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RENEWABLE ENERGY IMPACT AND READINESS STUDY

June 2024 | Prepared by Urban Enterprise for South Gippsland Shire Council and Latrobe City Council

www.urbanenterprise.com.au

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Version 1

Final Report

Urban Enterprise is located on Wurundjeri Woi-Wurrung Country. We pay our respects to elders past, present and emerging and also acknowledge all Traditional Owners of Country on which we work.

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EXECUTIVE SUMMARY

BACKGROUND

Gippsland is one of six Renewable Energy Zones (REZ) in Victoria, and is the focus of a series of major renewable energy development proposals. This includes nationally significant offshore wind (OSW) projects off the southern coast of Gippsland; an area declared as the first zone for offshore wind generation in Australia

ENGAGEMENT & PURPOSE

South Gippsland Shire Council and Latrobe City Council in conjunction with Regional Development Australia (RDA) engaged Urban Enterprise to complete a Renewable Energy Readiness Study (the Study) for the municipalities of South Gippsland and Latrobe City.

The main driver of the project is a need to understand, and strategically plan for long term renewable energy investment in order to optimise economic benefits and mitigate any potential issues that may arise from project facilitation and delivery.

Of particular importance is the need to understand and plan for issues and spatial implications for urban land supply and supply chain requirements (business, labour and housing).

This Study provides an economic and land use evidence base and action plan to guide renewable energy readiness over the next 10-20 years.

POLICY CONTEXT

- Gippsland is one of six Renewable Energy Zones (REZ) in Victoria. Gippsland enjoys natural advantages such as wind and solar.
- The State Government acknowledges the need for OSW projects to generate the majority of Victoria's future energy needs.
- In November 2023, the Victorian Government legislated OSW energy targets of at least 2GW by 2032, 4GW by 2035 and 9GW by 2040.
- OSW feasibility license applications were submitted to the Federal Government in April 2023.
- As at May 2024, feasibility licences have been granted to 6 OSW projects. A further 6 OSW projects may receive a license subject to further consultation.
- Local policy supports continued investment in the renewables sector to support transition from old to new energy. Other priorities include:
    - Developing enabling infrastructure to facilitate investment and development;
    - Supporting education and training institutions to support a skilled workforce that is aligned with future needs; and
    - Addressing housing availability and affordability issues.

PROJECT PIPELINE

There are a diverse range of project types proposed in Gippsland. The current pipelines includes:

- **Offshore wind farms (6-12*)**
- **Onshore wind farms (3)**
- **Solar farms (10)**
- **Battery storage (5)**
- **Hydrogen (3)**

The renewable energy project pipeline in Gippsland is shown in Figure S1 on page 7.

*Total number yet to be finalised (subject to feasibility and ultimate number of commercial licences)

NEEDS & READINESS

The renewable energy pipeline has various needs to construct, operate and maintain the suite of projects over time.

It is imperative that the region is ready to:

- Facilitate the successful delivery of projects;
- Optimise potential economic benefits that might flow to the local economy; and
- Mitigate adverse implications where possible.

This study focuses on four key readiness themes:

1. Business supply-chain;
2. Jobs and skills;
3. Housing and accommodation; and
4. Infrastructure (ports, roads, urban).

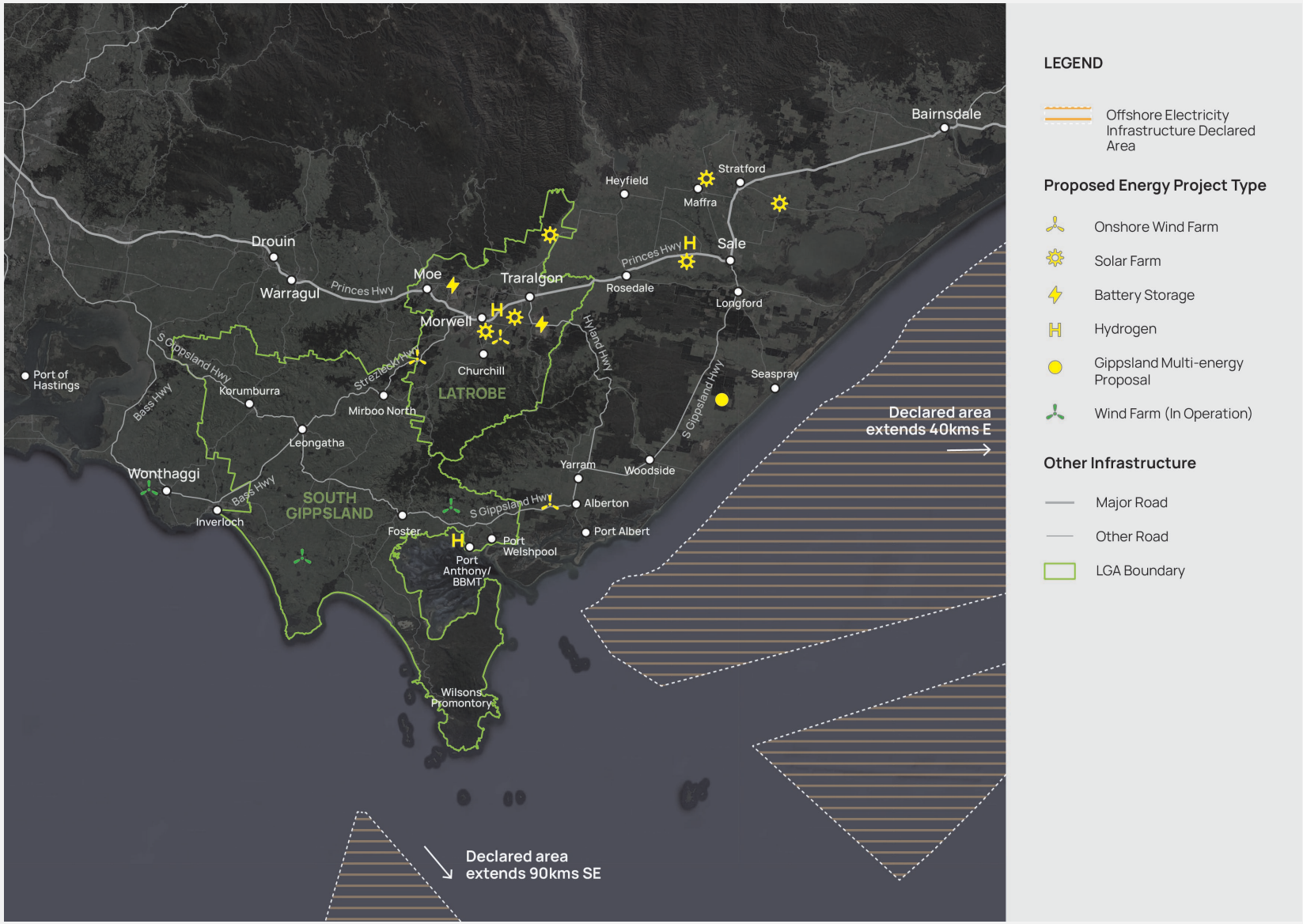
Needs, issues, opportunities and strategic directions for each theme are summarised on the following pages.

