local government payments.*

Indirect contribution

This $30 million in direct spending generated:

- *$51 million in additional supply chain goods and services purchases; and*
- *$23 million in wages and salaries associated with 634 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$78 million in supplying business purchases;*
- *$26 million in total wages and salaries paid to workers;*
- *$81 million in value added, or 0.6% of total GRP in this region ($14.0 billion); and*
- *676 full-time equivalent jobs, or 0.6% of the entire workforce in this region.*

Murray

Direct contribution

In this region during 2016/17, the 25 companies surveyed contributed $7 million in direct spending through:

- *$2 million in wages and salaries to 19 direct full-time employees (including contractors); and*
- *$4 million in purchases of goods and services from 27 local businesses (includes contractors), community contributions and local government payments.*

Indirect contribution

This $7 million in direct spending generated:

- *$11 million in additional supply chain goods and services purchases; and*
- *$5 million in wages and salaries associated with 120 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$14 million in supplying business purchases;*
- *$7 million in total wages and salaries paid to workers;*
- *$16 million in value added, or 0.3% of total GRP in this region ($6.2 billion); and*
- *139 full-time equivalent jobs, or 0.3% of the entire workforce in this region.*

Murrumbidgee

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $28 million in direct spending through:

- *$4 million in wages and salaries to 65 direct full-time employees (including contractors); and*
- *$24 million in purchases of goods and services from 54 local businesses (includes contractors), community contributions and local government payments.*

Indirect contribution

This $28 million in direct spending generated:

- *$17 million in additional supply chain goods and services purchases; and*
- *$8 million in wages and salaries associated with 182 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$41 million in supplying business purchases;*
- *$12 million in total wages and salaries paid to workers;*
- *$44 million in value added, or 0.4% of total GRP in this region ($11.2 billion); and*
- *248 full-time equivalent jobs, or 0.3% of the entire workforce in this region.*

North Western

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $280 million in direct spending through:

- *$197 million in wages and salaries to 1,566 direct full-time employees (including contractors);*
- *$75 million in purchases of goods and services from 463 local businesses (includes contractors);*
- *$0.6 million in contributions to 95 community organisations; and*
- *$7.0 million in local government payments.*

Indirect contribution

This $280 million in direct spending generated:

- *$345 million in additional supply chain goods and services purchases; and*
- *$157 million in wages and salaries associated with 4,148 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$419 million in supplying business purchases;*
- *$354 million in total wages and salaries paid to workers;*
- *$613 million in value added, or 6.0% of total GRP in this region ($10.3 billion); and*
- *5,714 full-time equivalent jobs, or 7.2% of the entire workforce in this region.*

Northern

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $202 million in direct spending through:

- *$115 million in wages and salaries to 975 direct full-time employees (including contractors);*
- *$77 million in purchases of goods and services from 385 local businesses (includes contractors);*
- *$0.6 million in contributions to 74 community contributions; and*
- *$8.5 million in local government payments.*

Indirect contribution

This $202 million in direct spending generated:

- *$236 million in additional supply chain goods and services purchases; and*
- *$107 million in wages and salaries associated with 2,833 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$313 million in supplying business purchases;*
- *$222 million in total wages and salaries paid to workers;*
- *$430 million in value added, or 3.8% of total GRP in this region ($11.3 billion); and*
- *3,808 full-time equivalent jobs, or 4.6% of the entire workforce in this region.*

Richmond-Tweed

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $4 million in direct spending through:

- ***$2 million in wages and salaries to 33 direct full-time employees (including contractors);***
- ***$3 million in purchases of goods and services from 17 local businesses (includes contractors), community contributions and local government payments.***

Indirect contribution

This $4 million in direct spending generated:

- ***$7 million in additional supply chain goods and services purchases; and***
- ***$4 million in wages and salaries associated with 75 additional jobs supported in this region.***

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- ***$10 million in supplying business purchases;***
- ***$5 million in total wages and salaries paid to workers;***
- ***$11 million in value added, or 0.1% of total GRP in this region ($11.0 billion); and***
- ***107 full-time equivalent jobs, or 0.1% of the entire workforce in this region.***

South Eastern

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $41 million in direct spending through:

- ***$2 million in wages and salaries to 23 direct full-time employees (including contractors);***
- ***$39 million in purchases of goods and services from 44 local businesses (includes contractors), community contributions and local government payments.***

Indirect contribution

This $41 million in direct spending generated:

- ***$64 million in additional supply chain goods and services purchases; and***
- ***$28 million in wages and salaries associated with 786 additional jobs supported in this region.***

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- ***$103 million in supplying business purchases;***
- ***$30 million in total wages and salaries paid to workers;***
- ***$104 million in value added, or 0.9% of total GRP in this region ($11.0 billion); and***
- ***810 full-time equivalent jobs, or 0.8% of the entire workforce in this region.***

Sydney

Direct contribution

In this region during 2016/17, the 26 companies surveyed contributed $2.2 billion in direct spending through:

- *$199 million in wages and salaries to 1,820 direct full-time employees (including contractors);*
- *$2.0 billion in purchases of goods and services from 2,349 local businesses (includes contractors);*
- *$0.6 million in contributions to 95 community organisations; and*
- *$1.7 million in local government payments.*

