Roadmap to Zero Emissions

Geelong Region Jobs Analysis

Ironbark Sustainability

GEELONG SUSTAINABILITY

ACF Community Geelong
Independently organised ACF group

Prepared for

This report has been prepared for Geelong Sustainability and the ACF Community Geelong.

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About Ironbark Sustainability

Ironbark Sustainability is a specialist consultancy that works with government and business around Australia by assisting them to reduce energy and water usage through sustainable asset and data management and on-the-ground implementation.

Ironbark has been operating since 2005 and brings together a wealth of technical and financial analysis, maintenance and implementation experience in the areas of building energy and water efficiency, public lighting and data management. We pride ourselves on supporting our clients to achieve real action regarding the sustainable management of their operations.

Ironbark are a certified B Corporation. We have been independently assessed as meeting the highest standards of verified social and environmental performance, public transparency, and legal accountability to balance profit and purpose.

Our Mission

The Ironbark mission is to achieve real action on sustainability for councils and their communities.

Recognition of traditional custodians

Ironbark Sustainability recognise First Nations peoples as the Traditional Custodians of the lands on which we live and work. We acknowledge sovereignty over their land was never ceded and the impact of this ongoing dispossession continues to this day. We stand in solidarity with First Nations people in calling for the establishment of a First Nations Voice in the Constitution, as described in the Uluru Statement from the Heart. We further support calls for the establishment of a Makarrata Commission on agreement-making and truth-telling between Aboriginal and Torres Strait Islander peoples and governments.

Ironbark Sustainability maintains offices on the traditional lands of the Wurundjeri people of the Kulin Nation, the Darug people and the Muwinina people. We pay our respects to all First Nations Elders past, present and those emerging and we commit to building relationships that support self-determination and the healing of Country.

This report is written for the Geelong region which incorporates the lands of the Wadawurrung, Gulidjan and Gadubanud and Eastern Maar traditional custodians. We acknowledge their custodianship for thousands of years, their advocacy and continuing care of the country.

Ironbark

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1. Executive Summary

This report determines the number of zero emissions jobs that can be created in the Geelong region over the coming years. The report was commissioned by Geelong Sustainability and ACF Community Geelong and undertaken by Ironbark Sustainability.

Ironbark Sustainability is a national consultancy that works with councils and their communities to reduce greenhouse emissions, tackle climate change and implement sustainability projects and programs.

The report demonstrates:
•Setting ambitious zero emissions targets will drive investment and opportunity to the region
•Coordinated local, regional and state government planning will support the transition to a zero emissions environment
•Emissions from all sectors (energy, transport, land use, waste and industry) need to be considered
•The Geelong region is well placed to advocate for resources from the state and federal governments to realise these opportunities.

The project draws on the Million Jobs Plan of Beyond Zero Emissions (BZE), an Australia-based, internationally recognised climate change solutions think-tank. The Million Jobs Plan shows how in just five years, renewables and low emissions projects can deliver 1.8 million new jobs in the regions and communities where these are needed most. It identifies key sectors across our economy where strategic investment over the next five years will have the most impact and create the most jobs.

The job numbers are calculated using the total national job numbers determined in the Million Jobs Plan. These national job numbers have been allocated to each local government area in Australia according to the relative capacity of each area to provide these jobs.

For the purposes of this report the Geelong region is defined by the boundaries of the Geelong Regional Alliance (G21) including the Local Government Areas of the City of Greater Geelong, the Borough of Queenscliffe, Golden Plains Shire, Surf Coast Shire and Colac Otway Shire.

The key finding of the report is that more than **24,000 new, full time equivalent jobs**, in the Geelong region, could be created by taking swift action to decarbonise the economy.

0ver 10,000 of these are ongoing positions, spread across seven zero emissions sectors: buildings, renewables, transport, manufacturing, land use, recycling and circular economy and education, training and research. The buildings sector has the greatest number of both ongoing and temporary jobs, but there is potential for over 1000 jobs for all sectors other than education, training and research.

This report is the first in Australia to publish this type of regional jobs analysis.

Total Zero Emissions Jobs in the Geelong region by sector

Sector	Ongoing job years	Temporary job years	Zero Emissions job years
Buildings (Social Housing)	2,496	9,924	12,420
Renewables	1,814	3,168	4,982
Transport	1,577	342	1,919
Cleantech manufacturing	1,708	131	1,839
Land Use	1,752	0	1,752
Recycling and circular economy	1,003	0	1,003
Education, training and research	111	0	111
Total	**10,461**	**13,565**	**24,027**

2. Introduction

Australia has the capacity to be a global leader in the zero emissions transition. Our renewable energy and renewable industry opportunities are world leading and regional Australia, particularly places with established industry, are well placed to capitalise on this opportunity and generate a diversified economy. An ambitious, science-based transition plan to address climate change offers countless opportunities for regional communities.