Directions relate to areas in which Local Government can practically influence.

HOW CAN COUNCIL INFLUENCE READINESS?

- **Promotion & Advocacy**
- **Coordination & Partnerships**
- **Strategic Planning & Policy**
- **Engagement & Communication**

Figure S1 Renewable Energy Pipeline



Supply-Chain

NEEDS

- A global supply chain to design, manufacture and install specialised components.
- A local and regional supply-chain to support general construction, labour and trades, parts manufacturing, transport, logistics and professional services.
- Indirect supply-chain to support the workforce, including retail, hospitality, housing, accommodation, health and education.
- Adequate, suitable and well-located industrial land to serve demand from renewable energy projects, including:
  - Strategic and 'opportunistic' business investment (e.g. new business entrants seeking a Gippsland presence); and
  - Investment from existing businesses seeking to re-locate or expand to leverage cumulative investment.

ISSUES & OPPORTUNITIES

1. Latrobe has industry specialisations in engineering, manufacturing and civil construction services; all of which are relevant to the renewable energy supply-chain.
2. The utilisation of regional suppliers by proponents/developers is unknown. Advocating minimum targets for utilisation would encourage regional economic benefits.
3. There is high awareness of the impending renewable energy investment across the business base. However, there is some uncertainty around how to capture the opportunity locally.
4. Existing industry specialisations in South Gippsland Shire need to productively operate concurrent to the renewable energy sector (e.g. agriculture, tourism, construction).
5. The critical mass of investment in Gippsland may appeal to new business entrants. 'Market ready' industrial land supply availability will be critical.
6. Morwell is well served for zoned industrial land stocks, and appears to be a logical area to accommodate future demand for industrial sites, especially related to the renewable energy supply chain.
7. Council should seek to address insurmountable infrastructure and development constraints in zoned industrial areas across Morwell with the fewest constraints observed.
8. Traralgon and Moe have limited vacant industrial land. It will be challenging for these towns to accommodate long term industrial demand without expansion of zoned land.
9. There is a current undersupply of industrial land supply in Leongatha and Korumburra.
10. The majority of South Gippsland's vacant zoned industrial land is located on Barry Rd adjacent to the Port (~550ha+). This area appears to face many development constraints. However, this land is highly strategic that may attract future investment that serves the OSW supply-chain and hydrogen exports.
11. As coal mines in Loy Yang and Yallourn plan for closure and subsequent rehabilitation, there may be an opportunity to investigate re-purposing or activating unused and surplus SUZ1 land for alternative and productive uses (e.g. industry hubs).

Jobs & Skills

NEEDS

- In Gippsland, more than 8,000 jobs in development and construction phases and 1,500 ongoing operational jobs may be generated by 2032.
- The pipeline of projects will require different job roles and specific skill requirements during each phase of the development lifecycle:
  - **Feasibility/development phase** engineers, environmental & consenting professionals, stakeholder engagement, surveyors, planners and managers.
  - **The construction phase** trades and technicians, machinery operators, drivers, transport and logistics, coordinators, inspectors, supervisors & managers.
  - **The operational phase** engineers, managers, technicians, machinery operators, drivers, transport and logistics, coordinators and supervisors.

ISSUES & OPPORTUNITIES

1. Proximity to ports will be a key spatial driver. There will be a need for workers at different on and offshore locations for roles relating to transport and logistics, assembly and technical installation.
2. As the preferred construction hub location, Port of Hastings will be a key attractor for labour (as will Port of Corner Inlet if it is ultimately an operations and maintenance hub).
3. There is an existing workforce with skills and capabilities that can be adapted to renewable energy projects, especially those related to offshore oil and gas, traditional energy, resource production and services.
4. Labour shortages pose risks for the productivity of Gippsland's economy under 'business as usual' conditions. This could impact the efficient delivery of renewable energy projects and the opportunity to attract new business to the region.
5. Current gaps in job roles that are relevant to the renewable energy supply chain include technicians and trade workers, labourers, and machinery operators and drivers.
6. Renewable energy projects will increase competition within the regional labour force, which already has limited capacity. Further, persistent unemployment and labour shortages in Gippsland suggests that new energy projects will face challenges in from, and utilising the regional workforce.
7. To meet the construction and operational labour requirements for renewable projects, several areas of focus for growth in jobs and participation will be important for readiness:
   - Providing employment pathways for different renewable energy project types through targeted programming, delivered by education, skills and training providers;
   - Opportunities for re-skilling, upskilling and transition for workers with transferrable skills;
   - Opportunities to mobilise cohorts that are inactive in the labour market, particularly low and unskilled positions; and
   - Dedicated training and skills development.

Housing & Accommodation

NEEDS

- Housing to support key workers during the construction phase of projects. Tenure and type will include a mix of permanent and short term rental housing, and commercial accommodation.
- Rental housing demand generated from OSW projects is likely to be most prominent in proximity, and within reasonable commuting distance to the ports, including Foster, Yarram and Leongatha.
- If rental demand cannot be accommodated proximate to the port, some 'spillover' rental demand is likely to extend to regional centres (e.g. Traralgon, Sale, Moe, Wonthaggi).
- Demand for short and long stay commercial accommodation will be drawn on in proximity to ports, coastal crossings, transmission corridors and substation locations.