Indirect contribution

This $2.2 billion in direct spending generated:

- *$3.3 billion in additional supply chain goods and services purchases; and*
- *$1.2 billion in wages and salaries associated with 14,895 additional jobs supported in this region.*

Total contribution

The total economic contribution in this region (direct, indirect and induced) during 2016/17 from the 26 companies surveyed amounted to:

- *$5.3 billion in supplying business purchases;*
- *$1.4 billion in total wages and salaries paid to workers;*
- *$4.7 billion in value added, or 1.1% of total GRP in this region ($414.6 billion); and*
- *16,715 full-time equivalent jobs, or 0.7% of the entire workforce in this region.*

Local Impact

Direct Spending

Similar to SDs or regions, the expenditure data provided by the 26 companies surveyed was aggregated using geographical concordances at the local government area (LGA) level. As expected, companies' expenditures, split across salaries supplier and community contribution expenditure, varied considerably across LGAs. The level of employment, direct expenditure on employees and business supply chain purchases and community and local government contributions is summarised for the 128 LGAs in New South Wales in Appendix A.

Table 8 shows the distribution of total direct spending (i.e. salaries, business purchases, local council and community contributions) from the surveyed companies across New South Wales to the top 20 expenditure LGAs. Newcastle LGA recorded the largest share of direct expenditure in 2016/17 ($1,149 million), followed by Sydney ($881 million), Maitland ($868 million), Singleton ($845 million) and Cessnock ($597 million).

Direct resident employment and associated salary expenditures were greatest in the Hunter Valley region, specifically Singleton LGA ($320 million and 2,458 FTEs), followed by the Maitland ($310 million and 2,396 FTEs), Lake Macquarie ($208 million and 1,848 FTEs), Newcastle ($189 million and 1,673 FTEs) and Cessnock ($221 million and 1,616 FTEs) LGAs.

Table 8: Direct Impact of Surveyed Companies, Top 20 LGAs by Expenditure, 2016/17

Local government area	Residing employees (FTEs)	Associated salaries ($M)	Business purchases and community contributions ($M)	Total direct spending ($M)
Newcastle (C)	1,673	189	959	1,149
Sydney (C)	136	15	866	881
Maitland (C)	2,396	310	558	868
Singleton (A)	2,458	320	525	845
Cessnock (C)	1,616	221	377	597
Muswellbrook (A)	1,383	187	256	444
Wollongong (C)	1,118	124	307	431
Lake Macquarie (C)	1,848	208	178	387
Parramatta (C)	240	3	372	375
Mid-Western Regional (A)	1,509	195	75	270
Orange (C)	757	96	103	199
Wingecarribee (A)	107	13	154	168
Broken Hill (C)	462	51	99	150
Lithgow (C)	1,330	97	51	147
Gunnedah (A)	506	60	46	106
Central Coast (C)	345	35	70	105
Upper Hunter Shire (A)	604	82	11	93
Camden (A)	137	17	74	91
Port Stephens (A)	335	46	45	91
North Sydney (A)	31	2	74	76

Indirect and Consumption-Induced Spending

The I-O modelling estimated the indirect and consumption-induced effects flowing from business supply chain expenditure and consumption spending in each LGA. These impacts have been modelled separately and then aggregated to identify the level of Type II impacts on output, incomes, employment and industry value added for each region. The I-O model allowed for spending leakages to imports in both the first and subsequent rounds of economic activity.

Modelling consumption-induced impacts is problematic for smaller shires with limited economic structures because only a subset of goods and services are available. Smaller and specialised mining LGAs tend to have larger expenditure leakages, typically to the nearest large regional centre. To incorporate this into the modelling, a further correction factor based on extensive research of retail expenditure patterns in regional areas conducted by Lawrence Consulting has been applied for LGAs, as shown in Table 9.

Table 9: Rates of Adjustment for Local Consumption Expenditure by LGA Population Size

Population of LGA	Rate of consumption expenditure in LGA
0 – 2,000	40%
2,000 – 5,000	46.7%
5,000 – 10,000	53.3%
10,000 – 30,000	73.3%
30,000 – 50,000	80%
50,000 – 100,000	86.7%
Over 100,000	100%

The total economic impact (i.e. both Type I and Type II model scenarios) of the 26 companies' direct spending for each LGA across New South Wales in 2016/17 is contained in Appendix B, with a summary of the top 20 LGAs by Type II value added provided in Table 10. The results show that the 26 surveyed companies' expenditure again has the highest overall impact in the Newcastle LGA, with total estimated value added of $2.4 billion, followed by Maitland ($1.8 billion), Singleton ($1.8 billion), Cessnock ($1.3 billion) and Wollongong ($1.1 billion).

With regard to employment, the surveyed companies again had the greatest impact on jobs in the Newcastle LGA, with 13,585 FTEs, followed by the Maitland (11,925 FTEs) and Singleton (11,862 FTEs) LGAs, whilst the regions where the impact of the 26 companies' direct spending accounted for the largest share of employment were Singleton (94.4%), Muswellbrook (78.3%) and Mid-Western Regional (46.8%).

