
Victorian Minerals Sector Economic Contribution Study 2023/24

December 2024



Executive Summary

Executive Summary

Approach

The Minerals Council of Australia (MCA) – Victorian Division analysed the expenditure patterns of Victoria's five (5) operating mines to determine the economic contribution of the minerals industry throughout Victoria in 2023/24. The spending data, which included employee salaries and wages, business purchases, community contributions and local and state government payments, was collected by postcode to allow local, regional and state-wide economic benefits to be assessed.

Direct Impact

Expenditure data provided by the 5 member companies surveyed indicated that the **minerals sector contributed \$569.1 million** in direct spending to the Victorian economy in 2023/24, comprising:

- **\$180.7 million in wages and salaries** to approximately **1,479 direct fulltime resident employees**, representing an **average salary** level across the sector of **\$122,162** per annum;
- **Total workforce of 1,795 full-time equivalent workers** (including direct employees by place of operation and 274 contract workers);
- **\$346.9 million in purchases of goods and services from almost 1,700 local businesses** (including contract payments);
- **\$2.4 million in community contributions and payments to local government** (including rates, developer contributions and other payments); and
- **\$38.8 million** in state government payments (including royalties, stamp duty, payroll tax and land tax).

*The minerals sector contributed **\$569.1 million** in direct spending to the Victorian economy in 2023/24.*

Compared to the previous contribution study completed in 2020/21, the level of direct spending by resource companies in Victoria increased by \$58.9 million, or 11.6%. Wage and salaries spend increased by \$28.8 million (or 18.9%), whilst payments to local businesses for goods and services increased by \$39.7 million, or 12.9%.

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The highest direct industry expenditure by region was in Central Victoria/Loddon Murray (\$214.4 million), followed by the Melbourne (\$198.7 million) and Western Victoria (\$89.6 million) regions. Central Victoria/Loddon Murray also recorded the highest number of direct employees by place of residence (862 FTEs), followed by Western Victoria (423 FTEs), Melbourne (91 FTEs) and Hume/North East Victoria (62 FTEs).

Table E1: Direct Impact of Victorian Minerals Sector by Region, 2023/24

| Region | Residing employees (FTEs) | Associated salaries (\$M) | Business purchases, community and govt payments (\$M) | No. of local suppliers | Total direct spending (\$M) | % of total spending, Victoria |
|---------------------------------|---------------------------|---------------------------|---|------------------------|-----------------------------|-------------------------------|
| Mallee | 6 | 0.5 | 6.3 | 12 | 6.8 | 1.2% |
| Western Victoria | 423 | 53.5 | 36.0 | 494 | 89.6 | 15.7% |
| Geelong/Barwon | 15 | 1.7 | 1.6 | 36 | 3.2 | 0.6% |
| Gippsland | 20 | 2.1 | 0.5 | 14 | 2.6 | 0.5% |
| Melbourne ^(a) | 91 | 10.5 | 188.2 | 672 | 198.7 | 34.9% |
| Hume/North East Victoria | 62 | 6.3 | 8.3 | 62 | 14.6 | 2.6% |
| Central Victoria/Loddon Murray | 862 | 106.1 | 108.3 | 509 | 214.4 | 37.7% |
| Rest of Victoria ^(b) | 0 | 0.0 | 39.1 | 1 | 39.2 | 6.9% |
| Total Victoria | 1,479 | 180.7 | 388.4 | 1,674 | 569.1 | 100.0% |
| Rest of Australia | 42 | 7.0 | 270.9 | 604 | 277.8 | |
| Total Australia | 1,521 | 187.7 | 659.3 | 2,278 | 846.9 | |
| Overseas | 0 | 0.0 | 18.0 | 20 | 18.0 | |
| Other | 0 | 0.0 | 22.6 | 113 | 22.6 | |
| Total | 1,521 | 187.7 | 699.8 | 2,411 | 887.5 | |

Note: (a) Spending includes some central payments to suppliers who have an office location in Melbourne, but may have operations in regional areas of Victoria. (b) Includes State Government payments, which are not region specific.

The direct economic stimulus provided by the Victorian minerals sector extends to the rest of Australia. In 2023/24, \$277.8 million in direct spending was made in other states, which combined with the impact in Victoria for a **total direct impact of \$846.9 million for the whole of Australia**, comprised of:

- \$187.7 million in wages and salaries to approximately 1,521 full-time residing employees;
- \$450.6 million in purchases of goods and services from local businesses;
- \$2.5 million in community contributions; and
- \$206.2 million in government payments (federal, state and local).

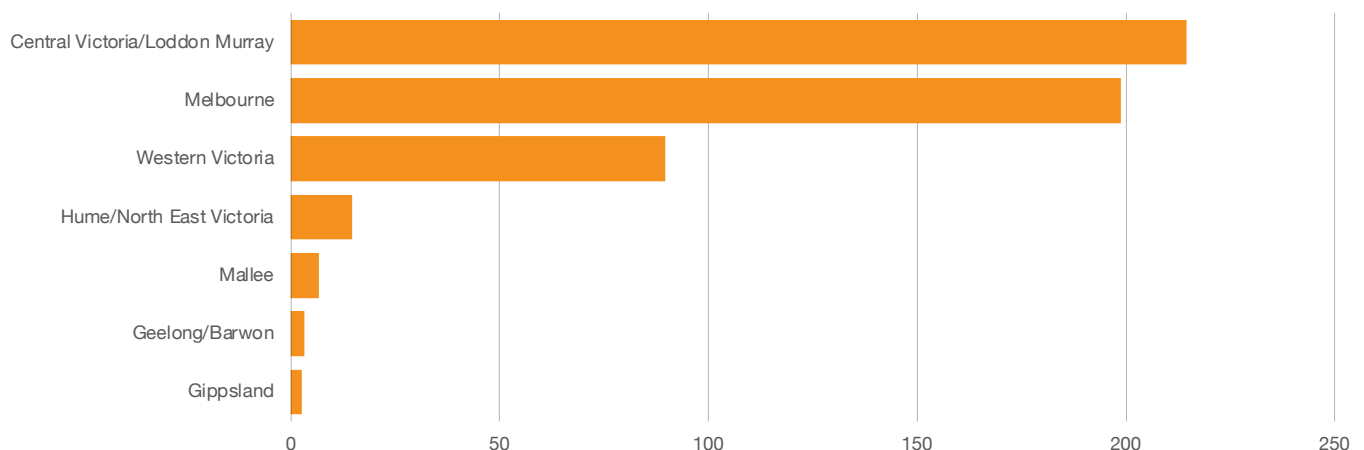
When overseas and other unallocated spending of \$40.5 million was also included, the total direct expenditure relating to the Victorian minerals sector was approximately \$887.5 million in 2023/24.

*The total expenditure of Victorian minerals companies surveyed was approximately **\$887.5 million** in 2023/24, of which **64.1%** was spent directly in Victoria.*

In terms of local impact, Greater Bendigo local government area (LGA) recorded the largest share of direct expenditure in 2023/24 (\$192.2 million), followed by Melbourne (\$44.0 million), Ballarat (\$38.0 million), Northern Grampians (\$37.3 million) and Maroondah (\$28.3 million).

Total Minerals Sector Direct Spend by Region

Victoria (\$ million)



Indirect and Total Economic Impacts

Economic modelling of the flow on effects of Victorian mineral companies' direct expenditure allowed the industry's indirect and total economic impact to be estimated. Across the state, the total economic impact of the minerals and energy sector in 2023/24, based on Type II multipliers (i.e. including both indirect industry and consumption-induced affects), amounted to:

- **\$1.2 billion in output/turnover** (a measure of direct and supply chain purchases from businesses);
- **\$1.1 billion in gross value added (GVA)**, amounting to 0.2% of Gross State Product (GSP) for Victoria (which was \$606.1 billion in 2023/24) through \$569.1 million in direct effects and \$496.9 million in supply chain and consumption effects;
- **\$481.5 million in income** (wages and salaries) paid to workers; and
- **5,334 full time equivalent jobs** supported, or 0.1% of total employment in Victoria during 2023/24.

*The total economic impact of the Victorian minerals sector was estimated at **\$1.1 billion in gross value added and 5,334 jobs supported in 2023/24.***

In terms of total economic benefit, the minerals sector has the **highest overall impact in the Melbourne region**, with total value added of \$425.8 million, followed by other resource-based regional economies, specifically Central Victoria/Loddon Murray (\$405.0 million) and Western Victoria (\$164.9 million). With regard to economic contribution, the resources sector comprised the largest share of gross regional product in the Central Victoria/Loddon Murray region (2.8%), followed by Western Victoria (0.7%) and Mallee (0.2%).