ISSUES & OPPORTUNITIES

1. Construction port locations for OSW are unresolved, which makes it difficult to define housing catchments with certainty.
2. The rental market in Latrobe and South Gippsland is constrained. There is very limited capacity to accommodate any uplift in demand that may arise from renewable energy projects.
3. Any increase in rental demand is likely to manifest into lower vacancy rates, higher rents, and potential unmet demand for residents.
4. Commercial accommodation plays an important role in serving the tourism industry. Demand for accommodation arising from renewable energy projects may displace tourist visitors, especially over the summer period.
5. At present, there is limited policy flexibility or strategic support to accommodate key worker housing. This should be considered to meet demand for seasonal worker housing.
6. It is likely that new housing and rental stock will be needed in Leongatha, Korumburra and Foster - both to serve business as usual demand, but also a potential uplift in demand from temporary and permanent workers at the Port of Corner Inlet, transmission corridors and coastal crossings.
7. It is apparent that smaller settlements (particularly those defined in the planning scheme as Coastal Villages) in South Gippsland have limited capacity and capability to accommodate future growth; due to environmental sensitivities and risks posed by climate change. Expansion of these areas is not supported.

Infrastructure

NEEDS

- Transmission infrastructure to support the transportation of energy from areas of generation to consumption markets.
- Transport infrastructure (roads, ports, airports) to facilitate freight, cargo and crew movements.
- For ports:
  - Construction Hub(s) during the construction phase for receiving, handling and assembling OSW turbine components; and
  - An Operation and Maintenance Hub (O&M) during the OSW operational phase to support storage and transport of supplies and crew.
- Civil service infrastructure, particularly adequate drainage, sewer and water treatment to support urban growth and potential expansion, and to facilitate residential and industrial development.

ISSUES & OPPORTUNITIES

1. Certainty regarding transmission alignments is important for proponents and the community. The ultimate transmission network should be consolidated wherever possible to maximise efficiencies and minimise visual and environmental impacts.
2. Port infrastructure and related land will be needed to support offshore wind and hydrogen opportunities. Port of Corner Inlet is well placed to perform an operational role and potentially a supporting role during construction which would benefit both projects and the Gippsland economy.
3. Preparations for upgrades to the arterial and local road networks will ensure readiness for construction phases of projects. This will require State, regional and local involvement and could create legacy benefits for communities in areas which currently have sub-standard road networks.
4. The urban infrastructure network in Latrobe City and South Gippsland could limit the ability of certain areas to accommodate housing and business growth in response to projects. This is particularly relevant to drainage, town water supply and wastewater treatment.

Directions

Ten strategic directions are proposed to ensure local readiness, facilitate investment and maximise economic benefits within local municipalities and the Gippsland region.

An Action Plan is detailed in section 10. Recommended actions are identified which align with strategic directions and respond to issues and opportunities.

An indicative timeframe, lead and partner stakeholders are recommended for each action.
It is acknowledged that the implementation of actions will be subject to future resourcing, budgeting and prioritisation to be determined by each Council.

Themes	Directions
Supply-Chain	1. Support and promote the existing business base to integrate into the renewable energy supply-chain. 2. Position the Gippsland region to attract national and global suppliers to the renewable energy sector. 3. Plan for Gippsland to become a primary hub for renewable energy supply-chain.
Jobs & Skills	4. Attract, develop and grow the regional labour force to service employment needs.
Housing & Accommodation	5. Plan for a diversity of housing and accommodation needs across Gippsland. 5. Encourage key worker housing to accommodate temporary and seasonal labour force needs. 6. Plan and logically sequence residential development in South Gippsland's larger settlements.
Infrastructure	8. Advocate for Port of Corner Inlet to become an Operations Hub to service the offshore wind industry. 9. Address civil infrastructure barriers to urban development in key residential and industrial locations. 10. Ensure transport and transmission readiness through early investigations and strategic planning.

SECTION 1

INTRODUCTION

BACKGROUND

Renewable energy targets, incentives and investments are driving major shifts in the way energy is produced, stored and transported in Australia. New sources of energy and forms of production are planned to complement or replace traditional equivalents.

Gippsland is one of six Renewable Energy Zones (REZ) identified in Victoria, and is the focus of a series of major renewable energy development proposals. This includes nationally significant offshore wind projects off the southern coast of Gippsland; an area declared as the first zone for offshore wind generation in Australia (declared by the Federal Government in December 2022).

Gippsland is expected to lead national growth in offshore wind generation. Modelling prepared by the Australian Energy Market Operator (AEMO) includes a scenario with offshore wind generation in Gippsland commencing in 2027 and increasing to 5.5GW by 2038.

Gippsland is also attracting growing investment interest in large scale solar, onshore wind, hydrogen and battery projects.

The suite of renewable energy projects are emerging in a region which generates the majority of Victoria's electricity, oil and gas. Gippsland produces approximately 85% of Victoria's electricity, 97% of Victoria's natural gas and 26% of Australia's oil.

Gippsland has a well-established energy sector supply chain that has developed from resource exploration, mining and energy generation; all of which are in varying stages of reduced output and decommissioning.

Renewable projects proposed in and near Gippsland are state and nationally significant in that they are directly facilitating the energy transition needed to achieve state and Federal emissions targets. However, a particular challenge for Gippsland and Australia's transition to new energy is the relatively immature supply-chain capability, particularly manufacturing and installation.

Concurrently, Gippsland is experiencing several other issues impacting the economy and property markets which may interact with the impacts of renewable energy projects, such as limited industrial land availability, housing shortages and low unemployment.

Gippsland is expected to lead national growth in offshore wind generation. Modelling prepared by AEMO includes a scenario with offshore wind generation in Gippsland commencing in 2027 and increasing to 5.5GW by 2038.

Gippsland is also attracting growing investment interest in large scale solar, onshore wind, hydrogen and battery projects.

ENGAGEMENT

South Gippsland Shire Council and Latrobe City Council in conjunction with Regional Development Australia (RDA) engaged Urban Enterprise to complete a Renewable Energy Readiness Study (the Study) for the municipalities of South Gippsland and Latrobe City.

OBJECTIVES

The main driver of the project is a need to understand, and strategically plan for long term renewable energy investment in order to optimise economic benefits and mitigate any potential issues.

Of particular importance is the need to understand and plan for issues and spatial implications for urban land supply and supply chain requirements at the local Government level (business, labour and housing).