The Geelong region in particular holds significant opportunities in the rapid and ambitious transition to zero emissions. State and local governments, local business and industry and community all have a role to put in place plans to capitalise on these opportunities.

This report provides analysis of the jobs available to the Geelong region over a five year period if an ambitious zero emissions pathway consistent with strong action on climate change is embraced across all levels of government.

The region considered includes the Local Government Areas of the City of Greater Geelong, the Borough of Queenscliffe, Golden Plains Shire, Surf Coast Shire and Colac Otway Shire.

As well as creating new jobs and economic prosperity, these opportunities, using already available technology, will have many lasting benefits such as revitalising Australian manufacturing and improving air quality.

Beyond Zero Emissions' Million Jobs Plan demonstrated 1.8 million new jobs can be created through renewables and low emissions projects over the next five years if governments take strong action to address climate change. New solar and wind energy, transmission infrastructure and energy storage, energy efficient retrofits to buildings, zero emissions transport, manufacturing and mining and land use, resource recovery and education and training opportunities are all possible for the Geelong region.

The Geelong region can seize these subsequent opportunities by rapidly scaling up renewable energy industrial zones, investing in renewable energy infrastructure and generating much cheaper energy. Local community, government, business and investment leaders have an opportunity to set a pathway to zero emissions and reap the benefits of the global transition and see improved health, economic, environmental and social outcomes.

3. Million Jobs Plan

The Beyond Zero Emissions (BZE) Million Jobs Plan provides a framework to show how strategic investment from government and industry can create 1.8 million jobs in the next five years. Nationally these jobs are distributed across renewable energy, buildings, transport, manufacturing, land use, waste management and education and training.

The Million Jobs Plan provides a boost to diverse business sectors and provides jobs throughout Australia – over 70% in regional areas.
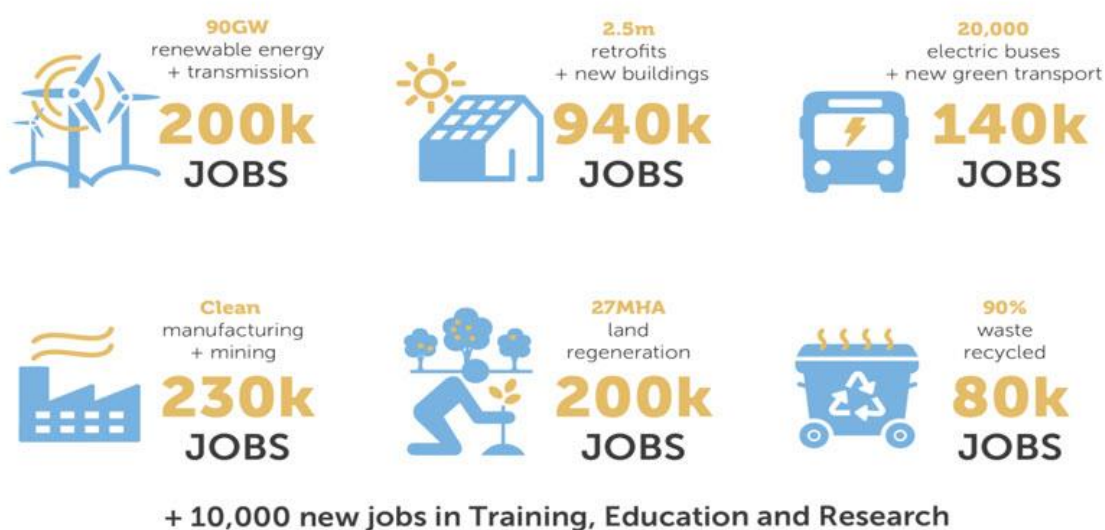
Figure 1. Jobs identified in the Million Jobs Plan (Source BZE).

Figure 1 sumarises the opportunities in this report and the jobs they could generate. These are new jobs created within a five year period starting in the financial year 2020-21.

Table 1 outlines the employment opportunities across the different sectors of The Million Jobs Plan. These are described in three frames:

•Peak construction jobs: Temporary jobs during a construction project such as building a wind farm or a factory. These jobs typically last between a few months and two years.
•On-going jobs: Jobs that begin during our five year period, and will continue indefinitely, such as manufacturing jobs. On-going jobs often grow during the five year plan.
•Job-years: A job-year corresponds to one job for one year during the five-year plan. As many jobs could become self-sustaining, over a longer timeframe this plan would create more job-years.

Table 1 Australian job creation potential of the Million Jobs Plan over the next five years (Source BZE).