With regard to employment, the minerals sector had the greatest impact on jobs in the Central Victoria/Loddon Murray region, supporting 2,205 jobs (FTEs), followed by the Melbourne (1,569 FTEs) and Western Victoria (1,021 FTEs) regions.

Table E2: Economic Impact of Victorian Minerals Sector, 2023/24

| | Victoria | Rest of Australia | Total Australia |
|---|--------------|-------------------|-----------------|
| Gross Value Added (\$M) | | | |
| Direct | 569 | 278 | 847 |
| % of Gross State Product (GSP) | 0.1% | 0.0% | 0.0% |
| Indirect | 378 | 241 | 620 |
| Total GVA (Type I) | 948 | 519 | 1,467 |
| % of GSP | 0.2% | 0.0% | 0.1% |
| Consumption-induced | 183 | 144 | 326 |
| Total GVA (Type II) | 1,130 | 663 | 1,793 |
| % of GSP | 0.2% | 0.0% | 0.1% |
| Employment (FTEs) | | | |
| Direct | 1,479 | 42 | 1,521 |
| % of total state employment | 0.0% | 0.0% | 0.0% |
| Indirect | 2,346 | 1,234 | 3,581 |
| Total employment (Type I) | 3,825 | 1,276 | 5,102 |
| % of total state employment | 0.1% | 0.0% | 0.0% |
| Consumption-induced | 1,509 | 807 | 2,316 |
| Total employment (Type II) | 5,334 | 2,083 | 7,418 |
| % of total state employment | 0.2% | 0.0% | 0.1% |
| Business spend (incl. community contributions and govt payments) (\$M) | | | |
| Direct | 388 | 271 | 659 |
| Indirect | 272 | 246 | 518 |
| Total business spend (Type I) | 661 | 516 | 1,177 |
| Consumption-induced | 369 | 266 | 635 |
| Total business spend (Type II) | 1,030 | 782 | 1,813 |
| Wages & salaries (\$M) | | | |
| Direct | 181 | 7 | 188 |
| Indirect | 198 | 131 | 329 |
| Total wages & salaries (Type I) | 379 | 138 | 517 |
| Consumption-induced | 102 | 64 | 167 |
| Total wages & salaries (Type II) | 481 | 202 | 684 |

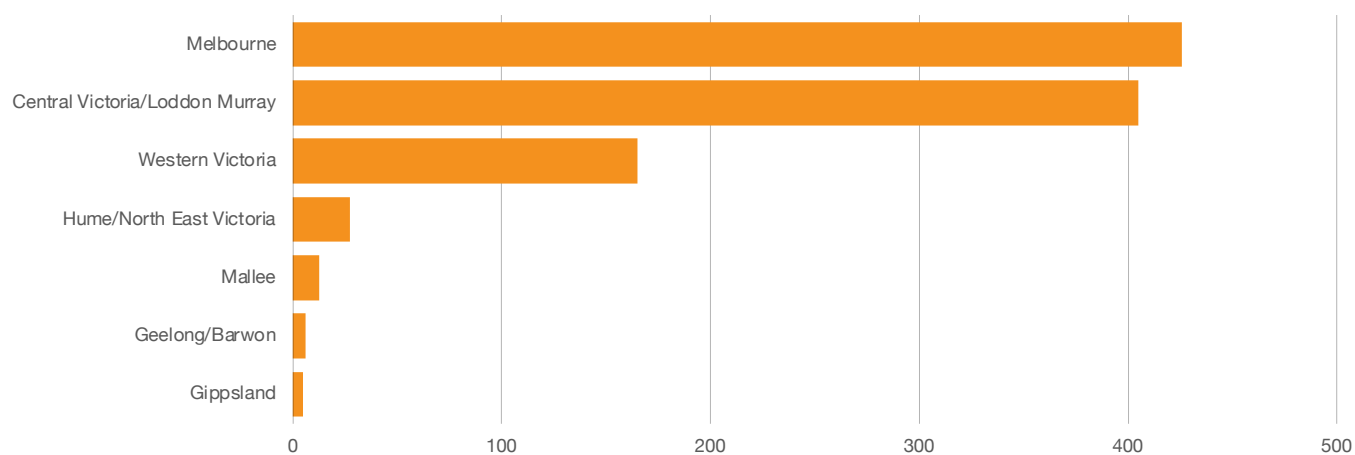
Note: Consumption-induced impacts, i.e. the increase in economic activity generated to service the additional employment generated or sustained through the direct and indirect effects, are included in Type II impacts, but are excluded from Type I impacts. Total figures may not appear as the sum of individual commodities due to rounding errors.

Table E3: Total Economic Impact of Minerals Sector by Region, 2023/24

| Region | Total GVA (\$M) | Total value added as % of GRP | Total jobs supported (FTEs) | % of regional employment |
|--------------------------------|-----------------|-------------------------------|-----------------------------|--------------------------|
| Mallee | 12.4 | 0.2% | 43 | 0.1% |
| Western Victoria | 164.9 | 0.7% | 1,021 | 0.6% |
| Geelong/Barwon | 6.1 | 0.0% | 37 | 0.0% |
| Gippsland | 4.6 | 0.0% | 36 | 0.0% |
| Melbourne | 425.8 | 0.1% | 1,569 | 0.1% |
| Hume/North East Victoria | 27.2 | 0.1% | 155 | 0.1% |
| Central Victoria/Loddon Murray | 405.0 | 2.8% | 2,205 | 1.7% |
| Total Victoria | 1,130.4 | 0.2% | 5,334 | 0.1% |
| Rest of Australia | 662.7 | 0.0% | 2,083 | 0.0% |
| Total Australia | 1,793.2 | 0.1% | 7,418 | 0.1% |

Total Minerals Sector Value Added by Region

Victoria (\$ million)



Local Suppliers

An estimated 1,674 unique businesses in Victoria received payments for goods and services supplied during 2023/24 to those survey respondents that provided supplier details. The highest number of businesses was recorded in the Melbourne region (672), followed by Central Victoria/Loddon Murray (509), Western Victoria (494) and Hume/North East Victoria (62).

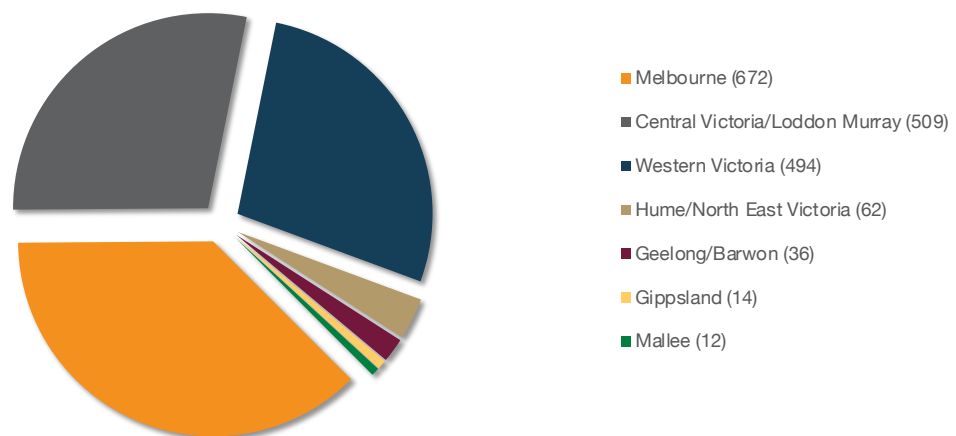
Table E4: Number of Businesses Supported by Region, 2023/24

| Region | Number of local suppliers |
|--------------------------------|---------------------------|
| Mallee | 12 |
| Western Victoria | 494 |
| Geelong/Barwon | 36 |
| Gippsland | 14 |
| Melbourne | 672 |
| Hume/North East Victoria | 62 |
| Central Victoria/Loddon Murray | 509 |
| Unallocated | <5 |
| Total Victoria | 1,674 |
| Rest of Australia | 604 |
| Total Australia | 2,278 |
| Overseas | 20 |
| Other | 113 |
| Total | 2,411 |

Note: Only for those companies that provided supplier details. Duplicates were removed to the best extent practicable to ensure an accurate estimation of the number of businesses supported at both state and regional level. The total number of businesses supported for Victoria is less than the aggregate for all regions due to the removal of duplicates.