Table 10: Total Economic Impact of Surveyed Companies, Top 20 LGAs by Value Added, 2016/17 (Type II Impact)

Local government area	Total estimated value added ($M)	% of gross regional product (GRP)	Total employees (FTEs)	% of total employment
Newcastle (C)	2,429	15.7%	13,585	16.0%
Maitland (C)	1,839	48.3%	11,925	30.5%
Singleton (A)	1,803	28.6%	11,862	94.4%
Cessnock (C)	1,274	54.2%	8,234	32.8%
Wollongong (C)	1,077	8.5%	8,393	8.4%
Muswellbrook (A)	947	25.3%	6,389	78.3%
Sydney (C)	881	0.8%	137	0.1%
Lake Macquarie (C)	825	8.6%	6,334	6.4%
Mid-Western Regional (A)	590	26.9%	5,491	46.8%
Orange (C)	471	15.5%	4,152	19.4%
Broken Hill (C)	384	31.4%	3,427	43.0%
Wingecarribee (A)	376	15.1%	2,379	11.6%
Parramatta (C)	375	1.7%	240	0.2%
Lithgow (C)	324	16.6%	3,529	35.3%
Gunnedah (A)	226	29.5%	1,989	35.8%
Upper Hunter Shire (A)	201	21.0%	1,792	24.4%
Port Stephens (A)	193	5.4%	1,378	4.3%
Parkes (A)	127	11.3%	1,280	18.0%
Central Coast (C)	105	0.7%	347	0.2%
Narrabri (A)	103	8.6%	896	14.1%

CONCLUSION

This report contains the outcomes of two key pieces of analysis. The first is the collection of primary data by the NSW Minerals Council (NSWMC) that identifies the direct impact of 26 exploration and mining companies by local and regional areas in New South Wales. The second is the conduct of I-O modelling that identifies the flow-on effects through the economy at a State, Regional, Local Government Authority and State and Federal electoral boundary levels.

The results of the analysis demonstrate that incomes and expenditures from the 26 companies surveyed are widely distributed across the state generating significant flow-on effects, and that traditional economic techniques understate the true contribution of the mining sector as they do not attribute the output from related sectors such as construction, rail transport, utilities, professional services, manufacturing and contract workers.

The analysis identifies that the 26 companies surveyed contributed an estimated $10.4 billion in direct spending to the state economy in 2016/17, comprised of:

- **$2.9 billion in wages and salaries** to approximately **22,821 full-time equivalent residing employees** (including contractors);

- **$5.9 billion** in purchases of goods and services from approximately 6,681 local businesses, community contributions and payments to local government (including rates, developer contributions and other payments); and

- **$1.7 billion** in state government payments (including royalties, stamp duty, payroll tax and land tax).

Of the total workforce employed by the 26 companies surveyed, 17,061 were direct full-time employees, or 74.8% of the total workforce – of which 1,147 direct workers were female – with another 5,673 contract workers (24.9%) employed for mining operations and 86 FTEs (0.4%) engaged on capital projects.

Compared to 2015/16, direct spending in NSW of the companies surveyed in 2016/17 decreased by 3.5%, although in contrast, the total number of employees, both direct and contract workers, increased by 1,831 FTEs, or 8.7%.

The economic stimulus provided by the 26 mining companies in 2016/17 also extended to other states, with an additional $4.0 billion in direct spending, which combined with the impact in New South Wales for a total impact of $14.5 billion for the whole of Australia, comprised of:

- ***$3.2 billion in wages and salaries to approximately 26,046 full-time residing employees; and***

- ***$11.3 billion in purchases of goods and services from local businesses, government (state and local) and community contributions.***

The total impact of the $10.4 billion in direct spending by companies surveyed, measured through supply chain and consumption spending effects, amounted to an estimated 4.0% of Gross State Product and 3.4% of employment in New South Wales in 2016/17. If a more conservative approach excluding consumption-induced effects is adopted, direct spending by the companies surveyed and flow-on impacts would still contribute 3.2% to GSP and 2.3% of total state employment.

Over the past six years during which the annual NSWMC survey of member companies has been conducted, the New South Wales minerals and energy sector has generated approximately $145.2 billion in value added, including $68.4 billion in direct spending, and has supported an average workforce of approximately 140,688 jobs per annum.

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APPENDIX A: DIRECT IMPACTS BY LGA