Stimulus Targets by Sector	Jobs		
	Peak Construction	On-going (Year 5)	Job Years
Renewable energy			**202,000**
Build 90GW of new renewable energy (solar and wind)	18,000	9,300	109,000
Expand electricity transmission network	8,000	1,200	29,000
Establish large-scale wind turbine manufacturing	-	9,000	38,000
Establish battery manufacturing sector	3,200	2,500	27,000
Better buildings			**935,000**
Home energy retrofits for 2.5M low-income households	101,000	-	497,000
Build 150,000 net-zero carbon social housing dwellings	56,500	30,000	433,000
Solar + batteries for schools & pools	2,000	-	5,000
Better transport			**138,000**
Buses – introduce 18,000 electric buses for public transport	125	19,000	47,000
Trains – electrify 3,000km of existing railway enabling faster rail	3,000	2,600	26,000
Cycling – build or upgrade 5,000km new or upgraded cycle lane	5,000	10,000	65,000
Manufacturing			**215,000**
Electrify industry – transition manufacturing from fossil fuels to renewable energy	-	12,000	60,000
Renewable Hydrogen	-	1,500	6,000
Green steel	-	1,500	7,000
Green aluminium (existing and new plant)	-	3,500	23,000
New energy metals (mining, processing, manufacturing)	-	15,000	42,000
Decarbonising mining (electric mining equipment)	-	20,000	77,000
Land use and regeneration			**200,000**
Land regeneration	-	23,000	115,000
Environmental managers	-	10,000	50,000
Indigenous land and water rangers	-	6,000	30,000
Coastal catchment and land care groups	-	1,000	5,000
Recycling			**78,000**
Increase national recycling rate to 90%	-	28,000	78,000
Education, training & Research			**10,000**
Supporting Australia's workforce and knowledge sector to deliver *The Million Jobs Plan*	-	2,000	10,000
Total Job years			**1,778,000**

4. Methodology

The job numbers in this report are calculated using the total national job numbers determined in the BZE Million Jobs Plan. These national job numbers have been allocated to each LGA in Australia according to the relative capacity of each area to provide these jobs.

The allocation is determined using a range of factors from 2016 Australian Bureau of Statistics census data including population, Socio-Economic Indexes for Areas, labour force, participation rate, job hours per capita and per worker and proximity to renewable energy, transportation, re-vegetation and industrial zones.

A formula using these factors was developed to distribute the total number MJP jobs to each Local Government area. This report provides information for the LGA's in the Geelong region. The job allocations have been rounded to the nearest whole number.

A list of job categories has been developed from both the MJP and ABS job classifications. The job categories considered for this report are outlined in Table 2. The data represent the number of additional people who could be employed in each of the industry sectors in a defined region if a zero emissions pathway was embraced.

The process for this report has been to downscale jobs data to the LGA scale, but the process could equally be applied to other geographical boundaries, such as electorates, renewable energy zones or Natural Resource Management areas.

Definitions
Job definitions in this report are based on the analysis used by BZE in the Million Jobs Plan. These are defined as Peak construction jobs; on-going jobs; and job-years. The data provided in this report refers to job years over a five year period starting in the 2020-21 financial year. For the purpose of this report a job is defined as one FTE for a one year period - Some of the jobs are temporary in nature - some are ongoing. Job years have also been converted into jobs and number of people employed in the jobs analysis section.

Assumptions
The most recent ABS census data is from 2016 which means these job figures are likely conservative as they will not reflect the significant change in zero emissions investment and policy over the past five years.

The jobs modelling is weighted according to population so LGA's with a small population (such as Queenscliffe) may need to treat some of the job numbers with caution. Jobs are allocated by place of residence over place of work. For example, the jobs identified for the Queenscliffe Borough are likely to be residents who live in Queenscliffe but are employed in a zero emissions job in a neighbouring municipality.

5. Region of consideration

This report includes job data for the Geelong region including the Local Government Areas of the City of Greater Geelong, the Borough of Queenscliffe, Golden Plains Shire, Surf Coast Shire and Colac Otway Shire. The Geelong Region Alliance (G21) is the formal partnership of these five local government areas working in collaboration with the community, business, local leaders, First Nations and institutions.

Figure 2. G21 geographical region. Source G21 Priorities and project 2021-22.

6. Emissions profiles

The following figures provide Snapshot emissions profiles for the G21 region and the five councils within it for the 2019 calendar year. Emissions profiles include emissions from electricity and gas (residential, commercial and industrial), transport, agriculture and waste sectors. Further sector breakdowns are available in the adjacent table. For example, dairy cattle, sheep and meat cattle contribute the bulk of agricultural emissions.

The profiles provide an indication of the scale of transformation required. Emissions from these sectors need to be rapidly reduced to zero or offset by land use sinks.