Local Businesses Supported by Minerals Sector by Region

Victoria, 2023/24



Community Support

During 2023/24, minerals sector companies directly contributed over \$2.4 million to 82 separate community groups across Victoria in a wide range of areas including health, education, environment and the arts. The Central Victoria/Loddon Murray region recorded the highest number of community organisations supported (58), followed by Western Victoria (20).

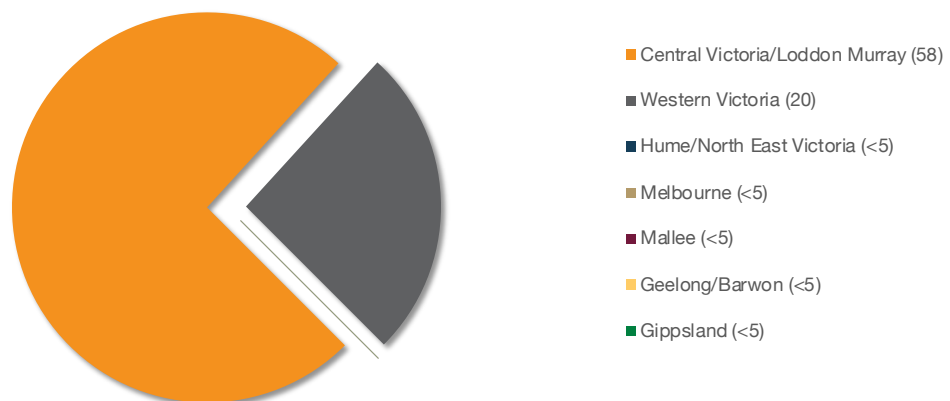
Table E5: Number of Community Organisations Supported by Region, 2023/24

| Region | No. of community groups | % of total | Total contribution |
|--------------------------------|-------------------------|---------------|--------------------|
| Mallee | <5 | n.p. | n.p. |
| Western Victoria | 20 | 24.4% | \$63,792 |
| Geelong/Barwon | <5 | n.p. | n.p. |
| Gippsland | <5 | n.p. | n.p. |
| Melbourne | <5 | 2.4% | \$550,920 |
| Hume/North East Victoria | <5 | 2.8% | \$4,613 |
| Central Victoria/Loddon Murray | 58 | 70.4% | \$1,786,649 |
| Total Victoria | 82 | 100.0% | \$2,405,977 |

Note: Only for those companies that provided details. n.p. not publishable data. Duplicates were removed to the best extent practicable to ensure an accurate estimation of the number of individual community organisations supported at both state and regional level. The total number of community organisations supported for South Australia is less than the aggregate for all regions due to the removal of duplicates.

Community Organisations Supported by Minerals Sector by Region

Victoria, 2023/24



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Introduction

Lawrence Consulting was commissioned by the Minerals Council of Australia (MCA) – Victoria Division to determine the economic benefit of the minerals sector to the Victorian economy based on expenditure data provided by five (5) operating mines in Victoria. This report provides a detailed summary of the level of direct expenditure into the state economy by the minerals sector in 2023/24 and the multiplier and consumption-induced effects that are generated by that initial stimulus. The analysis is an update of the previous initial study completed by Lawrence Consulting in 2020/21.

While the minerals sector makes a significant contribution to the Victorian and Australian economies, information about the impacts of the sector on regional and metropolitan economies within Victoria is limited. Impacts on regional and metropolitan areas of Victoria occur through direct, indirect and final consumption effects. There are two key types of direct impacts:

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

Business expenditure generates both upstream and downstream ripple effects through the business 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 that is generated through the direct effects (minerals and energy 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 minerals and energy sector across Victoria at a number of different geographic scales:

- State (the whole area of Victoria);
- Regional (represented by 7 major regions in Victoria);
- Local (represented by 79 Local Government Areas in Victoria);
- State electoral divisions (represented by 88 SEDs in Victoria); and
- Commonwealth electoral divisions (represented by 38 CEDs in Victoria).

This report concentrates more on the state and regional profiles, whilst data tables for LGAs are contained in the Appendices.

Company Survey

The process was initiated in September 2024 when MCA distributed an expenditure survey form to Victorian resource companies, who were asked to disclose total operational spending in 2023/24 in the following categories:

- Employee salaries and wages (by place of residence) for full-time direct employees and contract workers as well as the number of FTE employees by place of operation;
- Goods and services expenditure by individual supplier, including separate identification of both operational expenditure (opex) data for current projects and capital expenditure (capex) data from projects currently under development;
- Voluntary community contributions by individual organisation;
- Local government payments, including council rates and infrastructure charges;
- State government payments, including royalties, stamp duty, payroll tax and land tax; and
- Commonwealth government payments, including corporate income taxes and fringe benefits tax.

Five (5) companies returned the survey, representing the majority of the Victorian minerals sector based on current value of production. The data was supplied by Australian postcodes where the salary was paid (residence of the direct employee) and where the community contributions and business expenditures were made.

Table 1: Victoria Resource Companies Supplying Expenditure Data

Agnico Eagle Australia

Stawell Goldmines

Kaiser Reefs

Victory Minerals

Mandalay Resources

The postcode spend data were then aggregated using geographical concordance files from the Australian Bureau of Statistics and the economic impacts (direct, indirect and consumption impacts) of the minerals and energy sector were analysed at five geographic levels.

Economic Benefits

Direct Impact

Direct Spending

Expenditure data provided by the 5 member companies surveyed indicated that the **minerals sector contributed \$569.1 million** in direct spending to the Victorian economy in 2023/24 (representing an increase of \$58.9 million, or 11.6% from the previous survey in 2020/21), comprising:

- **\$180.7 million in wages and salaries** to approximately **1,479 direct fulltime resident employees**, representing an **average salary** level across the sector of **\$122,162** per annum;
- **Total workforce of 1,795 full-time equivalent workers** (including direct employees by place of operation and 274 contract workers);
- **\$346.9 million in purchases of goods and services from almost 1,700 local businesses** (including contract payments);
- **\$2.4 million in community contributions and payments to local government** (including rates, developer contributions and other payments); and
- **\$38.8 million** in state government payments (including royalties, stamp duty, payroll tax and land tax).

*The minerals sector contributed **\$569.1 million** in direct spending to the Victorian economy in 2023/24.*

The direct economic stimulus provided by the Victorian minerals sector in 2023/24 also extended to other states, with an additional \$277.8 million in spending, which combined with the impact in Victoria for a **total direct impact of \$846.9 million for the whole of Australia**, comprised of:

- \$187.7 million in wages and salaries to approximately 1,521 full-time residing employees;
- \$450.6 million in purchases of goods and services from local businesses;
- \$2.5 million in community contributions; and
- \$206.2 million in government payments (federal, state and local).

When overseas and other unallocated spending of \$40.5 million was also included, the **total direct expenditure relating to the Victorian minerals sector was approximately \$887.5 million in 2023/24.**

Local Suppliers

An estimated 1,674 unique businesses in Victoria received payments for goods and services supplied during 2023/24 to those survey respondents that provided supplier details. The highest number of businesses was recorded in the Melbourne region (672), followed by Central Victoria/Loddon Murray (509), Western Victoria (494) and Hume/North East Victoria (62).

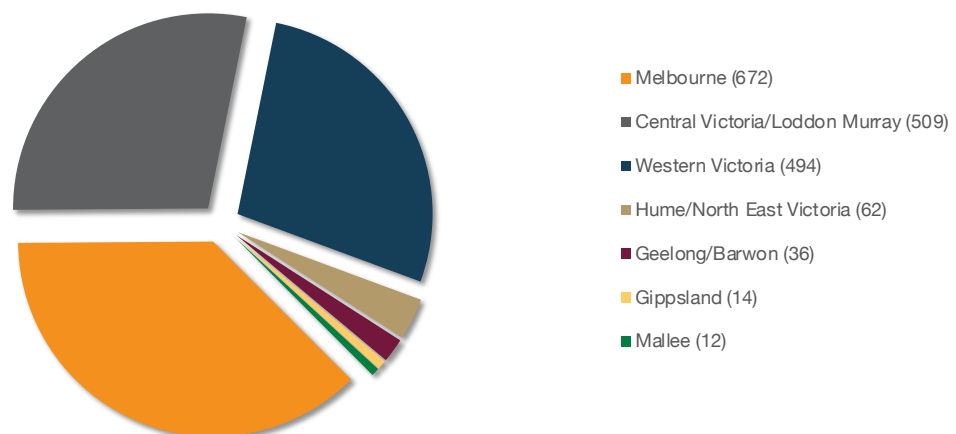
Table 2: Number of Businesses Supported by Region, 2023/24

| Region | Number of local suppliers |
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| Mallee | 12 |
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| Gippsland | 14 |
| Melbourne | 672 |
| Hume/North East Victoria | 62 |
| Central Victoria/Loddon Murray | 509 |
| Unallocated | <5 |
| Total Victoria | 1,674 |
| Rest of Australia | 604 |
| Total Australia | 2,278 |
| Overseas | 20 |
| Other | 113 |
| Total | 2,411 |

Note: Only for those companies that provided supplier details. Duplicates were removed to the best extent practicable to ensure an accurate estimation of the number of businesses supported at both state and regional level. The total number of businesses supported for Victoria is less than the aggregate for all regions due to the removal of duplicates.

