

An Input-Output Zero Greenhouse Gas Simulation – Method and Results

**Applied to the ‘Sheep, Grains, Beef and Dairy Cattle’ Sector of the
Hindmarsh, Yarriambiack, Horsham Rural City, and West Wimmera LGAs
(Scope 1 Emissions Only)**

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EXECUTIVE SUMMARY

This report provides an economic impact analysis of a net-zero Green-House Gas (GHG) emissions simulation performed on the farming areas of four Wimmera municipalities that are driving towards a net zero greenhouse gas (GHG) emission production environment.

The modelling removes only Scope 1 emissions from the ‘Sheep, grains, beef and dairy cattle’ sector (S0101). These are the emissions produced on-farm and on-site by this sector. It does not remove any Scope 2 and Scope 3 emissions that are embodied within this sector due to its receipt of flow-on inputs (factors of production) from the other 113 sectors within the 114-sector model. Nor does it remove Scope 1, 2 and 3 emissions from the other 113 sectors. To remove these emissions would require further modelling with considerable changes in technique.

The modelling uses a simple trend analysis which examines the changes in Scope 1 emissions alongside the changes in sector outputs associated with them. It was performed in partnership with Wimmera Southern Mallee Development (formerly Wimmera Development Association, WDA). This modelling builds upon other research undertaken as part of the *Wimmera Broadacre Farming Net-Zero Emissions project*, which was supported by the Department of Agriculture, Water and the Environment, through funding from Australian Government’s *National Landcare Program: Smart Farms Small Grants Round 4 & WSMD* (formerly WDA). This research is also related to WDA’s *Roadmap to Zero Grampians Agriculture Project*.

A time series examination and Federal and State Government reports suggests that GHG emissions from the ‘sheep, grains, beef and dairy cattle’ and other sectors were reduced in part to some activities changing their fuel sources. Also, sector outputs as measured in \$M AUD earnings increased partly due to global shortages of the sectors produce which forced up export prices and hence revenue earned.

The project reports the analysis of a zero GHG emissions simulation across the combined ‘sheep, grains, beef and dairy cattle’ sector for four Local Government Authorities (LGAs) being Hindmarsh, Yarriambiack, Horsham Rural City and West Wimmera. Under the net-zero scenario, the economies of each of these LGAs are projected to grow, and having these farms achieve a net-zero carbon emission level, is not expected to present any substantial negative impact on any of the economic sectors, nor on the overall economic activity.

Table 5 shows the economic impact on only the ‘sheep, grains, beef and dairy cattle’ sector for all four LGAs before and after sequestration. It shows all economic variables increasing due to initial impacts plus industry-support and consumption induced effects.

Table 6 shows an economy wide impact for each of the four LGAs. This is, it shows the zero GHG simulation result for each LGA's top five and lowest five performers. For the Hindmarsh, Yarriambiack, and Horsham LGAs, the main finding is that all 114 industry sectors are growing as shown by increases in their outputs through economic production and the flow-on effects from the 'sheep, grains, beef, and dairy cattle sector, while their GHGs are being reduced. Also, there were no adverse effects on other sectors with all regional economic indicators showing increases. For the West Wimmera LGA, most sectors experienced growth which was much larger for the top five performers. Very little if any of this growth was detected at the \$M AUD five decimal measure for the bottom five performers, due to weaker multipliers further down the sectors.

Table 7 shows increases in imports of goods, imports of services, exports of goods and exports of services. However, when netting some import values against their corresponding export values some resulting net-export values declined ever so slightly and this was due to the relevant import multiplier being slightly stronger than its corresponding export multiplier. This is not a concern as all relevant payments to labour and profits for farms and businesses, as measured by the Compensation of Employees (COE) and Gross Operating Surplus and Mixed Income (GOSMI) experienced increases. Also, these sectors were not part of the seven related agricultural sectors and were mainly concentrated within the lowest five performers of each region.

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SECTION ONE: INTRODUCTION

This report discussed a zero green-house gas (GHG) simulation that was applied to the ‘sheep, grains, beef and dairy cattle (S0101)’ sector within the Hindmarsh, Yarriambiack, Horsham Rural City, and West Wimmera LGA regional economies.

This was performed to determine the economic impact of removing Greenhouse Gases (GHGs) from within the ‘sheep, grains, beef and dairy cattle (S0101)’ sector production, for each region (i.e. LGA) and was performed using input-output (IO) models for these regional economies.

The modelling removes only Scope 1 emissions from the ‘Sheep, grains, beef and dairy cattle’ sector (S0101). These are the emissions produced on-farm and on-site by this sector. It does not remove any Scope 2 and Scope 3 emissions that are embodied within this sector due to its receipt of flow-on inputs (factors of production) from the other 113 sectors within the 114-sector model. Nor does it remove Scope 1, 2 and 3 emissions from the other 113 sectors. To remove these emissions would require further modelling with considerable changes in technique.

The modelling uses a simple trend analysis which examines the changes in Scope 1 emissions alongside the changes in sector outputs associated with them.

This report was commissioned by the previous Wimmera Development Board in lite of policy expectations that these LGAs move towards a non-GHG emission scenario commencing with their agricultural productions. As such, it is structured as follows.

The causations of on-farm GHG emissions, a review of past studies (findings and methods), Victoria’s long term and more recent trends are discussed in Sections 2, 3, 4 and 5 respectively. These are followed by discussions on the characteristics of the nominated regional economies, their inter-relations. and related sectors; concepts of economic impact and multiplier effects; and the data samples in Sections 6, 7 and 8 respectively. The method and net-zero GHG simulation procedure and results were discussed in Sections 9 and 10 respectively. The conclusion in Section 11, discusses policy implications and further research possibilities.

SECTION TWO: CAUSATION OF ON-FARM GREEN HOUSE GAS (GHG) EMISSIONS

On-farm and related agricultural GHG emissions result from using fuels to power the necessary on-farm production technologies. These fuels range from grid and off grid provided electricity, fossil fuels combustion (non-renewables), and on-farm generated gas or renewables. They provide the power (energy) needed to produce all crop, grain, meat, livestock, wool, and other agricultural products. Fuelled production systems include on-farm and off-farm transport, other operational systems. Staff accommodation and residential requirements are included within the household (residential) sector.

On-farm transport includes the use of tractors, trucks, four-wheel drive vehicles, quadbikes, motor bikes, helicopters (for mustering), and aircraft (for aerial spraying and pesticide delivery). In contrast, off-farm transport may deliver livestock to a saleyard or meatworks, or the stockfeed, crop seed or fertiliser to a place of use. Other operational equipment and on-farm systems may include irrigation, livestock drinking water; fertiliser delivery, automatic milking facilities, shearing equipment, production related cooling, heating, drying, and water provision. Fuel sources can include grid-provided electricity, farm-generated electricity, fossil fuels, or renewables. Fossil fuels include petrol, diesel, liquified petroleum gas (LPG), propane, natural gas, oil, and coal. These are used to fuel on-farm tractors and other transport equipment. A variety of gases can be used for agricultural industry heating and cooling purposes.

In comparison, farm-used renewable fuel sources include animal power, solar, wind, hydropower, tidal and wave energy, geothermal, biomass and biofuels such as biogas. These can be produced on or off the farm from decomposing wood, energy crops, biomass fermentation (ethanol), whilst biodiesel and biogas are produced from anaerobic digestion. Some renewables are well suited for portable and remote applications. Some may also provide lower cost options, improve energy access, diversify farm revenues, avoid disposal of waste products, reduce fossil fuel dependence and GHG emissions thereby assisting achieve sustainable development goals. For others, high up-front capital costs remain an issue when compared to traditional sources.

In addition, farm used electricity can either be grid-provided or on-farm generated. Electricity usually provides power for water pumping (for cleaning, drinking and irrigation) plus stationary operations such as heating, cooling, refrigeration, and ventilation machines. However, electricity generation produces high GHG levels due to its technological and historical reliance on burning coal and other fossil fuels. Furthermore, electricity generation costs have increased by 70-80 percent in recent years due to infrastructure network upgrades and metering service costs; whilst other additional costs stem from various State and Federal ‘Green’ schemes such as renewable energy target schemes, feed-in tariffs, and energy efficiency schemes. As stated earlier, electricity used for residential purposes are included within the household (residential) sector.

SECTION THREE: THE USE OF INPUT-OUTPUT TECHNIQUES (PAST STUDIES)

This section provides a brief review of Input-Output (IO) applications in examining the relations between Green House Gas (GHG) emissions and economic impact. It mainly considers how IO has been used to determine how energy embodied in non-energy exports and imports are transferred via global trade and how global trade has affected GHG emission levels for different nations with Brazil used as a major example. It is by no means an exhaustive and complete analysis as detailed mathematical explanations are avoided whilst the advantages of various method developments are emphasized. Further details can be obtained by reading the referred to journal publications.

All goods produced are directly or indirectly associated with energy use and therefore CO₂ emissions. Hence, generalized IO models for analysis of environmental flows have become well established in the literature from the 1960s onwards (Daly, 1968; Ayres and Kneese, 1969; Leontief, 1970 Leontief and Ford, 1971; Isard et al., 1972; Victor, 1972). These models link GHG for all sectors with intermediate transactions whilst Carbon Footprint analysis has quantified all direct and indirect (embodied) GHG emissions caused by a given level of final demand. For example, an automobile manufacturer uses energy and emits CO₂ directly in manufacturing a car, but indirectly when other companies make use of the energy and emit CO₂ to produce the required tyres, steel panels, plastic parts, and other inputs. IO techniques can trace direct and indirect energy use and CO₂ emissions is possible, assessing so called total energy and carbon embodied in a product in national or global markets. Thus IO use allowed the final demand impacts within the economy to be traced through to direct and indirect energy and environmental impacts.

In the 1970s and 1980s the use of IO provided insights to guide energy and environmental policies in many countries. See research by (Rmstader et al., (1977), Ostblom (1982), Roop (1987), Gowdy and Miller (1987), US DOE (1989), US Congress (1990), Casler and Blair (1997). Several researchers have also used IO methods to examine how global trade affects domestic energy demand and impacts the environment. Refer to Wright (1974), Herendeen (1974), Bullard and Herendeen (1975), Bullard et al. (1978), Costanza (1981), Hannon et al. (1983), Casler and Wilber (1984), Fieleke (1975), Bullard and Herendeen (1975), Herendeen (1978), Stephenson and Saha (1980), Strout (1985), Roop (1986), US DOE (1989), US Congress (1990), Han and Lakshmanan (1994), Wyckoff and Roop (1994), Schaeffer and Sa (1996), Young (1996), Khrushch (1996), Ostblom (1998), Lenzen (1998); Chang and Lin (1998), Wier (1998), Lange (1998), Proops et al., (1999).

Some specialists are particularly concerned with the emissions impact on climate change agreements (Wyckoff and Roop, 1994; Khrushch, 1996; Schaeffer and Sa, 1996; Lenzen, 1998; Wyckoff and Roop, 1994; Khrushch, 1996; Schaeffer and SA, 1996; Lenzen, 1998). This is possibly due to carbon leakage from countries submitting or not submitting to such agreements. Some national leaders argue that if GHG emissions policies focus mostly

on the domestic market of the first country category, they might reduce their domestic GHG emissions artificially by stopping the production of certain goods and importing them instead.

Machado, Schaeffer, and Worrell (2001) have used modified IO methods to determine international trade impacts on energy use and CO₂ emissions for Brazil for 1995. They developed a commodity by industry IO model with energy commodities in physical units and non-energy commodities in monetary units and were able to determine energy quantities embodied within non-energy commodities for imports and exports. Results show that total energy embodied in the exports of non-energy goods equals 831 PJ, while total carbon embodied is 13.5 MtC. These amounts are larger than the relevant amounts embodied in the imports of non-energy goods, respectively 679 PJ and 9.9 MtC. These figures are better understood by contrasting them with the total energy use and the corresponding total carbon emission of the Brazilian economy in 1995 estimated by this work: 6781 PJ and 99.4 MtC respectively. This means that international inflows and outflows of energy embodied in non-energy goods were determined at 10% to 12% of the total energy use, while inflows and outflows of carbon embodied in non-energy goods were determined at 10% and 14% of the corresponding total emissions in Brazil for 1995.

The findings were that Brazil was not only a net exporter on energy (153 PJ) and of carbon (3.6) MTC embodied in non-energy goods internationally traded by the country in 1995, but also that each dollar earned with exports embodied 40% more energy and 56% more carbon than each dollar spent on imports. These findings suggest that the Brazil policy makers should be concerned about the extra impacts international trade policy may have on energy use and carbon emissions of the country. They found that Brazil not only exported energy embodied in non-energy goods, but that each export dollar earned embodied 40% more energy and 56% more carbon than each dollar spent on imports. Findings suggest that policy makers should be concerned about the extra impacts international trade policy has on energy use and carbon emissions.

Bullard and Herendeen (1975) developed hybrid models that substituted energy rows expressed in physical units for energy rows valued in monetary terms in the IO table, before recalculating the Leontief inverse matrix based on the adjusted flows. The same procedure may be followed to get a hybrid model in carbon and monetary value units, after converting energy data in carbon units by applying the conversion factors (IPCC, 1996). The detailed derivation of the hybrid model in commodity-by-industry approach is provided by Hannon et al. (1983), Casler and Wilbur (1984) and Millar and Blair (1985). Hybrid models help overcome limitations associated with the usage of direct coefficients over the Leontief inverses matrix formulation (direct coefficient hereafter) when applied to energy issues. The most serious problem in using the direct coefficient formulation is the violation of the energy conservation law ($\text{primary energy} = \text{secondary energy} + \text{losses}$) which occurs when energy processes are not uniform in all industries, which is a strong constraint usually not verified (in reality). Another problem is that it introduces errors in the estimations when simulating new final demand vectors significantly different from base-year final demand vectors (Bullard and Herendeen, 1975; Millar and Blair, 1985; Casler and Blair, 1997).

In another study of the Brazil economy, De Santana Ribeiro, de Area Leao, and De Silva Freitas (2018) used IO models to calculate GHG emissions multipliers of the Brazil economy for 2009 and associated these results with employment and income multipliers, particularly in their agriculture sector. The field of influence method (Sonis and Hewings, 1992) is applied to calculate the inter-sectorial relations in terms of input linkages and GHG emissions. This model incorporates direct emissions and the matrix algebra allows for the level of emissions for a vector representing the total outputs for each sector to be calculated. The relationship between these emissions (direct and indirect), output, employment and income multipliers are then determined.

Minx, Wiedmann, Wood, Peters, Lenzen, Owen, Scott, Barrett, Hubacek, Baiocchi, Paul, Dawkins, Briggs, Guan, Suh and Ackerman (2009) used a multi-regional IO model to determine carbon footprint applications in seven areas: national emissions inventories and trade, emission drivers, economic sectors, supply chains, organizations, household consumption, lifestyles and sub-national inventories. They define CF purely as a consumption-based concept as direct and indirect GHG emissions required to satisfy a given level of consumption. Methodological frameworks to develop such commenced with Finkbeiner 2009.

Liping and Bin (2010) built upon the this work of Machado, Scheffer, Worrell (2001), Munksgaard and Pedersen, (2001); Peters (2008), Alcantara, and Padilla (2009); Pan, Phillips and Chen (2008); and developed IO Life Cycle Assessment models to account for embodied CO₂ emissions of the consumption of primary energy based on produce from the total supply chain up to the production gate, and the CO₂ emissions from the supply chains of industrial process combined with energy flow matrices. Their paper proposes a method that combines IO tables to identify systemic sources of CO₂ emissions within production structure and a carbon footprint inventory so that those sectors contributing the most to emissions can be identified and these were transportation equipment, smelting and pressing of metals; electricity, steam production and supply; coal mining and dressing; non-metal minerals mining and dressing; petroleum, coking and nuclear fuel processing.

In more recent studies by Dejuan, Portella-Carbo, Ortiz (2022), IO was used to examine the economic impact of decarbonization in energy intensive sectors being electricity generation, road transport, household consumption on value added, employment, energy consumption and GHG emission. Their analysis hypothesizes that emissions and employment will fall once renewables sources of energy replace fossil fuels, and they confirmed this using fictitious alternative energy data whilst admitting that large scale investment is required to build the new and alternative energy infrastructure. To compute these impacts, they used multiplier-accelerator models to a global multi-regional hybrid IO table and examined global impacts through international production chains. Some of their models used trend data to project or forecast possible outcomes. Their modelling also assumed that the electricity generated from fossil fuels like coal, oil and gas will be replaced by that generated from photovoltaic (PV) systems, and wind power stations, and internal combustion engines will be replaced with battery electric vehicles.

Whilst some of the modelling referred to in the previous paragraph used trend forecasts so too does the modelling and analysis performed, presented, and analyzed in this report. In summary, it is purely a simple trend-forecast method. While the data for Victoria shows a reduction in Scope 1 GHG emissions corresponding to increases in ‘sheep, grains, beef, and dairy cattle (S0101)’ sector balances in \$M AUD, a sector output dollar value can be predicted that corresponds to net-zero GHG Scope 1 emissions level for the nominated sector. In addition, some of this \$M AUD outputs increased is considered due to global price rises causing revenue earnings to increase when the sector’s product is short in supply globally.

Furthermore, whilst this trend-forecast method may remove direct emissions (Scope 1) produced on-farm by the ‘sheep, grains, beef and dairy cattle’ sector it does not remove Scope 2 and Scope 3 emissions that this sector has acquired from other sectors as flow-ons (whilst receiving inputs, factors of production from other sectors) and is therefore still embodied within its outputs as further modelling refinements are required to identify and remove the Scope 2 and Scope 3 components. Parallel to this, it does not remove all the Scope 1 emissions stemming from the outputs of the other 113 main sectors. Nor does it remove, but perhaps will reduce the Scope 2 and Scope 3 flow-on emissions passed to the other 113 sectors from the ‘sheep, grains, beef and dairy cattle’ sector. Whilst further modelling would be required to determine these unknown quantities, the technique does remove Scope 1 on-farm production emissions and is grounded within historical and methodological developments.

SECTION FOUR: VICTORIA, LONG TERM TRENDS

Table 1 below, shows the sector balances and Green House Gases (GHG) emissions for the ‘Sheep, grains, beef and dairy cattle’ sector from 1989-90 to 2018-19. It shows a simultaneous sector balance increase and GHG emissions decrease. Be it with the balance for 1989-90 missing. GHGs were sourced from the Victorian GHG inventory whilst Victorian sector balances were derived from national balances in proportion to employment shares. Overall, Table 1 data shows long-term decreases in GHGs for the ‘sheep, grains, beef and dairy cattle sector’ corresponding to increases in sector balances (outputs).

Table 1 – Green House Gases and Corresponding Sector Balances, Sheep, Grains, Beef and Dairy Cattle

Year	GHG Volumes kt CO ₂ -e		Balance \$M AUD	Percent Changes		
	Complete Agriculture, Forestry, Logging, Fishing, and Support Services	Sheep, Grains, Beef and Dairy Cattle (S0101)		Complete Agriculture, Forestry, Logging, Fishing, and Support Services	Sheep, Grains, Beef and Dairy Cattle (S0101)	Sheep, Grains, Beef and Dairy Cattle (S0101)
1989-90	25782.00	11744.88				
2017-18	13593.00	6136.04	8339.00	-47.28	-47.76	
2018-19	11.295.00	5145.39	8607.20	-16.91	-16.14	+3.22
Overall				-56.19	-56.19	

Sources: GHGs are sourced from National and Victorian GHG inventories.
 Sector balances are sourced from National IO tables adjusted for Victoria’s employment share.

For Table 2 below, the Victorian sector balances are calculated by reportioning national sector balances according to their Victorian employment share, which is standard IO practice. These initial national sector balances were sourced from the relevant national IO table within the National Accounts. Corresponding GHG volumes are first sourced from the Victorian GHG inventory and then allocated across each of the 114, 4-digit IO sectors. Table 2, Columns 11 and 12 show that from 2017-18 to 2018-19, a decrease in GHG of -3.69344 CO₂ equivalents corresponded to a \$1M increase in the balance of the ‘sheep, grains, beef and dairy cattle’ sector. Columns 13 and 14 show for all 114 sectors, whether balances and GHG volumes move in the same or opposite direction, and whether this suggests the use of on-site GHG reducing technologies. Possible reasons for such GHG emission decreases are explained in further in this section.

This exchange relationship of a decrease in GHG emissions of -3.69344 CO₂ equivalents corresponding to a \$1M increase in the balance of the ‘sheep, grains, beef and dairy cattle’ sector was then chosen as the foundation conversion factor for the non-zero GHG adjustment for two reasons. First, the intention was to simulate a non-

zero GHG impact in transition from 2018 to 2019 using only the on-farm practices and technology mix for those years as represented by the sample-farm GHG data.

Second, a relationship calculated over a longer time would require sample derived changes in GHG usages over a parallel time-period, or an average of the GHG volumes used over that same time-period. However, such data was not acquired, and using a longer-term exchange relationship would have placed less emphasis on the 2018 on-farm practices and technology mix which reflected in the survey data.

Table 3 below, shows the sample farm GHG usage as collected and categorised by Craig Hurley, Centre for National Sustainability, being converted to their \$M AUD equivalents. These sample farms are referred to as farms B, D, L and W and represent the ‘sheep, grains, beef and dairy cattle’ sector (S0101) within the Hindmarsh, Yarriambiack, Horsham and West Wimmera LGAs respectively.

SECTION FIVE: VICTORIA, RECENT TRENDS

Agriculture emissions vary considerably depending on seasonal conditions, domestic consumption, and export induced demand. Whilst some partial year-to-year explanations are provided within Federal and State Government emissions reports, a connected long-term trend analyses over several years that show the substitution of various energy sources for specific tasks, or their applications is lacking. Especially while sector outputs for the ‘sheep, grains, beef and dairy cattle sector (S0101)’ are increasing as their GHG emissions decline, as there may be some contribution from other energy sources that are undergoing technological change and hence reducing their own emissions whilst also supplying energy to this sector.

To determine if this is so, a more comprehensive IO analysis is required, and for such an analysis, the IO table needs to be constructed to show all possible energy sources (on both the supply and demand side) and their contributions, both direct-intermediate and flow on into all 114 main sectors. This would then relate energy sources to sector outputs to emissions. With two such IO tables representing different time periods, substitutions over time could be determined. Having said this, the more recent trends in GHG emissions for the ‘sheep, grains, beef and dairy cattle’ sector are sourced from the Annual Victorian Greenhouse Gas Emissions Reports, as published by the Victoria Department of Environment, Land, Water and Planning and these are described in the below paragraphs.

For both 2014/15 and 2015/16 emissions decreased by 3.4% due to reductions in enteric fermentation emissions as driven by declining beef cattle numbers from 26.3 to 24.2 million, and sheep numbers by 1.3 million, and reduced key crop production. In 2016 these comprised 12% of net emissions (1.44% directly and 10.56 indirect related) being the fourth largest share of total emissions behind electricity generation, transport, and direct combustion.

During 2016/17 emissions then increased 4.5% and this was caused mainly by increased enteric fermentation and agricultural soils, driven by increased beef cattle and sheep numbers at 3.6% and 7.1% respectively. The main contributors were livestock enteric fermentation (67%), the release of nitrous oxide by organic and inorganic fertilisers and crop residue to soils (21%). Cattle emissions were nearly three times higher than sheep emissions due to the higher emission intensity of cattle compared to sheep. In addition, agricultural sub-soils emissions increased due to increased crop land for wheat, barley and canola, and associated increases in the application of nitrogen fertilisers, crop residue and animal wastes.

During 2017/18 emissions then decreased 2.9% due to decreased enteric fermentation caused by reduced beef cattle, reduced agricultural soils and field burning of agricultural residues. These trends were considered to reflect reduced crop residues and fertiliser use for 2017/18 due to favourable conditions in the previous year.

During 2018/19 emissions also decreased. This time by 5.9% as initial severe drought conditions caused reduced supplies of irrigation water during the crop planting season, resulting in lower feed crop yields increased sheep and cattle stock losses. The floods that almost immediately followed the drought caused further stock and feed crop losses, even though sector balances increased possibly due to price rather than quantity increases.

During 2019/20 emission decreased further by 3.7% due to drought and flood induced stock feed and stock (cattle and sheep) losses. The following year (2020/21) saw emissions increase by 4.9% due to increased stock numbers and cropping yields.

SECTION SIX: THE REGIONAL ECONOMIES AND RELATED SECTORS

The regional economies of interest are the Hindmarsh, Yarriambiack, Horsham Rural City, and West-Wimmera LGAs, and each regional economy is defined and bounded by its LGA area. However, these four LGAs adjoin each other, share similar industry structures and impact upon each other's economies. In addition, their economic development is managed by the Wimmera Development Association, which commissioned this report.

Four input-output tables were constructed to reflect the structure of each LGA. Appendix A describes the IO table structure and construction details whilst Appendices B and C define and describe the relevant primary input and final demand quadrant economic variables (indicators and measures) respectively.

All four LGAs are intensive in agricultural production. Specifically: sheep meat, wool, grains, and beef cattle and other livestock such as goats, poultry, and pigs. Crops grown across the region include, wheat, sorghum, barley, hay, oats, canola triticale and others. The intensity of various grazing and cropping activities may vary across the region from time to time. As these four LGAs adjoin each other and share similar industry structures, an event or economic activity in one region may have a consequence for the other regions through economic flow-ons.

As the on-farm GHG emissions sample data concerns the activities of grain growing and cropping, sheep and beef meat, and wool production, the main input-output (national accounting) sector that include these activities is the 'sheep, grains, beef and dairy cattle sector (S0101)'. Changes in this sector will also impact other related sectors and this may vary across the regions and seasons somewhat. The immediate related sectors are:

- S0102 Poultry and other livestock,
- S0103 Other agriculture,
- S0201 Aquaculture,
- S0301 Forestry and logging,
- S0401 Fishing, hunting, and trapping,
- S0501 Agriculture, forestry, and fishing support services

SECTION SEVEN: ECONOMIC IMPACTS AND MULTIPLIER EFFECTS

For this report, an economic impact is the effect of increasing the economic activity of an LGA regional economy by removing GHGs from the ‘Sheep, grains, beef and dairy cattle sector (Sector 0101)’. Outputs from this sector also flow into other sectors to be used as inputs into their production. These are referred to as flow-ons and invariably increase (decrease) their contributions to other intermediate sector-flows and therefore increase (decrease) their output, employment, income, net-exports, and value-adding contributions. A mathematical explanation of economic impacts is provided in West (1993).

Economic impacts can be generated by demand-side or supply-side activity. The demand-side analysis considers the effect of increasing or decreasing the demand for products and services provided by the ‘Sheep, grains, beef and dairy cattle sector (Sector 0101)’. Supply-side analysis considers the effect of increasing or decreasing the supply of factors of production to this sector.

Economic impact is measured by changes in standard economic measures (variables) such as a sector’s output, income (compensation of employees, i.e. COE), profits (gross operating surplus and mixed income, i.e. GOSMI), value added and employment. The derived economic impact values provided in this report are calculated to meet the specified increases (reductions) in *final demand*. They are derived using a mathematical *matrix inversion method* that estimates the *various rounds of expenditure* within the *economic cycle* and are based on the *input-output models supporting equation* system which is like inter-connected formulas within a complex spread-sheet system (West, 1993). This equation system consists of intersecting simultaneous equations that represent both the rows and the columns. Economic impacts are derived for the policy scenarios listed below and the following tables are produced listing sector flows by decreasing value of economic impact. A comprehensive mathematical explanation of economic impacts within an input-output framework can be found in West (1993).

It is the strong connectivity across and between the agriculture-related sectors that is responsible for most of them appearing within the top five performing sectors once the final demand or outputs of the ‘sheep, grains, beef and dairy cattle sector (S0101)’ have been affected (impacted) as discussed in Section RR and reported in Table 5.

In addition, each of full number of modelled exchanging sectors, being 114, are inputting into themselves and the remaining 113 sectors continuously, and the value of these inputs will vary. Changes in these inputs due to changes be they increases or decreases in a final demand quadrant variable, which measures a specific activity create this phenomenon and this is referred to as the multiplier effect. It comes about due to the upstream and downstream (demand and supply chain connections) inter-sector linkages that evolve during the exchange process. These upstream and downstream linkages along with an array of multipliers can be measures in \$1M AUD terms and provided if requested.