4.96M
Total

source
● electricity ● transport ● agriculture ● gas ● waste

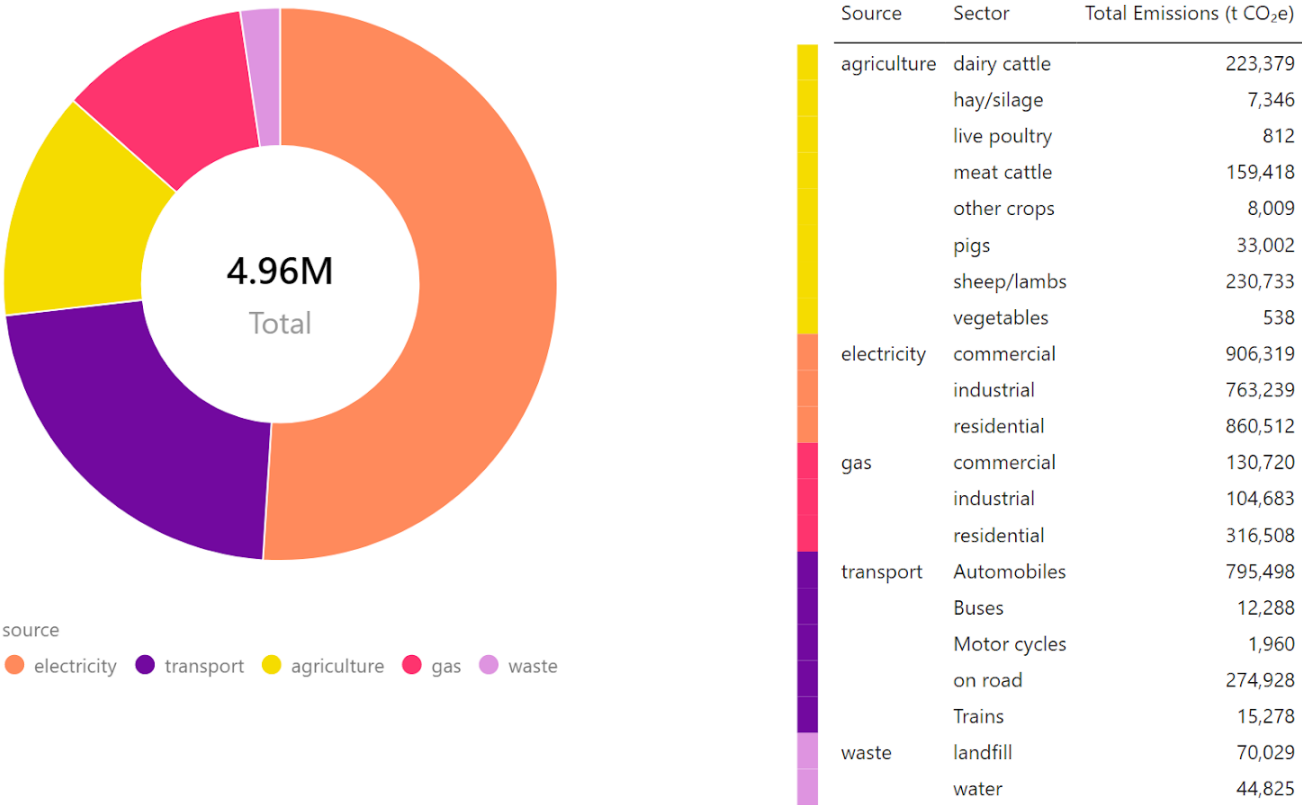| Source	Sector	Total Emissions (t CO_2e)
agriculture	dairy cattle	223,379
	hay/silage	7,346
	live poultry	812
	meat cattle	159,418
	other crops	8,009
	pigs	33,002
	sheep/lambs	230,733
	vegetables	538
electricity	commercial	906,319
	industrial	763,239
	residential	860,512
gas	commercial	130,720
	industrial	104,683
	residential	316,508
transport	Automobiles	795,498
	Buses	12,288
	Motor cycles	1,960
	on road	274,928
	Trains	15,278
waste	landfill	70,029
	water	44,825

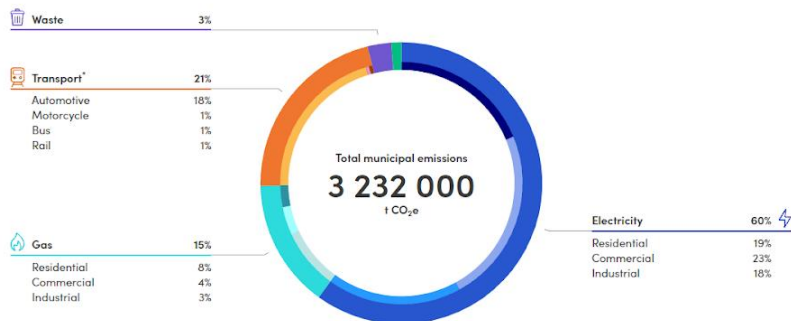Figure 3. 2019-19 Snapshot emissions profile for the Geelong Region.