Local Businesses Supported by Minerals Sector by Region

Victoria, 2023/24



Community Support

During 2023/24, minerals sector companies directly contributed over \$2.4 million to 82 separate community groups across Victoria in a wide range of areas including health, education, environment and the arts. The Central Victoria/Loddon Murray region recorded the highest number of community organisations supported (58), followed by Western Victoria (20).

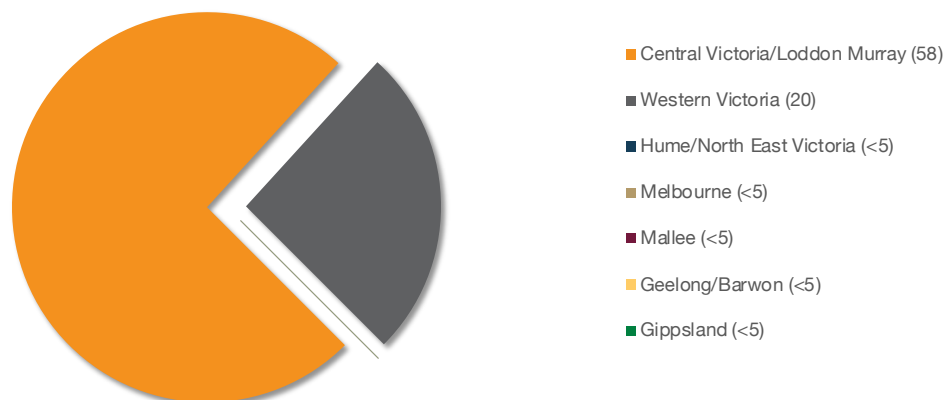
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| Region | No. of community groups | % of total | Total contribution |
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| Western Victoria | 20 | 24.4% | \$63,792 |
| Geelong/Barwon | <5 | n.p. | n.p. |
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| Melbourne | <5 | 2.4% | \$550,920 |
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| Central Victoria/Loddon Murray | 58 | 70.4% | \$1,786,649 |
| Total Victoria | 82 | 100.0% | \$2,405,977 |

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Community Organisations Supported by Minerals Sector by Region

Victoria, 2023/24



Indirect Impact

The I-O modelling conducted for this project has estimated the indirect (Type I) and consumption-induced (Type II) effects flowing from the business expenditure, community and government contributions of \$388.4 million and the employment expenditure of \$180.7 million. These impacts have been modelled separately and then aggregated to identify the level of impacts on output, incomes, employment and industry value added in Victoria. In 2023/24, the \$569.1 million in direct spending by the minerals sector in Victoria supported additional supply chain and consumption-induced effects of 3,855 fulltime jobs and \$942.5 million in aggregate spending (\$300.8 million in wages and salaries and \$641.7 million in purchases of goods and services).

*In 2023/24, the Victoria minerals sector supported an additional **3,855 fulltime jobs and \$942.5 million in aggregate spending** (\$300.8 million in wages and salaries and \$641.7 million in purchases of goods and services).*

Total Impact

The results of the I-O modelling allow estimates to be made about the total size of impacts from the minerals and energy sector on the economy. 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 final consumption-induced effects. The total economic impact (i.e. direct, indirect and induced, or Type II impact) from the minerals and energy sector to the Victoria economy in 2023/24 amounted to:

- **\$1.2 billion in output/turnover** (or purchases from supplying businesses);
- **\$1.1 billion in gross value added** (contribution to gross state product);
- **\$481.5 million in income** (wages and salaries); and
- **5,334 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 effects. A precise measure of direct value added for the minerals and energy sector is not available from the data; an estimated value added of \$569.1 million – 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 minerals and energy sector generated approximately **\$1.1 billion in gross value added** (\$569.1 million in direct effects, and \$561.3 million in supply chain and consumption effects) in 2023/24 and was responsible for supporting approximately **5,334 jobs** (1,479 in direct employment and 3,855 in additional employment). This means that the minerals and energy sector contributed an estimated **0.2% of Gross State Product** (based on the figure of \$606.1 billion in 2023/24) and **0.1% of total employment** (3,649,644 persons) in Victoria in 2023/24.

*The total economic impact of the Victoria minerals and energy sector was estimated at **\$1.1 billion in gross value added and 5,334 jobs supported in 2023/24.***

Under the more conservative Type I scenario (i.e. excluding consumption-induced effects), direct spending by the companies surveyed and flow-on impacts contributed 0.2% to GSP and 0.1% of total state employment.

Table 4: Economic Impact of Victorian Minerals Sector, 2023/24

| | Victoria | Rest of Australia | Total Australia |
|---|--------------|-------------------|-----------------|
| Gross Value Added (\$M) | | | |
| Direct | 569 | 278 | 847 |
| % of Gross State Product (GSP) | 0.1% | 0.0% | 0.0% |
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| Total GVA (Type I) | 948 | 519 | 1,467 |
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| Employment (FTEs) | | | |
| Direct | 1,479 | 42 | 1,521 |
| % of total state employment | 0.0% | 0.0% | 0.0% |
| Indirect | 2,346 | 1,234 | 3,581 |
| Total employment (Type I) | 3,825 | 1,276 | 5,102 |
| % of total state employment | 0.1% | 0.0% | 0.0% |
| Consumption-induced | 1,509 | 807 | 2,316 |
| Total employment (Type II) | 5,334 | 2,083 | 7,418 |
| % of total state employment | 0.2% | 0.0% | 0.1% |
| Business spend (incl. community contributions and govt payments) (\$M) | | | |
| Direct | 388 | 271 | 659 |
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| Total business spend (Type I) | 661 | 516 | 1,177 |
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Note: Consumption-induced impacts, i.e. the increase in economic activity generated to service the additional employment generated or sustained through the direct and indirect effects, are included in Type II impacts, but are excluded from Type I impacts. Total figures may not appear as the sum of individual commodities due to rounding errors.

Regional Impact

The postcode expenditure data provided by companies was aggregated using geographical concordances at the regional and local (LGA) levels. Victoria minerals sector expenditures, split across salary and supplier and community contribution expenditure, varied considerably across regional areas.

The level of employment, and direct expenditure on employees and business purchases in 2023/24 is summarised for the 7 major regions in Victoria in Table 5. The data illustrates that the largest proportion of direct expenditure from the minerals sector in Victoria in 2023/24 was in the Central Victoria/Loddon Murray region (\$214.4 million), followed by the Melbourne (\$198.7 million) and Western Victoria (\$89.6 million) regions.

Central Victoria/Loddon Murray recorded the largest share of direct expenditure by region in 2023/24 (\$214.4 million), followed by Melbourne (\$198.7 million) and Western Victoria (\$89.6 million).

With regard to employment, the largest share of direct full-time resident employees across Victoria was recorded in the Central Victoria/Loddon Murray region (862 FTEs, or 58.3%), followed by the Western Victoria (423 FTEs, or 28.6%) and Melbourne (91 FTEs, or 6.1%) regions.

The largest share of direct employees across Victoria was recorded in the **Central Victoria/Loddon Murray** region (862 FTEs, or 58.3%).