This Study provides the Councils with an economic and land use evidence base and action plan to guide renewable energy readiness over the next 10-20 years.

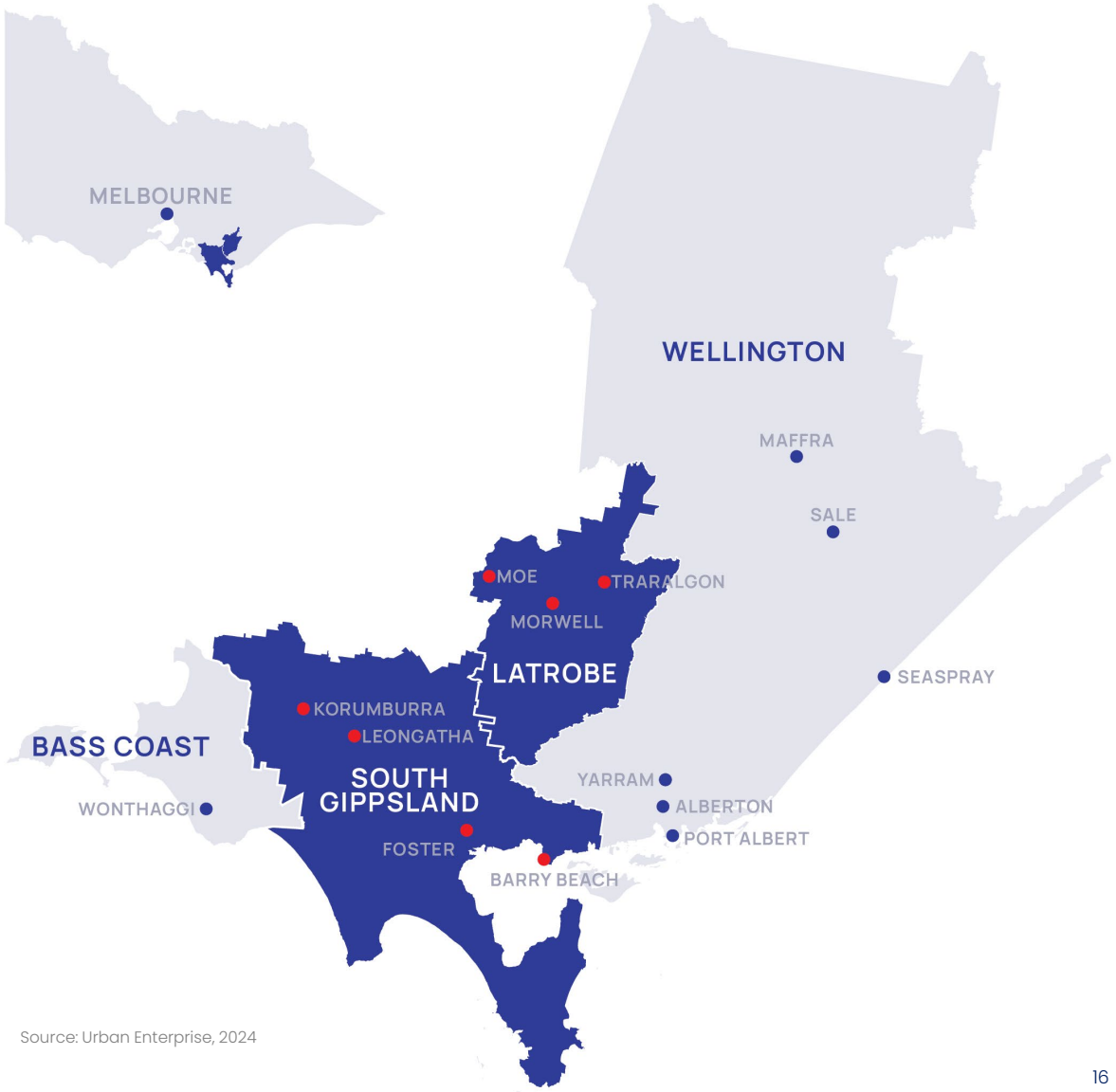
1. **Understand and document the nature, scale, timing and impacts of renewable projects**	**2.** **Understand the implications of projects in terms of supply chain, business and labour demand, housing and land supply**
3. **Analyse industrial and residential land demand and supply in areas that are expected to be most impacted by the projects**	**4.** **Identify economic and spatial opportunities and constraints expected to result from the projects**
5. **Identify actions and levers for Council to facilitate investment, maximise economic benefits, and minimise potential issues that may arise.**	

STUDY AREA

The study area includes South Gippsland and Latrobe City Local Government Areas, as shown in Figure 1.

The spatial distribution of renewable energy projects and the economic and supply-chain relationships across Gippsland means that the suite of projects will impact the whole region and beyond. As a result, neighbouring Local Government Areas in Gippsland are referenced throughout this study, including Wellington and Bass Coast.

Figure 1 Study Area



Source: Urban Enterprise, 2024

APPROACH & SCOPE

Purpose and Objectives

- Outline the purpose, objectives and parameters of the Study.
- Identify Council's main areas of influence.

Policy Context

- Outline the State and Federal policy context and priorities for renewable energy investment and transition.
- Review key Council documents to identify relevant objectives.

Current state & Outlook

- The current state and outlook for the renewable energy industry in Gippsland, Victoria and Australia

Consultation

- Consult with internal Council stakeholders, business and industry to discuss issues and opportunities for the Study.

Renewable Energy Projects

- Summarise renewable energy projects proposed in the region.
- Outline the development process, requirements and timing for a generic project, across key feasibility, construction and operation phases.

Readiness Considerations

- Identify the main readiness considerations and comment on the main areas of focus for Latrobe and South Gippsland

Economy, Jobs and Skills

- Profile the existing economic, business and labour force capability and capacity.
- Identify issues and opportunities for supply-chain integration.

Housing & Accommodation

- Assess indicators of housing demand and property market conditions.
- Discuss the capacity of housing and accommodation to meet the needs of workers in renewable energy.

Transmission & Ports

- Discuss considerations for port and transmission planning, particularly in relation to the opportunity for Port of Corner Inlet (Barry Beach Marine Terminal & Port Anthony).