Greater Geelong
2019 municipal emissions snapshot

🗑 Waste	3%	
🚃 Transport*	21%	
Automotive	18%	
Motorcycle	1%	
Bus	1%	
Rail	1%	
🔥 Gas	15%	
Residential	8%	
Commercial	4%	
Industrial	3%	

Total municipal emissions
3 232 000
t CO$_2$e

Electricity	60% ⚡
Residential	19%
Commercial	23%
Industrial	18%

Queenscliffe
2019 municipal emissions snapshot

🗑 Waste	2%	
🚃 Transport	38%	
On road	38%	
🔥 Gas	17%	
Residential	12%	
Commercial	5%	

Total municipal emissions
42 000
t CO$_2$e

Electricity	43% ⚡
Residential	14%
Commercial	27%
Industrial	2%
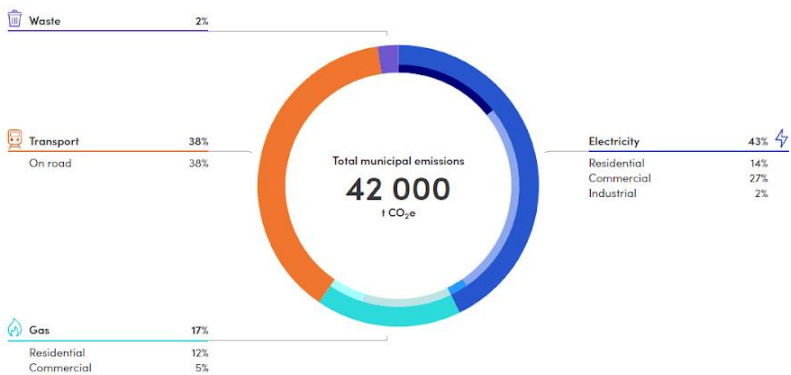
Colac-Otway
2019 municipal emissions snapshot

Electricity	31% ⚡
Residential	7%
Commercial	8%
Industrial	16%

🌱 Agriculture	47%

Total municipal emissions
701 000
t CO$_2$e

Gas	3% 🔥

Transport	18% 🚃
On road	18%

🗑 Waste	1%
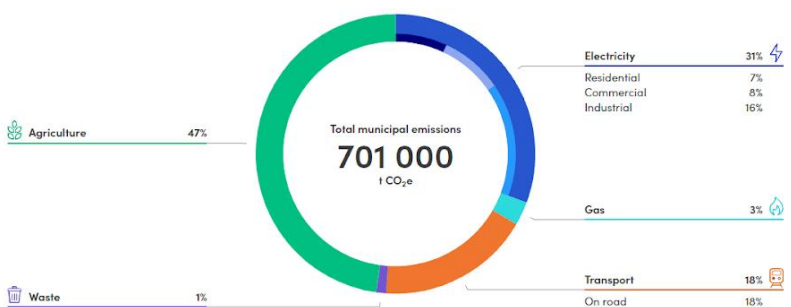
Figures 3 - 5. 2019 Snapshot emissions profiles for each of the G21 councils.

Surf Coast
2019 municipal emissions snapshot

Agriculture	20%
Waste	2%
Transport*	30%
Automotive	29%
Bus	1%

Total municipal emissions
515 000
t CO$_2$e

Electricity	42%
Residential	24%
Commercial	13%
Industrial	5%

Gas	6%
Residential	4%
Commercial	1%
Industrial	1%

Golden Plains
2019 municipal emissions snapshot
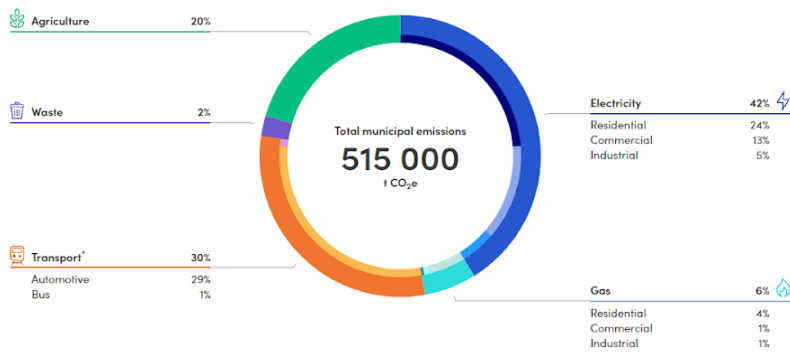

Electricity	26%
Residential	18%
Commercial	3%
Industrial	5%

Agriculture	42%

Total municipal emissions
501 000
t CO$_2$e

Gas	4%
Residential	2%
Commercial	1%
Industrial	1%

Waste	1%

Transport	27%
On road	27%
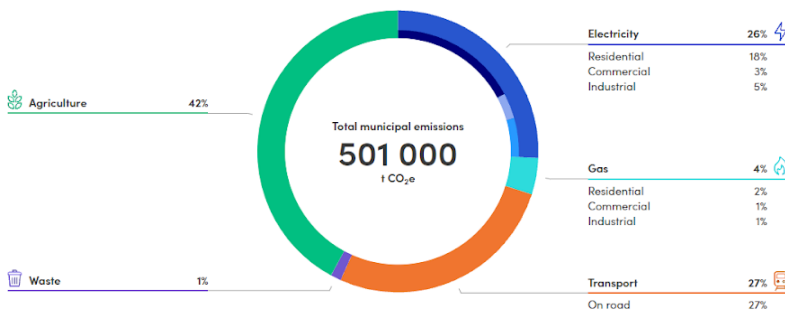
Figures 6 - 7. 2019 Snapshot emissions profiles for each of the G21 councils.