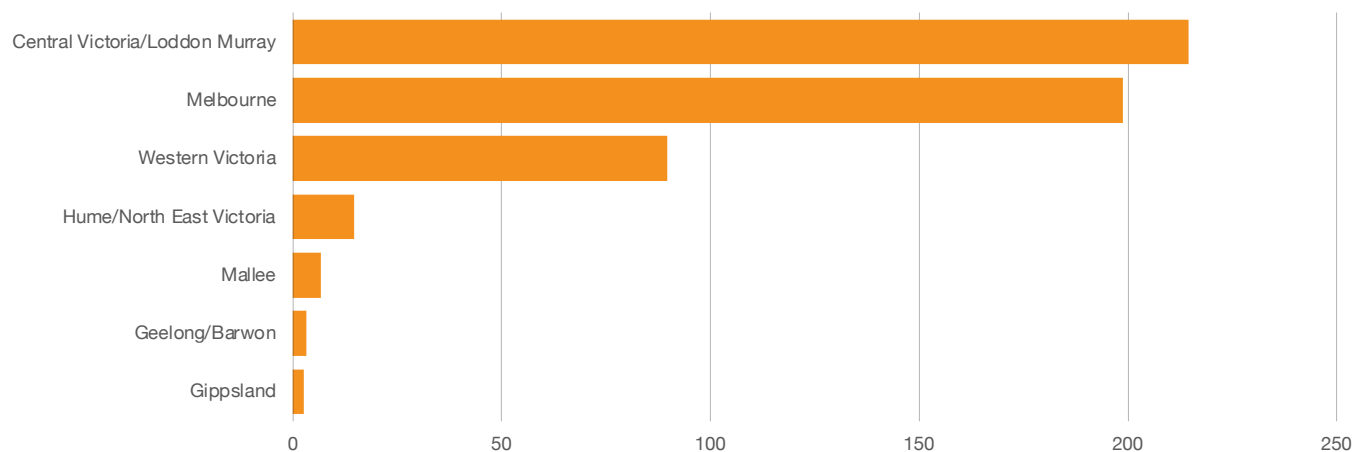
Table 5: Direct Impact of Victorian Minerals Sector by Region, 2023/24

| Region | Residing employees (FTEs) | Associated salaries (\$M) | Business purchases, community and govt payments (\$M) | No. of local suppliers | Total direct spending (\$M) | % of total spending, Victoria |
|---------------------------------|---------------------------|---------------------------|---|------------------------|-----------------------------|-------------------------------|
| Mallee | 6 | 0.5 | 6.3 | 12 | 6.8 | 1.2% |
| Western Victoria | 423 | 53.5 | 36.0 | 494 | 89.6 | 15.7% |
| Geelong/Barwon | 15 | 1.7 | 1.6 | 36 | 3.2 | 0.6% |
| Gippsland | 20 | 2.1 | 0.5 | 14 | 2.6 | 0.5% |
| Melbourne ^(a) | 91 | 10.5 | 188.2 | 672 | 198.7 | 34.9% |
| Hume/North East Victoria | 62 | 6.3 | 8.3 | 62 | 14.6 | 2.6% |
| Central Victoria/Loddon Murray | 862 | 106.1 | 108.3 | 509 | 214.4 | 37.7% |
| Rest of Victoria ^(b) | <5 | n.p. | 39.1 | <5 | 39.2 | 6.9% |
| Total Victoria | 1,479 | 180.7 | 388.4 | 1,674 | 569.1 | 100.0% |

Note: (a) Spending includes some central payments to suppliers who have an office location in Melbourne, but may have operations in regional areas of Victoria. (b) Includes State Government payments, which are not region specific.

Total Minerals Sector Direct Spend by Region

Victoria (\$ million)



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 region and those generated by consumption-induced spending in each region. These impacts have been modelled separately and then aggregated to identify the level of impacts on output, incomes, employment and industry value added for each region.

Table 6: Flow-on Impacts of Minerals Sector by Region, 2023/24 (Type II)

| Region | Indirect full-time employees (FTEs) | Associated salaries (\$M) | Supply of goods and services (\$M) | Total indirect value added (\$M) |
|--------------------------------|-------------------------------------|---------------------------|------------------------------------|----------------------------------|
| Mallee | 37 | 2.4 | 5.3 | 5.7 |
| Western Victoria | 598 | 38.3 | 81.7 | 75.3 |
| Geelong/Barwon | 22 | 1.6 | 3.3 | 2.9 |
| Gippsland | 16 | 1.1 | 2.2 | 2.0 |
| Melbourne | 1,478 | 133.2 | 276.9 | 227.1 |
| Hume/North East Victoria | 93 | 6.0 | 13.6 | 12.5 |
| Central Victoria/Loddon Murray | 1,343 | 93.7 | 204.4 | 190.6 |
| Rest of Victoria | <5 | 0.2 | 0.5 | 0.4 |
| Total Victoria | 3,855 | 300.8 | 641.7 | 561.3 |

Table 7 shows that the minerals sector has the highest overall impact in the Melbourne region, with total gross value added of \$425.8 million, meaning the sector contributed 0.1% to gross regional product (\$507.6 billion). The impact in Melbourne was slightly higher than that of other resource-based regional economies, namely Central Victoria/Loddon Murray (\$405.0 million in value added) and Western Victoria (\$164.9 million in value added). The Central Victoria/Loddon Murray region had the highest proportion of GRP contributed by the resource sector (2.8%), followed by the Western Victoria (0.7%) and Mallee (0.2%) regions.

*The **Central Victoria/Loddon Murray** region had the highest proportion of GRP contributed by the minerals sector (2.8%), followed by Western Victoria (0.7%) and Mallee (0.2%).*

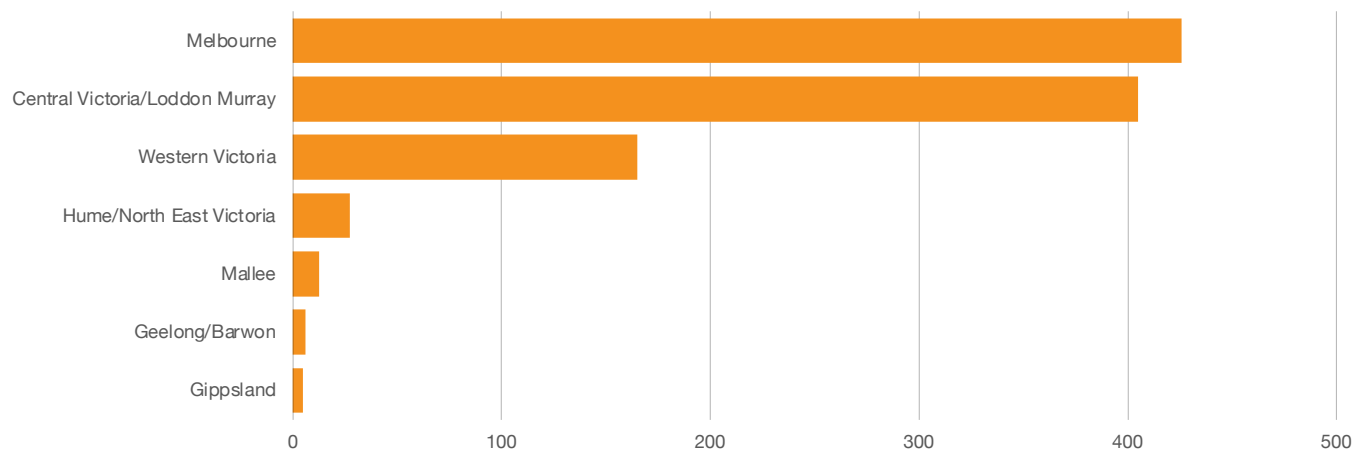
With regard to employment, the minerals sector had the greatest impact on jobs in the Central Victoria/Loddon Murray region, supporting 2,205 FTEs and comprising 1.7% of the total regional workforce. The Melbourne (1,569 FTEs) and Western Victoria (1,021 FTEs) regions recorded the next highest employment impacts, whilst the Central Victoria/Loddon Murray region had the highest proportion of total regional employment made up by the minerals sector (1.7%), followed by Western Victoria (0.6%).

Table 7: Total Economic Impact of Minerals Sector by Region, 2023/24

| Region | Total GVA (\$M) | Total value added as % of GRP | Total jobs supported (FTEs) | % of regional employment |
|--------------------------------|-----------------|-------------------------------|-----------------------------|--------------------------|
| Mallee | 12.4 | 0.2% | 43 | 0.1% |
| Western Victoria | 164.9 | 0.7% | 1,021 | 0.6% |
| Geelong/Barwon | 6.1 | 0.0% | 37 | 0.0% |
| Gippsland | 4.6 | 0.0% | 36 | 0.0% |
| Melbourne | 425.8 | 0.1% | 1,569 | 0.1% |
| Hume/North East Victoria | 27.2 | 0.1% | 155 | 0.1% |
| Central Victoria/Loddon Murray | 405.0 | 2.8% | 2,205 | 1.7% |
| Total Victoria | 1,130.4 | 0.2% | 5,334 | 0.1% |

Total Minerals Sector Value Added by Region

Victoria (\$ million)



Mallee

Direct Contribution

In 2023/24, the minerals sector in this region contributed:

- \$0.5 million in wages and salaries to 6 direct fulltime employees, with an average salary of \$87,635; and
- \$6.3 million in purchases of goods and services from 12 local businesses (including contractors).