Land Supply

- Assess industrial land supply availability, adequacy, issues and opportunities in Latrobe City
- Assess residential land supply availability, adequacy, issues and opportunities in South Gippsland Shire.

Action & Implementation

- Prepare an action plan for each council to address issues and considerations, and guide implementation.

It is important to note that a Renewable Energy Impact and Readiness Study was prepared by Urban Enterprise for Wellington Shire Council, and was adopted by Council in Feb 2023.
Relevant information, research and analysis from the Wellington Shire Study has been used to inform this Study where possible.

LIMITATIONS

The following limitations to this study should be taken into consideration:

- The ultimate number and sequencing of OSW wind farms in the Gippsland OSW zone are yet to be finalised. This will be subject to feasibility and granting of commercial licences.
- The ultimate port location(s) for Victoria's OSW construction hub is yet to be confirmed. Although Hastings is the likely preferred location. There are many environmental challenges to be resolved, and therefore other deepwater ports could perform a role.
- Many of the specific project requirements are difficult to define at this point. This is because key decisions regarding project licences and approvals, major infrastructure locations (especially transmission and ports) and the ultimate scale and location of proposals are yet to be finalised. In this context, the future impacts of the proposed projects in terms of timing and spatial implications are highly uncertain and should be regularly monitored by Council.

COUNCILS AREA OF INFLUENCE

Council's main opportunities to influence local 'readiness' relate to:

- Planning for the skills needed to provide labour for the construction and operation of projects;
- Ensuring there is adequate land supply to accommodate businesses and housing needed to support renewable projects; and
- Identifying and facilitating the delivery of key infrastructure required to directly and indirectly support projects.

Council can primarily influence readiness using the levers shown. In most instances, local governments cannot directly influence the way in which renewable energy projects are delivered and the benefits which accrue.

Indirect influence and readiness can be achieved, however, through the application of a multi-faceted approach involving **advocacy, partnership, planning, policy and engagement**.

Promotion & Advocacy

Local supply chain opportunities, skills and training priorities.

Coordination

Assist government and other agencies regarding funding, infrastructure and approvals.

Strategic Planning

Land use planning to ensure adequate availability and capacity to accommodate demand from industry, housing and services.

Engagement & communication

Business and community awareness and information.

PART A

CONTEXT

SECTION 2

STRATEGY & POLICY

INTRODUCTION

This section summarises the policy context relevant to the study, including federal, state and local priorities in regard to the renewable energy industry:

- The strategic and policy drivers that underpin energy transition;
- Victoria's Renewable Energy Zones; and
- The roadmap to "net zero" by 2050.

KEY FINDINGS

- Federal and State policy supports an urgent need to transition to renewable energy, including more investment in generation and legislating ambitious targets for emission reductions.
- Gippsland is one of six Renewable Energy Zones (REZ) in Victoria. Gippsland enjoys natural advantages such as wind and solar. Gippsland has existing economic capabilities in traditional energy production and infrastructure (transmission).
- The State Government acknowledges the need for offshore wind projects to generate the majority of Victoria's future energy needs. There is a clear focus for departments and agencies to facilitate the delivery of offshore wind projects.
- In November 2023, the Victorian Government introduced a Bill legislating offshore wind energy generation targets of at least 2GW by 2032, 4GW by 2035 and 9GW by 2040.
- Bass Strait waters off the Gippsland coast was declared as Australia's first offshore wind zone (Dec, 2022). Feasibility license applications were submitted in April 2023. As of February 2024, 6 applications are under preliminary consideration, but are yet to be finalised.
- Local policy supports continued investment in the renewables sector to support transition from old to new energy. Other priorities include:
    - Developing enabling infrastructure to facilitate investment and development;
    - Supporting education and training institutions to support a skilled workforce that is aligned with future needs; and
    - Addressing housing availability and affordability issues.

FEDERAL POLICY

The Federal Government is committed to addressing climate change through ambitious national targets on greenhouse gas emissions reduction, including legislating a 43% reduction on 2005 levels by 2030, and net zero emissions by 2050.

An updated Nationally Determined Contribution (NDC) has been lodged with the United Nations Framework Convention on Climate Change (UNFCCC) secretariat. This is part of Australia's obligations under the Paris Agreement. The updated NDC:

- Commits Australia to a more ambitious 2030 target;
- Reaffirms Australia's commitment to net zero emissions by 2050;
- Commits the government to providing an annual statement to parliament on progress towards these targets; and
- Restores Australia's Climate Change Authority as a source of independent policy advice.

Federal Government policies will build on existing emissions reduction programs, provide industry with a comprehensive and consistent policy framework and encourage households, businesses and communities to embrace opportunities to transition to net zero.

In December 2022, the Federal Government declared the Bass Strait waters off the Gippsland coast as the first offshore wind zone, providing greater certainty for offshore wind farm development. The Offshore Electricity Infrastructure (OEI) Act establishes a regulatory framework which allows licence holders to undertake offshore electricity infrastructure activities in Commonwealth offshore areas. Licences that may be granted under the OEI Act relate to feasibility, commercial, research and demonstration, and transmission and infrastructure activities.

Feasibility licence applications for OSW projects were submitted by proponents in April 2023.

In May 2024, 6 OSW projects were granted a feasibility licence. A further 6 projects are also under consideration and may receive a feasibility licence, but are subject to further consultation.

The Federal Government has legislated ambitious national targets on greenhouse gas emissions reduction, including legislating a 43% reduction on 2005 levels by 2030, and net zero emissions by 2050.

In May 2024, 6 OSW projects were granted a feasibility licence. A further 6 projects are also under consideration and may receive a feasibility licence, but are subject to further consultation.

STATE POLICY

Victoria's Climate Change Act (2017) aims to achieve net zero greenhouse gas emissions and a climate-resilient community and economy in order to mitigate and adapt to the impacts of climate change. The Victorian Government introduced the Victorian Renewable Energy Targets (VRET) to provide greater policy certainty and investor confidence for the renewable energy sector in Victoria.

Greenhouse Gas Emission reduction & Energy Storage Targets

Victoria's Climate Change Act 2017 establishes a long-term target of net-zero greenhouse gas emissions by 2050, with five-yearly interim emissions reduction targets. The Victorian Government's foundational target was for emissions in 2020 to be 15–20% below 2005 levels along with:

- 40% by 2025;
- 50% by 2030; and
- Net zero emissions by 2050.