7. Science derived target

An emissions reduction target for an organisation, entity or community is considered science-derived when it is aligned with the broader emissions reduction required to keep global temperature increase below 2°C compared to preindustrial temperatures, as described in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

The science-derived target for the Geelong region is based on Australia's carbon budget (total volume of greenhouse gases that can be emitted to 2050), as established by the Climate Change Authority in 2013. This budget is considered the most robust and accepted Australian carbon budget, and aligns with the international carbon budget developed by IPCC, notwithstanding associated limitations, risks and challenges.

The Geelong region's scaled community-wide carbon budget is 66.8 Mt CO_2-e. This budget will be exhausted by 2032 (13.5 years from 2018/19) based on current projections if there is no associated emissions reduction action.

If governments, Councils, the broader community, business and industry and other stakeholders undertake urgent action to reduce emissions, then this budget will stretch further.

There is a wealth of information demonstrating that a target of 2°C is not an acceptable risk to avoid the effects of catastrophic climate change. The targets presented here can be considered an upper limit of the emissions reductions required.

To reach net zero by 2045, the Geelong region needs to reduce emissions by 3.7% each year – which equates to an annual reduction of 184,141 tonnes.

To reach net zero by 2035 (in line with the draft municipal-wide target of the City of Greater Geelong), the Geelong region needs to reduce emissions by 6.25% each year - which equates to an annual reduction of 310,012 tonnes.

8. Geelong region jobs data

The following section provides data on the zero emissions jobs potential in the Geelong region over a five year period, starting in the 2021-22 financial year. Data is provided according to Local Government Area, sector and job type. For this analysis one job year equates to one FTE position for a 12 month period.

Table 2 provides a breakdown of the zero emissions jobs in the Geelong region by sector. Table 3 provides a breakdown according to Local Government area. Table 4 shows the job types considered in this report and Tables 5-9 provide a further breakdown of sectors according to job type.

Table 2. Total Zero Emissions job years in the Geelong Region by sector

Sector	Ongoing job years	Temporary job years	Zero Emissions job years
Buildings (Social Housing)	2,496	9,924	12,420
Renewables	1,814	3,168	4,982
Transport	1,577	342	1,919
Cleantech manufacturing	1,708	131	1,839
Land Use	1,752	0	1,752
Recycling and circular economy	1,003	0	1,003
Education, training and research	111	0	111
Total	**10,461**	**13,565**	**24,027**

Table 3. Total Zero Emissions Jobs in the Geelong Region

Local Government Area	Zero Emissions Jobs	State proportion %
Greater Geelong	18638	4.4
Golden Plains	1930	0.45
Surf Coast	1829	0.43
Colac Otway	1523	0.36
Queenscliffe*	108	0.03
Total	**24027**	**5.7%**

Table 4. Job types considered in this analysis

Renewables and Transmission	Buildings - Social housing	Transport	Cleantech Manufacturing	Land Use Waste Education, Training & Research
Renewable construction Renewable operations Wind manufacture Battery manufacture Battery installation Renewable energy (Professional services) Transmission (Construction) Transmission (Operations)	Social housing construction Solar and battery installation Additional supply-chain jobs Retrofits (installation) Retrofits (Professional services)	Trains (Track electrification) Trains (Rolling stock manufacture) Trains (Rolling stock supply chain) Bicycles (construction) Bicycles (Supply-chain jobs) Bicycles (Maintenance) Bike retail and repair Bus manufacture Buses (Chassis manufacture) Bus supply-chain Buses (Charger manufacture) Buses (Charger install)	Manufacturing (Electrifying Industry) Manufacturing (Renewable Hydrogen) Manufacturing New energy metals Manufacturing (Electric mining equipment)	Planting Resource recovery (Operations) Education, Training & Research

Table 5a. Job type – Renewables

Region	Construction	Operations	Wind manufacture	Battery installation	Battery manufacture
Greater Geelong	1625	315	409	287	102
Golden Plains	324	60	35	54	9
Surf Coast	263	39	25	35	6
Colac-Otway	109	133	11	30	3
Queenscliffe	10	1	3	1	1
Total	2331	448	483	408	120