Indirect Contribution

This **\$6.8 million in direct spending** supported:

- \$5.3 million in additional supply chain purchases and household consumption; and
- \$2.4 million in wages and salaries associated with a further 37 jobs supported in this region.

Total Contribution

The total economic contribution (direct, indirect and consumption-induced) from the minerals sector in 2023/24 amounted to:

- \$12.1 million in supplying business purchases;
- \$2.9 million in total wages and salaries paid to workers;
- **\$12.4 million in gross value added**, or 0.2% of total GRP in this region (\$5.9 billion); and
- **43 full-time equivalent jobs**, or 0.1% of the regional workforce.

Western Victoria

Direct Contribution

In 2023/24, the minerals sector in this region contributed:

- Total workforce of 476 FTEs whose place of work was in the region;
- \$53.5 million in wages and salaries to 423 direct fulltime resident employees, with an average salary of \$126,438; and
- \$36.0 million in purchases of goods and services from 494 local businesses (including contractors);
- \$0.1 million in voluntary contributions to 38 community organisations and local government payments.

Indirect Contribution

This **\$89.6 million in direct spending** supported:

- \$81.7 million in additional supply chain purchases and household consumption; and
- \$38.3 million in wages and salaries associated with a further 598 jobs supported in this region.

Total Contribution

The total economic contribution (direct, indirect and consumption-induced) from the minerals sector in 2023/24 amounted to:

- \$171.2 million in supplying business purchases;
- \$91.8 million in total wages and salaries paid to workers;
- **\$164.9 million in gross value added**, or 0.7% of total GRP in this region (\$22.9 billion); and
- **1,021 full-time equivalent jobs**, or 0.6% of the regional workforce.

Geelong/Barwon

Direct Contribution

In 2023/24, the minerals sector in this region contributed:

- \$1.7 million in wages and salaries to 15 direct fulltime employees, with an average salary of \$110,868; and
- \$1.6 million in purchases of goods and services from 36 local businesses (including contractors).

Indirect Contribution

This **\$3.2 million in direct spending** supported:

- \$3.3 million in additional supply chain purchases and household consumption; and
- \$1.6 million in wages and salaries associated with a further 22 jobs supported in this region.

Total Contribution

The total economic contribution (direct, indirect and consumption-induced) from the minerals sector in 2023/24 amounted to:

- \$6.5 million in supplying business purchases;
- \$3.2 million in total wages and salaries paid to workers;
- **\$6.1 million in gross value added**, or 0.03% of total GRP in this region (\$19.5 billion); and
- **37 full-time equivalent jobs**, or 0.02% of the regional workforce.

Gippsland

Direct Contribution

In 2023/24, the minerals sector in this region contributed:

- \$2.1 million in wages and salaries to 20 direct fulltime employees, with an average salary of \$105,276; and
- \$0.5 million in purchases of goods and services from 14 local businesses (including contractors).

Indirect Contribution

This **\$2.6 million in direct spending** supported:

- \$2.2 million in additional supply chain purchases and household consumption; and
- \$1.1 million in wages and salaries associated with a further 16 jobs supported in this region.

Total Contribution

The total economic contribution (direct, indirect and consumption-induced) from the minerals sector in 2023/24 amounted to:

- \$4.7 million in supplying business purchases;
- \$3.2 million in total wages and salaries paid to workers;
- **\$4.6 million in gross value added**, or 0.03% of total GRP in this region (\$16.2 billion); and
- **36 full-time equivalent jobs**, or 0.02% of the regional workforce.

Melbourne

Direct Contribution

In 2023/24, the minerals sector in this region contributed:

- \$10.5 million in wages and salaries to 91 direct fulltime employees, with an average salary of \$115,716; and
- \$187.7 million in purchases of goods and services from 672 local businesses (including contractors);
- \$0.6 million in community contributions and local government payments.

Indirect Contribution

This **\$198.7 million in direct spending** supported:

- \$276.9 million in additional supply chain purchases and household consumption; and
- \$133.2 million in wages and salaries associated with a further 1,478 jobs supported in this region.

Total Contribution

The total economic contribution (direct, indirect and consumption-induced) from the minerals sector in 2023/24 amounted to:

- \$475.7 million in supplying business purchases;
- \$143.7 million in total wages and salaries paid to workers;
- **\$425.8 million in gross value added**, or 0.1% of total GRP in this region (\$507.6 billion); and
- **1,569 full-time equivalent jobs**, or 0.1% of the regional workforce.

Hume/North East Victoria

Direct Contribution

In 2023/24, the minerals sector in this region contributed:

- Total workforce of 69 FTEs whose place of work was in the region;
- \$6.3 million in wages and salaries to 62 direct fulltime employees, with an average salary of \$101,772; and
- \$8.3 million in purchases of goods and services from 62 local businesses (including contractors).

Indirect Contribution

This **\$14.6 million in direct spending** supported:

- \$13.6 million in additional supply chain purchases and household consumption; and
- \$6.0 million in wages and salaries associated with a further 93 jobs supported in this region.

Total Contribution

The total economic contribution (direct, indirect and consumption-induced) from the minerals sector in 2023/24 amounted to:

- \$28.3 million in supplying business purchases;
- \$12.3 million in total wages and salaries paid to workers;
- **\$27.2 million in gross value added**, or 0.1% of total GRP in this region (\$19.6 billion); and
- **155 full-time equivalent jobs**, or 0.1% of the regional workforce.

Central Victoria/Loddon Murray

Direct Contribution

In 2023/24, the minerals sector in this region contributed:

- Total workforce of 1,244 FTEs whose place of work was in the region, including 244 contract workers;
- \$106.1 million in wages and salaries to 862 direct fulltime employees, with an average salary of \$123,015;
- \$106.3 million in purchases of goods and services from 509 local businesses (including contractors);
- \$1.8 million in voluntary contributions to 58 community organisations; and
- \$0.3 million in local government payments.

Indirect Contribution

This **\$214.4 million in direct spending** supported:

- \$204.4 million in additional supply chain purchases and household consumption; and
- \$93.7 million in wages and salaries associated with a further 1,343 jobs supported in this region.

Total Contribution

The total economic contribution (direct, indirect and consumption-induced) from the minerals sector in 2023/24 amounted to:

- \$418.8 million in supplying business purchases;
- \$199.8 million in total wages and salaries paid to workers;
- **\$405.0 million in gross value added**, or 2.8% of total GRP in this region (\$14.4 billion); and
- **2,205 full-time equivalent jobs**, or 1.7% of the regional workforce.

Local Impact

Direct Spending

The spending and employment data provided by companies was aggregated using geographical concordances at the local government area (LGA) level. As expected, Victoria minerals sector expenditures, split across salary and supplier and voluntary community contribution expenditure, varied considerably across LGAs. The level of employment and direct expenditure on employees and business supply chain purchases is summarised for the 79 LGAs in Victoria in Appendix B (where significant activity occurs in an LGA).

Table 8 shows the distribution of total direct spending (i.e. salaries, business purchases and community contributions) from resources companies across Victoria to the top 20 LGAs by expenditure. Greater Bendigo LGA recorded the largest share of direct expenditure in 2023/24 (\$192.2 million), followed by Melbourne (\$44.0 million), Ballarat (\$38.0 million), Northern Grampians (\$37.3 million) and Maroondah (\$28.3 million).

Greater Bendigo recorded the largest share of direct expenditure by local government area in 2023/24 (\$192.2 million), followed by Melbourne (\$44.0 million).

Direct resident employment and associated salary expenditures were again greatest in the Greater Bendigo LGA (\$96.2 million and 775 FTEs), followed by the Ballarat (\$28.2 million and 217 FTEs) and Northern Grampians (\$16.7 million and 139 FTEs) LGAs.