Table A1: Direct Impacts of Spending by Companies Surveyed by LGA, 2016/17

Local government area	Residing employees (FTEs)	Associated salaries ($M)	Business purchases and community contributions ($M)	Total direct spending ($M)	No. of businesses directly supported
Albury (C)	1	0.1	0.2	0.2	5
Armidale Regional (A)	3	0.2	1.1	1.3	11
Ballina (A)	6	0.2	0.7	0.8	3
Balranald (A)	0	0.0	0.0	0.0	5
Bathurst Regional (A)	243	28.3	9.4	37.7	73
Bayside (A)	11	1.5	30.2	31.8	62
Bega Valley (A)	4	0.4	0.3	0.7	3
Bellingen (A)	2	0.3	0.0	0.3	0
Berrigan (A)	0	0.0	0.0	0.0	0
Blacktown (C)	83	2.9	61.5	64.3	138
Bland (A)	226	15.1	18.6	33.7	98
Blayney (A)	148	18.1	5.0	23.1	50
Blue Mountains (C)	101	10.6	1.5	12.1	25
Bogan (A)	1	0.1	0.0	0.1	0
Bourke (A)	0	0.0	0.0	0.0	1
Brewarrina (A)	0	0.0	0.0	0.0	0
Broken Hill (C)	462	51.1	99.0	150.1	156
Burwood (A)	1	0.2	0.2	0.5	5
Byron (A)	3	0.3	0.3	0.6	2
Cabonne (A)	126	14.6	15.0	29.6	33
Camden (A)	137	17.1	74.3	91.3	46
Campbelltown (C) (NSW)	134	13.3	44.9	58.2	73
Canada Bay (A)	1	0.0	2.4	2.4	19
Canterbury-Bankstown (A)	27	1.8	66.8	68.6	81
Carrathool (A)	2	0.1	0.0	0.2	0
Central Coast (C) (NSW)	345	35.0	69.9	104.9	131
Central Darling (A)	0	0.0	0.0	0.0	1
Cessnock (C)	1,616	220.8	376.6	597.5	193
Clarence Valley (A)	12	0.6	0.1	0.7	2
Cobar (A)	6	0.4	0.4	0.8	10
Coffs Harbour (C)	8	0.5	3.5	4.1	5
Coolamon (A)	4	0.3	0.4	0.7	1
Coonamble (A)	2	0.2	0.0	0.2	0
Cootamundra-Gundagai (A)	3	0.2	0.0	0.2	1
Cowra (A)	12	1.0	0.7	1.7	9
Cumberland (A)	10	0.7	35.4	36.1	66
Dubbo Regional (A)	118	10.5	9.2	19.7	138
Dungog (A)	135	18.0	6.4	24.3	26
Edward River (A)	0	0.0	0.0	0.0	1
Eurobodalla (A)	3	0.3	0.2	0.5	2
Fairfield (C)	37	2.7	66.5	69.2	108
Federation (A)	0	0.0	0.0	0.0	1
Forbes (A)	100	7.7	3.0	10.7	43
Georges River (A)	16	0.9	1.3	2.2	26
Gilgandra (A)	1	0.1	0.0	0.1	0
Glen Innes Severn (A)	0	0.0	0.0	0.0	0
Goulburn Mulwaree (A)	5	0.4	5.0	5.4	11
Greater Hume Shire (A)	0	0.0	0.1	0.1	1

Table A1: Direct Impacts of Spending by Companies Surveyed by LGA, 2016/17

Local government area	Residing employees (FTEs)	Associated salaries ($M)	Business purchases and community contributions ($M)	Total direct spending ($M)	No. of businesses directly supported
Griffith (C)	5	0.3	1.0	1.4	10
Gunnedah (A)	506	60.2	46.1	106.3	164
Gwydir (A)	16	0.9	0.7	1.6	2
Hawkesbury (C)	14	1.0	2.2	3.3	18
Hay (A)	0	0.0	0.0	0.0	0
Hilltops (A)	6	0.5	1.6	2.0	13
Hornsby (A)	20	2.2	4.3	6.4	58
Hunters Hill (A)	2	2.4	0.9	3.4	6
Inner West (A)	21	3.1	6.0	9.2	35
Inverell (A)	13	0.6	3.0	3.6	2
Junee (A)	0	0.0	0.2	0.2	2
Kempsey (A)	2	0.3	2.9	3.2	3
Kiama (A)	81	8.8	1.7	10.6	13
Ku-ring-gai (A)	20	4.8	32.2	37.0	29
Kyogle (A)	0	0.0	0.0	0.0	0
Lachlan (A)	31	2.0	3.8	5.8	22
Lake Macquarie (C)	1,848	208.4	178.1	386.5	508
Lane Cove (A)	3	1.0	4.6	5.6	27
Leeton (A)	7	0.5	3.6	4.2	9
Lismore (C)	3	0.2	0.3	0.5	5
Lithgow (C)	1,330	96.6	50.6	147.2	165
Liverpool (C)	6	0.6	24.9	25.5	41
Liverpool Plains (A)	52	6.2	2.7	8.9	26
Lockhart (A)	0	0.0	0.1	0.1	1
Maitland (C)	2,396	310.0	557.9	867.8	491
Mid-Coast (A)	157	18.7	15.9	34.6	93
Mid-Western Regional (A)	1,509	194.8	75.3	270.1	334
Moree Plains (A)	4	0.4	0.1	0.5	0
Mosman (A)	1	0.1	0.1	0.3	8
Murray River (A)	2	0.3	0.0	0.3	0
Murrumbidgee (A)	2	0.2	0.0	0.2	0
Muswellbrook (A)	1,383	187.5	256.3	443.8	331
Nambucca (A)	2	0.2	0.0	0.2	2
Narrabri (A)	232	29.3	20.1	49.4	87
Narrandera (A)	3	0.2	0.5	0.6	0
Narromine (A)	18	1.2	0.6	1.8	12
Newcastle (C)	1,673	189.4	959.5	1,148.9	745
North Sydney (A)	31	1.7	74.3	76.0	106
Northern Beaches (A)	44	4.4	12.8	17.2	89
Oberon (A)	20	3.0	4.2	7.2	4
Orange (C)	757	95.9	102.9	198.7	188
Parkes (A)	426	42.0	16.3	58.2	143
Parramatta (C)	240	2.5	372.4	375.0	190
Penrith (C)	21	1.9	26.7	28.6	44
Port Macquarie-Hastings (A)	16	1.2	20.6	21.8	17
Port Stephens (A)	335	46.3	44.6	90.9	77
Queanbeyan-Palerang Regional (A)	0	0.0	28.6	28.6	10
Randwick (C)	23	2.6	50.4	53.0	17
Richmond Valley (A)	5	0.4	1.0	1.3	4
Ryde (C)	32	5.9	49.1	55.0	114
Shellharbour (C)	300	30.4	5.2	35.7	24