Other examples of economic impacts and multiplier effects are when land and other resources are diverted from one primary industry activity into another activity and hence GHG emissions and land clearing activities alter. Alternatively, activity in one of these sectors such as S0101, causes flow-on inputs or factors of production to flow into sectors such as ‘other agriculture’ or ‘agriculture, forestry, and fishing support services.’

Appendix D illustrates what happens when either ‘sheep, grains, beef, and dairy cattle (S0101) or any of the six listed and related sectors above increase their output by \$1M AUD. The data shows how this is multiplied through rounds of economic expenditure. This exercise can be performed for any of the economic variables. That is, any of the primary input and final demand measures. Appendix D shows the initial shock or expenditure to the sector in Column 3. Resultant flow-ons are the first-round cycle of expenditure, industry support and consumption expenditures are in Columns 4, 5 and 6 respectively.

SECTION EIGHT: DATA SAMPLES

Four data samples were used to calculate GHG emission estimates for the ‘Sheep, grains, beef and dairy cattle (S0101)’ sector within each LGA, and these were sourced from the Federation University’s *Wimmera Broadacre Farming Net-Zero Emissions Project 2023*. The samples can be described as follows:

For Hindmarsh LGA: the sample is referred to as Farm B and provides GHG emissions resulting from grain, forage, and sheep production. Emissions are provided separately for these and then totalled.

For Yarriambiack LGA: the sample is referred to as Farm D and provides GHG emissions in one collection resulting from grains, sheep, and cattle production.

For Horsham Rural City LGA: the sample is referred to as Farm L and provides GHG emissions resulting from grains, sheep, and cattle production.

For West-Wimmera LGA: the sample is referred to as Farm W and provides GHG emissions on sheep and cattle production only. It is larger in area than the other farms and has higher GHG emission quantities.

SECTION NINE: METHOD AND NET-ZERO GHG SIMULATION PROCEDURE

In summary, an Input-Output (IO) model for each of the LGA regional economies was constructed at the 114 main-sector four-digit ANZSIC statistical classification level to mirror the sector representation within the National IO tables. Non-zero GHG simulations were then performed for each LGA using its respective IO model to determine the effects (economic impact) of converting the ‘sheep, grains, beef and dairy cattle (S0101)’ sector to producing zero greenhouse gasses in its production of economic outputs.

The method is multi-stage as follows:

First, Table 1 within Section 4 was constructed to identify and confirm long term trends from 1989/90 to 2018/19, for the outputs of the ‘sheep, grains, beef and dairy cattle (S0101)’ sector and their resultant GHG emissions for Victoria. The determined relationship is discussed in Section 4.

Second, Table 2 below, was then constructed to show this relationship for all 114 sectors for the period 2017/18 to 2018/19 and establish the relationship between the nominated ‘sheep, grains, beef and dairy cattle’ sector \$M AUD outputs and GHG emissions measured in CO₂ -e for the sample data period of 2018.

Third, Table 3 below, was then constructed to show the conversion of on-farm GHG CO₂ -e emissions, as sourced by sampling four farms referred to as farms B, D, L and W from the Hindmarsh, Yarriambiack, Horsham, and West-Wimmera LGAs respectively, into their corresponding \$M AUD equivalent values.

These \$M AUD equivalent values were then used to derive the non-zero GHG simulation adjustment values for the ‘sheep, grains, beef, and dairy cattle (S0101)’ sector within each LGA. As the sample data are GHG usages for 2018 only, the simulations were applied only to IO models that represented the LGA regional economies for that year.

As such, the simulation method assumes that production technologies, farming practices used by the sector, and trade conditions all existing in 2018 are responsible for the sector’s \$M AUD outputs (balances), and its resulting and corresponding GHG emissions; and that the technologies and farming practices used on each sample-farm is representative of those used across the whole LGA represented by that sample farm.

The Table 3 procedures for determining the input-output net-zero adjustment value is performed using 7 calculations as follows:

- Calculations 1 and 2 show the summation of on-farm survey derived Scope 1 (direct) and Scope 2 (indirect) GHG emissions with the totals provided in Rows 16 and 26 respectively,

- Only Scope 1 emissions are relevant to the sector \$M AUD outputs (balances) as they result from on-farm production outputs and are therefore allocated to such.
- Scope 2 and 3 emissions are treated as being associated with intermediate transaction flow-ons that contribute to final production outputs measured in \$M AUD. Hence, Scope 2 and 3 GHG are considered to contribute to the formation of the Scope 1 emissions.
- Calculation 3 aggregates all emission categories and removes ‘sequestration in trees’ to yield the net on-farm emissions and net-emissions per hectare values shown in Rows 30 and 31 respectively,
- Calculation 4 illustrates the specific GHG share of emissions for direct emissions with totals shown in Row 36 equalling those of Row 16,
- Calculation 5 determines GHG emission volumes for removal by subtracting ‘sequestration in trees’ from the direct emissions to yield the result in Row 40,
- Calculation 6 converts each sample derived on-farm GHG emission volume from calculation 5 into a \$1M AUD equivalent to be used in adjusting each of the specific input-output tables,
 - This is performed by dividing the Calculation 5 value by the conversion factor of -3.69344 CO₂ equivalents.
- Calculation 7 of Table 3 is micro-demonstrated in Table 4 below. It adjusts the Calculation 6 derived value which applies only for the sample-farm hectares, to determine an input-output \$M AUD adjustment that can be applied for the total farmed area of each LGA,
 - This is performed by multiplying the Column 5 values by the upscale adjustment in Column 7.
 - The upscale adjustment in Column 7, equals the fully farmed LGA hectares of Column 6, divided by the sample hectares of Column 4.

In summary, Table 4 shows that sample-farms B, D, L and W, produced 1.148023, 0.068310, 0.567180 and 1.747170 kt of CO₂ equivalents respectively. This equates to equivalent increases for the ‘Sheep, grains, beef and dairy cattle’ sector of \$0.220291M, \$0.011631M, \$0.037715M and \$0.473047 AUD respectively. When these later values are adjusted upwards to estimate the post sequestration \$M AUD increases for each LGA’s total

farmed area as shown in Table 2 Column 6, these values become \$8.46768M, \$3.77580M, \$11.93403 and 142.035404 the 'sheep, grains, beef and dairy cattle (S0101)' sector within each respective LGA.

'Sheep, grains, beef and dairy cattle' sector outputs were then increased for each LGA regional economy using the constructed IO tables by these values to remove the GHG volumes and determine accurate economic impacts across Hindmarsh, Yarriambiack, Horsham Rural City and West-Wimmera LGAs respectively. The GHG emissions volumes were manually removed by increasing the LGA outputs by the Column 7 upscale adjustment values. An increase in Final Demand function within the IO software provides the facility for making this adjustment.

When adjusted upwards to estimate the \$M AUD increases for each LGA's total farmed hectares (shown in Table 4, Column 3, post-sequestration calculation) the required increases in output (final demand) for the 'sheep, grains, beef and dairy cattle sector' becomes \$8.46768M, \$3.77580M, \$11.93403 and \$142.03540 for the Hindmarsh, Yarriambiack, Horsham Rural City, and West-Wimmera LGA regional economies respectively. Results are further discussed within Section 10.

Finally, Table 7 provides data on changes in exports and changes in imports for both their goods and services components. From this data the corresponding net-export changes were derived. Relevant multipliers and changes in components were calculated by the input-output software using the relevant command functions.

Table 2 – Victoria Sector Balances and Direct (Scope 1) Green House Gas Allocations, 2018 to 2019

Code	ANZSIC Sector	Sector Balances, \$M, AUD				Green House Gas Volumes, kt CO ₂ -e (Scope 1 – Direct Allocations from Production)				Exchange Rates (Prices)		Technology Behaviour	
		Input-Output, National Accounts	2017-18	2018-19	Balance Change	%Balance Change	2017-18	2018-19	Volume Change	%Volume Change	\$1M output causes kt CO ₂ -e	kt CO ₂ -e Per \$1M	Δ\$M AUD To Δkt CO ₂ -e
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
101	Sheep, grains, beef and dairy cattle	8339.0	8607.2	268.2	3.22	6136.04	5145.39	-990.65	-16.14	-3.69344	-0.27075	Opp.	Yes
102	Poultry and other livestock	1607.4	1698.3	90.8	5.65	1182.79	1015.22	-167.57	-14.17	-1.84492	-0.54203	Opp.	Yes
103	Other agriculture	5116.9	5196.7	79.9	1.56	3765.12	3106.60	-658.52	-17.49	-8.24587	-0.12127	Opp.	Yes
201	Aquaculture	381.0	405.2	24.2	6.36	280.33	242.22	-38.11	-13.59	-1.57339	-0.63557	Opp.	Yes
301	Forestry and logging	735.6	793.1	57.5	7.82	-9781.72	-8818.87	962.85	9.84	16.74011	0.05974	Same	No
401	Fishing, hunting, and trapping	547.5	572.8	25.3	4.62	402.87	342.42	-60.45	-15.00	-2.39001	-0.41841	Opp.	Yes
501	Agriculture, forestry, and fishing support services	1745.7	1620.9	-124.8	-7.15	1284.56	969.00	-315.56	-24.57	2.52857	0.39548	Same	No
601	Coal mining	2887.7	2971.3	83.6	2.90	1014.23	882.98	-131.25	-12.94	-1.56928	-0.63724	Opp.	Yes
701	Oil and gas extraction	2416.7	3118.8	702.1	29.05	848.80	926.80	78.00	9.19	0.11110	9.00117	Same	No
801	Iron ore mining	0.0	0.0	0.0	NA	0.00	0.00	0.00	NA	NA	NA	NA	NA
802	Non-ferrous metal ore mining	1943.5	1991.9	48.4	2.49	682.59	591.92	-90.67	-13.28	-1.87255	-0.53403	Opp.	Yes
901	Non-metallic mineral mining	255.3	265.2	9.9	3.88	89.67	78.81	-10.86	-12.11	-1.09634	-0.91212	Opp.	Yes
1001	Exploration and mining support services	676.8	671.3	-5.5	-0.81	237.71	199.49	-38.22	-16.08	6.94638	0.14396	Same	No
1101	Meat and meat product manufacturing	7955.9	7618.1	-337.8	-4.25	648.50	649.28	0.78	0.12	-0.00230	-433.88636	Opp.	Yes
1102	Processed seafood manufacturing	293.3	280.9	-12.4	-4.22	23.91	23.94	0.03	0.14	-0.00276	-361.82946	Opp.	Yes
1103	Dairy product manufacturing	3480.7	3233.0	-247.7	-7.12	283.72	275.54	-8.18	-2.88	0.03301	30.29041	Same	No
1104	Fruit and vegetable product manufacturing	1151.0	1096.9	-54.1	-4.70	93.82	93.49	-0.33	-0.35	0.00614	162.76056	Same	No
1105	Oils and fats manufacturing	435.8	421.3	-14.5	-3.32	35.52	35.91	0.39	1.09	-0.02668	-37.48655	Opp.	Yes
1106	Grain mill and cereal product manufacturing	1479.2	1387.1	-92.1	-6.22	120.57	118.22	-2.35	-1.95	0.02552	39.18329	Same	No
1107	Bakery product manufacturing	1997.4	1892.1	-105.3	-5.27	162.81	161.26	-1.55	-0.95	0.01475	67.79166	Same	No
1108	Sugar and confectionery manufacturing	2180.9	1987.1	-193.7	-8.88	177.77	169.36	-8.41	-4.73	0.04339	23.04688	Same	No
1109	Other food product manufacturing	2946.8	2878.3	-68.6	-2.33	240.20	245.31	5.11	2.13	-0.07451	-13.42140	Opp.	Yes

Table 2 – Victoria Sector Balances and Green House Gas Allocations, 2018 to 2019 (Cont.)

Code	ANZSIC Sector	Sector Balances, \$M, AUD				Green House Gass Volumes, kt CO ₂ -e (Scope 1 – Direct Allocations from Production)				Exchange Rates (Prices)		Technology Behaviour	
		Input-Output, National Accounts	2017-18	2018-19	Balance Change	%Balance Change	2017-18	2018-19	Volume Change	%Volume Change	\$1M output causes kt CO ₂ -e	kt CO ₂ -e Per \$1M	Δ\$M AUD To Δkt CO ₂ -e
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1201	Soft drinks, cordials and syrup manufacturing	1390.5	1253.5	-137.1	-9.86	113.35	106.83	-6.52	-5.75	0.04753	21.03994	Same	No
1202	Beer manufacturing	1087.7	1020.9	-66.9	-6.15	88.66	87.01	-1.66	-1.87	0.02479	40.33912	Same	No
1205	Wine, spirits and tobacco	1611.6	1486.5	-125.1	-7.76	131.37	126.69	-4.67	-3.56	0.03735	26.77625	Same	No
1301	Textile manufacturing	110.4	114.0	3.6	3.24	9.00	9.72	0.72	7.95	0.19985	5.00377	Same	No
1302	Tanned leather, dressed fur and leather product manufacturing	229.8	187.8	-42.0	-18.29	18.73	16.00	-2.73	-14.57	0.06491	15.40506	Same	No
1303	Textile product manufacturing	747.0	693.9	-53.1	-7.11	60.89	59.14	-1.75	-2.88	0.03296	30.33768	Same	No
1304	Knitted product manufacturing	13.6	10.2	-3.4	-25.07	1.11	0.87	-0.24	-21.65	0.07040	14.20394	Same	No
1305	Clothing manufacturing	274.6	252.3	-22.4	-8.14	22.39	21.50	-0.89	-3.95	0.03958	25.26376	Same	No
1306	Footwear manufacturing	105.0	109.4	4.3	4.13	8.56	9.32	0.76	8.87	0.17527	5.70555	Same	No
1401	Sawmill product manufacturing	1200.2	1158.2	-42.0	-3.50	97.83	98.71	0.88	0.90	-0.02097	-47.69149	Opp.	Yes
1402	Other wood product manufacturing	2350.5	2226.7	-123.8	-5.27	191.59	189.78	-1.81	-0.95	0.01465	68.26723	Same	No
1501	Pulp, paper and paperboard manufacturing	703.7	650.0	-53.8	-7.64	57.36	55.40	-1.97	-3.43	0.03658	27.34038	Same	No
1502	Paper stationery and other converted paper product manufacturing	1709.5	1565.2	-144.3	-8.44	139.34	133.39	-5.95	-4.27	0.04121	24.26537	Same	No
1601	Printing (including the reproduction of recorded media)	1587.0	1471.5	-115.5	-7.28	129.36	125.41	-3.95	-3.05	0.03417	29.26216	Same	No
1701	Petroleum and coal product manufacturing	6041.7	5438.9	-602.9	-9.98	492.47	463.54	-28.93	-5.87	0.04799	20.83970	Same	No
1801	Human pharmaceutical and medicinal product manufacturing	2643.3	2615.6	-27.7	-1.05	215.46	222.92	7.47	3.47	-0.26995	-3.70440	Opp.	Yes
1802	Veterinary pharmaceutical and medicinal product manufacturing	186.2	178.7	-7.5	-4.03	15.18	15.23	0.05	0.35	-0.00698	-143.32260	Opp.	Yes
1803	Basic chemical manufacturing	3284.7	3175.2	-109.6	-3.34	267.74	270.61	2.87	1.07	-0.02618	-38.19257	Opp.	Yes
1804	Cleaning compounds and toiletry preparation manufacturing	747.3	716.6	-30.7	-4.11	60.91	61.07	0.16	0.26	-0.00519	-192.54303	Opp.	Yes
1901	Polymer product manufacturing	3284.2	3218.4	-65.8	-2.00	267.70	274.30	6.60	2.46	-0.10021	-9.97885	Opp.	Yes

Table 2 – Victoria Sector Balances and Green House Gas Allocations, 2018 to 2019 (Cont.)

Code	ANZSIC Sector	Sector Balances, \$M, AUD				Green House Gas Volumes, kt CO ₂ -e (Scope 1 – Direct Allocations from Production)				Exchange Rates (Prices)		Technology Behaviour	
		Input-Output, National Accounts	2017-18	2018-19	Balance Change	%Balance Change	2017-18	2018-19	Volume Change	%Volume Change	\$1M output causes kt CO ₂ -e	kt CO ₂ -e Per \$1M	Δ\$M AUD To Δkt CO ₂ -e
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1902	Natural rubber product manufacturing	232.4	206.5	-25.9	-11.13	18.94	17.60	-1.34	-7.08	0.05185	19.28584	Same	No
2001	Glass and glass product manufacturing	1005.8	850.7	-155.1	-15.42	81.98	72.50	-9.48	-11.56	0.06113	16.35938	Same	No
2002	Ceramic product manufacturing	333.8	292.3	-41.5	-12.44	27.21	24.91	-2.30	-8.45	0.05536	18.06329	Same	No
2003	Cement, lime and ready-mixed concrete manufacturing	2431.9	2199.4	-232.5	-9.56	198.23	187.45	-10.78	-5.44	0.04636	21.57155	Same	No
2004	Plaster and concrete product manufacturing	916.6	819.5	-97.2	-10.60	74.71	69.84	-4.87	-6.52	0.05017	19.93412	Same	No
2005	Other non-metallic mineral product manufacturing	502.1	448.3	-53.8	-10.71	40.93	38.21	-2.72	-6.64	0.05052	19.79283	Same	No
2101	Iron and steel manufacturing	2717.3	2430.6	-286.7	-10.55	221.49	207.16	-14.33	-6.47	0.05000	19.99944	Same	No
2102	Basic non-ferrous metal manufacturing	11138.4	10515.8	-622.6	-5.59	907.91	896.24	-11.67	-1.29	0.01874	53.35590	Same	No
2201	Forged iron and steel product manufacturing	192.6	188.4	-4.2	-2.18	15.70	16.06	0.36	2.28	-0.08525	-11.73033	Opp.	Yes
2202	Structural metal product manufacturing	4175.5	4121.8	-53.7	-1.29	340.35	351.29	10.94	3.22	-0.20387	-4.90510	Opp.	Yes
2203	Metal containers and other sheet metal product manufacturing	1034.7	992.6	-42.1	-4.07	84.34	84.60	0.26	0.31	-0.00619	-161.67350	Opp.	Yes
2204	Other fabricated metal product manufacturing	1966.2	1847.7	-118.5	-6.03	160.27	157.48	-2.79	-1.74	0.02355	42.46452	Same	No
2301	Motor vehicles and parts; other transport equipment manufacturing	2917.9	2611.4	-306.4	-10.50	237.84	222.57	-15.27	-6.42	0.04984	20.06357	Opp.	Yes
2302	Ships and boat manufacturing	1365.7	1321.9	-43.8	-3.21	111.32	112.66	1.34	1.21	-0.03068	-32.59082	Opp.	Yes
2303	Railway rolling stock manufacturing	1007.0	1129.5	122.5	12.16	82.09	96.27	14.18	17.28	0.11578	8.63688	Same	No
2304	Aircraft manufacturing	1349.0	1278.7	-70.4	-5.22	109.96	108.98	-0.98	-0.90	0.01399	71.49563	Same	No
2401	Professional, scientific, computer and electronic equipment manufacturing	2497.8	2559.0	61.2	2.45	203.60	218.09	14.50	7.12	0.23690	4.22125	Same	No
2403	Electrical equipment manufacturing	1179.5	1156.1	-23.3	-1.98	96.14	98.53	2.39	2.49	-0.10264	-9.74298	Opp.	Yes
2404	Domestic appliance manufacturing	325.3	304.8	-20.6	-6.33	26.52	25.97	-0.55	-2.06	0.02652	37.70843	Same	No
2405	Specialised and other machinery and equipment manufacturing	3217.4	3167.3	-50.1	-1.56	262.25	269.94	7.69	2.93	-0.15364	-6.50864	Opp.	Yes

Table 2 – Victoria Sector Balances and Green House Gas Allocations, 2018 to 2019 (Cont.)

Code	ANZSIC Sector	Sector Balances, \$M, AUD				Green House Gas Volumes, kt CO ₂ -e (Scope 1 – Direct Allocations from Production)				Exchange Rates (Prices)		Technology Behaviour	
		Input-Output, National Accounts	2017-18	2018-19	Balance Change	%Balance Change	2017-18	2018-19	Volume Change	%Volume Change	\$1M output causes kt CO ₂ -e	kt CO ₂ -e Per \$1M	Δ\$M AUD To Δkt CO ₂ -e
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2501	Furniture manufacturing	1149.0	1102.5	-46.5	-4.05	93.65	93.96	0.31	0.33	-0.00662	-151.09521	Opp.	Yes
2502	Other manufactured products	634.8	597.5	-37.3	-5.88	51.74	50.92	-0.82	-1.59	0.02203	45.39101	Opp.	Yes
2601	Electricity generation	4269.9	4523.0	253.0	5.93	9065.98	9120.32	54.34	0.60	0.21473	4.65691	Opp.	Yes
2605	Electricity transmission, distribution, on selling and electricity market operation	11781.4	11592.4	-189.1	-1.60	25014.57	23375.40	-1639.17	-6.55	8.67039	0.11534	Same	No
2701	Gas supply	1146.3	1191.1	44.9	3.91	2433.80	2401.84	-31.95	-1.31	-0.71236	-1.40379	Opp.	Yes
2801	Water supply, sewerage and drainage services	4999.7	5041.2	41.5	0.83	10615.39	10165.26	-450.13	-4.24	-10.84384	-0.09222	Opp.	Yes
2901	Waste collection, treatment and disposal services	3518.8	3579.2	60.4	1.72	7471.12	7217.26	-253.86	-3.40	-4.20070	-0.23806	Opp.	Yes
3001	Residential building construction	19769.5	19176.0	-593.5	-3.00	394.19	408.84	14.65	3.72	-0.02468	-40.52195	Opp.	Yes
3002	Non-residential building construction	11678.2	11663.6	-14.6	-0.13	232.86	248.67	15.81	6.79	-1.07965	-0.92623	Opp.	Yes
3101	Heavy and civil engineering construction	15913.6	14529.2	-1384.4	-8.70	317.31	309.77	-7.54	-2.38	0.00545	183.58848	Same	No
3201	Construction services	50184.8	49705.5	-479.3	-0.96	1000.65	1059.73	59.08	5.90	-0.12327	-8.11237	Opp.	Yes
4601	Road transport	11595.7	12130.8	535.1	4.61	6631.91	6691.09	59.18	0.89	0.11060	9.04144	Same	No
4701	Rail transport	3121.5	3107.2	-14.3	-0.46	1785.26	1713.86	-71.40	-4.00	4.99703	0.20012	Same	No
4801	Water, pipeline and other transport	2153.4	2387.7	234.2	10.88	1231.62	1317.00	85.38	6.93	0.36451	2.74344	Same	No
4901	Air and space transport	5585.5	5982.0	396.6	7.10	3194.49	3299.58	105.09	3.29	0.26499	3.77373	Same	No
5101	Postal and courier pick-up and delivery service	3107.2	3160.8	53.6	1.72	1777.08	1743.42	-33.66	-1.89	-0.62809	-1.59213	Opp.	Yes
5201	Transport support services and storage	13228.6	13599.1	370.5	2.80	7565.79	7500.97	-64.83	-0.86	-0.17498	-5.71499	Opp.	Yes
6701	Ownership of dwellings	42842.0	44573.0	1731.0	4.04	NA	NA	NA	NA	NA	NA	NA	NA
3301 (F,G)	Wholesale trade	32563.3	34845.4	2282.0	7.01	338.47	349.50	11.03	3.26	0.00483	206.90673	Same	No
3901 (F,G)	Retail trade	29308.1	29041.4	-266.7	-0.91	304.63	291.28	-13.35	-4.38	0.05004	19.98212	Same	No
4401 (H,P,Q)	Accommodation	3696.5	3831.4	134.9	3.65	20.95	19.78	-1.17	-5.57	-0.00865	-115.62752	Opp.	Yes
4501 (H,P,Q)	Food and beverage services	15233.4	15549.3	315.9	2.07	86.32	80.27	-6.05	-7.01	-0.01915	-52.21201	Opp.	Yes

Table 2 – Victoria Sector Balances and Green House Gas Allocations, 2018 to 2019 (Cont.)

Code	ANZSIC Sector	Sector Balances, \$M, AUD				Green House Gass Volumes, kt CO ₂ -e (Scope 1 – Direct Allocations from Production)				Exchange Rates (Prices)		Technology Behaviour	
		Input-Output, National Accounts	2017-18	2018-19	Balance Change	%Balance Change	2017-18	2018-19	Volumes Change	%Volume Change	\$1M output causes kt CO ₂ -e	kt CO ₂ -e Per \$1M	Δ\$M AUD To Δkt CO ₂ -e
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
8401 (H,P,Q)	Health care services	23196.7	22948.0	-248.7	-1.07	131.44	118.46	-12.98	-9.87	0.05218	19.16375	Same	No
8601 (H,P,Q)	Residential care and social assistance services	15244.7	16124.5	879.8	5.77	86.38	83.24	-3.14	-3.64	-0.00357	-279.80047	Opp.	Yes
5401 (J)	Publishing (except internet and music publishing)	2175.5	2092.5	-82.9	-3.81	14.11	11.81	-2.30	-16.31	0.02775	36.03151	Same	No
5501 (J)	Motion picture and sound recording	2029.8	2084.3	54.4	2.68	13.17	11.76	-1.40	-10.66	-0.02578	-38.79712	Opp.	Yes
5601 (J)	Broadcasting (except internet)	2768.6	2552.9	-215.7	-7.79	17.96	14.41	-3.55	-19.77	0.01646	60.75926	Same	No
5701 (J)	Internet service providers, internet publishing and broadcasting, web-search portals and data processing	3686.8	3857.3	170.5	4.63	23.91	21.77	-2.14	-8.97	-0.01257	-79.53826	Opp.	Yes
5801 (J)	Telecommunication services	14843.2	14683.1	-160.1	-1.08	96.28	82.86	-13.41	-13.93	0.08378	11.93583	Same	No
6001 (J)	Library and other information services	491.5	479.8	-11.6	-2.37	3.19	2.71	-0.48	-15.05	0.04125	24.24244	Same	No
6201 (K,L)	Finance	36135.4	37584.0	1448.5	4.01	107.95	107.47	-0.48	-0.45	-0.00033	-2990.25450	Opp.	Yes
6301 (K,L)	Insurance and superannuation funds	14225.3	14379.5	154.2	1.08	42.50	41.12	-1.38	-3.25	-0.00895	-111.70370	Opp.	Yes
6401 (K,L)	Auxiliary finance and insurance services	14502.9	14741.8	239.0	1.65	43.33	42.15	-1.17	-2.71	-0.00491	-203.62788	Opp.	Yes
6601 (K,L)	Rental and hiring services (except real estate)	4577.9	4683.3	105.3	2.30	13.68	13.39	-0.28	-2.08	-0.00271	-369.54053	Opp.	Yes
6702 (K,L)	Non-residential property operators and real estate services	17988.7	17697.1	-291.6	-1.62	53.74	50.60	-3.14	-5.84	0.01076	92.94898	Same	No
8010 (K,L)	Primary and secondary education services (including pre-schools and special schools)	15856.1	15970.9	114.8	0.72	89.85	82.45	-7.40	-8.24	-0.06446	-15.51365	Opp.	Yes
8110 (K,L)	Technical, vocational and tertiary education services (including undergraduate and postgraduate)	12422.2	12609.1	186.9	1.50	70.39	65.09	-5.30	-7.53	-0.02834	-35.28112	Opp.	Yes
6901 (M)	Professional, scientific and technical services	39139.1	42171.6	3032.5	7.75	154.46	143.58	-10.88	-7.04	-0.00359	-278.72395	Opp.	Yes
7501 (N,O)	Public administration and regulatory services	16468.6	18790.7	2322.1	14.10	103.02	219.31	116.29	112.87	0.05008	19.96901	Same	No
7601 (N,O)	Defence	5836.0	6704.5	868.6	14.88	36.51	78.25	41.74	114.33	0.04806	20.80808	Same	No
7701 (N,O)	Public order and safety	5157.0	5968.5	811.5	15.74	32.26	69.66	37.40	115.92	0.04609	21.69807	Same	No
8210 (R)	Arts, sports, adult and other education services (including community education)	2242.5	2218.3	-24.3	-1.08	-42.23	-31.67	10.56	-25.00	-0.43458	-2.30105	Opp.	Yes

Table 2 – Victoria Sector Balances and Green House Gas Allocations, 2018 to 2019 (Cont.)