The latest emissions data shows that this target has been exceeded. In 2019, emissions fell to 24.8% below 2005 levels.

In October 2022, the Victorian State Government announced more ambitious reduction commitments than those outlined in the Act. These include:

- 75%-80% below 2005 levels by 2035;
- Net zero by 2045.

The state government has also outlined energy storage targets for Victoria:

- at least 2.6 GW of energy storage capacity by 2030; and
- at least 6.3 GW by 2035.

Roadmap to Net Zero by 2050

Victoria's Climate Change Strategy (2021) provides a roadmap to net-zero emissions by 2050. To achieve emissions reduction targets, the State Government has outlined emissions reduction objectives for the energy sector.

This includes accelerating Victoria's transition to clean and efficient energy, with 50% of Victoria's electricity to be generated from renewable sources by 2030.

The transition away from brown coal-fired power is underway, with the closure of Anglesea Power Station in 2015 and Hazelwood Power Station in 2017.

Two out of the three coal fired power stations that remain operational in Gippsland are planned to close in the coming decades, including Yallourn in 2028 and Loy Yang A in 2035.

The decision to close Loy Yang A ten years earlier than planned was announced by Energy Australia in 2022. Alinta Energy owns Loy Yang B, which is proposed to close in 2047, but this could also be brought forward.

The VRET targets and Victoria's Climate Change Strategy objectives are drivers of investment into the renewable energy sector. This includes investment in energy production and transmission to ensure electricity is stable, reliable and cost-effective.

Victorian Renewable Energy Zones (REZ)

In order to meet future VRET targets, the State Government (in collaboration with the Australian Energy Market Operator) has identified six Victorian Renewable Energy Zones (REZs).

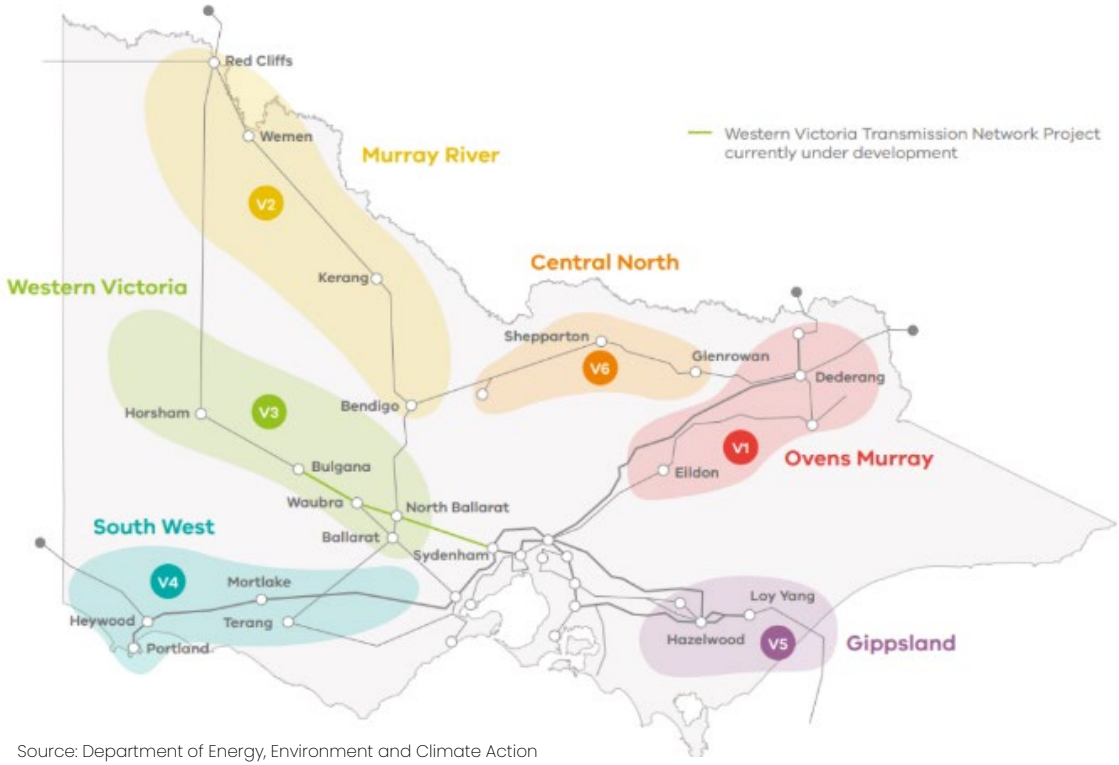
These zones are recognised as having the highest potential to provide clean and reliable energy through solar, wind and hydro resource. The Gippsland REZ is shown in Figure 2.

The Victorian Renewable Energy Zones Development Plan Directions Paper (2021) states that the development of REZs will allow new renewable energy projects to be connected in a timely manner, thereby reducing risk premiums for investors, contributing to energy affordability and reliability outcomes for consumers, and helping to achieve Victoria's climate change goals.

The State Government has also established VicGrid; a government agency dedicated to actively plan and develop Victoria's REZs, including:

- Planning and investing in REZ network infrastructure;
- Identifying and applying appropriate procurement, cost recovery and co-funding approaches;
- Facilitating renewable energy generation projects in Victorian REZs; and
- Working with communities to plan REZs and ensure local benefits from REZ development.

Figure 2 Renewable Energy Zones, Victoria



Source: Department of Energy, Environment and Climate Action

Offshore Wind Policy Directions Paper

The Victorian Offshore Wind Policy Directions Paper (March 2022) details how the development of an offshore wind industry will assist the State in achieving its emissions reduction targets.