Table A1: Direct Impacts of Spending by Companies Surveyed by LGA, 2016/17

Local government area	Residing employees (FTEs)	Associated salaries ($M)	Business purchases and community contributions ($M)	Total direct spending ($M)	No. of businesses directly supported
Shoalhaven (C)	44	3.2	16.3	19.5	20
Singleton (A)	2,458	319.8	525.5	845.3	532
Snowy Monaro Regional (A)	2	0.2	0.6	0.8	1
Snowy Valleys (A)	1	0.1	0.2	0.3	2
Strathfield (A)	1	0.1	1.7	1.8	12
Sutherland Shire (A)	52	3.7	8.8	12.5	83
Sydney (C)	136	14.7	866.5	881.1	440
Tamworth Regional (A)	146	17.0	11.5	28.5	88
Temora (A)	9	0.6	0.4	1.0	3
Tenterfield (A)	0	0.0	0.0	0.0	0
The Hills Shire (A)	16	3.4	13.2	16.6	68
Tweed (A)	16	0.7	0.3	1.0	3
Upper Hunter Shire (A)	604	81.7	11.0	92.8	75
Upper Lachlan Shire (A)	2	0.1	0.3	0.4	3
Uralla (A)	1	0.0	0.7	0.7	2
Wagga Wagga (C)	30	1.4	17.6	19.0	23
Walcha (A)	2	0.3	0.4	0.6	1
Walgett (A)	6	0.8	0.0	0.8	0
Warren (A)	2	0.2	0.1	0.4	1
Warrumbungle Shire (A)	27	3.1	1.3	4.5	9
Waverley (A)	4	0.6	0.6	1.2	12
Weddin (A)	3	0.3	0.0	0.3	2
Wentworth (A)	16	1.9	4.0	5.9	14
Willoughby (C)	15	2.2	26.9	29.1	69
Wingecarribee (A)	107	13.1	154.5	167.6	40
Wollondilly (A)	210	26.3	26.3	52.6	94
Wollongong (C)	1,118	124.2	307.0	431.2	362
Woollahra (A)	6	0.7	0.5	1.1	8
Yass Valley (A)	1	0.1	2.2	2.3	1

APPENDIX B: TOTAL ECONOMIC IMPACTS BY LGA

Table B1: Estimated Total Economic Impacts of Spending by Companies Surveyed by LGA (Type II Impact)

Local government area	Total estimated value added ($M)	% of gross regional product (GRP)	Total employees (FTEs)	% of total regional employment
Albury (C)	0.5	0.0%	4	0.0%
Armidale Regional (A)	3.4	0.2%	29	0.2%
Ballina (A)	2.0	0.1%	19	0.1%
Balranald (A)	0.0	0.0%	0	0.0%
Bathurst Regional (A)	81.2	2.8%	783	3.5%
Bayside (A)	31.8	0.1%	11	0.0%
Bega Valley (A)	1.5	0.1%	14	0.1%
Bellingen (A)	0.5	0.1%	5	0.1%
Berrigan (A)	0.0	0.0%	0	0.0%
Blacktown (C)	64.3	0.4%	83	0.1%
Bland (A)	80.1	15.9%	804	25.6%
Blayney (A)	49.5	7.7%	477	12.5%
Blue Mountains (C)	12.1	0.5%	101	0.3%
Bogan (A)	0.3	0.1%	3	0.2%
Bourke (A)	0.0	0.0%	0	0.0%
Brewarrina (A)	0.0	0.0%	0	0.0%
Broken Hill (C)	384.5	31.4%	3,427	43.0%
Burwood (A)	0.5	0.0%	1	0.0%
Byron (A)	1.6	0.1%	15	0.1%
Cabonne (A)	67.6	4.0%	599	8.2%
Camden (A)	91.3	2.7%	137	0.3%
Campbelltown (C)	58.3	0.8%	135	0.2%
Canada Bay (A)	2.4	0.0%	1	0.0%
Canterbury-Bankstown (A)	68.6	0.4%	27	0.0%
Carrathool (A)	0.3	0.1%	4	0.2%
Central Coast (C)	105.2	0.7%	347	0.2%
Central Darling (A)	0.0	0.0%	0	0.0%
Cessnock (C)	1,274.2	54.2%	8,234	32.8%
Clarence Valley (A)	1.5	0.1%	22	0.1%
Cobar (A)	1.9	0.2%	20	0.8%
Coffs Harbour (C)	10.8	0.2%	93	0.3%
Coolamon (A)	1.3	0.5%	11	0.5%
Coonamble (A)	0.4	0.1%	5	0.3%
Cootamundra-Gundagai (A)	0.4	0.1%	5	0.1%
Cowra (A)	3.4	0.5%	33	0.6%
Cumberland (A)	36.1	0.2%	10	0.0%
Dubbo Regional (A)	45.0	1.4%	433	1.6%
Dungog (A)	52.5	11.6%	435	10.0%
Edward River (A)	0.0	0.0%	0	0.0%
Eurobodalla (A)	1.1	0.1%	11	0.1%
Fairfield (C)	69.2	0.8%	37	0.0%
Federation (A)	0.0	0.0%	0	0.0%
Forbes (A)	23.6	3.8%	260	5.6%
Georges River (A)	2.2	0.0%	16	0.0%
Gilgandra (A)	0.2	0.1%	3	0.1%
Glen Innes Severn (A)	0.0	0.0%	0	0.0%
Goulburn Mulwaree (A)	8.1	0.5%	36	0.3%
Greater Hume Shire (A)	0.1	0.0%	1	0.0%