Code	ANZSIC Sector	Sector Balances, \$M, AUD				Green House Gas Volumes, kt CO ₂ -e (Scope 1 – Direct Allocations from Production)				Exchange Rates (Prices)		Technology Behaviour	
		Input-Output, National Accounts	2017-18	2018-19	Balance Change	%Balance Change	2017-18	2018-19	Volume Change	%Volume Change	\$1M output causes kt CO ₂ -e	kt CO ₂ -e Per \$1M	Δ\$M AUD To Δkt CO ₂ -e
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
8901 (R)	Heritage, creative and performing arts	1933.3	1971.3	38.0	1.97	-36.41	-28.15	8.26	-22.69	0.21735	4.60088	Same	No
9101 (R)	Sports and recreation	4250.2	4224.3	-25.9	-0.61	-80.04	-60.32	19.72	-24.64	-0.76139	-1.31339	Opp.	Yes
9201 (R)	Gambling	2591.6	2463.1	-128.5	-4.96	-48.80	-35.17	13.63	-27.94	-0.10610	-9.42503	Opp.	Yes
7001 (S)	Computer systems design and related services	13270.1	14011.7	741.6	5.59	83.01	163.53	80.52	96.99	0.10857	9.21069	Same	No
7210 (S)	Employment, travel agency and other administrative services	18906.3	18853.2	-53.2	-0.28	118.27	220.04	101.77	86.04	-1.91353	-0.52259	Opp.	Yes
7310 (S)	Building cleaning, pest control and other support services	4904.4	4867.9	-36.5	-0.75	30.68	56.81	26.13	85.18	-0.71522	-1.39817	Opp.	Yes
9401 (S)	Automotive repair and maintenance	4552.3	4640.9	88.6	1.95	28.48	54.16	25.69	90.20	0.28988	3.44967	Same	No
9402 (S)	Other repair and maintenance	3453.0	3439.1	-13.9	-0.40	21.60	40.14	18.54	85.82	-1.33460	-0.74929	Opp.	Yes
9501 (S)	Personal services	3693.2	3635.2	-57.9	-1.57	23.10	42.43	19.32	83.64	-0.33354	-2.99811	Opp.	Yes
9502 (S)	Other services	2545.0	2713.9	168.9	6.64	123.84	110.28	-13.56	-10.95	-0.08027	-12.45786	Opp.	Yes
	Totals	714958.9	724764.7	9805.8	1.37	94604.00	91329.00	-3275.00	-3.46				

Source: Sector balances from Australia Input-Output tables, Australia National Accounts.
GHG emissions from Victoria and National GHG Inventory

Table 3 – Conversion of Green House Gas Volumes to Monetary Values for Performance of Zero GHG Input-Output Simulations, Kt CO₂-e to \$M AUD Sheep, Grains, Beef, Dairy Cattle (Sector 0101)

(1)	Activity	GHG	GHG Volumes in kt CO ₂ -e							Percent of kt CO ₂ -e Contributions						
			Hindmarsh City Council (Farm B)				Yarriam.	Horsham	W-Wim.	Hindmarsh City Council (Farm B)				Yarriam.	Horsham	W-Wim.
			Farm B				Farm D	Farm L	Farm W	Farm B				Farm D	Farm L	Farm W
			Grain	Forage	Sheep	Total				Grain	Forage	Sheep	Total			
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
1	CALCULATION 1: SCOPE 1 DIRECT EMISSIONS															
2	Fuel	CO ₂	0.108073	0.083626	0.032567	0.224266	0.032510	0.116330	0.035600	60.93	82.50	0.88	5.61	16.16	17.89	1.97
3	Lime	CO ₂	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.046610	0.00	0.00	0.00	0.00	0.00	0.00	2.58
4	Urea Application	CO ₂	0.000000	0.000000	0.000000	0.000000	0.000000	0.022940	0.000000	0.00	0.00	0.00	0.00	0.00	3.53	0.00
5	Field Burning	CH ₄	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Fuel	CH ₄	0.000155	0.000121	0.000010	0.000285	0.000050	0.000100	0.000010	0.09	0.12	0.00	0.01	0.02	0.02	0.00
7	Enteric	CH ₄	0.000000	0.000000	3.240314	3.240314	0.032290	0.339360	1.556330	0.00	0.00	87.19	81.10	16.05	52.18	86.04
8	Manure Management	CH ₄	0.000000	0.000000	0.177917	0.177917	0.001010	0.014750	0.084570	0.00	0.00	4.79	4.45	0.50	2.27	4.68
9	Fertiliser	N ₂ O	0.010998	0.013805	0.000000	0.024802	0.062410	0.065480	0.000000	6.20	13.62	0.00	0.62	31.02	10.07	0.00
10	Atmospheric deposition	N ₂ O	0.001210	0.001519	0.015798	0.018526	0.006870	0.009460	0.008120	0.68	1.50	0.43	0.46	3.41	1.45	0.45
11	Urine and dung	N ₂ O	0.000000	0.000000	0.150458	0.150458	-0.000040	0.021510	0.077320	0.00	0.00	4.05	3.77	-0.02	3.31	4.27
12	Field (Savana) Burning	N ₂ O	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Crop residues	N ₂ O	0.043438	0.000000	0.000000	0.043438	0.045460	0.028560	0.000000	24.49	0.00	0.00	1.09	22.60	4.39	0.00
14	Leaching and Runoff	N ₂ O	0.012964	0.001878	0.099302	0.114144	0.020470	0.031460	0.000000	7.31	1.85	2.67	2.86	10.17	4.84	0.00
15	Fuel	N ₂ O	0.000541	0.000421	0.000097	0.001059	0.000160	0.000470	0.000240	0.31	0.42	0.00	0.03	0.08	0.07	0.01
16	Total (Scope 1) (ΣR2:R15)	CO₂	0.177379	0.101368	3.716463	3.995210	0.201190	0.650420	1.808800	100.00	100.00	100.00	100.00	100.00	100.00	100.00
17	CALCULATION 2: SCOPE 2 AND 3 INDIRECT EMISSIONS															
18	Electricity (Scope 2 off-farm emission)	CO ₂	0.000289	0.000327	0.000000	0.000616	0.000034	0.000168	0.002330	0.18	0.28	0.00	0.09	0.01	0.08	1.00
19	Fertiliser (Scope 3, Pre-farm)	N ₂ O	0.000000	0.000000	0.197335	0.197335	0.000000	0.029410	0.047360	0.00	0.00	49.25	29.02	0.00	13.59	20.34
20	Herbicides / pesticides (Scope 3, Pre-farm)	N ₂ O	0.157676	0.111215	0.000000	0.268891	0.281300	0.117770	0.000000	96.40	95.97	0.00	39.54	85.26	54.40	0.00
21	Electricity (Scope 3, Pre-farm)	CO ₂	0.000028	0.000032	0.000000	0.000060	0.000003	0.000020	0.000230	0.02	0.03	0.00	0.01	0.00	0.01	0.10
22	Fuel (Scope 3, Pre-farm)	CH ₄	0.005566	0.004307	0.001740	0.011613	0.001740	0.003300	0.001840	3.40	3.72	0.43	1.71	0.53	1.52	0.79
23	Lime (Scope 3, Pre-farm)	CO ₂	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.001950	0.00	0.00	0.00	0.00	0.00	0.00	0.84

Table 3 – Conversion of Green House Gas Volumes to Monetary Values for Performance of Zero GHG Input-Output Simulations, Kt CO₂-e to \$M AUD Sheep, Grains, Beef, Dairy Cattle (Sector 0101)

(1)	(2)	GHG	GHG Volumes in kt CO ₂ -e							Percent of kt CO ₂ -e Contributions						
			Hindmarsh City Council (Farm B)				Yarriam.	Horsham	W-Wim.	Hindmarsh City Council (Farm B)				Yarriam.	Horsham	W-Wim.
			Farm B				Farm D	Farm L	Farm W	Farm B				Farm D	Farm L	Farm W
			Grain	Forage	Sheep	Total				Grain	Forage	Sheep	Total			
(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)		
24	Purchased livestock (Scope 3, Pre-farm)	CO ₂	0.000000	0.000000	0.027900	0.027900	0.000000	0.055660	0.055230	0.00	0.00	6.96	4.10	0.00	25.71	23.72
25	Purchased feed	CO ₂	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.123880	0.00	0.00	0.00	0.00	0.00	0.00	53.21
26	Total (Scope 2 plus Scope 3) (ΣR18:R25)	CO ₂	0.163559	0.115881	0.400650	0.680090	0.329947	0.216478	0.232820	100.00	100.00	100.00	100.00	100.00	100.00	100.00
27	CALCULATION 3: ALL EMISSION, SCOPE 1, 2 AND 3															
28	Total (Scope 1, 2 plus 3; (R16 + R26)	CO ₂	0.340938	0.217249	4.117113	4.675300	0.531137	0.866898	2.041620	NA	NA	NA	NA	NA	NA	NA
29	Less: Carbon sequestration in trees (S0301)	CO ₂	-2.847186	0.000000	0.000000	-2.847186	-0.032880	-0.083240	-0.061660	NA	NA	NA	NA	NA	NA	NA
30	Yields: Net Farm Emissions (R28 – R29)	CO ₂	-2.506248	0.217249	4.117113	1.828114	0.498257	0.783658	1.979960	NA	NA	NA	NA	NA	NA	NA
31	Net emissions kt/ha	CO ₂	NA	NA	NA	0.000210	0.000290	0.000820	0.001854	NA	NA	NA	NA	NA	NA	NA
32	CALCULATION 4: FOR INPUT-OUTPUT ADJUST (Scope 1 only)															
33	CO ₂	CO ₂	0.108073	0.083626	0.032567	0.224266	0.032510	0.139270	0.082210	60.93	82.50	0.88	5.61	16.16	21.41	4.54
34	CH ₄	CO ₂	0.000155	0.000121	3.418241	3.418516	0.033350	0.354210	1.640930	0.09	0.12	91.98	85.57	16.58	54.46	90.72
35	N ₂ O	CO ₂	0.069151	0.017622	0.265654	0.352427	0.135330	0.156940	0.085690	38.98	17.38	7.15	8.82	67.26	24.13	4.74
36	TOTAL: Direct Emissions (ΣR33:R35)	CO ₂	0.177379	0.101368	3.716463	3.995210	0.201190	0.650420	1.808830	100.00	100.00	100.00	100.00	100.00	100.00	100.00
37	CALCULATION 5: GHG EMISSION VOLUMES FOR REMOVAL:															
38	TOTAL: Direct GHG emissions	CO ₂	0.177379	0.101368	3.716463	3.995210	0.201190	0.650420	1.808830	100.00	100.00	100.00	100.00	100.00	100.00	100.00
39	LESS: Sequestration in trees (vegetation)	CO ₂	-2.847186	-0.000000	-0.000000	-2.847186	-0.032880	-0.083240	-0.061660	NA	NA	NA	NA	NA	NA	NA
40	YIELDS: Net Direct GHG Emissions	CO ₂	-2.669807	0.101368	3.716463	1.148024	0.168310	0.567180	1.747170	NA	NA	NA	NA	NA	NA	NA
41	CALCULATION 6: RESULTING \$M AUD ADJUSTMENT (INCREASE) FOR S0101 (FROM SAMPLE FARM HECTARES)															
42	TOTAL: Direct \$M Adjustment Increase	\$M AUD	0.010397	0.005941	0.217819	0.234157	0.011792	0.038121	0.489741	100.00	100.00	100.00	100.00	100.00	100.00	100.00
43	LESS: Sequestration in trees (vegetation)	\$M AUD	-0.013866	-0.000000	-0.000000	-0.013866	-0.000160	-0.000405	-0.016694	NA	NA	NA	NA	NA	NA	NA
44	YIELDS: \$M increase in Sector 0101 Balance	\$M AUD	0.003469	0.005941	0.217819	0.220291	0.011631	0.037715	0.473047	NA	NA	NA	NA	NA	NA	NA
45	CALCULATION 7: RESULTING \$M AUD ADJUSTMENT (INCREASE) FOR S0101 (FOR WHOLE LGA FARMED AREA HECTARES)															
6	TOTAL: Direct \$M Adjustment Increase	\$M AUD	0.399646	0.228364	8.372660	9.000670	3.827737	12.062179	147.048027	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 3 – Conversion of Green House Gas Volumes to Monetary Values for Performance of Zero GHG Input-Output Simulations, Kt CO₂ -e to \$M AUD (Cont.)
Sheep, Grains, Beef, Dairy Cattle (Sector 0101)

	Activity	GHG	GHG Volumes in kt CO ₂ -e							Percent of kt CO ₂ -e Contributions						
			Hindmarsh City Council (Farm B)				Yarriam.	Horsham	W-Wim.	Hindmarsh City Council (Farm B)				Yarriam.	Horsham	W-Wim.
			Farm B				Farm D	Farm L	Farm W	Farm B				Farm D	Farm L	Farm W
(1)	(2)	(3)	Grain	Forage	Sheep	Total	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
47	LESS: Sequestration in trees (vegetation)	\$M AUD	-0.532990	-0.000000	-0.000000	-0.532990	-0.051937	-0.128149	-5.012622	NA	NA	NA	NA	NA	NA	NA
48	YIELDS: \$M increase in Sector 0101 Balance	\$M AUD	-0.133344	0.228364	8.372660	8.467680	3.775800	11.934030	142.035404	NA	NA	NA	NA	NA	NA	NA

Sources: GHG Volumes are sourced from National and Victorian GHG Inventories,
Sector balances are sourced from National Input-Output Tables (National Accounts) Adjusted for LGA sector employment share

Table 4 – Calculation of Final Input-Output Adjustments for Sheep, Grains, Beef and Dairy Cattle (S0101) 2018

LGA	Sample Related Data				LGA Whole of Farmland Related Data (Post Sequestration)		
	ID	CO ₂ -e ¹	Hectares ²	\$M AUD Increase ³	Hectares ⁴	Upscale Adjust. ⁵	Derived S0101 \$M AUD Increase ⁶
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Hindmarsh	Farm B	1.148024	9934	0.220291	381849.15916	38.438611	8.467680
Yarriambiack	Farm D	0.168310	1878	0.011631	609659.73691	324.632448	3.775800
Horsham	Farm L	0.567180	885	0.037715	280037.55933	316.426621	11.934030
West-Wimmera	Farm W	1.747170	1068	0.473047	320674.00000	300.256554	142.035404

Sources 1: Table 3, Calculation 5, Row 40,
2: Sample sourced,
3: Table 3, Calculation 6, Row 41 (sample sourced GHG emissions),
4: LGA and Wimmera Development Authority sourced,
5: Column 6 values divided by Column 4 values,
6: Calculation 7, Row 48, also Column 5 values multiplied by Column 7 values.

SECTION TEN: RESULTS

Section ten presents and discussed the modelling results. As such, it is important to realise that the modelling removes only Scope 1 emissions from the ‘Sheep, grains, beef and dairy cattle’ sector (S0101), which are the emissions produced on-farm and on-site by this sector. It does not remove any Scope 2 and Scope 3 emissions that are embodied within this sector due to its receipt of flow-on inputs (factors of production) from the other 113 sectors within the 114-sector model. Nor does it remove Scope 1, 2 and 3 emissions from the other 113 sectors. To remove these emissions would require further modelling with considerable changes in technique beyond the scope and coverage of this report.

The modelling technique employs a simple trend analysis which examines the changes in Scope 1 emissions for ‘sheep, grains, beef and dairy cattle (S0101)’ alongside the changes in the sector \$M AUD outputs associated with them. Table 5, 6 and 7 display the modelling results and these are discussed below.

Table 5 data shows what happens only to the ‘sheep, grains, beef and dairy cattle (S0101)’ sector, when the zero Green House Gas (GHG) simulation was applied. The zero GHG simulation effects are shown for before and after sequestration and the difference between these two measures. As sequestration for the ‘sheep, grains, beef and dairy cattle (S0101)’ sector differs from that in the forestry and logging industries, in that when applied to the ‘sheep, grains, beef, and dairy cattle (S0101) sector it increases when crops and boundary trees are planted then left to grow, and decreases when crops are harvested, or trees are removed or when land is cleared for grazing and cropping. Hence, there is some scientific debate about the value of sequestration within the ‘sheep, grains, beef and dairy cattle (S0101)’ sector.

The Table 5 data shows that for the four LGA regional economies, the zero GHG simulation resulted in:

- All variables (primary input variables) increasing their values from those in Column 2 to those in Column 7, with Percentage increases shown in Column 8.
 - Total increases are shown in Column 6 and comprise the initial own sector increase, industry-support and consumption induced flow-ons, as shown in Columns 3, 4 and 5 respectively.

Table 6 data shows what happens to the whole LGA’s economy (114 sectors) in a short-cut form once the zero GHG simulation is applied to the ‘sheep, grains, beef and dairy cattle sector (S0101)’. It reports post-sequestration summary performance data on the strongest 5 performing sectors and the weakest 5 performing sectors for each LGA.

The Table 6 data shows that for the four LGAs:

- Sector production outputs as listed in Column 2 increased in all sectors,

- Sector employment as listed in Column 10 increased in all sectors,
 - An exception was ‘library and other information services (S6001)’ within the Hindmarsh weakest 5 category (due to an initial low multiplier relationship).
- Incomes (COE) and profits (GOSMI) as listed in Columns 3 and 4 respectively, increased in all sectors,
- Nearly all taxation measures being ‘taxes less subsidies on products (TLSP)’ and ‘other taxes less subsidies on production (OTLSP)’ as listed in Columns 5 and 6 respectively, increased for most sectors.
 - Some exceptions were due to a lower multiplier effect from the sector being adjusted (i.e. sheep, gains, beef and dairy cattle, (S0101) and these were:
 - ‘Library and other information services (S6001)’ within Hindmarsh LGAs weakest 5 category (TLSP, C5),
 - ‘Heritage, creative and performing arts (S8901)’ within Hindmarsh LGAs weakest 5 category (TLSP, C5),
 - ‘Arts, sport, adult, and other education services (S8201)’ within the Yarriambiack LGAs weakest 5 category (TLSP, C5),
 - ‘Health care services (S8401)’ within the Yarriambiack LGAs weakest 5 category (TLSP, C5),
 - ‘Residential care and social assistance services (S8601)’ within the Yarriambiack LGAs weakest 5 category (TLSP, C5),
 - ‘Heritage, creative and performing arts (S8901)’ within the Yarriambiack LGAs weakest 5 category (TLSP, C5),
 - ‘Library and other information services (S6001)’ within the Horsham weakest 5 category (TLSP, C5),
 - ‘Art, sport and other education services (S8201) within the Yarriambiack weakest 5 category (OTLSP, C6),

- ‘Residential care and social assistance services (S8601)’ within the Yarriambiack weakest 5 category (OTLSP, C6).
- ‘Imports of goods’ as listed in Column 7 increased for almost all sectors:
 - An exception was ‘Arts, sport, adult and other education services (S8201)’ within the Yarriambiack weakest 5 category, due to a weaker multiplier effect from the stimulated sector being S0101.
- ‘Imports of services’ as listed in Column 8 increased for almost all sectors:
 - Exceptions were (a) ‘Arts, sport, adult and other education services (S8201)’ and (b) ‘residential care and social assistance services (S8601),
 - Both within the Yarriambiack weakest 5 category; and both due to a weaker multiplier effect from the stimulated sector being ‘sheep, grains, beef and dairy cattle (S0101)’.
- Value added as listed in Column 9 increased for all sectors,
- For those LGA sectors within the weakest performing category, some economic variables show increased contributions, and these were measured at less than 1.00 percent of the whole variable (indicator),
- West-Wimmera LGA presented surprising results:
 - For the top 5 performing sectors the economic variable increased more than those in other LGAs,
 - For lowest 5 performing sectors the economic variables showed no increase at the five decimal level possible due to stronger and lower multiplier connections for the top 5 and lowest 5 performing sectors respectively,
 - Ownership of dwellings appears as a top 5 performer possibly due to an increase in on-farm residential dwellings,
 - This does not follow through in increase electricity generation, electricity transmission, gas supply; water supply, sewerage, and drainage services; waste collection treatment and disposal services.
- In summary, all sectors across all three LGAs improved production outputs, related employment, incomes, profits, and value added.

- Changes to the other sectors within each LGA occur as they absorb flows-ons generated by the zero GHG simulation to ‘sheep, grains, beef and dairy cattle (S0101)’ sector.
- Most other economic variables increased in contributions except those listed above.
- No unusual data movements or inexplicable results were obtained.

Table 7 data shows that for all four LGA regional economies, imports and exports of both goods and services have increased.

- However, some sectors demonstrated very slight decreases in net-exports (i.e. export less imports) for either their goods or services category.
 - These do not include any of the seven related agricultural sectors referred to in Section 6, and fall mainly within the lowest 5 performers for each LGA,
 - This is due in most cases, to their import component increasing slightly more than its corresponding export component due to very slightly larger multipliers for those variables,
 - This is not a concern as the relevant sector’s labour earnings and profits for farmers, graziers, and businesses, that is COE and GOSMI respectively, have all increased.
- In summary, there is no loss of incomes for any group of wage earners or producers.

Table 5 - Economic Impacts: Zero Green House Gas Emission Simulation: Sheep, Grains, Beef and Dairy Cattle (Sector 0101)

	Initial Balance (Before)	Initial Own-Sector Increase	Induced Flow-on Increase		Total Increase	Final Balance (After)	Percent Increase
			Industry	Consumption			
	(2)	(3)	(4)	(5)	(6)	(7)	(8)
HINDMARSH LGA (BEFORE SEQUESTRATION)							
Output (Q)	120.34156	9.00070	1.96946	0.13916	11.10932	131.45088	9.23
Compensation of employees (Incomes, COE (I))	5.78999	0.43290	0.09472	0.00669	0.53431	6.32430	9.23
Gross Operating surplus & mixed income (GOSMI)	30.04940	2.24628	0.49151	0.03473	2.77252	32.82192	9.23
Taxes less subsidies on products (TLSP)	3.34136	0.24982	0.05466	0.00386	0.30834	3.64970	9.23
Other taxes less subsidies on production (OTLSP)	0.62888	0.04702	0.01029	0.00727	0.06458	0.69346	10.27
Competing imports of goods (Imports Goods)	14.75539	1.10321	0.24140	0.01706	1.36167	16.11706	9.23
Competing imports of services (Imports Services.)	3.90713	0.29212	0.06392	0.00452	0.36056	4.26769	9.23
Value added (VA)	36.46827	2.97600	0.65119	0.04601	3.67320	40.14147	10.07
Employment (Employ.): Full time equivalent persons	301.00000	22.50466	4.92429	0.34795	27.77690	328.77690	9.23
HINDMARSH LGA (AFTER SEQUESTRATION)							
Output (Q)	120.34156	8.46768	1.85283	0.13092	10.45143	130.79299	8.68
Compensation of employees (Incomes, COE (I))	5.78999	0.40726	0.08911	0.00630	0.50267	6.29266	8.68
Gross Operating surplus & mixed income (GOSMI)	30.04940	2.11325	0.46241	0.03267	2.60833	32.65773	8.68
Taxes less subsidies on products (TLSP)	3.34136	0.23505	0.05143	0.00363	0.29011	3.63147	8.68
Other taxes less subsidies on production (OTLSP)	0.62888	0.04424	0.00968	0.00068	0.05460	0.68348	8.68
Competing imports of goods (Imports Goods)	14.75539	1.03787	0.22710	0.01605	1.28102	16.03641	8.68
Competing imports of services (Imports Services.)	3.90713	0.27482	0.06013	0.00425	0.33920	4.24633	8.68
Value added (VA)	36.46827	2.79977	0.61262	0.04329	3.45568	39.92395	9.48
Employment (Employ.): Full time equivalent persons	301.00000	21.17194	4.63268	0.32735	26.13197	327.13197	8.68
HINDMARSH LGA (DIFFERENCE)							
Output (Q)	NA	0.53302	0.11663	0.00824	0.65789	0.65789	0.55
Compensation of employees (Incomes, COE (I))	NA	0.02564	0.00561	0.00039	0.03164	0.03164	0.55
Gross Operating surplus & mixed income (GOSMI)	NA	0.13303	0.02910	0.00206	0.16419	0.16419	0.55
Taxes less subsidies on products (TLSP)	NA	0.01477	0.00323	0.00023	0.01823	0.01823	0.55
Other taxes less subsidies on production (OTLSP)	NA	0.00278	0.00061	0.00659	0.00998	0.00998	1.59
Competing imports of goods (Imports Goods)	NA	0.06534	0.01430	0.00101	0.08065	0.08065	0.55
Competing imports of services (Imports Services)	NA	0.01730	0.00379	0.00027	0.02136	0.02136	0.55
Value added (VA)	NA	0.17623	0.03857	0.00272	0.21752	0.21752	0.60
Employment (Employ.): Full time equivalent persons	NA	1.33272	0.29161	0.02060	1.64493	1.64493	0.55
YARRIAMBIACK LGA (BEFORE SEQUESTRATION)							
Output (Q)	142.37133	3.82782	0.93605	0.15395	4.91782	147.28915	3.45
Compensation of employees (Incomes, COE (I))	11.83983	0.31835	0.07785	0.01280	0.40900	12.24883	3.45
Gross Operating surplus & mixed income (GOSMI)	43.65837	1.17390	0.28706	0.04721	1.50817	0.00000	9.23
Taxes less subsidies on products (TLSP)	1.62118	0.04359	0.01066	0.00175	0.05600	1.67718	3.45
Other taxes less subsidies on production (OTLSP)	1.03156	0.02774	0.00678	0.00112	0.03564	1.06720	3.45
Competing imports of goods (Imports Goods)	4.67191	0.12562	0.03072	0.00505	0.16139	4.83330	3.45
Competing imports of services (Imports Services)	1.23718	0.03327	0.00814	0.00134	0.04275	1.27993	3.46
Value added (VA)	56.52976	1.56358	0.38236	0.06289	2.00883	58.53859	3.55
Employment (Employ.): Full time equivalent persons	418.00000	11.23932	2.74844	0.45204	14.43980	432.43980	3.45
YARRIAMBIACK LGA (AFTER SEQUESTRATION)							
Output (Q)	142.37133	3.77580	0.92333	0.15186	4.85099	147.22232	3.41
Compensation of employees (Incomes, COE (I))	11.83983	0.31403	0.07679	0.01263	0.40345	12.24328	3.41

Table 5 - Economic Impacts: Zero Green House Gas Emission Simulation: Sheep, Grains, Beef and Dairy Cattle (Sector 0101) (Cont.)