Table 5b. Job type - Renewables

Region	Transmission - Construction	Transmission - Operations	Professional services
Greater Geelong	785	69	82
Surf Coast	102	7	6
Golden Plains	75	6	14
Colac-Otway	31	4	4
Queenscliffe	6	0	1
Total	998	87	107

Table 6. Job type – Buildings (Social Housing)

Region	Construction	Solar and battery installation	Supply Chain	Installation	Professional services
Greater Geelong	3021	114	1438	4837	127
Colac-Otway	303	20	130	553	6
Golden Plains	181	7	146	591	9
Surf Coast	122	3	196	542	22
Queenscliffe	7	0	13	29	2
Total	3634	144	1924	6552	166

Table 7a. Job type – Transport (Trains)

Region	Track electrification	Rolling stock manufacture	Rolling stock - supply chain
Greater Geelong	236	60	56
Surf Coast	26	4	8
Golden Plains	23	5	6
Colac-Otway	16	2	5
Queenscliffe	1	0	1
Total	303	70	75

Table 7b. Job type – Transport (Bicycles)

Region	Construction	Supply Chain	Maintenance	Retail and repair
Greater Geelong	247	198	15	182
Golden Plains	30	20	2	21
Surf Coast	28	27	2	22
Colac-Otway	28	18	2	19
Queenscliffe	1	2	0	1
Total	335	265	20	245

Table 7c. Job type – Transport (Bus)

Region	Manufacture	Chassis manufacture	Supply chain	Charger manufacture	Charger installation
Greater Geelong	93	49	307	19	4
Golden Plains	8	4	31	2	0
Surf Coast	6	3	42	1	0
Colac-Otway	2	1	28	0	0
Queenscliffe	1	0	3	0	0
Total	110	58	411	22	5

Table 8. Job type – Cleantech manufacturing

Region	Electrifying industry	Renewable Hydrogen	Electric mining equipment
Greater Geelong	654	65	840
Golden Plains	56	6	71
Surf Coast	40	4	51
Colac-Otway	17	2	22
Queenscliffe	5	0	6
Total	772	77	990

Table 9. Job type – Land Use, Resource recovery and Education and training

Region	Land Use - Planting	Resource Recovery - Operations	Education, training and research
Greater Geelong	1466	850	85
Surf Coast	123	52	15
Colac-Otway	95	22	4
Golden Plains	64	72	6
Queenscliffe	4	6	1
Total	1752	1003	111

9. Jobs analysis

Jobs Analysis

The jobs identified in this report demonstrate that there is significant potential for the Geelong region to grow jobs and economic prosperity, in a range of sectors, by embarking on rapid and ambitious zero emissions transition planning.

The jobs identified in this report are in the short term (five year period). Significantly more jobs could arise over the following years. Decisions and actions taken now will determine the trajectory and uptake of jobs and other opportunities available over the coming decades.

Conversion of jobs years to jobs

To enable comparison of total jobs years identified in this analysis we have converted the job years to jobs with an ongoing and temporary job allocation. Table 10 provides a breakdown of the jobs according to job years, FTE, number of people employed and jobs by sector.

Table 10. Job years compared to FTE, permanent and temporary jobs and number of people employed.

Sector	Zero Emissions Job years - FTE	Jobs FTE	Permanent FTE	Temporary FTE	Number of people employed
Buildings	12,420	2,528	499	2,028	4,104
Renewables	4,982	1,346	363	983	1,627
Transport	1,919	650	568	82	1,055
Cleantech manufacturing	1,839	448	427	21	727
Land Use	1,752	350	350	0	568
Recycling and circular economy	1,003	360	360	0	584
Education, training and research	111	22	22	0	36
Total	24,027	5,704	2,589	3,115	9,261

The Million Jobs Plan analysis looks at 'job years' to allow for jobs that are permanent or ongoing with jobs that are inherently temporary (such as construction of infrastructure). To determine the relationship between jobs and job years, we determined the proportion of jobs from each sector that fall into each of these categories using the same breakdowns employed in the Million Jobs Plan. This ratio was then applied to the total identified jobs to establish the breakdown. This breakdown is shown in Table 11.

Table 11. Proportion of temporary and permanent jobs by sector

Sector	Temp	Permanent
Renewables	59%	41%
Transmission	79%	21%
Buildings	80%	20%
Transport	18%	82%
Cleantech Manufacturing	7%	93%
Land Use	0%	100%
Recycling and circular economy	0%	100%
Education, training and research	0%	100%

Number of people employed
To determine the number of people employed compared to the FTE we took the breakdown of employment by time from the Australian Bureau of Statistics for the Geelong Region. This breakdown indicates that for every 100 FTE roles, there are 60 full time jobs and 102 part time jobs, or 162 jobs in total.

10. Policy settings

The total new jobs for the Geelong region account for 5.7% of the Victorian state total and 1.4% of the federal total from the jobs identified in the Million Jobs Plan. The scale of investment and infrastructure development to realise these jobs is ambitious and provides an indication of the opportunities ahead.