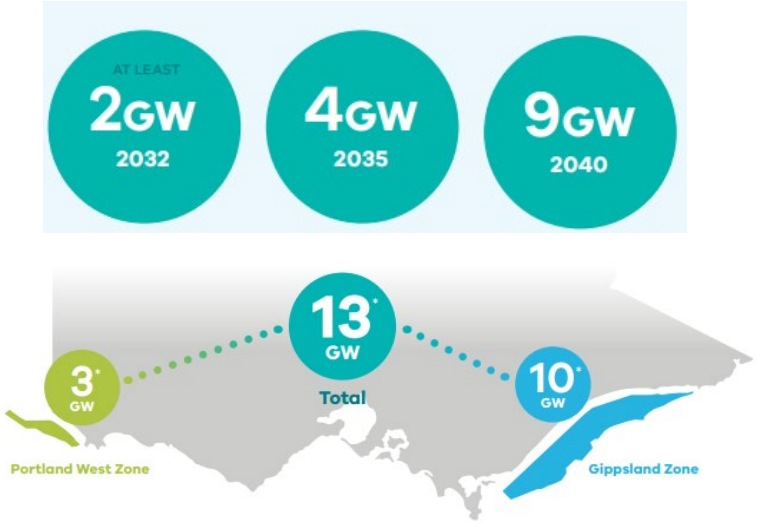
The Paper identifies that winds off Victoria's coastline are among the best not only in Australia, but on a global scale, with the potential for Gippsland and Portland regions to support 13GW of capacity using fixed platforms in shallow waters.

The Paper articulates an objective for Victoria to be the leader in the Australian offshore wind market, an industry that is developing rapidly internationally, and for which competition for investment is strong.

The state government's aim is to achieve first power from offshore wind by 2028, to provide sufficient time for Government and proponents to prepare for, and complete necessary development activities, such as:

- Planning and approvals;
- Procurement, supply chain and workforce development;
- Stakeholder impacts; and
- Enabling infrastructure such as ports and transmission.

Figure 3 Offshore Wind Targets, Victoria



Source: Victorian Offshore Wind Policy Directions Paper, March 2022

In 2023, the Victorian Government legislated Victoria's offshore wind energy generation targets:

- at least 2 gigawatts (GW) of offshore generation capacity by 2032
- 4 GW by 2035
- 9 GW by 2040.

Offshore Wind: Implementation Statement 1, 2 & 3

The Victorian Government's Offshore Wind Energy Implementation Statements support and guide industry and the community on the development of Victoria's offshore wind sector.

Implementation Statements 1, 2 and 3 have been released. The statements provide guidance on:

- Transmission
- Ports
- Offshore Wind Energy Victoria.
- Local industry
- Legislation and regulation.

Source: Victorian Offshore Wind Implementation Statement 3, 2023

LOCAL & REGIONAL POLICY

SOUTH GIPPSLAND

South Gippsland's local policy and strategy has a focus on positioning the municipality to capitalise on renewable energy opportunities while ensuring environmental impacts are immaterial and managed where possible.

The local planning scheme also seeks to:

> *"encourage major economic development opportunities associated with the use of deep-water port facilities at Barry Beach"* [1]

The Council Plan identifies the need to ensure land use planning and economic development are aligned to facilitate appropriate business investment. The plan also highlights a desire to strengthen economic resilience and encourage innovation to build the economy of the future.

The Economic Development Strategy identifies "energy" as one of the municipality's key economic industries, and highlights opportunities for hydrogen, wind, battery and bio-energy.

The strategy has a strong focus on ensuring South Gippsland can maximise the economic and social benefits captured locally from growth in new energy.

The strategy also highlights a need to balance growth in the energy sector against community expectations. Understanding the opportunities and implications from development of the new energy sector is identified as critical to future investment in the region.

Relevant objectives and strategic directions in local policy relate to investment attraction, developing enabling infrastructure, supporting industry to access skilled workers and building partnerships for a sustainable and resilient economic future.

A relevant objective of the EDS:

> *"engage with the energy sector, businesses and community to achieve positive outcomes from new energy developments."* [2]

LATROBE CITY

Local policy and strategy in Latrobe supports the development of renewable energy projects and associated supply-chain.

The local planning scheme seeks to encourage renewable energy industries in strategic locations whilst also fostering community prosperity from industry diversification.[3]

The Council Plan identifies a focus to continue the municipality's strengths in engineering, energy production and manufacturing excellence, and continue to build on the skills and capabilities in the region.

Local policy underscores the pivotal role of renewable energy for the future of the region and indicates a strategic focus should be placed on leveraging existing competitive advantages in energy generation. This includes advantages associated with a skilled workforce, logistics infrastructure, location and existing transmission infrastructure.[3]

Local policy also acknowledges a range of economic challenges for the municipality associated with renewable energy including managing the transition away from coal-fired power, housing availability, skill shortages, and regulatory complexities.[3]

Relevant recommendations within the local policy include a focus on investment attraction in renewable energy, infrastructure delivery to facilitate growth, supporting the existing business base and further development of education and training institutions to support a skilled workforce aligned with to economic needs.

> *"Attract investment in key industries including working towards net zero emissions energy generation"* [4]

1. South Gippsland Planning Scheme Clause 02.03-7, 2022
2. South Gippsland Economic Development Strategy 2021-31
3. Latrobe Planning Scheme Clause 02.03-7, 2021
4. Latrobe Environmental Scan, 2023

SECTION 3

RENEWABLE ENERGY: CURRENT STATE & OUTLOOK

INTRODUCTION

This section summarises the current state of play for the renewable energy sector in Australia, including energy generation, consumption and supply-chain maturity.

KEY FINDINGS

- Energy generated from renewable sources is increasing in Australia. In the past five years, the amount of Australia's electricity that comes from renewables has almost doubled. However, renewable energy still accounts for less than one-third of all generation.
- Recent growth in renewable energy investment and generation is mostly attributed to solar and onshore wind.
- Large-scale solar and offshore wind are recognised as the key growth areas to support future energy needs.
- Large scale renewable energy generation projects in development in Victoria generated $846 million capital expenditure and 662 jobs during 2023.
- Australia's supply-chain capability in renewables is relatively immature, with no manufacturing capabilities in large-scale solar or wind turbines (on or offshore).
- Policy support and increased project investment could create the critical mass required to attract global supply-chain investment interest.
- Australia has existing capabilities in the following renewable energy supply-chain activities:
    - Professional and technical services to support planning and pre-development;
    - Trades, technicians and machinery operators to support civil works, assembly and installation;
    - Parts and equipment manufacturing; and
    - Transport and logistics to support operations and maintenance.

ENERGY GENERATION & CONSUMPTION

In 2022, 32% of Australia's total electricity generation was produced by renewable energy sources, including solar (14%), wind (11%) and hydro (6%). The share of renewables in total electricity generation in 2022 was the highest on record.