	Initial Balance (Before)	Initial Own-Sector Increase	Induced Flow-on Increase		Total Increase	Final Balance (After)	Percent Increase
			Industry	Consumption			
YARRIAMBIACK LGA (AFTER SEQUESTRATION) CONT.	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gross Operating surplus & mixed income (GOSMI)	43.65837	1.15795	0.28316	0.04657	1.48768	0.00000	8.68
Taxes less subsidies on products (TLSP)	1.62118	0.04300	0.01052	0.00173	0.05525	1.67643	3.41
Other taxes less subsidies on production (OTLSP)	1.03156	0.02736	0.00669	0.00110	0.03515	1.06671	3.41
Competing imports of goods (Imports Goods)	4.67191	0.12391	0.03030	0.00498	0.15919	4.83110	3.41
Competing imports of services (Imports Services)	1.23718	0.03282	0.00802	0.00132	0.04216	1.27934	3.41
Value added (VA)	56.52976	1.54233	0.37716	0.06203	1.98152	58.51128	3.51
Employment (Employ.): Full time equivalent persons	418.00000	11.08658	2.71109	0.44590	14.24357	432.24357	3.41
YARRIAMBIACK LGA (DIFFERENCE)							
Output (Q)	NA	0.05202	0.01272	0.00209	0.06683	0.06683	0.05
Compensation of employees (Incomes, COE (I))	NA	0.00432	0.00106	0.00017	0.00555	0.00555	0.05
Gross Operating surplus & mixed income (GOSMI)	NA	0.01595	0.00390	0.00064	0.02049	0.00000	0.55
Taxes less subsidies on products (TLSP)	NA	0.00059	0.00014	0.00002	0.00075	0.00075	0.05
Other taxes less subsidies on production (OTLSP)	NA	0.00038	0.00009	0.00002	0.00049	0.00049	0.05
Competing imports of goods (Imports Goods)	NA	0.00171	0.00042	0.00007	0.00220	0.00220	0.05
Competing imports of services (Imports Services)	NA	0.00045	0.00012	0.00002	0.00059	0.00059	0.05
Value added (VA)	NA	0.02125	0.00520	0.00086	0.02731	0.02731	0.05
Employment (Employ.): Full time equivalent persons	NA	0.15274	0.03735	0.00614	0.19623	0.19623	0.05
HORSHAM LGA (BEFORE SEQUESTRATION)							
Output (Q)	141.27770	12.06230	1.46735	0.13729	13.66694	154.94464	9.67
Compensation of employees (Incomes, COE (I))	8.08054	0.69032	0.08398	0.00786	0.78215	8.86269	9.68
Gross Operating surplus & mixed income (GOSMI)	38.29382	3.27144	0.39796	0.03723	3.70664	42.00046	9.68
Taxes less subsidies on products (TLSP)	4.53299	0.38725	0.04711	0.00441	0.43877	4.97176	9.68
Other taxes less subsidies on production (OTLSP)	0.54058	0.05473	0.00666	0.00062	0.06201	0.60259	11.47
Competing imports of goods (Imports Goods)	15.10959	1.29082	0.15703	0.01469	1.46254	16.57213	9.68
Competing imports of services (Imports Services)	3.99538	0.34133	0.04152	0.00389	0.38673	4.38211	9.68
Value added (VA)	46.91494	4.40374	0.53570	0.05012	4.98957	51.90451	10.64
Employment (Employ.): Full time equivalent persons	354.00000	30.24224	3.67889	0.34420	34.26533	388.26533	9.68
HORSHAM LGA (AFTER SEQUESTRATION)							
Output (Q)	141.27770	11.93403	1.45174	0.13583	13.52160	154.79930	9.57
Compensation of employees (Incomes, COE (I))	8.08054	0.68298	0.08308	0.00777	0.77383	8.85437	9.58
Gross Operating surplus & mixed income (GOSMI)	38.29382	3.23666	0.39373	0.03684	3.66723	41.96105	9.58
Taxes less subsidies on products (TLSP)	4.53299	0.38314	0.04661	0.00436	0.43411	4.96710	9.58
Other taxes less subsidies on production (OTLSP)	0.54058	0.05414	0.00659	0.00062	0.06135	0.60193	11.35
Competing imports of goods (Imports Goods)	15.10959	1.27710	0.15536	0.01454	1.44700	16.55659	9.58
Competing imports of services (Imports Services)	3.99538	0.33770	0.04108	0.00384	0.38262	4.37800	9.58
Value added (VA)	46.91494	4.35691	0.53001	0.04959	4.93651	51.85145	10.52
Employment (Employ.): Full time equivalent persons	354.00000	29.92064	3.63977	0.34054	33.90095	387.90095	9.58
HORSHAM LGA (DIFFERENCE)							
Output (Q)	NA	0.12827	0.01561	0.00146	0.14534	0.14534	0.10
Compensation of employees (Incomes, COE (I))	NA	0.00734	0.00090	0.00009	0.00832	0.00832	0.10
Gross Operating surplus & mixed income (GOSMI)	NA	0.03478	0.00423	0.00039	0.03941	0.03941	0.10
Taxes less subsidies on products (TLSP)	NA	0.00411	0.00050	0.00005	0.00466	0.00466	0.10

Table 5 - Economic Impacts: Zero Green House Gas Emission Simulation: Sheep, Grains, Beef and Dairy Cattle (Sector 0101) (Cont.)

	Initial Balance (Before)	Initial Own-Sector Increase	Induced Flow-on Increase		Total Increase	Final Balance (After)	Percent Increase
			Industry	Consumption			
	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Other taxes less subsidies on production (OTLSP)	NA	0.00059	0.00007	0.00000	0.00066	0.00066	0.12000
Competing imports of goods (Imports Goods)	NA	0.01372	0.00167	0.00015	0.01554	0.01554	0.10000
Competing imports of services (Imports Services)	NA	0.00363	0.00044	0.00005	0.00411	0.00411	0.10000
Value added (VA)	NA	0.04683	0.00569	0.00053	0.05306	0.05306	0.12000
Employment (Employ.): Full time equivalent persons	NA	0.32160	0.03912	0.00366	0.36438	0.36438	0.10000
WEST-WIMMERA LGA (BEFORE SEQUESTRATION)							
Output (Q)	165.01465	147.04800	58.28175	0.51999	205.84974	370.86439	124.74634
Compensation of employees (Incomes, COE (I))	3.38001	3.01236	1.19393	0.01065	4.21694	7.59695	124.76117
Gross Operating surplus & mixed income (GOSMI)	25.67405	22.88141	9.06894	0.08091	32.03126	57.70531	124.76123
Taxes less subsidies on products (TLSP)	0.96419	0.85931	0.34058	0.00304	1.20293	2.16712	124.76118
Other taxes less subsidies on production (OTLSP)	0.55962	0.49875	0.19768	0.00176	0.69818	1.25780	124.76037
Competing imports of goods (Imports Goods)	6.15297	5.48369	2.17343	0.01939	7.67652	13.82949	124.76116
Competing imports of services (Imports Services)	1.04110	0.92785	0.36775	0.00328	1.29888	2.33998	124.76070
Value added (VA)	29.61368	27.25183	10.80113	0.09637	38.14932	67.76300	128.82330
Employment (Employ.): Full time equivalent persons	419.00000	373.42422	148.00486	1.32049	522.74957	941.74957	124.76123
WEST-WIMMERA LGA (AFTER SEQUESTRATION)							
Output (Q)	165.01465	142.03540	56.29504	0.50226	198.83270	363.84735	120.49397
Compensation of employees (Incomes, COE (I))	3.38001	2.90967	1.15323	0.01029	4.07319	7.45320	120.50828
Gross Operating surplus & mixed income (GOSMI)	25.67405	22.10143	8.75979	0.07815	30.93937	56.61342	120.50835
Taxes less subsidies on products (TLSP)	0.96419	0.83002	0.32897	0.00294	1.16193	2.12612	120.50830
Other taxes less subsidies on production (OTLSP)	0.55962	0.48174	0.19094	0.00170	0.67439	1.23401	120.50767
Competing imports of goods (Imports Goods)	6.15297	5.29676	2.09935	0.01873	7.41484	13.56781	120.50827
Competing imports of services (Imports Services)	1.04110	0.89622	0.35521	0.00317	1.25461	2.29571	120.50783
Value added (VA)	29.61368	26.32286	10.43294	0.09308	36.84888	66.46256	124.43195
Employment (Employ.): Full time equivalent persons	419.00000	360.69487	142.95964	1.27548	504.93000	923.93000	120.50835
WEST-WIMMERA LGA (DIFFERENCE)							
Output (Q)	NA	5.01260	1.98671	0.01773	7.01704	7.01704	4.25237
Compensation of employees (Incomes, COE (I))	NA	0.10269	0.04070	0.00036	0.14375	0.14375	4.25289
Gross Operating surplus & mixed income (GOSMI)	NA	0.77998	0.30914	0.00276	1.09189	1.09189	4.25288
Taxes less subsidies on products (TLSP)	NA	0.02929	0.01161	0.00010	0.04101	0.04101	4.25288
Other taxes less subsidies on production (OTLSP)	NA	0.01700	0.00674	0.00006	0.02380	0.02380	4.25271
Competing imports of goods (Imports Goods)	NA	0.18693	0.07409	0.00066	0.26168	0.26168	4.25289
Competing imports of services (Imports Goods)	NA	0.03163	0.01254	0.00011	0.04428	0.04428	4.25287
Value added (VA)	NA	0.92897	0.36819	0.00329	1.30044	1.30044	4.39135
Employment (Employ.): Full time equivalent persons	NA	12.72934	5.04521	0.04501	17.81957	17.81957	4.25288

Source: Input-Output Non-Zero GHG simulation results

Table 6 – Post Carbon Sequestration Zero GHG Simulations for Hindmarsh, Yarriambiack, Horsham and West Wimmera LGAs, Whole Economy Summary

		Economic Variable Increase \$M AUD – Primary Inputs									Percent Contribution to Economic Variable Total (%) – Primary Inputs								
		Output	Income	Profits	TLSP	OTLSP	Imp.Gds	Imp.Serv.	Val.Add.	Emp.	Output	Income	Profits	TLSP	OTLSP	Imp.Gds	Imp.Serv.	Val.Add.	Emp.
			(COE)	(GOSMI)						Persons		(COE)	(GOSMI)						
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
HINDMARSH LGA																			
Top 5 Performers																			
1	Other agriculture (103)	2.86910	0.24050	0.86580	0.08393	0.00958	0.26728	0.07078	1.19981	7.51593	25.00	12.46	18.80	16.00	8.80	10.50	10.50	16.70	15.40
2	Sheep, grains, beef & dairy cattle (0101)	10.45143	0.50267	2.60833	0.29009	0.05460	1.28102	0.33921	3.45569	23.13196	17.30	26.04	56.60	55.30	49.90	50.30	50.30	48.20	53.50
3	Agriculture, fishing, forestry, hunting support services (501)	1.07237	0.06960	0.07042	0.01302	0.00190	0.04465	0.01182	0.15494	2.54273	9.40	3.61	1.50	2.50	1.70	1.80	1.80	2.20	5.20
4	Petroleum & coal products (1701)	0.40176	0.09666	0.02407	0.00155	0.00235	0.10268	0.02814	0.12463	0.39402	3.50	5.01	0.50	0.30	2.10	4.20	4.20	1.70	0.80
5	Poultry & other livestock (102)	0.38779	0.02363	0.13936	0.00603	0.00089	0.02490	0.00659	0.16991	1.03983	3.40	1.22	3.00	1.10	0.80	1.00	1.00	2.40	2.10
Lowest 5 Performers																			
110	Library & other information services (6001)	0.00292	0.00109	0.00125	0.00000	0.00051	0.00028	0.00007	0.00236	0.00000	<1.00	0.06	<1.00	0.00	<1.00	<1.00	<1.00	<1.00	0.00
111	Primary & secondary education services (including pre-schools & special schools (8010)	0.00541	0.00358	0.00036	0.00002	0.00003	0.00062	0.00016	0.00398	0.03767	<1.00	0.19	<1.00	<0.01	<1.00	<1.00	<1.00	0.10	0.10
112	Heritage, creative & performing arts (8901)	0.00149	0.00033	0.00050	0.00000	0.00003	0.00028	0.00007	0.00080	0.00968	<1.00	0.02	<1.00	0.00	<1.00	<1.00	<1.00	<1.00	<1.00
113	Sport & recreation (9101)	0.00222	0.00047	0.00013	0.00001	0.00001	0.00080	0.00021	0.00063	0.01282	<1.00	0.02	<1.00	<0.01	<1.00	<1.00	<1.00	<1.00	<1.00
114	Gambling (9201)	0.00243	0.00044	0.00037	0.00006	0.00002	0.00060	0.00016	0.00089	0.01288	<1.00	0.02	<1.00	<0.01	<1.00	<1.00	<1.00	<1.00	<1.00
YARRIAMBIACK LGA																			
Top 5 Performers																			
1	Sheep, grains, beef & dairy cattle (0101)	4.85099	0.40345	1.48768	0.05524	0.03515	0.15920	0.04216	1.98152	14.24357	43.10	20.80	50.90	44.10	47.90	30.90	30.90	39.20	40.80
2	Agriculture, forestry, fishing, hunting support services (501)	2.29789	0.48187	0.34650	0.02139	0.01053	0.04787	0.01268	0.86030	1.45505	20.40	24.90	11.90	17.10	14.40	9.30	9.30	17.00	4.20
3	Other agriculture (103)	1.51683	0.17931	0.45874	0.01485	0.00573	0.03086	0.00817	0.65863	4.65975	13.5	9.30	15.70	11.80	7.80	6.00	6.00	13.00	13.40
4	Poultry & other livestock (102)	0.47397	0.04778	0.20026	0.00289	0.00144	0.00780	0.00206	0.25237	0.81622	4.20	2.50	6.90	2.30	2.00	1.50	1.50	5.00	2.30
5	Basic non-ferrous metal manufactures (2102)	0.42989	0.11157	0.04422	0.00616	0.00190	0.16388	0.04340	0.16385	0.02423	3.80	5.80	1.50	4.90	2.60	31.80	31.80	3.20	0.10
Lowest 5 Performers																			
110	Arts, sport, adult & other education services (including community education) (8201)	0.00001	0.00001	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.11682	<1.00	<1.00	0.00	0.00	0.00	0.00	0.00	<1.00	0.30
111	Health care services (8401)	0.00067	0.00051	0.00008	0.00000	0.00001	0.00002	0.00001	0.00060	0.06422	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.20
112	Residential care & social assistance services (8601)	0.00064	0.00057	0.00003	0.00000	0.00000	0.00001	0.00000	0.00061	0.07105	<1.00	<1.00	<1.00	0.00	<1.00	<1.00	0.00	<1.00	0.20
113	Heritage, creative & performing arts (8901)	0.00146	0.00063	0.00068	0.00000	0.00004	0.00008	0.00002	0.00127	0.00756	<1.00	<1.00	<1.00	0.00	<1.00	<1.00	<1.00	<1.00	0.00

Table 6 – Post Carbon Sequestration Zero GHG Simulations for Hindmarsh, Yarriambiack, Horsham and West Wimmera LGAs, Whole Economy Summary (Cont.)

		Economic Variable Increase \$M AUD – Primary Inputs								Percent Contribution to Economic Variable Total (%) – Primary Inputs									
		Output	Income	Profits	TLSP	OTLSP	Imp.Gds	Imp.Serv.	Val.Add.	Emp.	Output	Income	Profits	TLSP	OTLSP	Imp.Gds	Imp.Serv.	Val.Add.	Emp.
			(COE)	(GOSMI)						Persons)		(COE)	(GOSMI)						
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
HINDMARSH LGA																			
114	Sports & recreation (9101)	0.00162	0.00084	0.00017	0.00001	0.00001	0.00022	0.00006	0.00103	0.01065	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.00
HORSHAM RURAL CITY LGA																			
Top 5 Performers																			
1	Sheep, grains, beef & dairy cattle (101)	13.52160	0.77384	3.66722	0.43410	0.06135	1.44699	0.38262	4.93651	33.90095	45.70	18.80	51.60	50.90	39.40	47.90	47.90	40.40	43.70
2	Other agriculture (103)	2.37410	0.22489	0.73941	0.07629	0.00654	0.18339	0.04849	1.04714	6.22090	8.00	5.50	10.40	8.90	4.20	6.10	6.10	8.60	8.00
3	Construction services (3201)	1.04860	0.18168	0.11955	0.01887	0.00323	0.15689	0.04149	0.32333	2.33711	3.50	4.40	1.70	2.20	2.10	5.20	5.20	2.60	3.00
4	Agriculture, forestry, fishing, hunting support services (501)	0.95869	0.08770	0.08105	0.01595	0.00174	0.04128	0.01092	0.18644	2.27250	3.20	2.10	1.10	1.90	1.10	1.40	1.40	1.50	2.90
5	Electricity transmission, distribution, on-selling & market operations (2605)	0.84733	0.06547	0.14319	0.00119	0.01594	0.02815	0.00744	0.22579	0.78894	2.90	1.60	2.00	0.10	10.20	0.90	0.90	1.80	1.00
Lowest 5 Performers																			
110	Aircraft manufacturing (2304)	0.01458	0.00307	0.00072	0.00009	0.00004	0.00527	0.00139	0.00392	0.03455	<1.00	0.10	<1.00	<1.00	<1.00	0.20	0.20	<1.00	<1.00
111	Domestic appliance manufacturing (2404)	0.00695	0.00155	0.00090	0.00004	0.00002	0.00250	0.00066	0.00252	0.01056	<1.00	<1.00	<1.00	<1.00	<1.00	0.10	0.10	<1.00	<1.00
112	Other manufactured products (2502)	0.01362	0.00347	0.00229	0.00012	0.00005	0.00317	0.00084	0.00593	0.01739	<1.00	0.10	<1.00	<1.00	<1.00	0.10	0.10	<1.00	<1.00
113	Library & other information services (6001)	0.00909	0.00352	0.00369	0.00000	0.00004	0.00066	0.00017	0.00725	0.01986	<1.00	0.10	0.10	0.00	<1.00	<1.00	<1.00	0.10	<1.00
114	Primary & secondary education services (including pre-schools & special schools (8010)	0.00648	0.00431	0.00039	0.00002	0.00003	0.00054	0.00014	0.00474	0.05252	<1.00	0.10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	0.10
WEST-WIMMERA LGA																			
Top 5 Performers																			
1	Other agriculture (103)	269.19753	11.25226	59.29846	1.94112	0.68321	8.93296	1.51147	73.17505	715.02091	46.80	50.50	55.80	54.30	39.00	45.60	45.50	54.60	47.40
2	Sheep, grains, beef & dairy cattle (101)	198.83270	4.07319	30.93937	1.16193	0.67438	7.41484	1.25461	36.84888	504.93000	34.60	18.30	29.10	32.50	38.50	37.80	37.80	27.50	33.50
3	Agriculture, forestry & fishing support services (501)	45.90803	0.52218	0.77348	0.04829	0.02169	0.23929	0.04049	1.36564	109.67583	8.00	2.30	0.70	1.30	1.20	1.20	1.20	1.00	7.30
4	Poultry & other livestock (102)	43.59604	0.99104	8.55594	0.12503	0.05656	0.74587	0.12620	9.72857	117.90461	7.60	4.50	8.00	3.50	3.20	3.80	3.80	7.30	7.80
5	Ownership of dwellings (6701)	2.87923	0.00000	2.64561	0.06570	0.14399	0.01515	0.00256	2.85530	NA	0.50	0.00	2.50	1.80	8.20	0.10	0.10	2.10	NA
Lowest 5 Performers																			
110	Electricity generation (2601)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	<1.00	0.10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

Table 6 – Post Carbon Sequestration Zero GHG Simulations for Hindmarsh, Yarriambiack, Horsham and West Wimmera LGAs, Whole Economy Summary (Cont.)

		Economic Variable Increase \$M AUD – Primary Inputs								Percent Contribution to Economic Variable Total (%) – Primary Inputs									
		Output	Income	Profits	TLSP	OTLSP	Imp.Gds	Imp.Serv.	Val.Add.	Emp.	Output	Income	Profits	TLSP	OTLSP	Imp.Gds	Imp.Serv.	Val.Add.	Emp.
			(COE)	(GOSMI)						(Persons)		(COE)	(GOSMI)						(Persons)
		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
111	Electricity transmission, distribution, on-selling and electricity market operations (2605)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	<1.00	0.10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
112	Gas supply (2701)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	<1.00	0.10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
113	Water supply, sewerage & drainage services (2801)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	<1.00	0.10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
114	Waste collection, treatment & disposal services (2901)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	<1.00	0.10	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00

Source: Input-Output Net-Zero GHG simulation results

Table 7 – Changes in Net-Exports (Exports Less Imports), \$M AUD
Post Carbon Sequestration Zero GHG Simulation Induced

Region (LGA) and Input-Output Sector		Change in Exports		Change in Imports		Change in Net Exports	
		Goods	Services	Goods	Services	Goods	Services
(1)		(2)	(3)	(4)	(5)	(6)	(7)
HINDMARSH LGA							
Top 5 Performers							
1	Other agriculture (103)	0.358808	0.274536	0.26728	0.07078	0.091528	0.203756
2	Sheep, grains, beef & dairy cattle (0101)	3.803191	2.909962	1.28102	0.33921	2.522171	2.570752
3	Agriculture, fishing, forestry, hunting support services (501)	0.124016	0.094889	0.04465	0.01182	0.079366	0.083069
4	Petroleum & coal products (1701)	0.035366	0.027060	0.10268	0.02814	-0.067314	-0.001080
5	Poultry & other livestock (102)	0.045110	0.034516	0.02490	0.00659	0.020210	0.027926
Lowest 5 Performers							
110	Library & other information services (6001)	0.000120	0.000092	0.00028	0.00007	-0.000160	0.000022
111	Primary & secondary education services (including pre-schools & special schools (8010)	0.000026	0.000020	0.00062	0.00016	-0.000594	-0.000140
112	Heritage, creative & performing arts (8901)	0.000102	0.000078	0.00028	0.00007	-0.000178	0.000008
113	Sport & recreation (9101)	0.000314	0.000240	0.00080	0.00021	-0.000486	0.000030
114	Gambling (9201)	0.000909	0.000696	0.00060	0.00016	0.000309	0.000536
YARRIAMBICK LGA							
Top 5 Performers							
1	Sheep, grains, beef & dairy cattle (0101)	1.701222	1.301668	0.15920	0.04216	1.542022	1.259508
2	Agriculture, forestry, fishing, hunting support services (501)	0.187410	0.143395	0.04787	0.01268	0.139540	0.130715
3	Other agriculture (103)	0.055957	0.042814	0.03086	0.00817	0.025097	0.034644
4	Poultry & other livestock (102)	0.044053	0.033707	0.00780	0.00206	0.036253	0.031647
5	Basic non-ferrous metal manufactures (2102)	0.206869	0.158283	0.16388	0.04340	0.042989	0.114883
Lowest 5 Performers							
110	Arts, sport, adult & other education services (including community education) (8201)	0.000000	0.000000	0.00000	0.00000	0.000000	0.000000
111	Health care services (8401)	0.000001	0.000000	0.00002	0.00001	-0.000019	-0.000010
112	Residential care & social assistance services (8601)	0.000000	0.000000	0.00001	0.00000	-0.000010	0.000000
113	Heritage, creative & performing arts (8901)	0.000014	0.000011	0.00008	0.00002	-0.000066	-0.000009
114	Sports & recreation (9101)	0.000036	0.000027	0.00022	0.00006	-0.000184	-0.000033
HORSHAM RURAL CITY LGA							
Top 5 Performers							
1	Sheep, grains, beef & dairy cattle (101)	4.653725	3.560741	1.44699	0.38262	3.206735	3.178121
2	Other agriculture (103)	0.313241	0.239672	0.18339	0.04849	0.129851	0.191182
3	Construction services (3201)	0.012467	0.009539	0.15689	0.04149	-0.144423	-0.031951
4	Agriculture, forestry, fishing, hunting support services (501)	0.130786	0.100070	0.04128	0.01092	0.089506	0.089150
5	Electricity transmission, distribution, on-selling & market operations (2605)	0.007196	0.005506	0.02815	0.00744	-0.020954	-0.001934
Lowest 5 Performers							
110	Aircraft manufacturing (2304)	0.001319	0.001009	0.00527	0.00139	-0.003951	-0.000381
111	Domestic appliance manufacturing (2404)	0.000169	0.000129	0.00250	0.00066	-0.002331	-0.000531
112	Other manufactured products (2502)	0.001604	0.001227	0.00317	0.00084	-0.001566	0.000387
113	Library & other information services (6001)	0.000085	0.000065	0.00066	0.00017	-0.000575	-0.000105
114	Primary & secondary education services (including pre-schools & special schools (8010)	0.000006	0.000004	0.00054	0.00014	-0.000534	-0.000136

Table 7 – Changes in Net-Exports (Exports Less Imports), \$M AUD (Cont.)
Post Carbon Sequestration Zero GHG Simulation Induced

Region (LGA) and Input-Output Sector		Change in Exports		Change in Imports		Change in Net Exports	
		Goods	Services	Goods	Services	Goods	Services
(1)		(2)	(3)	(4)	(5)	(6)	(7)
WEST-WIMMERA LGA							
Top 5 Performers							
1	Other agriculture (103)	146.739799	112.275710	8.93296	1.51147	137.806839	110.764240
2	Sheep, grains, beef & dairy cattle (101)	110.192988	84.312765	7.41484	1.25461	102.778148	83.058155
3	Agriculture, forestry & fishing support services (501)	6.534503	4.999806	0.23929	0.04049	6.295213	4.959316
4	Poultry & other livestock (102)	13.030092	9.970071	0.74587	0.12620	12.284222	9.843871
5	Ownership of dwellings (6701)	0.010130	0.007751	0.01515	0.00256	-0.005020	0.005191
Lowest 5 Performers							
110	Electricity generation (2601)	0.000000	0.000000	0.00000	0.00000	0.000000	0.000000
111	Electricity transmission, distribution, on-selling and electricity market operations (2605)	0.000000	0.000000	0.00000	0.00000	0.000000	0.000000
112	Gas supply (2701)	0.000000	0.000000	0.00000	0.00000	0.000000	0.000000
113	Water supply, sewerage & drainage services (2801)	0.000000	0.000000	0.00000	0.00000	0.000000	0.000000
114	Waste collection, treatment & disposal services (2901)	0.000000	0.000000	0.00000	0.00000	0.000000	0.000000

Source: Input-Output Net-Zero GHG simulation results

SECTION ELEVEN: CONCLUSION, POLICY IMPLICATIONS AND FURTHER RESEARCH

This report delivers a preliminary analysis. It finds that that over the longer-term, the Greenhouse Gases (GHGs) produced by the ‘sheep, grains, beef and dairy cattle’ sector, are decreasing while the sector balance has increased.

The modelling uses a simple trend analysis which examines the changes in Scope 1 emissions alongside the changes in sector outputs associated with them. It removes only Scope 1 emissions from the ‘Sheep, grains, beef and dairy cattle’ sector (S0101). These are the emissions produced on-farm and on-site by this sector. It does not remove any Scope 2 and Scope 3 emissions that are embodied within this sector due to its receipt of flow-on inputs (factors of production) from the other 113 sectors within the 114-sector model. Nor does it remove Scope 1, 2 and 3 emissions from the other 113 sectors. To remove these emissions would require further modelling with considerable changes in technique.

The mathematics or trend of this relationship have been derived and used to simulate a non-zero GHG scenario within the Hindmarsh, Yarriambiack, Horsham Rural City, and West-Wimmera LGA regional economies for 2018. The simulations were performed using input-output models of the LGA regional economies set at that date.

The results suggest that the ‘sheep, grains, beef and dairy cattle (S0101)’ sector has substantially improved its performance in all four regional economies, without loss of employment. This trend is also observed in the other sectors of each region due to their receipt of beneficial flow-ons from the ‘sheep, grains, beef and dairy cattle’ sector within their production processes.

A main assumption of the simulation modelling was that the technology of the day was responsible for the sector’s quantity and type of energy being sourced, its volume of emissions produced, and its sector balances. Sector earning also increased when a global shortage of outputs occurred due to increased price induced increased revenues. This influence being a price supply effect has not been removed.

There are also other influences at play. Some technology and fuel substitution processes are slowly coming on-stream over the longer term, and this requires confirmed (verified) with more sophisticated input-output comparing the changes over a specified longer period and further analysis. Also, policy would desire that such changes should continue and that those energy sources and technologies that produce lower GHG emissions become increasing more readily accessible.

It may also be that such fuel sourcing and technology changes are industry specific. That is, they relate either more to sheep, grains, or beef cattle production, and that the impact of this may vary across regions depending upon the regions particular farming or production intensity. Hence, it is proposed that further research be undertaken to determine any energy sourcing and technology changes and substitutions that may be occurring over time, and what multiplier effect this may have on the ‘sheep, grains, beef and dairy cattle’ and other sectors.

In summary, the analysis presented so far indicates that ‘sheep, grains, beef and dairy cattle (S0101)’ sector labour earnings and profits have increased, and this was noted not just in the ‘sheep, grains, beef and dairy cattle’ sector but nearly all 113 other sectors. An exception was West-Wimmera LGA which demonstrated increases in most sectors including the related other agricultural sectors and ‘ownership of dwellings (S6701)’. However, flow-ons from these increases were undetectable for the five lowest performing sectors (see Section 10, Table 7) at the five decimal level of the \$M AUD increase.