Table B1: Estimated Total Economic Impacts of Spending by Companies Surveyed by LGA (Type II Impact)

Local government area	Total estimated value added ($M)	% of gross regional product (GRP)	Total employees (FTEs)	% of total regional employment
Griffith (C)	2.1	0.1%	13	0.1%
Gunnedah (A)	225.9	29.5%	1,989	35.8%
Gwydir (A)	3.6	1.4%	42	1.9%
Hawkesbury (C)	3.3	0.1%	14	0.0%
Hay (A)	0.0	0.0%	0	0.0%
Hilltops (A)	5.3	0.5%	47	0.6%
Hornsby (A)	6.4	0.1%	20	0.0%
Hunters Hill (A)	3.4	0.4%	2	0.0%
Inner West (A)	9.2	0.1%	21	0.0%
Inverell (A)	9.1	1.1%	81	1.2%
Junee (A)	0.3	0.1%	2	0.1%
Kempsey (A)	8.6	0.6%	69	0.6%
Kiama (A)	29.6	3.4%	307	2.8%
Ku-ring-gai (A)	37.0	0.7%	20	0.0%
Kyogle (A)	0.1	0.0%	1	0.0%
Lachlan (A)	14.4	3.4%	139	4.4%
Lake Macquarie (C)	824.6	8.6%	6,334	6.4%
Lane Cove (A)	5.6	0.2%	3	0.0%
Leeton (A)	6.6	0.9%	34	0.6%
Lismore (C)	1.4	0.1%	12	0.1%
Lithgow (C)	324.1	16.6%	3,529	35.3%
Liverpool (C)	25.5	0.3%	6	0.0%
Liverpool Plains (A)	19.5	3.7%	184	5.6%
Lockhart (A)	0.1	0.1%	0	0.0%
Maitland (C)	1,839.3	48.3%	11,925	30.5%
Mid-Coast (A)	74.2	1.7%	563	1.5%
Mid-Western Regional (A)	590.5	26.9%	5,491	46.8%
Moree Plains (A)	1.0	0.1%	10	0.2%
Mosman (A)	0.3	0.0%	1	0.0%
Murray River (A)	1.2	0.2%	14	0.3%
Murrumbidgee (A)	0.4	0.1%	4	0.2%
Muswellbrook (A)	947.5	25.3%	6,389	78.3%
Nambucca (A)	0.4	0.1%	5	0.1%
Narrabri (A)	103.2	8.6%	896	14.1%
Narrandera (A)	1.0	0.2%	7	0.3%
Narromine (A)	3.6	1.0%	41	1.2%
Newcastle (C)	2,429.0	15.7%	13,585	16.0%
North Sydney (A)	76.0	0.4%	31	0.1%
Northern Beaches (A)	17.2	0.1%	44	0.0%
Oberon (A)	17.5	4.7%	149	5.2%
Orange (C)	470.9	15.5%	4,152	19.4%
Parkes (A)	127.0	11.3%	1,280	18.0%
Parramatta (C)	375.0	1.7%	240	0.2%
Penrith (C)	28.6	0.3%	21	0.0%
Port Macquarie-Hastings (A)	59.0	1.5%	482	1.4%
Port Stephens (A)	193.3	5.4%	1,378	4.3%
Queanbeyan-Palerang Regional (A)	66.3	2.8%	472	1.4%
Randwick (C)	53.0	0.8%	23	0.0%
Richmond Valley (A)	3.1	0.4%	25	0.3%
Ryde (C)	55.0	0.4%	32	0.1%
Shellharbour (C)	100.7	4.6%	1,073	3.2%
Shoalhaven (C)	45.2	1.0%	327	0.9%
Singleton (A)	1,802.6	28.6%	11,862	94.4%
Snowy Monaro Regional (A)	2.1	0.1%	18	0.2%

Table B1: Estimated Total Economic Impacts of Spending by Companies Surveyed by LGA (Type II Impact)