Minerals Sector Direct Spend by LGA

Victoria (\$ million), 2023/24

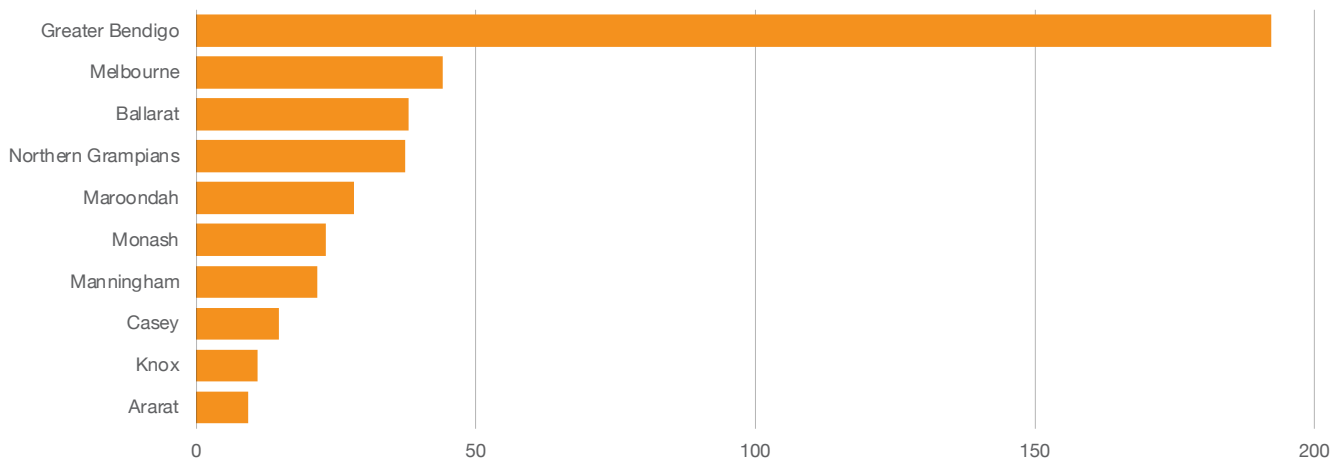


Table 8: Direct Impact of Minerals Sector, Highest LGAs by Expenditure, 2023/24

| Region | Residing employees (FTEs) | Associated salaries (\$M) | Business purchases, community and govt payments (\$M) | Total direct spending (\$M) | Local suppliers (no.) |
|--------------------|---------------------------|---------------------------|---|-----------------------------|-----------------------|
| Greater Bendigo | 775 | 96.2 | 96.0 | 192.2 | 443 |
| Melbourne | <5 | 0.2 | 43.8 | 44.0 | 135 |
| Ballarat | 217 | 28.2 | 9.8 | 38.0 | 218 |
| Northern Grampians | 139 | 16.7 | 20.6 | 37.3 | 172 |
| Maroondah | <5 | 0.0 | 28.3 | 28.3 | 16 |
| Monash | <5 | 0.3 | 22.9 | 23.2 | 54 |
| Manningham | <5 | 0.0 | 21.6 | 21.6 | 6 |
| Casey | <5 | 0.2 | 14.6 | 14.8 | 17 |
| Knox | <5 | 0.4 | 10.5 | 10.9 | 34 |
| Ararat | 47 | 5.6 | 3.7 | 9.3 | 25 |
| Macedon Ranges | 18 | 2.2 | 6.6 | 8.9 | 17 |
| Kingston | <5 | 0.3 | 8.5 | 8.8 | 37 |
| Hobsons Bay | <5 | 0.2 | 6.9 | 7.1 | 13 |
| Campaspe | 43 | 4.6 | 1.1 | 5.7 | 17 |
| Horsham | 31 | 4.0 | 1.4 | 5.4 | 30 |
| Brimbank | <5 | 0.0 | 5.2 | 5.2 | 34 |
| Mansfield | 6 | 0.8 | 4.1 | 4.9 | 24 |
| Buloke | <5 | 0.1 | 4.7 | 4.8 | <5 |
| Mount Alexander | 11 | 1.1 | 3.2 | 4.3 | 22 |
| Greater Dandenong | <5 | 0.0 | 4.2 | 4.2 | 44 |

Indirect Impact

The I-O modelling estimated the indirect and consumption 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 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 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 has been applied for LGAs, as shown in Table 9.

The total economic impact (i.e. Type II model scenario) of direct resource sector spending for each LGA across Victoria in 2023/24 are contained in Appendix C (where significant activity occurs in an LGA), with a summary of the top 20 LGAs by value added provided in Table 10. The largest contributions made by the minerals sector to gross regional product (i.e. total estimated value added) occurred in the Greater Bendigo LGA (\$362.9 million, or 4.8% of GRP), followed by Melbourne (\$94.6 million), Ballarat (\$69.9 million), Northern Grampians (\$65.7 million) and Maroondah (\$60.8 million).

With regard to employment, the minerals sector again had the greatest impact on jobs in the Greater Bendigo region, with 1,980 total FTEs supported, comprising 3.2% of the total workforce. Ballarat (480 FTEs, or 0.9%) and Northern Grampians (352 FTEs, or 5.8%) LGAs recorded the next highest employment impacts.

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% |

Table 10: Total Economic Impact of Minerals Sector, Highest LGAs by Gross Value Added, 2023/24 (Type II)

| Region | Total GVA (\$M) | Total value added as % of GRP | Total jobs supported (FTEs) | % of regional employment |
|--------------------|-----------------|-------------------------------|-----------------------------|--------------------------|
| Greater Bendigo | 362.9 | 4.8% | 1,980 | 3.2% |
| Melbourne | 94.6 | 0.0% | 329 | 0.3% |
| Ballarat | 69.9 | 0.9% | 480 | 0.9% |
| Northern Grampians | 65.7 | 6.8% | 352 | 5.8% |
| Maroondah | 60.8 | 0.9% | 209 | 0.3% |
| Monash | 49.8 | 0.2% | 175 | 0.2% |
| Manningham | 46.5 | 1.1% | 160 | 0.2% |
| Casey | 31.9 | 0.2% | 112 | 0.1% |
| Knox | 23.3 | 0.2% | 84 | 0.1% |
| Kingston | 19.0 | 0.1% | 67 | 0.1% |
| Macedon Ranges | 16.8 | 0.8% | 70 | 0.2% |
| Ararat | 16.2 | 2.1% | 100 | 1.8% |
| Hobsons Bay | 15.3 | 0.2% | 55 | 0.1% |
| Brimbank | 11.2 | 0.1% | 39 | 0.0% |
| Campaspe | 10.1 | 0.4% | 77 | 0.4% |
| Horsham | 10.0 | 0.7% | 66 | 0.6% |
| Mansfield | 9.1 | 1.3% | 35 | 0.7% |
| Greater Dandenong | 9.0 | 0.0% | 31 | 0.0% |
| Buloke | 8.9 | 2.3% | 28 | 0.9% |
| Maribyrnong | 8.3 | 0.1% | 30 | 0.1% |

Conclusion

This report contains the outcomes of two key pieces of analysis. The first is the collection of primary data by the MCA Victoria that identifies the direct impact of 5 resource companies by local and regional areas in Victoria. 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, State Electoral Division and Commonwealth Electoral Division level.

The results of the analysis demonstrate that incomes and expenditures from the minerals sector are widely distributed across the state generating significant flow-on effects, and that traditional economic techniques understate the true contribution of the minerals and energy 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 Victorian minerals sector companies contributed approximately \$569.1 million in direct spending to the state economy in 2023/24, comprised of:

- Total workforce of 1,795 full-time equivalent workers (including direct employees by place of operation and 274 contract workers);
- \$180.7 million in wages and salaries to approximately 1,479 direct fulltime resident employees, representing an average salary level across the sector of \$122,162 per annum;
- \$346.9 million in purchases of goods and services from almost 1,700 local businesses (including contract payments);
- \$2.4 million in community contributions and payments to local government (including rates, developer contributions and other payments); and
- \$38.8 million in state government payments (including royalties, stamp duty, payroll tax and land tax).

*The minerals sector contributed **\$569.1 million** in direct spending to the Victorian economy in 2023/24.*

The direct economic stimulus provided by the Victorian minerals sector in 2023/24 also extended to other states, with an additional \$277.8 million in direct spending, which combined with the impact in Victoria for a total direct impact of \$846.9 million for the whole of Australia, comprised of:

- \$187.7 million in wages and salaries to approximately 1,521 full-time residing employees;
- \$450.6 million in purchases of goods and services from local businesses;
- \$2.5 million in community contributions; and
- \$206.2 million in government payments (federal, state and local).

The total impact of the \$569.1 million in direct spending by the minerals and energy sector, measured through supply chain and consumption-induced spending effects, amounted to total gross value added of \$1.1 billion and total employment supported of 5,334 jobs across Victoria.

*The total economic impact of the Victorian minerals sector was estimated at **\$1.1 billion** in gross value added and **5,334 jobs** supported in 2023/24.*

Appendix A: Modelling Approach

Input-Output Modelling

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 Victoria. 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.

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. Note: Type II models involve 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.

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:

- 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.