APPENDIX A: INPUT-OUTPUT TABLE CONSTRUCTION AND STRUCTURE

AS1. Input-Output table construction and structure

Four 114 intermediate sector input-output (IO) tables were constructed for 2017/18 and used to derive the required economic impact estimates. The GRIMP (i.e. Generated Regional Input-Output Modelling Program) IO9 software as developed by Associate Professor Guy West, previously University of Queensland was used with a combined top-down bottom-up approach. The software applications and resulting input-output table structure mirrors those performed by the Australian Bureau of Statistics in developing the National IO table as part of the Australian National Accounts. To develop the regional IO tables a national IO table is first rebalanced with state sector-flow balances, and second rebalanced using regional sector totals, primary input, and final demand totals.

Sector inputs were shown in row cells and sector outputs were shown as column totals. The RAS method of iteration ensured that intermediate sector row and column totals are equal, that primary input quadrant row totals and final demand quadrant column totals are equal, and that the sum of the rows equals the sum of the columns. This later condition also ensured that the primary input quadrant rows and final demand quadrant column totals were equal which is a required condition of circular economic input-output flow modelling. In summary, these mathematical equalities ensured that the sum of the inputs equals the sum of the outputs and that the input-output table balanced. Further details including mathematical explanations of the RAS procedure are provided in *Input-Output for Practitioners* by Associate Professor Guy West, 1993.

An Australian National IO table example can be accessed and viewed at:

<https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-input-output-tables/latest-release>

Diagram 1 illustrates the input-output table structure and that it comprises of four quadrants as follows:

The Intermediate Transactions Quadrant: This contains 114 intermediate sector flows to mirror that of the National IO table produced by the Australian Bureau of Statistics. The sector row cells of this quadrant contain input values to sector outputs (columns). All intermediate sector-flows are listed in Appendix 2.

The Primary Inputs Quadrant: This contains the following (rows) with a valued cell allocation per sector (columns):

- (1) *Wages, Compensation of Employees (COE),*
- (2) *Gross Operating Surplus and Mixed Income (GOSMI),*
- (3) *Taxes less subsidies on products (TLSP),*
- (4) *Other taxes less subsidies on production (OTLSP),*
- (5) *Complementary imports of goods (Imp.Gds),*
- (6) *Complementary imports of services (Imp.Serv),*
- (7) *Output (Q), defined as the monetary value of the goods and services produced.*
- (8) *Employment (measured in full-time equivalent persons, FTE),*
- (9) *Value-added (VA = COE + GOSMI + OTLSP).*

The Final Demand Quadrant: This contains the following columns allocated to sectors (rows):

- (1) *Final consumption expenditure (households), (FCE-HH),*
- (2) *Final consumption expenditure (general government, national), (FCE-GG),*
- (3) *Final consumption expenditure (general government, state and local), (FCE-GGSL),*
- (4) *Gross fixed capital formation (i.e. investment) (private sector), (GFCF-Priv),*
- (5) *Gross fixed capital formation (i.e. investment) (general government, public enterprises), (GFCF-GGPE)*
- (6) *Gross fixed capital formation (i.e. investment) (general government, national), (GFCF-GGN)*
- (7) *Gross fixed capital formation (i.e. investment) (general government, state and local), (GFCF-GGSL)*
- (8) *Inventory changes, (InvCh)*
- (9) *Exports of services, (Exp.Serv)*
- (10) *Exports of goods, (Exp.Gds)*

The Primary Inputs to Final Demand Quadrant: This contains primary input contributions into final demand outputs.

Diagram 1 – Basic Input-Output Table

Intermediate Transactions Quadrant	Row Sub-totals	Final Demand Quadrant
Intermediate Transaction Column Sub-Totals	Intermediate Transaction Column Sub-totals	Sub-Totals
Primary Inputs Quadrant	Row Sub-totals	Primary Inputs to Final Demand Quadrant
Column Grand Totals	Column Grand-total	Column Totals
Sector employment values (under each sector column)	Employment total	

A specific definition of the contents and coverage of each of these quadrants can be found in ‘Australian National Accounts, Concepts, Methods, and Sources (ABS, 2013). An abridged version of these descriptions is found in ‘Appendix B: Description of Input-Output Quadrant Variables’.

AS2. Measures and data estimates

The IO table construction sourced 2017-18 current \$M AUD data values including row and column totals from the State Accounts within the Australian National Accounts. Sector definitions, cell values allocations, data classifications, primary input quadrant and final demand quadrant variable totals; were all sourced from the *ABS catalogue 5220.0 Australian National Accounts, State Accounts for 2017-18*. Regional balances were derived based their national employment shares, in accordance with National Accounting procedures.

Full time equivalent employment levels were estimated from the *Australian Bureau of Statistics (ABS), Labour Force Survey*, three (3) digit industry-identification level employment data. *Full-time* employment levels were added to half *part-time* employment levels, as per the ABS method, to derive the *full-time equivalent* measures.

Table 2 shows all 114 sector output balances measured in \$M AUD as sourced from National Account Input-Output tables in columns 3 to 6 inclusive while corresponding GHG scope 1 emission volumes as sourced from the National and Victorian Green House Gas (GHG) inventories are shown in columns 7 to 10 inclusive.

Scope 1 emissions were those immediately produced on the production site and GHG inventories were provided within the ‘Quarterly and Annual National Updates’ (Australian Government’s Department of the Environment and Energy), and the Victorian Greenhouse Gas Emissions Report (Victorian Department of Environment, Land, Water and Planning). Employment data were measured using full-time equivalent persons (FTE) as defined by the Australian Bureau of Statistics.

Table 3 shows farm-sample (referred to as farms B, D, and L for each respective LGA) derived GHG usages as provided to Craig Hurley and then converted to their \$M AUD equivalent values. Rows 38 and 41 provides the CO₂ volumes to be removed and their resulting corresponding sector increases. As each sample-farm represented a portion of each LGA’s farmed hectares, the Table 3, row 41 \$M AUD values were adjusted upwards to derive an adjustment that applied to each LGA’s total farmed hectares. Table 3 also shows that sample-farms B, D and L, produced 1.148023, 0.068310 and 0.567180 kt of CO₂ equivalents respectively which when removed from farming operations allows ‘Sheep, grains, beef and dairy cattle’ sector increases of \$0.220291M, \$0.011631M and \$0.037715M AUD respectively. When adjusted upwards to estimate the \$M AUD increases for each LGA’s total farmed hectares (shown in Table

4, Column 3, post-sequestration calculation) these become \$8.46768M, \$3.77580M and \$11.93403 for each respective LGA. Sector output is increased by these values to remove GHG volumes and determine accurate economic impacts across each LGA.

AS3. Measuring Victoria's GHG emissions

Victorian GHG emissions are published by the Victorian Department of Environment Land, Water and Planning (VDELWP) annually in two forms. First, in accordance with categories (sectors) defined by the Intergovernmental Panel on Climate Change (IPCC), with a further breakdown of the energy category. Second, by Economic Sectors as defined by the Australian National Accounts and the Australian and New Zealand Standard Industry Classification (ANZSIC).

Victoria's emissions are derived from preliminary national *Agriculture* emissions as sourced from and reproduced by DISER from the 'Australian Bureau of Agricultural and Resource Economics and Sciences' *Agricultural Commodities* publication. They are reported on a production rather than consumption bases in kilo tonnes (kt) of the original gas or its CO₂ equivalent for June 30, thereby accounting for emissions from goods and services produced in and exported from Victoria in accordance with the United Nations Framework Convention on Climate Change (UNFCCC). Further details on the emissions data method and collection are available from the Federal Department on request.

It is the ANZSIC allocation method that is used in this reports modelling and the applied net-zero GHG simulations. Further details on these allocations can be sourced from the third and fourth references listed publications.

AS4. Mechanical workings of Input-Output models and their mathematical configuration

Changes in the regional economy initially take place with a change in a final demand variable. To manifest this change, factors of production are required. This in-turn causes changes in the intermediate quadrant flows of goods and services to satisfy this increase in final demand. In turn this causes changes in the primary input variable.

Once all causations and effects and rounds of expenditure have permeated through the regional economy, several balancing specifications must be satisfied and complied with. These are, the sum of the rows must equal the sum of the columns, the intermediate sector column totals must equal the intermediate sector row totals; and the sum of the primary inputs quadrant (i.e. rows) must equal the sum of the final demand quadrant (i.e. columns). This ensures that expenditure equals income and satisfies the circular economy flow conditions.

A mathematical configuration and description of these processes can be found in West G., (1993), Input-Output for Practitioners, University of Queensland Press.

APPENDIX B: DESCRIPTION AND PURPOSE OF INPUT-OUTPUT PRIMARY INPUT QUADRANT VARIABLES

The following is a summary of the *Primary Input Quadrant variables only*. Further details on content, coverage and estimation are available from ABS Catalogue 5216, *Australian System of National Accounts: Concepts, Sources and Methods, 2013*.

Compensation of employees (COE):

This is payment by an enterprise to an employee in return for work performed by the employee during the fiscal year. It contains wages and salaries. It contains wages and salaries; and employers' social contributions such as superannuation. It is not payable for unpaid work performed voluntarily, including the work done by household members within an unincorporated enterprise owned by that household. It excludes taxes payable by the employer on the wage and salary bill (e.g. payroll tax).

Gross operating surplus and mixed income (GOSMI):

This is the operating surplus accruing to all enterprises, except unincorporated enterprises, from their operations. It is the excess of gross output over the sum of intermediate consumption, compensation of employees, and taxes less subsidies on production and imports. It is calculated before deduction of consumption of fixed capital, dividends, interest, royalties and land rent, and direct taxes payable, but after deducting the inventory valuation adjustment. It is also calculated for general government and equals its consumption of fixed capital.

Taxes less subsidies on products (TLSP):

Taxes on products include taxes on the provision of goods and services (e.g. sales tax and GST), excises, taxes on international trade, taxes on gambling, taxes on insurance, etc. Subsidies on products are paid by governments to the producer for production of a particular product.

Other taxes less subsidies on production (OTLSP):

Taxes in this category include all other taxes in production not included in TLSP such as taxes on the ownership or use of land, buildings, or other assets used in production, or on the labour employed or labour costs.

Complementary imports:

These are imports of goods that are not or cannot be produced domestically.

Imports of services interstate:

Imports from services sectors interstate are defined as those that are purchased by residents of Victoria when travelling in another State or territory of Australia. For example, specialised health care obtained from New South Wales.

Imports of goods interstate:

Imports of goods interstate are defined as those physical and tangible items that are purchased by residents of Victoria when travelling in another State or Territory of Australia. Furniture purchased from New South Wales would be an example.

Imports of services from overseas:

Imports from services sectors overseas are defined as those that are purchased by residents of Victoria when travelling in another country. Specialised health care purchased in the United States of America would be an example.

Imports of goods from overseas:

Imports of goods from overseas are defined as those physical and tangible items that are purchased by residents of Victoria when travelling in another country. The purchase of furniture from the United States of America would be an example.

APPENDIX C: DESCRIPTION AND PURPOSE OF INPUT-OUTPUT FINAL DEMAND QUADRANT VARIABLES

The following is a summary of the *Final Demand Quadrant variables only*. Further details on content, coverage and estimation are available from ABS Catalogue 5216, *Australian System of National Accounts: Concepts, Sources and Methods, 2013*.

Final Consumption Expenditure – Households (FCE Households):

This item records the purchases of household consumer items.

Final Consumption Expenditure – General Government, Commonwealth (FCE GGN):

This item records the purchases of consumer items by Federal Government departments.

Final Consumption Expenditure – General Government, State and Local (FCE GGSL):

This item records the purchases of consumer items by State and Local Government departments.

Gross Fixed Capital Formation Private (GFCF Private):

This item records capital (infrastructure) investment spending on new and replacement capital stock, by private sector business enterprises.

Gross Fixed Capital Formation – Public Enterprises Commonwealth (GFCF PEC):

This item records capital (infrastructure) investment spending on new and replacement capital stock, by Federal Government owned businesses.

Gross Fixed Capital Formation – Public Enterprises, State and Local Government (GFCF PESL):

This item records capital (infrastructure) investment spending on new and replacement capital stock, by State and Local Government owned businesses.

Gross Fixed Capital Formation – General Government, Commonwealth (GFCF GGN):

This item records capital (infrastructure) investment spending on new and replacement capital stock, by Federal Government departments.

Gross Fixed Capital Formation – General Government, State and Local (GFCF GGSL):

This item records capital (infrastructure) investment spending on new and replacement capital stock, by State and Local Government departments.

Inventory Changes:

This item records changes in supermarket, department store and warehouse stock on shelves which are nominated for wholesale and retail sale.

Export Services Interstate (Domestic):

This item records the sale of services (from services sectors and industries) to residents of other Australian States and Territories.

Export Goods Interstate (Domestic):

This item records the sale of goods (from goods producing sectors and industries) to residents of other Australian States and Territories.

Export Services Overseas:

This item records the sale of services (from services sectors and industries) to residents of other countries.

Exports Goods Overseas:

This item records the sale of goods (from goods producing sectors and industries) to residents of other countries.

**APPENDIX D:
 MULTIPLIER EFFECT DEMONSTRATION: WHAT HAPPENS WHEN A \$1M AUD
 INCREASE IN THE HIGHLIGHTED SECTOR FILTERS THROUGH THE WHOLE
 ECONOMY**

(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0101	Sheep, Grains, Beef and Dairy Cattle	1.000000	0.178193	0.066345	0.040220	1.284758	43.100000	0.284758	14.400000
0102	Poultry and Other Livestock	0.000000	0.020822	0.041806	0.062900	0.125527	4.200000	0.125527	6.300000
0103	Other Agriculture	0.000000	0.056808	0.252074	0.092843	0.401725	13.500000	0.401725	20.300000
0201	Aquaculture	0.000000	0.000000	0.000529	0.041676	0.042205	1.400000	0.042205	2.100000
0301	Forestry and Logging	0.000000	0.002906	0.002497	0.035669	0.041071	1.400000	0.041071	2.100000
0401	Fishing, hunting and trapping	0.000000	0.002127	0.002175	0.026592	0.030894	1.000000	0.030894	1.600000
0501	Agriculture, Forestry and Fishing Support Services	0.000000	0.251963	0.205823	0.150797	0.608583	20.400000	0.608583	30.700000
0601	Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0701	Oil and gas extraction	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0801	Iron Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0802	Non-Ferrous Metal Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0901	Non-Metallic Mineral Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1001	Exploration and Mining Support Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1101	Meat and Meat product Manufacturing	0.000000	0.000096	0.000059	0.001343	0.001498	0.100000	0.001498	0.100000
1102	Processed Seafood Manufacturing	0.000000	0.000001	0.000006	0.001366	0.001373	0.000000	0.001373	0.100000
1103	Dairy Product Manufacturing	0.000000	0.000046	0.000023	0.001287	0.001356	0.000000	0.001356	0.100000
1104	Fruit and Vegetable Product Manufacturing	0.000000	0.000000	0.000002	0.000318	0.000320	0.000000	0.000320	0.000000
1105	Oils and Fats Manufacturing	0.000000	0.000002	0.000003	0.001030	0.001035	0.000000	0.001035	0.100000
1106	Grain Mill and Cereal Product Manufacturing	0.000000	0.000004	0.000004	0.000388	0.000396	0.000000	0.000396	0.000000
1107	Bakery Product Manufacturing	0.000000	0.000002	0.000004	0.000437	0.000443	0.000000	0.000443	0.000000
1108	Sugar and Confectionery Manufacturing	0.000000	0.000013	0.000019	0.002021	0.002053	0.100000	0.002053	0.100000
1109	Other Food Product Manufacturing	0.000000	0.000954	0.000568	0.003277	0.004799	0.200000	0.004799	0.200000
1201	Soft Drinks, Cordials and Syrup Manufacturing	0.000000	0.000124	0.000074	0.000738	0.000936	0.000000	0.000936	0.000000
1202	Beer Manufacturing	0.000000	0.000003	0.000005	0.001402	0.001410	0.000000	0.001410	0.100000
1205	Wine, Spirits and Tobacco	0.000000	0.000007	0.000013	0.000545	0.000565	0.000000	0.000565	0.000000
1301	Textile Manufacturing	0.000000	0.000000	0.000000	0.000208	0.000209	0.000000	0.000209	0.000000
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.000000	0.000000	0.000000	0.000423	0.000423	0.000000	0.000423	0.000000
1303	Textile Product Manufacturing	0.000000	0.000000	0.000000	0.000895	0.000895	0.000000	0.000895	0.000000
1304	Knitted Product Manufacturing	0.000000	0.000000	0.000000	0.000005	0.000005	0.000000	0.000005	0.000000
1305	Clothing Manufacturing	0.000000	0.000000	0.000003	0.000777	0.000780	0.000000	0.000780	0.000000
1306	Footwear Manufacturing	0.000000	0.000001	0.000001	0.000961	0.000963	0.000000	0.000963	0.000000
1401	Sawmill Product Manufacturing	0.000000	0.000000	0.000001	0.001164	0.001165	0.000000	0.001165	0.100000
1402	Other Wood Product Manufacturing	0.000000	0.000017	0.000030	0.002446	0.002493	0.100000	0.002493	0.100000
1501	Pulp, Paper and Paperboard Manufacturing	0.000000	0.000005	0.000012	0.002845	0.002862	0.100000	0.002862	0.100000
1502	Paper Stationery and Other Converted Paper Product Manufacturing	0.000000	0.000003	0.000058	0.001817	0.001878	0.100000	0.001878	0.100000
1601	Printing (including the reproduction of recorded media)	0.000000	0.000002	0.000025	0.000867	0.000894	0.000000	0.000894	0.000000

APPENDIX D (Cont.)
MYLTIPLIER EFFECT DEMONSTRATION: WHAT HAPPENS WHEN A \$1M AUD
INCREASE IN THE HIGHLIGHTED SECTOR FILTERS THROUGH THE WHOLE
ECONOMY

(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1701	Petroleum and Coal Product Manufacturing	0.000000	0.001153	0.004369	0.005306	0.010828	0.400000	0.010828	0.500000
1801	Human Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000002	0.000002	0.000357	0.000360	0.000000	0.000360	0.000000
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000004	0.000001	0.000203	0.000208	0.000000	0.000208	0.000000
1803	Basic Chemical Manufacturing	0.000000	0.000357	0.000325	0.001252	0.001934	0.100000	0.001934	0.100000
1804	Cleaning Compounds and Toiletry Preparation Manufacturing	0.000000	0.000002	0.000003	0.000826	0.000832	0.000000	0.000832	0.000000
1901	Polymer Product Manufacturing	0.000000	0.000039	0.000137	0.002384	0.002560	0.100000	0.002560	0.100000
1902	Natural Rubber Product Manufacturing	0.000000	0.000006	0.000011	0.001329	0.001346	0.000000	0.001346	0.100000
2001	Glass and Glass Product Manufacturing	0.000000	0.000022	0.000078	0.003009	0.003109	0.100000	0.003109	0.200000
2002	Ceramic Product Manufacturing	0.000000	0.000004	0.000012	0.002636	0.002652	0.100000	0.002652	0.100000
2003	Cement, Lime, and Ready-Mixed Concrete Manufacturing	0.000000	0.000032	0.000100	0.004736	0.004869	0.200000	0.004869	0.200000
2004	Plaster and Concrete Product Manufacturing	0.000000	0.000030	0.000092	0.003436	0.003558	0.100000	0.003558	0.200000
2005	Other Non-Metallic Mineral Product Manufacturing	0.000000	0.000008	0.000024	0.002116	0.002148	0.100000	0.002148	0.100000
2101	Iron and Steel Manufacturing	0.000000	0.000216	0.000806	0.035189	0.036210	1.200000	0.036210	1.800000
2102	Basic Non-Ferrous Metal Manufacturing	0.000000	0.000965	0.001949	0.110941	0.113854	3.800000	0.113854	5.700000
2201	Forged Iron and Steel Product Manufacturing	0.000000	0.000001	0.000002	0.000670	0.000672	0.000000	0.000672	0.000000
2202	Structural Metal Product Manufacturing	0.000000	0.000040	0.000141	0.002878	0.003059	0.100000	0.003059	0.200000
2203	Metal Containers and Other Sheet Metal Product manufacturing	0.000000	0.000003	0.000007	0.000705	0.000715	0.000000	0.000715	0.000000
2204	Other Fabricated Metal Product manufacturing	0.000000	0.000023	0.000051	0.001585	0.001659	0.100000	0.001659	0.100000
2301	Motor Vehicles and Parts; Other Transport Equipment manufacturing	0.000000	0.000036	0.000087	0.004887	0.005010	0.200000	0.005010	0.300000
2302	Ships and Boat Manufacturing	0.000000	0.000001	0.000020	0.001570	0.001591	0.100000	0.001591	0.100000
2303	Railway Rolling Stock Manufacturing	0.000000	0.000000	0.000000	0.000118	0.000119	0.000000	0.000119	0.000000
2304	Aircraft Manufacturing	0.000000	0.000002	0.000004	0.000567	0.000572	0.000000	0.000572	0.000000
2401	Professional, Scientific, Computer and Electronic Equipment Manufacturing	0.000000	0.000015	0.000037	0.001150	0.001202	0.000000	0.001202	0.100000
2403	Electrical Equipment Manufacturing	0.000000	0.000008	0.000020	0.000990	0.001018	0.000000	0.001018	0.100000
2404	Domestic Appliance Manufacturing	0.000000	0.000001	0.000002	0.000612	0.000615	0.000000	0.000615	0.000000
2405	Specialised and other Machinery and Equipment Manufacturing	0.000000	0.000028	0.000058	0.000645	0.000731	0.000000	0.000731	0.000000
2501	Furniture Manufacturing	0.000000	0.000003	0.000007	0.001397	0.001406	0.000000	0.001406	0.100000
2502	Other Manufactured Products	0.000000	0.000005	0.000008	0.001070	0.001084	0.000000	0.001084	0.100000
2601	Electricity Generation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2605	Electricity Transmission, Distribution, On Selling and Electricity Market Operation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2701	Gas Supply	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2801	Water Supply, Sewerage and Drainage Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2901	Waste Collection, Treatment and Disposal Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3001	Residential Building Construction	0.000000	0.000252	0.000309	0.001138	0.001698	0.100000	0.001698	0.100000
3002	Non-Residential Building Construction	0.000000	0.000074	0.000108	0.000494	0.000676	0.000000	0.000676	0.000000

APPENDIX D (Cont.)
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(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3101	Heavy and Civil Engineering Construction	0.000000	0.000105	0.000061	0.000303	0.000469	0.000000	0.000469	0.000000
3201	Construction Services	0.000000	0.001684	0.002108	0.002652	0.006444	0.200000	0.006444	0.300000
3301	Wholesale Trade	0.000000	0.011510	0.014123	0.014646	0.040280	1.400000	0.040280	2.000000
3901	Retail Trade	0.000000	0.002276	0.004237	0.008907	0.015420	0.500000	0.015420	0.800000
4401	Accommodation	0.000000	0.000024	0.000027	0.000596	0.000648	0.000000	0.000648	0.000000
4501	Food and Beverage Services	0.000000	0.000347	0.000423	0.001973	0.002744	0.100000	0.002744	0.100000
4601	Road Transport	0.000000	0.000999	0.000758	0.003913	0.005669	0.200000	0.005669	0.300000
4701	Rail Transport	0.000000	0.000057	0.000058	0.002791	0.002906	0.100000	0.002906	0.100000
4801	Water, Pipeline and Other Transport	0.000000	0.000146	0.000177	0.005348	0.005671	0.200000	0.005671	0.300000
4901	Air and Space Transport	0.000000	0.000300	0.000498	0.010746	0.011544	0.400000	0.011544	0.600000
5101	Postal and Courier Pick-up and Delivery Service	0.000000	0.000262	0.000386	0.008241	0.008889	0.300000	0.008889	0.400000
5201	Transport Support services and storage	0.000000	0.000849	0.000496	0.002304	0.003649	0.100000	0.003649	0.200000
5401	Publishing (except Internet and Music Publishing)	0.000000	0.000000	0.000000	0.000003	0.000003	0.000000	0.000003	0.000000
5501	Motion Picture and Sound Recording	0.000000	0.000000	0.000000	0.000004	0.000004	0.000000	0.000004	0.000000
5601	Broadcasting (except Internet)	0.000000	0.000000	0.000000	0.000004	0.000004	0.000000	0.000004	0.000000
5701	Internet Service Providers, Internet Publishing and Broadcasting, Web search Portals and Data Processing	0.000000	0.000000	0.000001	0.000027	0.000029	0.000000	0.000029	0.000000
5801	Telecommunication Services	0.000000	0.000001	0.000002	0.000018	0.000021	0.000000	0.000021	0.000000
6001	Library and Other Information Services	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
6201	Finance	0.000000	0.003437	0.003008	0.003409	0.009854	0.300000	0.009854	0.500000
6301	Insurance and Superannuation Funds	0.000000	0.000917	0.000927	0.004672	0.006516	0.200000	0.006516	0.300000
6401	Auxiliary Finance and Insurance Services	0.000000	0.004633	0.004362	0.008160	0.017155	0.600000	0.017155	0.900000
6601	Rental and Hiring Services (except Real Estate)	0.000000	0.000188	0.000501	0.002678	0.003368	0.100000	0.003368	0.200000
6701	Ownership of Dwellings	0.000000	0.000000	0.000000	0.006467	0.006467	0.200000	0.006467	0.300000
6702	Non-Residential Property Operators and Real Estate Services	0.000000	0.001925	0.002547	0.007462	0.011934	0.400000	0.011934	0.600000
6901	Professional, Scientific and Technical Services	0.000000	0.001114	0.001386	0.002078	0.004578	0.200000	0.004578	0.200000
7001	Computer Systems Design and Related Services	0.000000	0.000005	0.000040	0.001158	0.001203	0.000000	0.001203	0.100000
7210	Employment, Travel Agency and Other Administrative Services	0.000000	0.000116	0.000097	0.000622	0.000835	0.000000	0.000835	0.000000
7310	Building Cleaning, Pest Control and Other Support Services	0.000000	0.000040	0.000348	0.004546	0.004935	0.200000	0.004935	0.200000
7501	Public Administration and Regulatory Services	0.000000	0.000001	0.000004	0.000089	0.000094	0.000000	0.000094	0.000000
7601	Defence	0.000000	0.000000	0.000000	0.000082	0.000082	0.000000	0.000082	0.000000
7701	Public Order and Safety	0.000000	0.000000	0.000001	0.000080	0.000081	0.000000	0.000081	0.000000
8010	Primary and Secondary Education Services (incl Pre-Schools and Special Schools)	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
8110	Technical, Vocational and Tertiary Education Services (incl undergraduate and postgraduate)	0.000000	0.000000	0.000000	0.000002	0.000002	0.000000	0.000002	0.000000
8210	Arts, Sports, Adult and Other Education Services (incl community education)	0.000000	0.000000	0.000000	0.000003	0.000003	0.000000	0.000003	0.000000