Local government area	Total estimated value added ($M)	% of gross regional product (GRP)	Total employees (FTEs)	% of total regional employment
Snowy Valleys (A)	0.5	0.0%	3	0.0%
Strathfield (A)	1.8	0.0%	1	0.0%
Sutherland Shire (A)	12.5	0.1%	52	0.0%
Sydney (C)	881.3	0.8%	137	0.1%
Tamworth Regional (A)	61.0	1.6%	549	2.0%
Temora (A)	2.0	0.4%	20	0.7%
Tenterfield (A)	0.0	0.0%	0	0.0%
The Hills Shire (A)	16.6	0.2%	16	0.0%
Tweed (A)	2.8	0.1%	36	0.1%
Upper Hunter Shire (A)	201.1	21.0%	1,792	24.4%
Upper Lachlan Shire (A)	0.7	0.2%	5	0.1%
Uralla (A)	1.9	0.9%	16	0.5%
Wagga Wagga (C)	29.3	0.7%	145	0.4%
Walcha (A)	1.5	0.8%	13	0.9%
Walgett (A)	1.6	0.4%	16	0.6%
Warren (A)	0.7	0.3%	6	0.4%
Warrumbungle Shire (A)	10.0	1.9%	96	2.2%
Waverley (A)	1.2	0.0%	4	0.0%
Weddin (A)	0.6	0.3%	7	0.4%
Wentworth (A)	14.0	2.7%	120	4.8%
Willoughby (C)	29.1	0.3%	15	0.0%
Wingecarribee (A)	376.2	15.1%	2,379	11.6%
Wollondilly (A)	54.3	2.9%	218	0.9%
Wollongong (C)	1,076.9	8.5%	8,393	8.4%
Woollahra (A)	1.1	0.0%	6	0.0%
Yass Valley (A)	6.2	1.0%	50	0.6%

APPENDIX C: DIRECT IMPACTS BY STATE ELECTORATE

Table C1: Direct Impacts of Spending by Companies Surveyed by SED (Type II Impact)

State electoral division	Residing employees (FTEs)	Associated salaries ($M)	Business purchases and community contributions ($M)	Total direct spending ($M)	No. of businesses directly supported
Albury	1	0.1	0.2	0.3	7
Auburn	3	0.2	40.0	40.2	89
Ballina	9	0.5	1.0	1.5	5
Balmain	13	1.2	0.7	1.8	16
Bankstown	1	0.1	47.4	47.5	27
Barwon	785	88.9	127.9	216.8	292
Bathurst	1,615	133.2	62.3	195.4	258
Baulkham Hills	9	0.9	9.2	10.1	35
Bega	7	0.7	0.5	1.2	4
Blacktown	19	0.6	38.4	39.0	56
Blue Mountains	101	10.6	1.2	11.8	21
Cabramatta	1	0.1	2.5	2.6	4
Camden	143	17.8	74.4	92.2	48
Campbelltown	40	3.9	24.8	28.7	17
Canterbury	5	0.1	0.2	0.3	5
Castle Hill	7	2.0	4.5	6.5	31
Cessnock	1,963	267.3	423.1	690.4	300
Charlestown	500	55.2	77.9	133.0	178
Clarence	17	0.8	1.2	2.0	6
Coffs Harbour	8	0.5	3.5	4.1	5
Coogee	5	0.6	0.7	1.3	12
Cootamundra	265	18.1	22.1	40.2	129
Cronulla	19	1.0	2.5	3.5	41
Davidson	15	3.0	8.0	11.0	26
Drummoyne	1	0.0	2.3	2.3	18
Dubbo	1,462	185.0	77.0	262.0	429
East Hills	21	1.3	18.8	20.1	39
Epping	7	0.7	1.7	2.5	14
Fairfield	18	1.2	44.6	45.7	48
Gosford	27	3.2	17.3	20.5	28
Goulburn	80	5.1	153.6	158.7	36
Granville	19	0.2	26.6	26.8	22
Hawkesbury	15	1.5	2.5	4.0	23
Heathcote	74	6.9	5.8	12.7	39
Heffron	16	1.2	15.0	16.2	69
Holsworthy	4	0.4	16.0	16.4	26
Hornsby	14	1.7	2.6	4.2	41
Keira	518	58.7	50.3	109.0	97
Kiama	195	19.4	16.8	36.3	31
Kogarah	8	0.4	0.5	0.9	14
Ku-ring-gai	13	3.3	26.8	30.1	22
Lake Macquarie	860	86.8	71.0	157.8	211
Lakemba	0	0.0	0.5	0.5	10
Lane Cove	15	9.2	24.4	33.6	73
Lismore	11	0.4	0.3	0.8	5
Liverpool	1	0.1	7.0	7.1	12

Table C1: Direct Impacts of Spending by Companies Surveyed by SED (Type II Impact)