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.

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 effect, or direct effect, are those from the activities expenditure in purchasing goods from other industries;
- The second-round effects are those from the 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, which recognise that the level of local production is important in determining regional levels of household consumption, that this in turn will be spent locally to a large extent and therefore influence the level of regional consumption and the level of output of each sector.

These effects can be represented 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.

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. However, care has to be taken in its application and interpretation of results. Key assumptions that underpin the application of I-O models are:

- 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.

Construction of Regional I-O Models

For the derivation of the regional I-O tables, 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, a widely used method of constructing local and regional input-output tables in Australia, America and Europe. The procedure utilises cross-industry location quotients 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 were 2021-22, 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 using the available data on salary and business expenditure.

The predictions of the I-O models for regional area 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 type of commodity (e.g. coal, gas, metals, etc.) and 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 minerals and energy sector 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, SED and CED levels, when combined with the accuracy of the primary data, meant that relatively accurate models of local impacts from the Victoria minerals and energy sector could be generated.

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

Appendix B: Direct Impact by Local Government Area

Table B1: Direct Impacts of Victorian Minerals Sector by LGA, 2023/24

| Local government area | Residing employees (FTEs) | Associated salaries (\$M) | Business purchases, community and local govt payments (\$M) | Total direct spending (\$M) | Local suppliers (no.) |
|-----------------------|---------------------------|---------------------------|---|-----------------------------|-----------------------|
| Greater Bendigo | 775 | 96.2 | 96.0 | 192.2 | 443 |
| Melbourne | <5 | 0.2 | 43.8 | 44.0 | 135 |
| Ballarat | 217 | 28.2 | 9.8 | 38.0 | 218 |
| Northern Grampians | 139 | 16.7 | 20.6 | 37.3 | 172 |
| Maroondah | <5 | 0.0 | 28.3 | 28.3 | 16 |
| Monash | <5 | 0.3 | 22.9 | 23.2 | 54 |
| Manningham | <5 | 0.0 | 21.6 | 21.6 | 6 |
| Casey | <5 | 0.2 | 14.6 | 14.8 | 17 |
| Knox | <5 | 0.4 | 10.5 | 10.9 | 34 |
| Ararat | 47 | 5.6 | 3.7 | 9.3 | 25 |
| Macedon Ranges | 18 | 2.2 | 6.6 | 8.9 | 17 |
| Kingston | <5 | 0.3 | 8.5 | 8.8 | 37 |
| Hobsons Bay | <5 | 0.2 | 6.9 | 7.1 | 13 |
| Campaspe | 43 | 4.6 | 1.1 | 5.7 | 17 |
| Horsham | 31 | 4.0 | 1.4 | 5.4 | 30 |
| Brimbank | <5 | 0.0 | 5.2 | 5.2 | 34 |
| Mansfield | 6 | 0.8 | 4.1 | 4.9 | 24 |
| Buloke | <5 | 0.1 | 4.7 | 4.8 | <5 |
| Mount Alexander | 11 | 1.1 | 3.2 | 4.3 | 22 |
| Greater Dandenong | <5 | 0.0 | 4.2 | 4.2 | 44 |
| Maribyrnong | <5 | 0.3 | 3.6 | 3.9 | 10 |
| Port Phillip | <5 | 0.0 | 3.2 | 3.2 | 34 |
| Mitchell | 34 | 2.9 | 0.3 | 3.2 | 7 |
| Greater Geelong | 12 | 1.4 | 1.6 | 2.9 | 33 |
| Murrindindi | <5 | 0.4 | 2.3 | 2.7 | <5 |
| Loddon | 13 | 1.6 | 1.0 | 2.6 | 6 |
| Hume | <5 | 0.1 | 2.4 | 2.5 | 32 |

Table B1: Direct Impacts of Victorian Minerals Sector by LGA, 2023/24

| Local government area | Residing employees (FTEs) | Associated salaries (\$M) | Business purchases, community and local govt payments (\$M) | Total direct spending (\$M) | Local suppliers (no.) |
|-----------------------|---------------------------|---------------------------|---|-----------------------------|-----------------------|
| Boroondara | 5 | 0.6 | 1.6 | 2.2 | 17 |
| Cardinia | 6 | 0.9 | 0.9 | 1.8 | 7 |
| Greater Shepparton | 5 | 0.6 | 1.1 | 1.7 | 16 |
| Latrobe (Vic.) | 15 | 1.6 | 0.0 | 1.6 | <5 |
| Gannawarra | <5 | 0.2 | 1.4 | 1.6 | <5 |
| Frankston | <5 | 0.4 | 1.1 | 1.5 | 9 |
| Moorabool | <5 | 0.5 | 0.6 | 1.2 | 8 |
| Yarra | <5 | 0.3 | 0.8 | 1.1 | 11 |
| Moonee Valley | <5 | 0.2 | 0.8 | 1.0 | 6 |
| Stonnington | <5 | 0.0 | 1.0 | 1.0 | 8 |

Note: Excludes LGAs with total direct spend of less than \$1 million.

Appendix C: Total Impact by Local Government Area

Table C1: Estimated Total Economic Impact of Victorian Minerals Sector by LGA, 2023/24 (Type II)

| Local government area | Total GVA (\$M) | Total value added as % of GRP | Total jobs supported (FTEs) | % of regional employment |
|-----------------------|-----------------|-------------------------------|-----------------------------|--------------------------|
| Greater Bendigo | 362.9 | 4.8% | 1,980 | 3.2% |
| Melbourne | 94.6 | 0.0% | 329 | 0.3% |
| Ballarat | 69.9 | 0.9% | 480 | 0.9% |
| Northern Grampians | 65.7 | 6.8% | 352 | 5.8% |
| Maroondah | 60.8 | 0.9% | 209 | 0.3% |
| Monash | 49.8 | 0.2% | 175 | 0.2% |
| Manningham | 46.5 | 1.1% | 160 | 0.2% |
| Casey | 31.9 | 0.2% | 112 | 0.1% |
| Knox | 23.3 | 0.2% | 84 | 0.1% |
| Ararat | 16.2 | 2.1% | 100 | 1.8% |
| Macedon Ranges | 16.8 | 0.8% | 70 | 0.2% |
| Kingston | 19.0 | 0.1% | 67 | 0.1% |
| Hobsons Bay | 15.3 | 0.2% | 55 | 0.1% |
| Campaspe | 10.1 | 0.4% | 77 | 0.4% |
| Horsham | 10.0 | 0.7% | 66 | 0.6% |
| Brimbank | 11.2 | 0.1% | 39 | 0.0% |
| Mansfield | 9.1 | 1.3% | 35 | 0.7% |
| Buloke | 8.9 | 2.3% | 28 | 0.9% |
| Mount Alexander | 8.1 | 0.7% | 35 | 0.4% |
| Greater Dandenong | 9.0 | 0.0% | 31 | 0.0% |
| Maribyrnong | 8.3 | 0.1% | 30 | 0.1% |
| Port Phillip | 6.9 | 0.0% | 24 | 0.0% |
| Mitchell | 5.5 | 0.2% | 53 | 0.2% |
| Greater Geelong | 5.6 | 0.0% | 32 | 0.0% |
| Murrindindi | 5.0 | 0.6% | 19 | 0.2% |
| Loddon | 4.3 | 0.8% | 25 | 0.7% |
| Hume | 5.3 | 0.0% | 20 | 0.0% |
| Boroondara | 4.6 | 0.0% | 21 | 0.0% |
| Cardinia | 3.7 | 0.1% | 19 | 0.0% |
| Greater Shepparton | 3.2 | 0.1% | 16 | 0.0% |
| Latrobe (Vic.) | 2.8 | 0.1% | 25 | 0.1% |

Table C1: Estimated Total Economic Impact of Victorian Minerals Sector by LGA, 2023/24 (Type II)

| Local government area | Total GVA (\$M) | Total value added as % of GRP | Total jobs supported (FTEs) | % of regional employment |
|-----------------------|-----------------|-------------------------------|-----------------------------|--------------------------|
| Gannawarra | 2.8 | 0.4% | 10 | 0.2% |
| Frankston | 3.2 | 0.0% | 15 | 0.0% |
| Moorabool | 2.1 | 0.1% | 11 | 0.0% |
| Yarra | 2.3 | 0.0% | 10 | 0.0% |
| Moonee Valley | 2.2 | 0.0% | 8 | 0.0% |
| Stonnington | 2.2 | 0.0% | 7 | 0.0% |

Note: Excludes LGAs with total direct spend of less than \$1 million.

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