APPENDIX D (Cont.)
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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
8401	Health Care Services	0.000000	0.000000	0.000002	0.000175	0.000176	0.000000	0.000176	0.000000
8601	Residential Care and Social Assistance Services	0.000000	0.000000	0.000000	0.000170	0.000170	0.000000	0.000170	0.000000
8901	Heritage, Creative and Performing Arts	0.000000	0.000001	0.000002	0.000384	0.000386	0.000000	0.000386	0.000000
9101	Sports and Recreation	0.000000	0.000001	0.000004	0.000423	0.000428	0.000000	0.000428	0.000000
9201	Gambling	0.000000	0.000019	0.000027	0.004509	0.004555	0.200000	0.004555	0.200000
9401	Automotive Repair and Maintenance	0.000000	0.000288	0.000480	0.004724	0.005492	0.200000	0.005492	0.300000
9402	Other Repair and Maintenance	0.000000	0.000906	0.001246	0.003629	0.005781	0.200000	0.005781	0.300000
9501	Personal Services	0.000000	0.000010	0.000013	0.001660	0.001683	0.100000	0.001683	0.100000
9502	Other Services	0.000000	0.000423	0.000445	0.021964	0.022832	0.800000	0.022832	1.200000
	Total	1.000000	0.550013	0.619725	0.813080	2.982818	100.000000	1.982818	100.000000
	Multiplier	1.000000				2.982818		1.982818	
0101	Sheep, Grains, Beef and Dairy Cattle	0.000000	0.085539	0.062567	0.032616	0.180721	7.100000	0.180721	11.600000
0102	Poultry and Other Livestock	1.000000	0.220709	0.084385	0.051008	1.356102	53.100000	0.356102	22.900000
0103	Other Agriculture	0.000000	0.053496	0.128580	0.075290	0.257366	10.100000	0.257366	16.500000
0201	Aquaculture	0.000000	0.000000	0.000831	0.033796	0.034627	1.400000	0.034627	2.200000
0301	Forestry and Logging	0.000000	0.004235	0.003260	0.028926	0.036422	1.400000	0.036422	2.300000
0401	Fishing, hunting, and trapping	0.000000	0.002647	0.001969	0.021565	0.026181	1.000000	0.026181	1.700000
0501	Agriculture, Forestry and Fishing Support Services	0.000000	0.061249	0.137538	0.122287	0.321074	12.600000	0.321074	20.600000
0601	Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0701	Oil and gas extraction	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0801	Iron Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0802	Non-Ferrous Metal Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0901	Non-Metallic Mineral Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1001	Exploration and Mining Support Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1101	Meat and Meat product Manufacturing	0.000000	0.000190	0.000089	0.001089	0.001369	0.100000	0.001369	0.100000
1102	Processed Seafood Manufacturing	0.000000	0.000000	0.000003	0.001108	0.001111	0.000000	0.001111	0.100000
1103	Dairy Product Manufacturing	0.000000	0.000070	0.000036	0.001044	0.001150	0.000000	0.001150	0.100000
1104	Fruit and Vegetable Product Manufacturing	0.000000	0.000000	0.000001	0.000258	0.000259	0.000000	0.000259	0.000000
1105	Oils and Fats Manufacturing	0.000000	0.000003	0.000003	0.000835	0.000841	0.000000	0.000841	0.100000
1106	Grain Mill and Cereal Product Manufacturing	0.000000	0.000012	0.000006	0.000314	0.000333	0.000000	0.000333	0.000000
1107	Bakery Product Manufacturing	0.000000	0.000004	0.000004	0.000354	0.000362	0.000000	0.000362	0.000000
1108	Sugar and Confectionery Manufacturing	0.000000	0.000014	0.000019	0.001639	0.001672	0.100000	0.001672	0.100000
1109	Other Food Product Manufacturing	0.000000	0.002411	0.000967	0.002657	0.006035	0.200000	0.006035	0.400000
1201	Soft Drinks, Cordials and Syrup Manufacturing	0.000000	0.000314	0.000126	0.000599	0.001038	0.000000	0.001038	0.100000
1202	Beer Manufacturing	0.000000	0.000005	0.000004	0.001137	0.001147	0.000000	0.001147	0.100000

APPENDIX D (Cont.)
MYLTIPLIER EFFECT DEMONSTRATION: WHAT HAPPENS WHEN A \$1M AUD
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ECONOMY

(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1205	Wine, Spirits and Tobacco	0.000000	0.000000	0.000006	0.000442	0.000448	0.000000	0.000448	0.000000
1301	Textile Manufacturing	0.000000	0.000000	0.000000	0.000169	0.000169	0.000000	0.000169	0.000000
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.000000	0.000000	0.000000	0.000343	0.000343	0.000000	0.000343	0.000000
1303	Textile Product Manufacturing	0.000000	0.000000	0.000000	0.000726	0.000726	0.000000	0.000726	0.000000
1304	Knitted Product Manufacturing	0.000000	0.000000	0.000000	0.000004	0.000004	0.000000	0.000004	0.000000
1305	Clothing Manufacturing	0.000000	0.000000	0.000001	0.000630	0.000632	0.000000	0.000632	0.000000
1306	Footwear Manufacturing	0.000000	0.000000	0.000001	0.000779	0.000780	0.000000	0.000780	0.100000
1401	Sawmill Product Manufacturing	0.000000	0.000000	0.000000	0.000944	0.000945	0.000000	0.000945	0.100000
1402	Other Wood Product Manufacturing	0.000000	0.000013	0.000025	0.001984	0.002022	0.100000	0.002022	0.100000
1501	Pulp, Paper and Paperboard Manufacturing	0.000000	0.000007	0.000009	0.002307	0.002323	0.100000	0.002323	0.100000
1502	Paper Stationery and Other Converted Paper Product Manufacturing	0.000000	0.000135	0.000076	0.001473	0.001685	0.100000	0.001685	0.100000
1601	Printing (including the reproduction of recorded media)	0.000000	0.000121	0.000047	0.000703	0.000871	0.000000	0.000871	0.100000
1701	Petroleum and Coal Product Manufacturing	0.000000	0.001057	0.002615	0.004303	0.007976	0.300000	0.007976	0.500000
1801	Human Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000001	0.000001	0.000289	0.000292	0.000000	0.000292	0.000000
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000001	0.000001	0.000165	0.000167	0.000000	0.000167	0.000000
1803	Basic Chemical Manufacturing	0.000000	0.000069	0.000192	0.001015	0.001277	0.000000	0.001277	0.100000
1804	Cleaning Compounds and Toiletry Preparation Manufacturing	0.000000	0.000000	0.000002	0.000670	0.000672	0.000000	0.000672	0.000000
1901	Polymer Product Manufacturing	0.000000	0.000029	0.000085	0.001933	0.002047	0.100000	0.002047	0.100000
1902	Natural Rubber Product Manufacturing	0.000000	0.000000	0.000005	0.001078	0.001083	0.000000	0.001083	0.100000
2001	Glass and Glass Product Manufacturing	0.000000	0.000013	0.000047	0.002440	0.002501	0.100000	0.002501	0.200000
2002	Ceramic Product Manufacturing	0.000000	0.000000	0.000007	0.002137	0.002144	0.100000	0.002144	0.100000
2003	Cement, Lime and Ready-Mixed Concrete Manufacturing	0.000000	0.000015	0.000063	0.003841	0.003920	0.200000	0.003920	0.300000
2004	Plaster and Concrete Product Manufacturing	0.000000	0.000024	0.000057	0.002786	0.002868	0.100000	0.002868	0.200000
2005	Other Non-Metallic Mineral Product Manufacturing	0.000000	0.000007	0.000015	0.001716	0.001737	0.100000	0.001737	0.100000
2101	Iron and Steel Manufacturing	0.000000	0.000147	0.000525	0.028536	0.029208	1.100000	0.029208	1.900000
2102	Basic Non-Ferrous Metal Manufacturing	0.000000	0.000307	0.001089	0.089966	0.091362	3.600000	0.091362	5.900000
2201	Forged Iron and Steel Product Manufacturing	0.000000	0.000000	0.000001	0.000543	0.000544	0.000000	0.000544	0.000000
2202	Structural Metal Product Manufacturing	0.000000	0.000026	0.000082	0.002334	0.002442	0.100000	0.002442	0.200000
2203	Metal Containers and Other Sheet Metal Product manufacturing	0.000000	0.000000	0.000004	0.000571	0.000575	0.000000	0.000575	0.000000
2204	Other Fabricated Metal Product manufacturing	0.000000	0.000010	0.000029	0.001286	0.001325	0.100000	0.001325	0.100000
2301	Motor Vehicles and Parts; Other Transport Equipment manufacturing	0.000000	0.000026	0.000051	0.003963	0.004041	0.200000	0.004041	0.300000
2302	Ships and Boat Manufacturing	0.000000	0.000000	0.000012	0.001273	0.001285	0.100000	0.001285	0.100000
2303	Railway Rolling Stock Manufacturing	0.000000	0.000000	0.000000	0.000096	0.000096	0.000000	0.000096	0.000000
2304	Aircraft Manufacturing	0.000000	0.000001	0.000002	0.000460	0.000463	0.000000	0.000463	0.000000
2401	Professional, Scientific, Computer and Electronic Equipment Manufacturing	0.000000	0.000012	0.000023	0.000932	0.000967	0.000000	0.000967	0.100000

APPENDIX D (Cont.)
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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2403	Electrical Equipment Manufacturing	0.000000	0.000005	0.000012	0.000803	0.000820	0.000000	0.000820	0.100000
2404	Domestic Appliance Manufacturing	0.000000	0.000000	0.000001	0.000496	0.000497	0.000000	0.000497	0.000000
2405	Specialised and other Machinery and Equipment Manufacturing	0.000000	0.000011	0.000033	0.000523	0.000567	0.000000	0.000567	0.000000
2501	Furniture Manufacturing	0.000000	0.000000	0.000004	0.001133	0.001137	0.000000	0.001137	0.100000
2502	Other Manufactured Products	0.000000	0.000004	0.000005	0.000868	0.000877	0.000000	0.000877	0.100000
2601	Electricity Generation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2605	Electricity Transmission, Distribution, On Selling and Electricity Market Operation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2701	Gas Supply	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2801	Water Supply, Sewerage and Drainage Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2901	Waste Collection, Treatment and Disposal Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3001	Residential Building Construction	0.000000	0.000247	0.000233	0.000923	0.001403	0.100000	0.001403	0.100000
3002	Non-Residential Building Construction	0.000000	0.000072	0.000076	0.000400	0.000549	0.000000	0.000549	0.000000
3101	Heavy and Civil Engineering Construction	0.000000	0.000016	0.000039	0.000246	0.000301	0.000000	0.000301	0.000000
3201	Construction Services	0.000000	0.001633	0.001599	0.002151	0.005382	0.200000	0.005382	0.300000
3301	Wholesale Trade	0.000000	0.003809	0.008271	0.011877	0.023958	0.900000	0.023958	1.500000
3901	Retail Trade	0.000000	0.001246	0.002511	0.007223	0.010981	0.400000	0.010981	0.700000
4801	Water, Pipeline and Other Transport	0.000000	0.000052	0.000110	0.004337	0.004500	0.200000	0.004500	0.300000
4401	Accommodation	0.000000	0.000005	0.000017	0.000483	0.000505	0.000000	0.000505	0.000000
4501	Food and Beverage Services	0.000000	0.000127	0.000272	0.001600	0.002000	0.100000	0.002000	0.100000
4601	Road Transport	0.000000	0.001013	0.000698	0.003173	0.004884	0.200000	0.004884	0.300000
4701	Rail Transport	0.000000	0.000039	0.000043	0.002263	0.002346	0.100000	0.002346	0.200000
4901	Air and Space Transport	0.000000	0.000119	0.000291	0.008714	0.009125	0.400000	0.009125	0.600000
5101	Postal and Courier Pick-up and Delivery Service	0.000000	0.000212	0.000267	0.006683	0.007162	0.300000	0.007162	0.500000
5201	Transport Support services and storage	0.000000	0.000146	0.000314	0.001868	0.002328	0.100000	0.002328	0.100000
5401	Publishing (except Internet and Music Publishing)	0.000000	0.000000	0.000000	0.000003	0.000003	0.000000	0.000003	0.000000
5501	Motion Picture and Sound Recording	0.000000	0.000000	0.000000	0.000004	0.000004	0.000000	0.000004	0.000000
5601	Broadcasting (except Internet)	0.000000	0.000000	0.000000	0.000003	0.000003	0.000000	0.000003	0.000000
5701	Internet Service Providers, Internet Publishing and Broadcasting, Web search Portals and Data Processing	0.000000	0.000000	0.000000	0.000022	0.000023	0.000000	0.000023	0.000000
5801	Telecommunication Services	0.000000	0.000001	0.000001	0.000015	0.000017	0.000000	0.000017	0.000000
6001	Library and Other Information Services	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
6201	Finance	0.000000	0.001285	0.001955	0.002764	0.006005	0.200000	0.006005	0.400000
6301	Insurance and Superannuation Funds	0.000000	0.000377	0.000598	0.003789	0.004764	0.200000	0.004764	0.300000
6401	Auxiliary Finance and Insurance Services	0.000000	0.001495	0.002809	0.006617	0.010921	0.400000	0.010921	0.700000
6601	Rental and Hiring Services (except Real Estate)	0.000000	0.000100	0.000269	0.002172	0.002541	0.100000	0.002541	0.200000
6701	Ownership of Dwellings	0.000000	0.000000	0.000000	0.005244	0.005244	0.200000	0.005244	0.300000

APPENDIX D (Cont.)
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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
6702	Non-Residential Property Operators and Real Estate Services	0.000000	0.000920	0.001606	0.006051	0.008577	0.300000	0.008577	0.600000
6901	Professional, Scientific and Technical Services	0.000000	0.000478	0.000864	0.001685	0.003027	0.100000	0.003027	0.200000
7001	Computer Systems Design and Related Services	0.000000	0.000004	0.000021	0.000939	0.000965	0.000000	0.000965	0.100000
7210	Employment, Travel Agency and Other Administrative Services	0.000000	0.000023	0.000056	0.000504	0.000583	0.000000	0.000583	0.000000
7310	Building Cleaning, Pest Control and Other Support Services	0.000000	0.000101	0.000198	0.003687	0.003986	0.200000	0.003986	0.300000
7501	Public Administration and Regulatory Services	0.000000	0.000000	0.000002	0.000072	0.000074	0.000000	0.000074	0.000000
7601	Defence	0.000000	0.000000	0.000000	0.000066	0.000066	0.000000	0.000066	0.000000
7701	Public Order and Safety	0.000000	0.000000	0.000000	0.000065	0.000065	0.000000	0.000065	0.000000
8010	Primary and Secondary Education Services (incl Pre-Schools and Special Schools)	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
8110	Technical, Vocational and Tertiary Education Services (incl undergraduate and postgraduate)	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
8210	Arts, Sports, Adult and Other Education Services (incl community education)	0.000000	0.000000	0.000000	0.000002	0.000002	0.000000	0.000002	0.000000
8401	Health Care Services	0.000000	0.000000	0.000001	0.000142	0.000142	0.000000	0.000142	0.000000
8601	Residential Care and Social Assistance Services	0.000000	0.000000	0.000000	0.000138	0.000138	0.000000	0.000138	0.000000
8901	Heritage, Creative and Performing Arts	0.000000	0.000000	0.000001	0.000311	0.000312	0.000000	0.000312	0.000000
9101	Sports and Recreation	0.000000	0.000003	0.000003	0.000343	0.000349	0.000000	0.000349	0.000000
9201	Gambling	0.000000	0.000023	0.000021	0.003656	0.003700	0.100000	0.003700	0.200000
9401	Automotive Repair and Maintenance	0.000000	0.000065	0.000278	0.003831	0.004174	0.200000	0.004174	0.300000
9402	Other Repair and Maintenance	0.000000	0.000171	0.000666	0.002943	0.003780	0.100000	0.003780	0.200000
9501	Personal Services	0.000000	0.000006	0.000009	0.001346	0.001361	0.100000	0.001361	0.100000
9502	Other Services	0.000000	0.000000	0.000287	0.017811	0.018099	0.700000	0.018099	1.200000
	Total	1.000000	0.446733	0.449909	0.659357	2.555999	100.000000	1.555999	100.000000
	Multiplier	1.000000				2.555999		1.555999	
0101	Sheep, Grains, Beef and Dairy Cattle	0.000000	0.043529	0.043541	0.046266	0.133336	4.300000	0.133336	6.400000
0102	Poultry and Other Livestock	0.000000	0.066354	0.050852	0.072355	0.189560	6.100000	0.189560	9.100000
0103	Other Agriculture	1.000000	0.030754	0.285242	0.106800	1.422795	46.200000	0.422795	20.300000
0201	Aquaculture	0.000000	0.000000	0.000340	0.047941	0.048281	1.600000	0.048281	2.300000
0301	Forestry and Logging	0.000000	0.001968	0.002082	0.041031	0.045081	1.500000	0.045081	2.200000
0401	Fishing, hunting and trapping	0.000000	0.002652	0.002076	0.030590	0.035317	1.100000	0.035317	1.700000
0501	Agriculture, Forestry and Fishing Support Services	0.000000	0.361463	0.175894	0.173466	0.710823	23.100000	0.710823	34.100000
0601	Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0701	Oil and gas extraction	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0801	Iron Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0802	Non-Ferrous Metal Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0901	Non-Metallic Mineral Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1001	Exploration and Mining Support Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1101	Meat and Meat product Manufacturing	0.000000	0.000003	0.000053	0.001545	0.001601	0.100000	0.001601	0.100000
1102	Processed Seafood Manufacturing	0.000000	0.000001	0.000006	0.001572	0.001579	0.100000	0.001579	0.100000
1103	Dairy Product Manufacturing	0.000000	0.000001	0.000018	0.001481	0.001501	0.000000	0.001501	0.100000
1104	Fruit and Vegetable Product Manufacturing	0.000000	0.000000	0.000002	0.000366	0.000368	0.000000	0.000368	0.000000
1105	Oils and Fats Manufacturing	0.000000	0.000001	0.000003	0.001185	0.001189	0.000000	0.001189	0.100000
1106	Grain Mill and Cereal Product Manufacturing	0.000000	0.000003	0.000004	0.000446	0.000453	0.000000	0.000453	0.000000
1107	Bakery Product Manufacturing	0.000000	0.000002	0.000004	0.000502	0.000508	0.000000	0.000508	0.000000
1108	Sugar and Confectionery Manufacturing	0.000000	0.000008	0.000017	0.002325	0.002350	0.100000	0.002350	0.100000
1109	Other Food Product Manufacturing	0.000000	0.000014	0.000576	0.003769	0.004359	0.100000	0.004359	0.200000
1201	Soft Drinks, Cordials and Syrup Manufacturing	0.000000	0.000002	0.000075	0.000849	0.000926	0.000000	0.000926	0.000000
1202	Beer Manufacturing	0.000000	0.000002	0.000005	0.001613	0.001620	0.100000	0.001620	0.100000
1205	Wine, Spirits and Tobacco	0.000000	0.000002	0.000014	0.000627	0.000642	0.000000	0.000642	0.000000
1301	Textile Manufacturing	0.000000	0.000000	0.000000	0.000240	0.000240	0.000000	0.000240	0.000000
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.000000	0.000000	0.000000	0.000487	0.000487	0.000000	0.000487	0.000000
1303	Textile Product Manufacturing	0.000000	0.000000	0.000000	0.001030	0.001030	0.000000	0.001030	0.000000
1304	Knitted Product Manufacturing	0.000000	0.000000	0.000000	0.000006	0.000006	0.000000	0.000006	0.000000
1305	Clothing Manufacturing	0.000000	0.000000	0.000003	0.000894	0.000896	0.000000	0.000896	0.000000
1306	Footwear Manufacturing	0.000000	0.000000	0.000001	0.001105	0.001107	0.000000	0.001107	0.100000
1401	Sawmill Product Manufacturing	0.000000	0.000000	0.000001	0.001340	0.001341	0.000000	0.001341	0.100000
1402	Other Wood Product Manufacturing	0.000000	0.000004	0.000030	0.002814	0.002848	0.100000	0.002848	0.100000
1501	Pulp, Paper and Paperboard Manufacturing	0.000000	0.000003	0.000011	0.003273	0.003287	0.100000	0.003287	0.200000
1502	Paper Stationery and Other Converted Paper Product Manufacturing	0.000000	0.000005	0.000095	0.002090	0.002189	0.100000	0.002189	0.100000
1601	Printing (including the reproduction of recorded media)	0.000000	0.000004	0.000034	0.000997	0.001036	0.000000	0.001036	0.000000
9502	Other Services	0.000000	0.000000	0.000287	0.017811	0.018099	0.700000	0.018099	1.200000
1701	Petroleum and Coal Product Manufacturing	0.000000	0.005754	0.004798	0.006104	0.016656	0.500000	0.016656	0.800000
1801	Human Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000001	0.000002	0.000410	0.000413	0.000000	0.000413	0.000000
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000000	0.000001	0.000233	0.000234	0.000000	0.000234	0.000000
1803	Basic Chemical Manufacturing	0.000000	0.000311	0.000299	0.001440	0.002050	0.100000	0.002050	0.100000
1804	Cleaning Compounds and Toiletry Preparation Manufacturing	0.000000	0.000001	0.000003	0.000951	0.000955	0.000000	0.000955	0.000000
1901	Polymer Product Manufacturing	0.000000	0.000103	0.000149	0.002742	0.002994	0.100000	0.002994	0.100000
1902	Natural Rubber Product Manufacturing	0.000000	0.000003	0.000011	0.001529	0.001543	0.100000	0.001543	0.100000
2001	Glass and Glass Product Manufacturing	0.000000	0.000084	0.000078	0.003461	0.003623	0.100000	0.003623	0.200000
2002	Ceramic Product Manufacturing	0.000000	0.000012	0.000012	0.003032	0.003056	0.100000	0.003056	0.100000
2003	Cement, Lime, and Ready-Mixed Concrete Manufacturing	0.000000	0.000074	0.000104	0.005448	0.005626	0.200000	0.005626	0.300000

APPENDIX D (Cont.)
MYLTIPLIER EFFECT DEMONSTRATION: WHAT HAPPENS WHEN A \$1M AUD
INCREASE IN THE HIGHLIGHTED SECTOR FILTERS THROUGH THE WHOLE
ECONOMY

(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2004	Plaster and Concrete Product Manufacturing	0.000000	0.000122	0.000096	0.003952	0.004170	0.100000	0.004170	0.200000
2005	Other Non-Metallic Mineral Product Manufacturing	0.000000	0.000031	0.000025	0.002434	0.002491	0.100000	0.002491	0.100000
2101	Iron and Steel Manufacturing	0.000000	0.000265	0.000822	0.040478	0.041566	1.300000	0.041566	2.000000
2102	Basic Non-Ferrous Metal Manufacturing	0.000000	0.000922	0.001898	0.127618	0.130438	4.200000	0.130438	6.300000
2201	Forged Iron and Steel Product Manufacturing	0.000000	0.000000	0.000002	0.000770	0.000772	0.000000	0.000772	0.000000
2202	Structural Metal Product Manufacturing	0.000000	0.000024	0.000152	0.003311	0.003487	0.100000	0.003487	0.200000
2203	Metal Containers and Other Sheet Metal Product manufacturing	0.000000	0.000001	0.000008	0.000811	0.000819	0.000000	0.000819	0.000000
2204	Other Fabricated Metal Product manufacturing	0.000000	0.000019	0.000053	0.001824	0.001896	0.100000	0.001896	0.100000
2301	Motor Vehicles and Parts; Other Transport Equipment manufacturing	0.000000	0.000055	0.000091	0.005621	0.005767	0.200000	0.005767	0.300000
2302	Ships and Boat Manufacturing	0.000000	0.000000	0.000023	0.001806	0.001829	0.100000	0.001829	0.100000
2303	Railway Rolling Stock Manufacturing	0.000000	0.000000	0.000000	0.000136	0.000137	0.000000	0.000137	0.000000
2304	Aircraft Manufacturing	0.000000	0.000001	0.000003	0.000652	0.000657	0.000000	0.000657	0.000000
2401	Professional, Scientific, Computer and Electronic Equipment Manufacturing	0.000000	0.000045	0.000038	0.001323	0.001406	0.000000	0.001406	0.100000
2403	Electrical Equipment Manufacturing	0.000000	0.000016	0.000021	0.001139	0.001175	0.000000	0.001175	0.100000
2404	Domestic Appliance Manufacturing	0.000000	0.000001	0.000002	0.000704	0.000707	0.000000	0.000707	0.000000
2405	Specialised and other Machinery and Equipment Manufacturing	0.000000	0.000040	0.000060	0.000742	0.000843	0.000000	0.000843	0.000000
2501	Furniture Manufacturing	0.000000	0.000004	0.000007	0.001607	0.001617	0.100000	0.001617	0.100000
2502	Other Manufactured Products	0.000000	0.000006	0.000008	0.001231	0.001245	0.000000	0.001245	0.100000
2601	Electricity Generation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2605	Electricity Transmission, Distribution, On Selling and Electricity Market Operation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2701	Gas Supply	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2801	Water Supply, Sewerage and Drainage Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2901	Waste Collection, Treatment and Disposal Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3001	Residential Building Construction	0.000000	0.000221	0.000304	0.001309	0.001834	0.100000	0.001834	0.100000
3002	Non-Residential Building Construction	0.000000	0.000089	0.000109	0.000568	0.000766	0.000000	0.000766	0.000000
3101	Heavy and Civil Engineering Construction	0.000000	0.000055	0.000047	0.000349	0.000451	0.000000	0.000451	0.000000
3201	Construction Services	0.000000	0.001394	0.002066	0.003051	0.006511	0.200000	0.006511	0.300000
3301	Wholesale Trade	0.000000	0.007439	0.013889	0.016848	0.038176	1.200000	0.038176	1.800000
3901	Retail Trade	0.000000	0.002611	0.004344	0.010246	0.017201	0.600000	0.017201	0.800000
4401	Accommodation	0.000000	0.000021	0.000024	0.000685	0.000731	0.000000	0.000731	0.000000
4501	Food and Beverage Services	0.000000	0.000471	0.000397	0.002270	0.003138	0.100000	0.003138	0.200000
4601	Road Transport	0.000000	0.000436	0.000686	0.004501	0.005622	0.200000	0.005622	0.300000
4701	Rail Transport	0.000000	0.000054	0.000050	0.003211	0.003315	0.100000	0.003315	0.200000
4801	Water, Pipeline and Other Transport	0.000000	0.000047	0.000151	0.006152	0.006350	0.200000	0.006350	0.300000
4901	Air and Space Transport	0.000000	0.000299	0.000468	0.012361	0.013128	0.400000	0.013128	0.600000

APPENDIX D (Cont.)
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(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
5101	Postal and Courier Pick-up and Delivery Service	0.000000	0.000241	0.000362	0.009480	0.010083	0.300000	0.010083	0.500000
5201	Transport Support services and storage	0.000000	0.000218	0.000375	0.002650	0.003244	0.100000	0.003244	0.200000
5401	Publishing (except Internet and Music Publishing)	0.000000	0.000000	0.000000	0.000004	0.000004	0.000000	0.000004	0.000000
5501	Motion Picture and Sound Recording	0.000000	0.000000	0.000000	0.000005	0.000005	0.000000	0.000005	0.000000
5601	Broadcasting (except Internet)	0.000000	0.000000	0.000000	0.000005	0.000005	0.000000	0.000005	0.000000
5701	Internet Service Providers, Internet Publishing and Broadcasting, Web search Portals and Data Processing	0.000000	0.000000	0.000001	0.000032	0.000033	0.000000	0.000033	0.000000
5801	Telecommunication Services	0.000000	0.000001	0.000002	0.000021	0.000025	0.000000	0.000025	0.000000
6001	Library and Other Information Services	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
6201	Finance	0.000000	0.002295	0.002698	0.003921	0.008914	0.300000	0.008914	0.400000
6301	Insurance and Superannuation Funds	0.000000	0.000714	0.000856	0.005374	0.006944	0.200000	0.006944	0.300000
6401	Auxiliary Finance and Insurance Services	0.000000	0.005064	0.003904	0.009387	0.018355	0.600000	0.018355	0.900000
6601	Rental and Hiring Services (except Real Estate)	0.000000	0.000126	0.000537	0.003081	0.003744	0.100000	0.003744	0.200000
6701	Ownership of Dwellings	0.000000	0.000000	0.000000	0.007439	0.007439	0.200000	0.007439	0.400000
6702	Non-Residential Property Operators and Real Estate Services	0.000000	0.001642	0.002339	0.008584	0.012564	0.400000	0.012564	0.600000
6901	Professional, Scientific and Technical Services	0.000000	0.000998	0.001332	0.002391	0.004720	0.200000	0.004720	0.200000
7001	Computer Systems Design and Related Services	0.000000	0.000003	0.000037	0.001332	0.001373	0.000000	0.001373	0.100000
7210	Employment, Travel Agency and Other Administrative Services	0.000000	0.000018	0.000087	0.000715	0.000820	0.000000	0.000820	0.000000
7310	Building Cleaning, Pest Control and Other Support Services	0.000000	0.000127	0.000380	0.005230	0.005736	0.200000	0.005736	0.300000
7501	Public Administration and Regulatory Services	0.000000	0.000002	0.000004	0.000102	0.000108	0.000000	0.000108	0.000000
7601	Defence	0.000000	0.000000	0.000000	0.000094	0.000094	0.000000	0.000094	0.000000
7701	Public Order and Safety	0.000000	0.000000	0.000001	0.000092	0.000093	0.000000	0.000093	0.000000
8010	Primary and Secondary Education Services (incl Pre-Schools and Special Schools)	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
8110	Technical, Vocational and Tertiary Education Services (incl undergraduate and postgraduate)	0.000000	0.000000	0.000000	0.000002	0.000002	0.000000	0.000002	0.000000
8210	Arts, Sports, Adult and Other Education Services (incl community education)	0.000000	0.000000	0.000000	0.000003	0.000003	0.000000	0.000003	0.000000
8401	Health Care Services	0.000000	0.000000	0.000002	0.000201	0.000203	0.000000	0.000203	0.000000
8601	Residential Care and Social Assistance Services	0.000000	0.000000	0.000000	0.000196	0.000196	0.000000	0.000196	0.000000
8901	Heritage, Creative and Performing Arts	0.000000	0.000000	0.000002	0.000441	0.000443	0.000000	0.000443	0.000000
9101	Sports and Recreation	0.000000	0.000001	0.000004	0.000487	0.000491	0.000000	0.000491	0.000000
9201	Gambling	0.000000	0.000020	0.000028	0.005186	0.005234	0.200000	0.005234	0.300000
9401	Automotive Repair and Maintenance	0.000000	0.000256	0.000470	0.005434	0.006160	0.200000	0.006160	0.300000
9402	Other Repair and Maintenance	0.000000	0.000508	0.001251	0.004175	0.005935	0.200000	0.005935	0.300000
9501	Personal Services	0.000000	0.000014	0.000012	0.001910	0.001936	0.100000	0.001936	0.100000
9502	Other Services	0.000000	0.000000	0.000372	0.025266	0.025638	0.800000	0.025638	1.200000
	Total	1.000000	0.540057	0.607336	0.935306	3.082699	100.000000	2.082699	100.000000