State electoral division	Residing employees (FTEs)	Associated salaries ($M)	Business purchases and community contributions ($M)	Total direct spending ($M)	No. of businesses directly supported
Londonderry	9	0.6	5.7	6.4	11
Macquarie Fields	95	3.7	27.5	31.3	60
Maitland	2,391	309.2	557.8	867.0	490
Manly	13	1.4	0.6	2.0	10
Maroubra	20	1.6	71.7	73.2	28
Miranda	19	1.2	2.3	3.5	17
Monaro	2	0.2	29.2	29.4	12
Mount Druitt	55	0.2	4.5	4.7	24
Mulgoa	5	0.6	5.8	6.4	9
Murray	34	3.5	8.7	12.1	39
Myall Lakes	45	4.7	3.4	8.1	22
Newcastle	1,081	85.9	760.5	846.3	541
Newtown	20	1.6	5.3	6.9	24
North Shore	30	1.3	71.4	72.7	106
Northern Tablelands	37	2.1	5.6	7.7	18
Oatley	8	0.5	0.8	1.3	14
Orange	1,411	158.3	139.2	297.5	407
Oxley	12	1.0	19.2	20.3	11
Parramatta	217	0.9	331.6	332.6	102
Penrith	9	0.9	16.7	17.6	32
Pittwater	11	0.1	3.5	3.6	31
Port Macquarie	14	1.4	4.3	5.7	12
Port Stephens	347	48.7	52.8	101.6	86
Prospect	25	1.2	32.7	33.8	83
Riverstone	1	0.1	1.6	1.6	4
Rockdale	2	0.3	0.4	0.7	9
Ryde	24	1.4	37.2	38.7	84
Seven Hills	7	0.6	14.4	15.0	62
Shellharbour	354	36.1	6.8	42.9	30
South Coast	18	1.8	0.7	2.5	6
Strathfield	3	0.5	2.0	2.5	18
Summer Hill	4	0.8	0.7	1.4	11
Swansea	358	46.5	12.0	58.5	55
Sydney	110	12.9	861.0	873.9	393
Tamworth	664	78.8	58.9	137.7	262
Terrigal	28	3.7	5.7	9.5	17
The Entrance	48	6.3	18.2	24.5	36
Tweed	8	0.5	0.3	0.8	3
Upper Hunter	4,642	614.3	779.9	1,394.2	1,027
Vaucluse	8	1.1	0.7	1.8	11
Wagga Wagga	31	1.6	17.8	19.4	26
Wakehurst	14	1.4	6.7	8.1	35
Wallsend	590	79.4	228.4	307.8	205
Willoughby	13	2.5	21.8	24.3	67
Wollondilly	241	30.7	39.0	69.6	114
Wollongong	397	45.6	252.7	298.3	240
Wyong	174	14.5	21.6	36.1	36

APPENDIX D: DIRECT IMPACTS BY FEDERAL ELECTORATE

Table D1: Direct Impacts of Spending by Companies Surveyed by CED (Type II Impact)

Commonwealth electoral division	Residing employees (FTEs)	Associated salaries ($M)	Business purchases and community contributions ($M)	Total direct spending ($M)	No. of businesses directly supported
Banks	28	1.5	15.4	16.9	42
Barton	13	0.8	1.5	2.3	26
Bennelong	34	6.4	49.6	55.9	127
Berowra	23	4.4	5.0	9.4	66
Blaxland	4	0.5	79.3	79.8	66
Bradfield	24	5.2	34.5	39.7	49
Calare	4,139	494.8	220.0	714.8	858
Chifley	67	1.2	24.9	26.1	52
Cook	26	1.9	2.6	4.5	46
Cowper	17	1.8	5.6	7.4	14
Cunningham	944	106.2	299.3	405.5	343
Dobell	223	21.4	38.2	59.6	72
Eden-Monaro	9	0.9	32.0	32.9	19
Farrer	37	3.7	9.3	13.0	46
Fowler	4	0.3	18.4	18.7	22
Gilmore	127	12.4	17.2	29.6	33
Grayndler	16	2.2	5.6	7.7	28
Greenway	17	1.4	37.5	38.9	88
Hughes	29	2.2	9.9	12.1	46
Hume	332	41.4	91.1	132.5	150
Hunter	5,953	802.5	874.3	1,676.8	1,239
Kingsford Smith	30	3.8	80.2	84.0	67
Lindsay	18	1.6	21.5	23.1	37
Lyne	771	96.6	101.3	197.8	205
Macarthur	175	18.7	73.5	92.2	82
Mackellar	28	2.6	10.1	12.7	62
Macquarie	115	11.6	3.8	15.4	43
McMahon	42	4.1	68.2	72.3	132
Mitchell	14	0.8	15.4	16.3	67
Newcastle	1,523	162.9	854.9	1,017.8	683
New England	826	106.7	31.1	137.7	207
North Sydney	46	7.8	103.7	111.4	193
Page	24	1.3	2.4	3.7	13
Parkes	1,434	161.0	183.0	343.9	597
Parramatta	238	1.4	359.1	360.5	115
Paterson	2,857	393.7	972.0	1,365.7	623
Reid	4	0.4	16.6	17.0	97
Richmond	25	1.2	1.3	2.5	8
Riverina	821	70.1	57.9	128.0	340
Robertson	53	6.8	24.2	31.0	46
Shortland	974	113.5	103.2	216.8	268
Sydney	137	14.7	866.4	881.2	438
Warringah	17	2.3	2.8	5.2	38
Watson	3	0.6	0.3	0.8	15
Wentworth	11	1.3	1.1	2.4	24
Werriwa	3	0.3	12.8	13.1	28

Table D1: Direct Impacts of Spending by Companies Surveyed by CED (Type II Impact)					
Commonwealth electoral division	Residing employees (FTEs)	Associated salaries ($M)	Business purchases and community contributions ($M)	Total direct spending ($M)	No. of businesses directly supported
Whitlam	562	59.2	152.3	211.5	73