International, national, state and local policy settings are all moving rapidly to enable zero emissions as fast as possible. Regional economies such as Geelong can proactively align with these targets and coordinate planning across all levels to achieve the economic, environmental and social benefits of a clean energy economy, better buildings, expanded skills and jobs, next-generation power and transport systems, revitalised farms and forests, and most importantly to support the community to withstand climate impacts.

The Victorian state government emissions targets are legislated under The Climate Change Act. The Act requires a state-wide climate change strategy, adaptation action plans and interim emissions reduction targets to be developed and updated every five years until 2050.
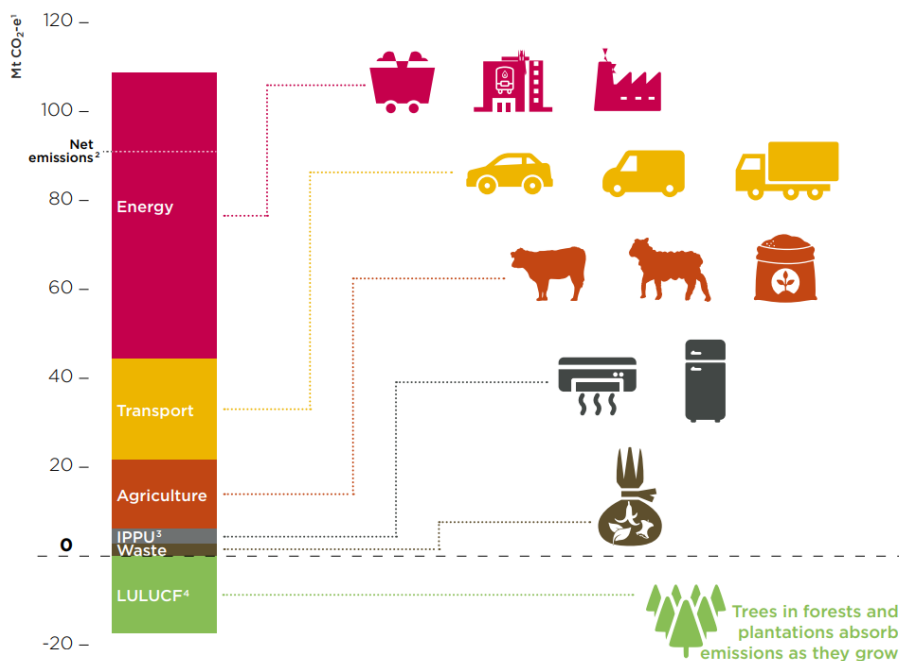

Victoria's greenhouse gas emissions by emissions sector in 2019
1   Million tonnes of carbon dioxide equivalent emissions
2   Victoria's net emissions are total emissions less the emissions absorbed in the LULUCF sector
3   Industrial processes and product use
4   Land use, land use change and forestry

Figure 8. Victoria's greenhouse gas emissions by sector in 2019, Source: https://www.climatechange.vic.gov.au/victorias-greenhouse-gas-emissions

The Act outlines the following key targets and is supported by Victoria's Climate Change Strategy.

•Net Zero Emissions by 2050
•50% renewable energy by 2030
•28-33% reduction in emissions (from 2005 levels) by 2025
•45-50% reduction in emissions (from 2005 levels) by 2030

There are also clear legislative and community expectations that Council Plans address climate change via the Local Government Act 2020. The integrated strategic planning process outlined in the Local Government Act provides the approach of embedding climate change across everything a council does, including a Council Plan. This recognises that climate change is already impacting the community's well being, natural and built environments and local economy. The Act requires that regional, state and national plans and policies are to be taken into account in strategic planning and decision making.

By setting ambitious council targets, in line with science derived approach, the local governments in the Geelong region can and enable infrastructure and investments that will support state targets and the zero emissions transformation ahead of us.

11. Conclusion

As we move into the critical decade of the climate crisis, local regions, councils and communities have an extraordinary opportunity to capitalise on the investment available. With proactive targets, policies and pathways a large number of jobs can be developed to support regional economies and emissions reduction at speed and scale.

The Geelong region is particularly well placed to seize these opportunities. With existing infrastructure and collaborative governments, a skilled workforce, strong unions, and an engaged community, the pathway to zero emissions and the benefits it will bring are ready to roll out.

As global and local ambition ramps up, and the importance of regional and local governments to manage both climate impacts and transformative economic growth is central to meeting the global climate challenge. The leadership at the regional and local scale is critical to galvanising action at all levels of community, businesses and government.

Taking action on climate will help us prepare for future risks and increase our preparedness for economic, social and environmental impacts. By addressing actions and ensuring co-benefits are enacted we can deliver new jobs, improved health and sustainable, equitable, local economies.

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