APPENDIX D (Cont.)
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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Multiplier	1.000000				3.082699		2.082699	
0101	Sheep, Grains, Beef and Dairy Cattle	0.000000	0.002306	0.008639	0.059559	0.070504	2.500000	0.070504	3.800000
0102	Poultry and Other Livestock	0.000000	0.000000	0.009860	0.093145	0.103004	3.600000	0.103004	5.600000
0103	Other Agriculture	0.000000	0.001671	0.070391	0.137486	0.209548	7.400000	0.209548	11.400000
0201	Aquaculture	1.000000	0.236941	0.074778	0.061715	1.373434	48.400000	0.373434	20.300000
0301	Forestry and Logging	0.000000	0.002128	0.001471	0.052821	0.056420	2.000000	0.056420	3.100000
0401	Fishing, hunting and trapping	0.000000	0.002438	0.001552	0.039379	0.043368	1.500000	0.043368	2.400000
0501	Agriculture, Forestry and Fishing Support Services	0.000000	0.071801	0.062006	0.223307	0.357114	12.600000	0.357114	19.400000
0601	Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0701	Oil and gas extraction	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0801	Iron Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0802	Non-Ferrous Metal Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0901	Non-Metallic Mineral Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1001	Exploration and Mining Support Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1101	Meat and Meat product Manufacturing	0.000000	0.000112	0.000063	0.001989	0.002164	0.100000	0.002164	0.100000
1102	Processed Seafood Manufacturing	0.000000	0.000092	0.000031	0.002023	0.002146	0.100000	0.002146	0.100000
1103	Dairy Product Manufacturing	0.000000	0.000000	0.000010	0.001907	0.001917	0.100000	0.001917	0.100000
1104	Fruit and Vegetable Product Manufacturing	0.000000	0.000009	0.000004	0.000471	0.000484	0.000000	0.000484	0.000000
1105	Oils and Fats Manufacturing	0.000000	0.000000	0.000002	0.001525	0.001527	0.100000	0.001527	0.100000
1106	Grain Mill and Cereal Product Manufacturing	0.000000	0.000007	0.000004	0.000574	0.000585	0.000000	0.000585	0.000000
1107	Bakery Product Manufacturing	0.000000	0.000011	0.000006	0.000647	0.000663	0.000000	0.000663	0.000000
1108	Sugar and Confectionery Manufacturing	0.000000	0.000037	0.000026	0.002993	0.003056	0.100000	0.003056	0.200000
1109	Other Food Product Manufacturing	0.000000	0.002650	0.000926	0.004852	0.008429	0.300000	0.008429	0.500000
1201	Soft Drinks, Cordials and Syrup Manufacturing	0.000000	0.000345	0.000121	0.001093	0.001559	0.100000	0.001559	0.100000
1202	Beer Manufacturing	0.000000	0.000000	0.000002	0.002077	0.002078	0.100000	0.002078	0.100000
1205	Wine, Spirits and Tobacco	0.000000	0.000000	0.000004	0.000807	0.000811	0.000000	0.000811	0.000000
1301	Textile Manufacturing	0.000000	0.000000	0.000000	0.000309	0.000309	0.000000	0.000309	0.000000
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.000000	0.000000	0.000000	0.000626	0.000627	0.000000	0.000627	0.000000
1303	Textile Product Manufacturing	0.000000	0.000000	0.000000	0.001325	0.001326	0.000000	0.001326	0.100000
1304	Knitted Product Manufacturing	0.000000	0.000000	0.000000	0.000008	0.000008	0.000000	0.000008	0.000000
1305	Clothing Manufacturing	0.000000	0.000000	0.000004	0.001151	0.001155	0.000000	0.001155	0.100000
1306	Footwear Manufacturing	0.000000	0.000000	0.000000	0.001423	0.001423	0.100000	0.001423	0.100000
1401	Sawmill Product Manufacturing	0.000000	0.000000	0.000001	0.001724	0.001725	0.100000	0.001725	0.100000
1402	Other Wood Product Manufacturing	0.000000	0.000000	0.000013	0.003622	0.003635	0.100000	0.003635	0.200000
1501	Pulp, Paper and Paperboard Manufacturing	0.000000	0.000019	0.000011	0.004213	0.004244	0.100000	0.004244	0.200000

APPENDIX D (Cont.)
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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1502	Paper Stationery and Other Converted Paper Product Manufacturing	0.000000	0.000000	0.000045	0.002690	0.002736	0.100000	0.002736	0.100000
1601	Printing (including the reproduction of recorded media)	0.000000	0.000000	0.000015	0.001284	0.001299	0.000000	0.001299	0.100000
1701	Petroleum and Coal Product Manufacturing	0.000000	0.002332	0.002135	0.007858	0.012325	0.400000	0.012325	0.700000
1801	Human Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000003	0.000001	0.000528	0.000533	0.000000	0.000533	0.000000
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000000	0.000000	0.000301	0.000301	0.000000	0.000301	0.000000
1803	Basic Chemical Manufacturing	0.000000	0.000038	0.000085	0.001854	0.001977	0.100000	0.001977	0.100000
1804	Cleaning Compounds and Toiletry Preparation Manufacturing	0.000000	0.000000	0.000001	0.001224	0.001225	0.000000	0.001225	0.100000
1901	Polymer Product Manufacturing	0.000000	0.000377	0.000183	0.003530	0.004090	0.100000	0.004090	0.200000
1902	Natural Rubber Product Manufacturing	0.000000	0.000095	0.000035	0.001968	0.002098	0.100000	0.002098	0.100000
2001	Glass and Glass Product Manufacturing	0.000000	0.000074	0.000059	0.004455	0.004589	0.200000	0.004589	0.200000
2002	Ceramic Product Manufacturing	0.000000	0.000000	0.000004	0.003903	0.003907	0.100000	0.003907	0.200000
2003	Cement, Lime, and Ready-Mixed Concrete Manufacturing	0.000000	0.000085	0.000068	0.007014	0.007167	0.300000	0.007167	0.400000
2004	Plaster and Concrete Product Manufacturing	0.000000	0.000066	0.000048	0.005088	0.005202	0.200000	0.005202	0.300000
2005	Other Non-Metallic Mineral Product Manufacturing	0.000000	0.000000	0.000007	0.003133	0.003140	0.100000	0.003140	0.200000
2101	Iron and Steel Manufacturing	0.000000	0.000812	0.001055	0.052109	0.053976	1.900000	0.053976	2.900000
2102	Basic Non-Ferrous Metal Manufacturing	0.000000	0.001695	0.001927	0.164286	0.167908	5.900000	0.167908	9.100000
2201	Forged Iron and Steel Product Manufacturing	0.000000	0.000000	0.000001	0.000991	0.000993	0.000000	0.000993	0.100000
2202	Structural Metal Product Manufacturing	0.000000	0.000529	0.000226	0.004262	0.005017	0.200000	0.005017	0.300000
2203	Metal Containers and Other Sheet Metal Product manufacturing	0.000000	0.000027	0.000012	0.001044	0.001083	0.000000	0.001083	0.100000
2204	Other Fabricated Metal Product manufacturing	0.000000	0.000227	0.000093	0.002348	0.002667	0.100000	0.002667	0.100000
2301	Motor Vehicles and Parts; Other Transport Equipment manufacturing	0.000000	0.000145	0.000080	0.007237	0.007461	0.300000	0.007461	0.400000
2302	Ships and Boat Manufacturing	0.000000	0.000503	0.000167	0.002325	0.002996	0.100000	0.002996	0.200000
2303	Railway Rolling Stock Manufacturing	0.000000	0.000000	0.000000	0.000175	0.000176	0.000000	0.000176	0.000000
2304	Aircraft Manufacturing	0.000000	0.000000	0.000002	0.000840	0.000841	0.000000	0.000841	0.000000
2401	Professional, Scientific, Computer and Electronic Equipment Manufacturing	0.000000	0.000066	0.000031	0.001703	0.001799	0.100000	0.001799	0.100000
2403	Electrical Equipment Manufacturing	0.000000	0.000058	0.000024	0.001466	0.001548	0.100000	0.001548	0.100000
2404	Domestic Appliance Manufacturing	0.000000	0.000000	0.000001	0.000906	0.000907	0.000000	0.000907	0.000000
2405	Specialised and other Machinery and Equipment Manufacturing	0.000000	0.000259	0.000099	0.000956	0.001313	0.000000	0.001313	0.100000
2501	Furniture Manufacturing	0.000000	0.000000	0.000003	0.002068	0.002072	0.100000	0.002072	0.100000
2502	Other Manufactured Products	0.000000	0.000041	0.000016	0.001585	0.001642	0.100000	0.001642	0.100000
2601	Electricity Generation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2605	Electricity Transmission, Distribution, On Selling and Electricity Market Operation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2701	Gas Supply	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2801	Water Supply, Sewerage and Drainage Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2901	Waste Collection, Treatment and Disposal Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
3001	Residential Building Construction	0.000000	0.000166	0.000140	0.001685	0.001991	0.100000	0.001991	0.100000
3002	Non-Residential Building Construction	0.000000	0.000086	0.000058	0.000731	0.000874	0.000000	0.000874	0.000000
3101	Heavy and Civil Engineering Construction	0.000000	0.000011	0.000016	0.000449	0.000476	0.000000	0.000476	0.000000
3201	Construction Services	0.000000	0.001568	0.001118	0.003927	0.006613	0.200000	0.006613	0.400000
3301	Wholesale Trade	0.000000	0.019465	0.010181	0.021689	0.051335	1.800000	0.051335	2.800000
3901	Retail Trade	0.000000	0.008647	0.004156	0.013190	0.025994	0.900000	0.025994	1.400000
4401	Accommodation	0.000000	0.000028	0.000023	0.000882	0.000933	0.000000	0.000933	0.100000
4501	Food and Beverage Services	0.000000	0.000903	0.000440	0.002922	0.004265	0.200000	0.004265	0.200000
4601	Road Transport	0.000000	0.000636	0.000435	0.005794	0.006866	0.200000	0.006866	0.400000
4701	Rail Transport	0.000000	0.000031	0.000039	0.004133	0.004204	0.100000	0.004204	0.200000
4801	Water, Pipeline and Other Transport	0.000000	0.000863	0.000408	0.007920	0.009191	0.300000	0.009191	0.500000
4901	Air and Space Transport	0.000000	0.000220	0.000301	0.015913	0.016434	0.600000	0.016434	0.900000
5101	Postal and Courier Pick-up and Delivery Service	0.000000	0.000130	0.000209	0.012204	0.012544	0.400000	0.012544	0.700000
5201	Transport Support services and storage	0.000000	0.000380	0.000295	0.003412	0.004086	0.100000	0.004086	0.200000
5401	Publishing (except Internet and Music Publishing)	0.000000	0.000000	0.000000	0.000005	0.000005	0.000000	0.000005	0.000000
5501	Motion Picture and Sound Recording	0.000000	0.000000	0.000000	0.000007	0.000007	0.000000	0.000007	0.000000
5601	Broadcasting (except Internet)	0.000000	0.000001	0.000001	0.000006	0.000008	0.000000	0.000008	0.000000
5701	Internet Service Providers, Internet Publishing and Broadcasting, Web search Portals and Data Processing	0.000000	0.000000	0.000001	0.000041	0.000041	0.000000	0.000041	0.000000
5801	Telecommunication Services	0.000000	0.000001	0.000002	0.000027	0.000030	0.000000	0.000030	0.000000
6001	Library and Other Information Services	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
6201	Finance	0.000000	0.001965	0.001414	0.005048	0.008427	0.300000	0.008427	0.500000
6301	Insurance and Superannuation Funds	0.000000	0.001247	0.000670	0.006919	0.008835	0.300000	0.008835	0.500000
6401	Auxiliary Finance and Insurance Services	0.000000	0.001374	0.001619	0.012084	0.015077	0.500000	0.015077	0.800000
6601	Rental and Hiring Services (except Real Estate)	0.000000	0.001564	0.000662	0.003966	0.006193	0.200000	0.006193	0.300000
6701	Ownership of Dwellings	0.000000	0.000000	0.000000	0.009576	0.009576	0.300000	0.009576	0.500000
6702	Non-Residential Property Operators and Real Estate Services	0.000000	0.000000	0.001400	0.011050	0.012450	0.400000	0.012450	0.700000
6901	Professional, Scientific and Technical Services	0.000000	0.001328	0.000900	0.003077	0.005305	0.200000	0.005305	0.300000
7001	Computer Systems Design and Related Services	0.000000	0.000055	0.000045	0.001715	0.001816	0.100000	0.001816	0.100000
7210	Employment, Travel Agency and Other Administrative Services	0.000000	0.000146	0.000078	0.000921	0.001145	0.000000	0.001145	0.100000
7310	Building Cleaning, Pest Control and Other Support Services	0.000000	0.001011	0.000469	0.006732	0.008213	0.300000	0.008213	0.400000
7501	Public Administration and Regulatory Services	0.000000	0.000005	0.000003	0.000131	0.000139	0.000000	0.000139	0.000000
7601	Defence	0.000000	0.000000	0.000000	0.000121	0.000121	0.000000	0.000121	0.000000
7701	Public Order and Safety	0.000000	0.000001	0.000001	0.000119	0.000120	0.000000	0.000120	0.000000
8010	Primary and Secondary Education Services (incl Pre-Schools and Special Schools)	0.000000	0.000000	0.000000	0.000002	0.000002	0.000000	0.000002	0.000000

APPENDIX D (Cont.)
MYLTIPLIER EFFECT DEMONSTRATION: WHAT HAPPENS WHEN A \$1M AUD
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(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
8110	Technical, Vocational and Tertiary Education Services (incl undergraduate and postgraduate)	0.000000	0.000000	0.000000	0.000002	0.000002	0.000000	0.000002	0.000000
8210	Arts, Sports, Adult and Other Education Services (incl community education)	0.000000	0.000000	0.000000	0.000004	0.000004	0.000000	0.000004	0.000000
8401	Health Care Services	0.000000	0.000007	0.000003	0.000258	0.000269	0.000000	0.000269	0.000000
8601	Residential Care and Social Assistance Services	0.000000	0.000000	0.000000	0.000252	0.000252	0.000000	0.000252	0.000000
8901	Heritage, Creative and Performing Arts	0.000000	0.000005	0.000002	0.000568	0.000576	0.000000	0.000576	0.000000
9101	Sports and Recreation	0.000000	0.000018	0.000009	0.000626	0.000653	0.000000	0.000653	0.000000
9201	Gambling	0.000000	0.000125	0.000049	0.006676	0.006850	0.200000	0.006850	0.400000
9401	Automotive Repair and Maintenance	0.000000	0.000602	0.000362	0.006995	0.007958	0.300000	0.007958	0.400000
9402	Other Repair and Maintenance	0.000000	0.001884	0.000954	0.005375	0.008213	0.300000	0.008213	0.400000
9501	Personal Services	0.000000	0.000098	0.000036	0.002459	0.002592	0.100000	0.002592	0.100000
9502	Other Services	0.000000	0.000000	0.000368	0.032525	0.032893	1.200000	0.032893	1.800000
	Total	1.000000	0.372570	0.263217	1.204041	2.839828	100.000000	1.839828	100.000000
	Multiplier	1.000000				2.839828		1.839828	
0101	Sheep, Grains, Beef and Dairy Cattle	0.000000	0.000000	0.028817	0.056429	0.085246	2.400000	0.085246	3.400000
0102	Poultry and Other Livestock	0.000000	0.000000	0.034314	0.088250	0.122563	3.500000	0.122563	4.900000
0103	Other Agriculture	0.000000	0.000000	0.359536	0.130261	0.489797	14.000000	0.489797	19.600000
0201	Aquaculture	0.000000	0.000000	0.000270	0.058472	0.058742	1.700000	0.058742	2.300000
0301	Forestry and Logging	1.000000	0.147706	0.026782	0.050045	1.224533	35.000000	0.224533	9.000000
0401	Fishing, hunting and trapping	0.000000	0.000000	0.001960	0.037310	0.039270	1.100000	0.039270	1.600000
0501	Agriculture, Forestry and Fishing Support Services	0.000000	0.445865	0.255863	0.211572	0.913301	26.100000	0.913301	36.500000
0601	Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0701	Oil and gas extraction	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0801	Iron Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0802	Non-Ferrous Metal Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0901	Non-Metallic Mineral Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1001	Exploration and Mining Support Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1101	Meat and Meat product Manufacturing	0.000000	0.000000	0.000032	0.001885	0.001917	0.100000	0.001917	0.100000
1102	Processed Seafood Manufacturing	0.000000	0.000000	0.000007	0.001917	0.001924	0.100000	0.001924	0.100000
1103	Dairy Product Manufacturing	0.000000	0.000000	0.000010	0.001806	0.001816	0.100000	0.001816	0.100000
1104	Fruit and Vegetable Product Manufacturing	0.000000	0.000000	0.000002	0.000446	0.000448	0.000000	0.000448	0.000000
1105	Oils and Fats Manufacturing	0.000000	0.000000	0.000003	0.001445	0.001448	0.000000	0.001448	0.100000
1106	Grain Mill and Cereal Product Manufacturing	0.000000	0.000002	0.000004	0.000544	0.000550	0.000000	0.000550	0.000000
1107	Bakery Product Manufacturing	0.000000	0.000000	0.000004	0.000613	0.000617	0.000000	0.000617	0.000000
1108	Sugar and Confectionery Manufacturing	0.000000	0.000000	0.000017	0.002836	0.002852	0.100000	0.002852	0.100000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1109	Other Food Product Manufacturing	0.000000	0.000012	0.000381	0.004597	0.004991	0.100000	0.004991	0.200000
1201	Soft Drinks, Cordials and Syrup Manufacturing	0.000000	0.000002	0.000050	0.001035	0.001087	0.000000	0.001087	0.000000
1202	Beer Manufacturing	0.000000	0.000000	0.000005	0.001968	0.001973	0.100000	0.001973	0.100000
1205	Wine, Spirits and Tobacco	0.000000	0.000000	0.000016	0.000764	0.000781	0.000000	0.000781	0.000000
1301	Textile Manufacturing	0.000000	0.000000	0.000000	0.000292	0.000293	0.000000	0.000293	0.000000
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.000000	0.000000	0.000000	0.000594	0.000594	0.000000	0.000594	0.000000
1303	Textile Product Manufacturing	0.000000	0.000000	0.000000	0.001256	0.001256	0.000000	0.001256	0.100000
1304	Knitted Product Manufacturing	0.000000	0.000000	0.000000	0.000007	0.000007	0.000000	0.000007	0.000000
1305	Clothing Manufacturing	0.000000	0.000000	0.000002	0.001090	0.001093	0.000000	0.001093	0.000000
1306	Footwear Manufacturing	0.000000	0.000000	0.000002	0.001348	0.001350	0.000000	0.001350	0.100000
1401	Sawmill Product Manufacturing	0.000000	0.000000	0.000001	0.001634	0.001634	0.000000	0.001634	0.100000
1402	Other Wood Product Manufacturing	0.000000	0.000000	0.000029	0.003432	0.003461	0.100000	0.003461	0.100000
1501	Pulp, Paper and Paperboard Manufacturing	0.000000	0.000000	0.000010	0.003992	0.004002	0.100000	0.004002	0.200000
1502	Paper Stationery and Other Converted Paper Product Manufacturing	0.000000	0.000000	0.000049	0.002549	0.002598	0.100000	0.002598	0.100000
1601	Printing (including the reproduction of recorded media)	0.000000	0.000000	0.000021	0.001216	0.001237	0.000000	0.001237	0.000000
1701	Petroleum and Coal Product Manufacturing	0.000000	0.000000	0.005246	0.007445	0.012691	0.400000	0.012691	0.500000
1801	Human Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000001	0.000002	0.000501	0.000503	0.000000	0.000503	0.000000
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000000	0.000000	0.000285	0.000285	0.000000	0.000285	0.000000
1803	Basic Chemical Manufacturing	0.000000	0.000005	0.000331	0.001756	0.002092	0.100000	0.002092	0.100000
1804	Cleaning Compounds and Toiletry Preparation Manufacturing	0.000000	0.000000	0.000004	0.001160	0.001164	0.000000	0.001164	0.000000
1901	Polymer Product Manufacturing	0.000000	0.000015	0.000154	0.003344	0.003514	0.100000	0.003514	0.100000
1902	Natural Rubber Product Manufacturing	0.000000	0.000000	0.000012	0.001865	0.001877	0.100000	0.001877	0.100000
2001	Glass and Glass Product Manufacturing	0.000000	0.000000	0.000085	0.004221	0.004307	0.100000	0.004307	0.200000
2002	Ceramic Product Manufacturing	0.000000	0.000000	0.000013	0.003698	0.003711	0.100000	0.003711	0.100000
2003	Cement, Lime, and Ready-Mixed Concrete Manufacturing	0.000000	0.000024	0.000111	0.006645	0.006780	0.200000	0.006780	0.300000
2004	Plaster and Concrete Product Manufacturing	0.000000	0.000000	0.000106	0.004821	0.004927	0.100000	0.004927	0.200000
2005	Other Non-Metallic Mineral Product Manufacturing	0.000000	0.000000	0.000028	0.002969	0.002997	0.100000	0.002997	0.100000
2101	Iron and Steel Manufacturing	0.000000	0.000000	0.000758	0.049370	0.050129	1.400000	0.050129	2.000000
2102	Basic Non-Ferrous Metal Manufacturing	0.000000	0.000000	0.001889	0.155653	0.157542	4.500000	0.157542	6.300000
2201	Forged Iron and Steel Product Manufacturing	0.000000	0.000000	0.000002	0.000939	0.000942	0.000000	0.000942	0.000000
2202	Structural Metal Product Manufacturing	0.000000	0.000013	0.000173	0.004038	0.004224	0.100000	0.004224	0.200000
2203	Metal Containers and Other Sheet Metal Product manufacturing	0.000000	0.000000	0.000009	0.000989	0.000998	0.000000	0.000998	0.000000
2204	Other Fabricated Metal Product manufacturing	0.000000	0.000008	0.000062	0.002224	0.002294	0.100000	0.002294	0.100000
2301	Motor Vehicles and Parts; Other Transport Equipment manufacturing	0.000000	0.000020	0.000106	0.006856	0.006983	0.200000	0.006983	0.300000
2302	Ships and Boat Manufacturing	0.000000	0.000000	0.000025	0.002203	0.002228	0.100000	0.002228	0.100000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2303	Railway Rolling Stock Manufacturing	0.000000	0.000000	0.000000	0.000166	0.000167	0.000000	0.000167	0.000000
2304	Aircraft Manufacturing	0.000000	0.000000	0.000003	0.000796	0.000799	0.000000	0.000799	0.000000
2401	Professional, Scientific, Computer and Electronic Equipment Manufacturing	0.000000	0.000004	0.000044	0.001613	0.001661	0.000000	0.001661	0.100000
2403	Electrical Equipment Manufacturing	0.000000	0.000004	0.000024	0.001389	0.001417	0.000000	0.001417	0.100000
2404	Domestic Appliance Manufacturing	0.000000	0.000000	0.000003	0.000858	0.000861	0.000000	0.000861	0.000000
2405	Specialised and other Machinery and Equipment Manufacturing	0.000000	0.000007	0.000071	0.000905	0.000984	0.000000	0.000984	0.000000
2501	Furniture Manufacturing	0.000000	0.000000	0.000008	0.001960	0.001967	0.100000	0.001967	0.100000
2502	Other Manufactured Products	0.000000	0.000000	0.000009	0.001502	0.001510	0.000000	0.001510	0.100000
2601	Electricity Generation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2605	Electricity Transmission, Distribution, On Selling and Electricity Market Operation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2701	Gas Supply	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2801	Water Supply, Sewerage and Drainage Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2901	Waste Collection, Treatment and Disposal Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3001	Residential Building Construction	0.000000	0.000000	0.000315	0.001596	0.001911	0.100000	0.001911	0.100000
3002	Non-Residential Building Construction	0.000000	0.000000	0.000118	0.000693	0.000810	0.000000	0.000810	0.000000
3101	Heavy and Civil Engineering Construction	0.000000	0.000000	0.000046	0.000425	0.000472	0.000000	0.000472	0.000000
3201	Construction Services	0.000000	0.000075	0.002120	0.003721	0.005916	0.200000	0.005916	0.200000
3301	Wholesale Trade	0.000000	0.005331	0.016661	0.020549	0.042542	1.200000	0.042542	1.700000
3901	Retail Trade	0.000000	0.001177	0.005158	0.012497	0.018833	0.500000	0.018833	0.800000
4401	Accommodation	0.000000	0.000000	0.000023	0.000836	0.000859	0.000000	0.000859	0.000000
4501	Food and Beverage Services	0.000000	0.000028	0.000402	0.002769	0.003199	0.100000	0.003199	0.100000
4601	Road Transport	0.000000	0.000790	0.000753	0.005490	0.007032	0.200000	0.007032	0.300000
4701	Rail Transport	0.000000	0.000017	0.000049	0.003916	0.003983	0.100000	0.003983	0.200000
4801	Water, Pipeline and Other Transport	0.000000	0.000000	0.000140	0.007504	0.007644	0.200000	0.007644	0.300000
4901	Air and Space Transport	0.000000	0.000000	0.000477	0.015077	0.015554	0.400000	0.015554	0.600000
5101	Postal and Courier Pick-up and Delivery Service	0.000000	0.000073	0.000334	0.011563	0.011970	0.300000	0.011970	0.500000
5201	Transport Support services and storage	0.000000	0.000062	0.000359	0.003233	0.003654	0.100000	0.003654	0.100000
5401	Publishing (except Internet and Music Publishing)	0.000000	0.000000	0.000000	0.000004	0.000005	0.000000	0.000005	0.000000
5501	Motion Picture and Sound Recording	0.000000	0.000000	0.000000	0.000006	0.000006	0.000000	0.000006	0.000000
5601	Broadcasting (except Internet)	0.000000	0.000000	0.000000	0.000006	0.000006	0.000000	0.000006	0.000000
5701	Internet Service Providers, Internet Publishing and Broadcasting, Web search Portals and Data Processing	0.000000	0.000000	0.000001	0.000039	0.000039	0.000000	0.000039	0.000000
5801	Telecommunication Services	0.000000	0.000000	0.000002	0.000026	0.000028	0.000000	0.000028	0.000000
6001	Library and Other Information Services	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
6201	Finance	0.000000	0.000033	0.002767	0.004783	0.007583	0.200000	0.007583	0.300000
6301	Insurance and Superannuation Funds	0.000000	0.000000	0.000888	0.006555	0.007444	0.200000	0.007444	0.300000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
6401	Auxiliary Finance and Insurance Services	0.000000	0.000000	0.003981	0.011449	0.015430	0.400000	0.015430	0.600000
6601	Rental and Hiring Services (except Real Estate)	0.000000	0.000027	0.000643	0.003758	0.004428	0.100000	0.004428	0.200000
6701	Ownership of Dwellings	0.000000	0.000000	0.000000	0.009073	0.009073	0.300000	0.009073	0.400000
6702	Non-Residential Property Operators and Real Estate Services	0.000000	0.000000	0.002334	0.010469	0.012804	0.400000	0.012804	0.500000
6901	Professional, Scientific and Technical Services	0.000000	0.000006	0.001352	0.002916	0.004274	0.100000	0.004274	0.200000
7001	Computer Systems Design and Related Services	0.000000	0.000000	0.000027	0.001625	0.001652	0.000000	0.001652	0.100000
7210	Employment, Travel Agency, and Other Administrative Services	0.000000	0.000001	0.000088	0.000873	0.000962	0.000000	0.000962	0.000000
7310	Building Cleaning, Pest Control and Other Support Services	0.000000	0.000000	0.000434	0.006378	0.006813	0.200000	0.006813	0.300000
7501	Public Administration and Regulatory Services	0.000000	0.000000	0.000004	0.000124	0.000128	0.000000	0.000128	0.000000
7601	Defence	0.000000	0.000000	0.000000	0.000115	0.000115	0.000000	0.000115	0.000000
7701	Public Order and Safety	0.000000	0.000000	0.000001	0.000112	0.000113	0.000000	0.000113	0.000000
8010	Primary and Secondary Education Services (incl Pre-Schools and Special Schools)	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
8110	Technical, Vocational and Tertiary Education Services (incl undergraduate and postgraduate)	0.000000	0.000000	0.000000	0.000002	0.000002	0.000000	0.000002	0.000000
8210	Arts, Sports, Adult and Other Education Services (incl community education)	0.000000	0.000000	0.000000	0.000004	0.000004	0.000000	0.000004	0.000000
8401	Health Care Services	0.000000	0.000000	0.000002	0.000245	0.000246	0.000000	0.000246	0.000000
8601	Residential Care and Social Assistance Services	0.000000	0.000000	0.000000	0.000239	0.000239	0.000000	0.000239	0.000000
8901	Heritage, Creative and Performing Arts	0.000000	0.000002	0.000002	0.000538	0.000542	0.000000	0.000542	0.000000
9101	Sports and Recreation	0.000000	0.000000	0.000003	0.000593	0.000597	0.000000	0.000597	0.000000
9201	Gambling	0.000000	0.000000	0.000028	0.006326	0.006354	0.200000	0.006354	0.300000
9401	Automotive Repair and Maintenance	0.000000	0.000067	0.000547	0.006628	0.007242	0.200000	0.007242	0.300000
9402	Other Repair and Maintenance	0.000000	0.000079	0.001473	0.005092	0.006644	0.200000	0.006644	0.300000
9501	Personal Services	0.000000	0.000027	0.000017	0.002329	0.002374	0.100000	0.002374	0.100000
9502	Other Services	0.000000	0.000000	0.000240	0.030816	0.031056	0.900000	0.031056	1.200000
	Total	1.000000	0.601486	0.759262	1.140769	3.501517	100.000000	2.501517	100.000000
	Multiplier	1.000000				3.501517		2.501517	
0101	Sheep, Grains, Beef and Dairy Cattle	0.000000	0.001432	0.022434	0.043607	0.067472	2.500000	0.067472	3.900000
0102	Poultry and Other Livestock	0.000000	0.021614	0.029630	0.068197	0.119441	4.400000	0.119441	6.900000
0103	Other Agriculture	0.000000	0.000520	0.233229	0.100662	0.334410	12.300000	0.334410	19.300000
0201	Aquaculture	0.000000	0.000000	0.000439	0.045185	0.045625	1.700000	0.045625	2.600000
0301	Forestry and Logging	0.000000	0.000000	0.000969	0.038673	0.039642	1.500000	0.039642	2.300000
0401	Fishing, hunting, and trapping	1.000000	0.009068	0.001564	0.028832	1.039463	38.100000	0.039463	2.300000
0501	Agriculture, Forestry and Fishing Support Services	0.000000	0.328941	0.122093	0.163496	0.614530	22.500000	0.614530	35.500000
0601	Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0701	Oil and gas extraction	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

APPENDIX D (Cont.)
MYLTIPLIER EFFECT DEMONSTRATION: WHAT HAPPENS WHEN A \$1M AUD
INCREASE IN THE HIGHLIGHTED SECTOR FILTERS THROUGH THE WHOLE
ECONOMY

(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
0801	Iron Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0802	Non-Ferrous Metal Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0901	Non-Metallic Mineral Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1001	Exploration and Mining Support Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1101	Meat and Meat product Manufacturing	0.000000	0.000023	0.000034	0.001457	0.001513	0.100000	0.001513	0.100000
1102	Processed Seafood Manufacturing	0.000000	0.000028	0.000005	0.001481	0.001515	0.100000	0.001515	0.100000
1103	Dairy Product Manufacturing	0.000000	0.000000	0.000011	0.001396	0.001407	0.100000	0.001407	0.100000
1104	Fruit and Vegetable Product Manufacturing	0.000000	0.000003	0.000001	0.000345	0.000349	0.000000	0.000349	0.000000
1105	Oils and Fats Manufacturing	0.000000	0.000000	0.000002	0.001117	0.001119	0.000000	0.001119	0.100000
1106	Grain Mill and Cereal Product Manufacturing	0.000000	0.000004	0.000003	0.000420	0.000428	0.000000	0.000428	0.000000
1107	Bakery Product Manufacturing	0.000000	0.000007	0.000004	0.000473	0.000484	0.000000	0.000484	0.000000
1108	Sugar and Confectionery Manufacturing	0.000000	0.000023	0.000014	0.002191	0.002229	0.100000	0.002229	0.100000
1109	Other Food Product Manufacturing	0.000000	0.000452	0.000327	0.003553	0.004332	0.200000	0.004332	0.300000
1201	Soft Drinks, Cordials and Syrup Manufacturing	0.000000	0.000059	0.000043	0.000800	0.000902	0.000000	0.000902	0.100000
1202	Beer Manufacturing	0.000000	0.000000	0.000004	0.001520	0.001524	0.100000	0.001524	0.100000
1205	Wine, Spirits and Tobacco	0.000000	0.000000	0.000011	0.000590	0.000602	0.000000	0.000602	0.000000
1301	Textile Manufacturing	0.000000	0.000000	0.000000	0.000226	0.000226	0.000000	0.000226	0.000000
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.000000	0.000000	0.000000	0.000459	0.000459	0.000000	0.000459	0.000000
1303	Textile Product Manufacturing	0.000000	0.000000	0.000000	0.000970	0.000971	0.000000	0.000971	0.100000
1304	Knitted Product Manufacturing	0.000000	0.000000	0.000000	0.000006	0.000006	0.000000	0.000006	0.000000
1305	Clothing Manufacturing	0.000000	0.000000	0.000003	0.000842	0.000845	0.000000	0.000845	0.000000
1306	Footwear Manufacturing	0.000000	0.000000	0.000001	0.001042	0.001043	0.000000	0.001043	0.100000
1401	Sawmill Product Manufacturing	0.000000	0.000000	0.000001	0.001263	0.001263	0.000000	0.001263	0.100000
1402	Other Wood Product Manufacturing	0.000000	0.000000	0.000023	0.002652	0.002675	0.100000	0.002675	0.200000
1501	Pulp, Paper and Paperboard Manufacturing	0.000000	0.000024	0.000009	0.003085	0.003117	0.100000	0.003117	0.200000
1502	Paper Stationery and Other Converted Paper Product Manufacturing	0.000000	0.000000	0.000061	0.001970	0.002031	0.100000	0.002031	0.100000
1601	Printing (including the reproduction of recorded media)	0.000000	0.000000	0.000023	0.000940	0.000962	0.000000	0.000962	0.100000
1701	Petroleum and Coal Product Manufacturing	0.000000	0.002899	0.003703	0.005753	0.012355	0.500000	0.012355	0.700000
1801	Human Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000002	0.000001	0.000387	0.000390	0.000000	0.000390	0.000000
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000000	0.000000	0.000220	0.000220	0.000000	0.000220	0.000000
1803	Basic Chemical Manufacturing	0.000000	0.000024	0.000221	0.001357	0.001602	0.100000	0.001602	0.100000
1804	Cleaning Compounds and Toiletry Preparation Manufacturing	0.000000	0.000007	0.000003	0.000896	0.000906	0.000000	0.000906	0.100000
1901	Polymer Product Manufacturing	0.000000	0.000334	0.000121	0.002584	0.003040	0.100000	0.003040	0.200000
1902	Natural Rubber Product Manufacturing	0.000000	0.000059	0.000009	0.001441	0.001509	0.100000	0.001509	0.100000
2001	Glass and Glass Product Manufacturing	0.000000	0.000046	0.000065	0.003262	0.003372	0.100000	0.003372	0.200000
2002	Ceramic Product Manufacturing	0.000000	0.000000	0.000009	0.002858	0.002867	0.100000	0.002867	0.200000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2003	Cement, Lime, and Ready-Mixed Concrete Manufacturing	0.000000	0.000053	0.000079	0.005135	0.005267	0.200000	0.005267	0.300000
2004	Plaster and Concrete Product Manufacturing	0.000000	0.000041	0.000073	0.003725	0.003839	0.100000	0.003839	0.200000
2005	Other Non-Metallic Mineral Product Manufacturing	0.000000	0.000022	0.000019	0.002294	0.002336	0.100000	0.002336	0.100000
2101	Iron and Steel Manufacturing	0.000000	0.000504	0.000877	0.038152	0.039533	1.400000	0.039533	2.300000
2102	Basic Non-Ferrous Metal Manufacturing	0.000000	0.000000	0.001643	0.120284	0.121926	4.500000	0.121926	7.100000
2201	Forged Iron and Steel Product Manufacturing	0.000000	0.000000	0.000002	0.000726	0.000728	0.000000	0.000728	0.000000
2202	Structural Metal Product Manufacturing	0.000000	0.000628	0.000129	0.003120	0.003878	0.100000	0.003878	0.200000
2203	Metal Containers and Other Sheet Metal Product manufacturing	0.000000	0.000017	0.000007	0.000764	0.000788	0.000000	0.000788	0.000000
2204	Other Fabricated Metal Product manufacturing	0.000000	0.000229	0.000047	0.001719	0.001995	0.100000	0.001995	0.100000
2301	Motor Vehicles and Parts; Other Transport Equipment manufacturing	0.000000	0.000090	0.000079	0.005298	0.005467	0.200000	0.005467	0.300000
2302	Ships and Boat Manufacturing	0.000000	0.000846	0.000027	0.001703	0.002575	0.100000	0.002575	0.100000
2303	Railway Rolling Stock Manufacturing	0.000000	0.000000	0.000000	0.000128	0.000129	0.000000	0.000129	0.000000
2304	Aircraft Manufacturing	0.000000	0.000000	0.000003	0.000615	0.000618	0.000000	0.000618	0.000000
2401	Professional, Scientific, Computer and Electronic Equipment Manufacturing	0.000000	0.000033	0.000030	0.001247	0.001309	0.000000	0.001309	0.100000
2403	Electrical Equipment Manufacturing	0.000000	0.000063	0.000017	0.001073	0.001153	0.000000	0.001153	0.100000
2404	Domestic Appliance Manufacturing	0.000000	0.000000	0.000002	0.000663	0.000665	0.000000	0.000665	0.000000
2405	Specialised and other Machinery and Equipment Manufacturing	0.000000	0.000211	0.000050	0.000700	0.000960	0.000000	0.000960	0.100000
2501	Furniture Manufacturing	0.000000	0.000021	0.000006	0.001514	0.001541	0.100000	0.001541	0.100000
2502	Other Manufactured Products	0.000000	0.000038	0.000007	0.001160	0.001205	0.000000	0.001205	0.100000
2601	Electricity Generation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2605	Electricity Transmission, Distribution, On Selling and Electricity Market Operation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2701	Gas Supply	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2801	Water Supply, Sewerage and Drainage Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2901	Waste Collection, Treatment and Disposal Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3001	Residential Building Construction	0.000000	0.000124	0.000223	0.001233	0.001581	0.100000	0.001581	0.100000
3002	Non-Residential Building Construction	0.000000	0.000071	0.000083	0.000535	0.000689	0.000000	0.000689	0.000000
3101	Heavy and Civil Engineering Construction	0.000000	0.000013	0.000032	0.000329	0.000374	0.000000	0.000374	0.000000
3201	Construction Services	0.000000	0.000640	0.001508	0.002875	0.005023	0.200000	0.005023	0.300000
3301	Wholesale Trade	0.000000	0.012457	0.010868	0.015880	0.039205	1.400000	0.039205	2.300000
3901	Retail Trade	0.000000	0.005099	0.003492	0.009657	0.018248	0.700000	0.018248	1.100000
4401	Accommodation	0.000000	0.000017	0.000020	0.000646	0.000683	0.000000	0.000683	0.000000
4501	Food and Beverage Services	0.000000	0.000686	0.000305	0.002140	0.003131	0.100000	0.003131	0.200000
4601	Road Transport	0.000000	0.000308	0.000480	0.004242	0.005030	0.200000	0.005030	0.300000
4701	Rail Transport	0.000000	0.000019	0.000039	0.003026	0.003084	0.100000	0.003084	0.200000
4801	Water, Pipeline and Other Transport	0.000000	0.001251	0.000169	0.005799	0.007220	0.300000	0.007220	0.400000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
4901	Air and Space Transport	0.000000	0.000272	0.000382	0.011651	0.012305	0.500000	0.012305	0.700000
5101	Postal and Courier Pick-up and Delivery Service	0.000000	0.000161	0.000279	0.008935	0.009376	0.300000	0.009376	0.500000
5201	Transport Support services and storage	0.000000	0.000402	0.000282	0.002498	0.003183	0.100000	0.003183	0.200000
5401	Publishing (except Internet and Music Publishing)	0.000000	0.000000	0.000000	0.000003	0.000004	0.000000	0.000004	0.000000
5501	Motion Picture and Sound Recording	0.000000	0.000000	0.000000	0.000005	0.000005	0.000000	0.000005	0.000000
5601	Broadcasting (except Internet)	0.000000	0.000001	0.000000	0.000004	0.000005	0.000000	0.000005	0.000000
5701	Internet Service Providers, Internet Publishing and Broadcasting, Web search Portals and Data Processing	0.000000	0.000000	0.000001	0.000030	0.000030	0.000000	0.000030	0.000000
5801	Telecommunication Services	0.000000	0.000001	0.000002	0.000020	0.000023	0.000000	0.000023	0.000000
6001	Library and Other Information Services	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
6201	Finance	0.000000	0.002147	0.002008	0.003696	0.007851	0.300000	0.007851	0.500000
6301	Insurance and Superannuation Funds	0.000000	0.001292	0.000655	0.005066	0.007012	0.300000	0.007012	0.400000
6401	Auxiliary Finance and Insurance Services	0.000000	0.003061	0.002897	0.008847	0.014806	0.500000	0.014806	0.900000
6601	Rental and Hiring Services (except Real Estate)	0.000000	0.001215	0.000446	0.002904	0.004565	0.200000	0.004565	0.300000
6701	Ownership of Dwellings	0.000000	0.000000	0.000000	0.007011	0.007011	0.300000	0.007011	0.400000
6702	Non-Residential Property Operators and Real Estate Services	0.000000	0.000067	0.001959	0.008090	0.010117	0.400000	0.010117	0.600000
6901	Professional, Scientific and Technical Services	0.000000	0.000341	0.001018	0.002253	0.003612	0.100000	0.003612	0.200000
7001	Computer Systems Design and Related Services	0.000000	0.000000	0.000033	0.001256	0.001289	0.000000	0.001289	0.100000
7210	Employment, Travel Agency and Other Administrative Services	0.000000	0.000035	0.000067	0.000674	0.000777	0.000000	0.000777	0.000000
7310	Building Cleaning, Pest Control and Other Support Services	0.000000	0.000346	0.000315	0.004929	0.005590	0.200000	0.005590	0.300000
7501	Public Administration and Regulatory Services	0.000000	0.000006	0.000003	0.000096	0.000106	0.000000	0.000106	0.000000
7601	Defence	0.000000	0.000000	0.000000	0.000089	0.000089	0.000000	0.000089	0.000000
7701	Public Order and Safety	0.000000	0.000001	0.000001	0.000087	0.000088	0.000000	0.000088	0.000000
8010	Primary and Secondary Education Services (incl Pre-Schools and Special Schools)	0.000000	0.000000	0.000000	0.000001	0.000001	0.000000	0.000001	0.000000
8110	Technical, Vocational and Tertiary Education Services (incl undergraduate and postgraduate)	0.000000	0.000000	0.000000	0.000002	0.000002	0.000000	0.000002	0.000000
8210	Arts, Sports, Adult and Other Education Services (incl community education)	0.000000	0.000000	0.000000	0.000003	0.000003	0.000000	0.000003	0.000000
8401	Health Care Services	0.000000	0.000004	0.000002	0.000189	0.000195	0.000000	0.000195	0.000000
8601	Residential Care and Social Assistance Services	0.000000	0.000000	0.000000	0.000185	0.000185	0.000000	0.000185	0.000000
8901	Heritage, Creative and Performing Arts	0.000000	0.000000	0.000001	0.000416	0.000417	0.000000	0.000417	0.000000
9101	Sports and Recreation	0.000000	0.000000	0.000003	0.000459	0.000462	0.000000	0.000462	0.000000
9201	Gambling	0.000000	0.000000	0.000020	0.004888	0.004909	0.200000	0.004909	0.300000
9401	Automotive Repair and Maintenance	0.000000	0.001047	0.000379	0.005122	0.006547	0.200000	0.006547	0.400000
9402	Other Repair and Maintenance	0.000000	0.000527	0.000993	0.003935	0.005455	0.200000	0.005455	0.300000
9501	Personal Services	0.000000	0.000020	0.000009	0.001800	0.001830	0.100000	0.001830	0.100000
9502	Other Services	0.000000	0.000000	0.000322	0.023814	0.024136	0.900000	0.024136	1.400000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	1.000000	0.399996	0.447463	0.881552	2.729011	100.000000	1.729011	100.000000
	Multiplier	1.000000				2.729011		1.729011	
0101	Sheep, Grains, Beef and Dairy Cattle	0.000000	0.006000	0.048000	0.059000	0.114000	3.300000	0.114000	4.700000
0102	Poultry and Other Livestock	0.000000	0.002000	0.063000	0.093000	0.158000	4.600000	0.158000	6.400000
0103	Other Agriculture	0.000000	0.491000	0.196000	0.137000	0.824000	23.900000	0.824000	33.700000
0201	Aquaculture	0.000000	0.000000	0.000000	0.061000	0.062000	1.800000	0.062000	2.500000
0301	Forestry and Logging	0.000000	0.000000	0.002000	0.053000	0.055000	1.600000	0.055000	2.200000
0401	Fishing, hunting, and trapping	0.000000	0.001000	0.003000	0.039000	0.043000	1.200000	0.043000	1.800000
0501	Agriculture, Forestry and Fishing Support Services	1.000000	0.054000	0.287000	0.222000	1.563000	45.300000	0.563000	23.000000
0601	Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0701	Oil and gas extraction	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0801	Iron Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0802	Non-Ferrous Metal Ore Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
0901	Non-Metallic Mineral Mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1001	Exploration and Mining Support Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1101	Meat and Meat product Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
1102	Processed Seafood Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
1103	Dairy Product Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
1104	Fruit and Vegetable Product Manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1105	Oils and Fats Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.000000	0.002000	0.100000
1106	Grain Mill and Cereal Product Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
1107	Bakery Product Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
1108	Sugar and Confectionery Manufacturing	0.000000	0.000000	0.000000	0.003000	0.003000	0.100000	0.003000	0.100000
1109	Other Food Product Manufacturing	0.000000	0.000000	0.000000	0.005000	0.006000	0.200000	0.006000	0.200000
1201	Soft Drinks, Cordials and Syrup Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
1202	Beer Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
1205	Wine, Spirits and Tobacco	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
1301	Textile Manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1302	Tanned Leather, Dressed Fur and Leather Product Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
1303	Textile Product Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.100000
1304	Knitted Product Manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1305	Clothing Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
1306	Footwear Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.100000
1401	Sawmill Product Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.000000	0.002000	0.100000
1402	Other Wood Product Manufacturing	0.000000	0.000000	0.000000	0.004000	0.004000	0.100000	0.004000	0.100000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1501	Pulp, Paper and Paperboard Manufacturing	0.000000	0.000000	0.000000	0.004000	0.004000	0.100000	0.004000	0.200000
1502	Paper Stationery and Other Converted Paper Product Manufacturing	0.000000	0.000000	0.000000	0.003000	0.003000	0.100000	0.003000	0.100000
1601	Printing (including the reproduction of recorded media)	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.100000
1701	Petroleum and Coal Product Manufacturing	0.000000	0.004000	0.006000	0.008000	0.018000	0.500000	0.018000	0.700000
1801	Human Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
1802	Veterinary Pharmaceutical and Medicinal Product Manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
1803	Basic Chemical Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
1804	Cleaning Compounds and Toiletary Preparation Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.100000
1901	Polymer Product Manufacturing	0.000000	0.000000	0.000000	0.004000	0.004000	0.100000	0.004000	0.200000
1902	Natural Rubber Product Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
2001	Glass and Glass Product Manufacturing	0.000000	0.000000	0.000000	0.004000	0.005000	0.100000	0.005000	0.200000
2002	Ceramic Product Manufacturing	0.000000	0.000000	0.000000	0.004000	0.004000	0.100000	0.004000	0.200000
2003	Cement, Lime and Ready-Mixed Concrete Manufacturing	0.000000	0.000000	0.000000	0.007000	0.007000	0.200000	0.007000	0.300000
2004	Plaster and Concrete Product Manufacturing	0.000000	0.000000	0.000000	0.005000	0.005000	0.200000	0.005000	0.200000
2005	Other Non-Metallic Mineral Product Manufacturing	0.000000	0.000000	0.000000	0.003000	0.003000	0.100000	0.003000	0.100000
2101	Iron and Steel Manufacturing	0.000000	0.000000	0.001000	0.052000	0.053000	1.500000	0.053000	2.200000
2102	Basic Non-Ferrous Metal Manufacturing	0.000000	0.001000	0.002000	0.164000	0.167000	4.800000	0.167000	6.800000
2201	Forged Iron and Steel Product Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
2202	Structural Metal Product Manufacturing	0.000000	0.000000	0.000000	0.004000	0.005000	0.100000	0.005000	0.200000
2203	Metal Containers and Other Sheet Metal Product manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
2204	Other Fabricated Metal Product manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
2301	Motor Vehicles and Parts; Other Transport Equipment manufacturing	0.000000	0.000000	0.000000	0.007000	0.007000	0.200000	0.007000	0.300000
2302	Ships and Boat Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
2303	Railway Rolling Stock Manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2304	Aircraft Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
2401	Professional, Scientific, Computer and Electronic Equipment Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
2403	Electrical Equipment Manufacturing	0.000000	0.000000	0.000000	0.001000	0.002000	0.000000	0.002000	0.100000
2404	Domestic Appliance Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
2405	Specialised and other Machinery and Equipment Manufacturing	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
2501	Furniture Manufacturing	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
2502	Other Manufactured Products	0.000000	0.000000	0.000000	0.002000	0.002000	0.000000	0.002000	0.100000
2601	Electricity Generation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2605	Electricity Transmission, Distribution, On Selling and Electricity Market Operation	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2701	Gas Supply	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2801	Water Supply, Sewerage and Drainage Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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(How it filters through the rounds of expenditure and multiplies)

ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2901	Waste Collection, Treatment and Disposal Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
3001	Residential Building Construction	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
3002	Non-Residential Building Construction	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
3101	Heavy and Civil Engineering Construction	0.000000	0.000000	0.000000	0.000000	0.001000	0.000000	0.001000	0.000000
3201	Construction Services	0.000000	0.002000	0.002000	0.004000	0.008000	0.200000	0.008000	0.300000
3301	Wholesale Trade	0.000000	0.017000	0.013000	0.022000	0.051000	1.500000	0.051000	2.100000
3901	Retail Trade	0.000000	0.005000	0.004000	0.013000	0.022000	0.700000	0.022000	0.900000
4401	Accommodation	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
4501	Food and Beverage Services	0.000000	0.000000	0.001000	0.003000	0.004000	0.100000	0.004000	0.100000
4601	Road Transport	0.000000	0.000000	0.001000	0.006000	0.007000	0.200000	0.007000	0.300000
4701	Rail Transport	0.000000	0.000000	0.000000	0.004000	0.004000	0.100000	0.004000	0.200000
4801	Water, Pipeline and Other Transport	0.000000	0.000000	0.000000	0.008000	0.008000	0.200000	0.008000	0.300000
4901	Air and Space Transport	0.000000	0.000000	0.001000	0.016000	0.017000	0.500000	0.017000	0.700000
5101	Postal and Courier Pick-up and Delivery Service	0.000000	0.000000	0.000000	0.012000	0.013000	0.400000	0.013000	0.500000
5201	Transport Support services and storage	0.000000	0.000000	0.000000	0.003000	0.004000	0.100000	0.004000	0.200000
5401	Publishing (except Internet and Music Publishing)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5501	Motion Picture and Sound Recording	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5601	Broadcasting (except Internet)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5701	Internet Service Providers, Internet Publishing and Broadcasting, Web search Portals and Data Processing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
5801	Telecommunication Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6001	Library and Other Information Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
6201	Finance	0.000000	0.002000	0.003000	0.005000	0.010000	0.300000	0.010000	0.400000
6301	Insurance and Superannuation Funds	0.000000	0.001000	0.001000	0.007000	0.009000	0.200000	0.009000	0.300000
6401	Auxiliary Finance and Insurance Services	0.000000	0.002000	0.005000	0.012000	0.020000	0.600000	0.020000	0.800000
6601	Rental and Hiring Services (except Real Estate)	0.000000	0.001000	0.000000	0.004000	0.005000	0.100000	0.005000	0.200000
6701	Ownership of Dwellings	0.000000	0.000000	0.000000	0.010000	0.010000	0.300000	0.010000	0.400000
6702	Non-Residential Property Operators and Real Estate Services	0.000000	0.001000	0.003000	0.011000	0.015000	0.400000	0.015000	0.600000
6901	Professional, Scientific and Technical Services	0.000000	0.001000	0.001000	0.003000	0.006000	0.200000	0.006000	0.200000
7001	Computer Systems Design and Related Services	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
7210	Employment, Travel Agency and Other Administrative Services	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
7310	Building Cleaning, Pest Control and Other Support Services	0.000000	0.000000	0.000000	0.007000	0.008000	0.200000	0.008000	0.300000
7501	Public Administration and Regulatory Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7601	Defence	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
7701	Public Order and Safety	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

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ID	Sector	Initial	First Round	Indust.Sup	Consumption	Total	Percent	Flow-on	Percent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
8010	Primary and Secondary Education Services (incl Pre-Schools and Special Schools)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8110	Technical, Vocational and Tertiary Education Services (incl undergraduate and postgraduate)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8210	Arts, Sports, Adult and Other Education Services (incl community education)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8401	Health Care Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8601	Residential Care and Social Assistance Services	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
8901	Heritage, Creative and Performing Arts	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
9101	Sports and Recreation	0.000000	0.000000	0.000000	0.001000	0.001000	0.000000	0.001000	0.000000
9201	Gambling	0.000000	0.000000	0.000000	0.007000	0.007000	0.200000	0.007000	0.300000
9401	Automotive Repair and Maintenance	0.000000	0.001000	0.000000	0.007000	0.008000	0.200000	0.008000	0.300000
9402	Other Repair and Maintenance	0.000000	0.002000	0.001000	0.005000	0.008000	0.200000	0.008000	0.300000
9501	Personal Services	0.000000	0.000000	0.000000	0.002000	0.002000	0.100000	0.002000	0.100000
9502	Other Services	0.000000	0.000000	0.000000	0.032000	0.033000	1.000000	0.033000	1.300000
	Total	1.000000	0.599000	0.650000	1.199000	3.448000	100.000000	2.448000	100.000000
	Multiplier	1.000000				3.448000		2.448000	

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