Despite strong growth, renewable energy accounts for a very small proportion of national energy consumption. Fossil fuels accounted for 91% of Australia's primary energy consumption mix in 2021.

Australia is a substantial net exporter of energy, including coal and natural gas, with net exports equating to over two-thirds of production. Whilst the share of renewable energy generation is increasing relative to national demand, Australia remains a major net exporter of fossil fuel powered energy.

Figure 4 Energy Consumption by Fuel, Aus, 2022

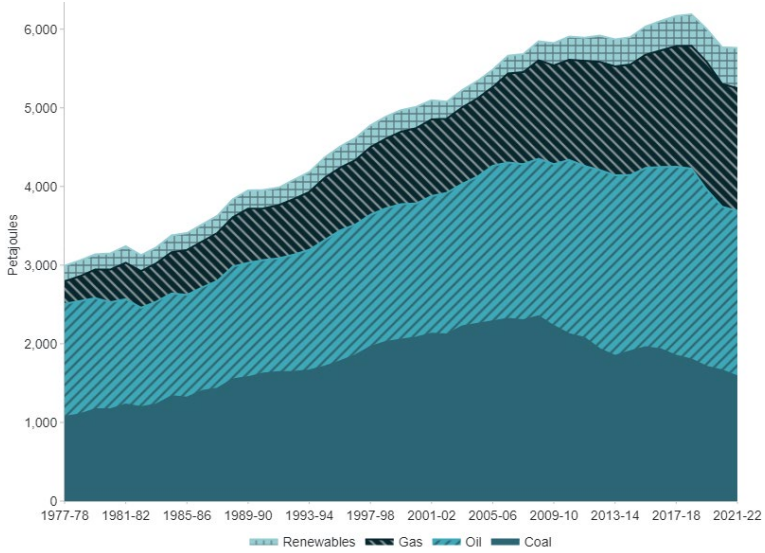


Figure 5 Renewable Energy Generation, Aus, 2022

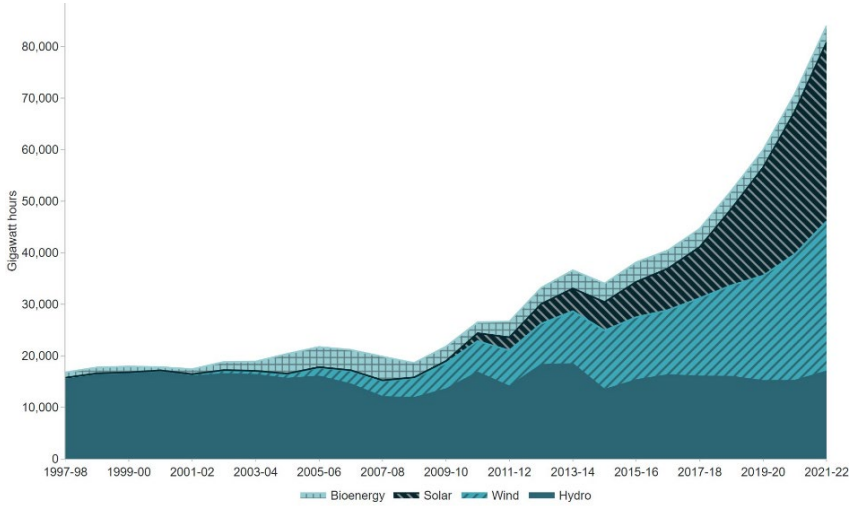
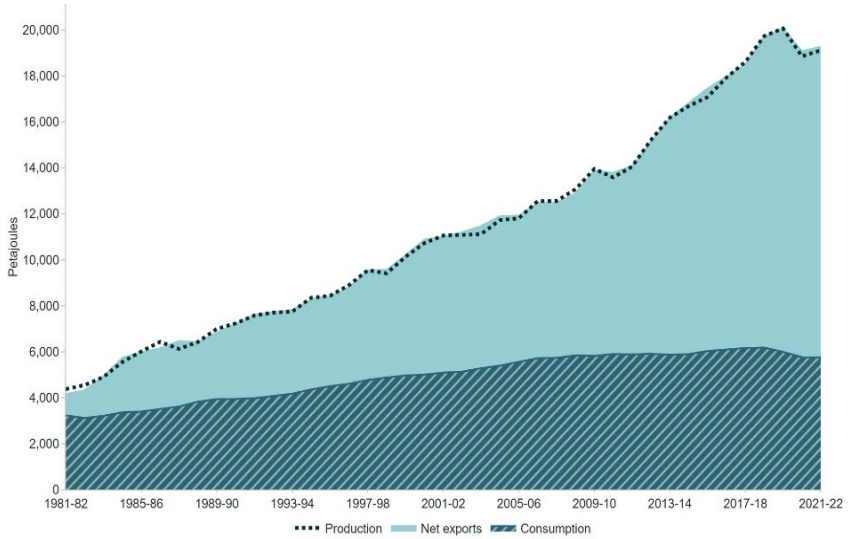


Figure 6 Energy net exports, Aus, 2022



Source: Department of Climate Change, Energy, the Environment and Water, 2021

RENEWABLE ENERGY INVESTMENT

National

In the past five years, the amount of Australia's electricity that comes from renewables has almost doubled. The growth of renewable energy in Australia in 2022 was led by :

- Small-scale solar - added 2.7 GW of new capacity during the year, slightly down on the previous year.
- Large-scale solar - added 2.3 GW of new capacity across 20 projects.
- Onshore wind - added 1.4 GW of new capacity; the highest ever recorded annually.

72 large-scale projects were under construction or financially committed at the end of 2022, representing more than 8.6 GW of new capacity. The 72 projects consisted of 48 solar farms, 21 wind farms and three bioenergy projects.

The battery storage sector is also gaining momentum, with 19 large-scale batteries under construction at the end of 2022. Construction also recently commenced on the Melbourne Renewable Energy Hub which will comprise a final capacity of 1.2 GW of battery storage.

Small and large scale solar (including rooftop solar) and onshore wind farms account for the majority of investment projects in Australia's renewable energy sector. Battery and hydrogen projects remain relatively immature by comparison.

Victorian Investment & Employment

Analysis prepared by the Victorian government shows that during the 2023 financial year, Victoria's renewable energy capacity increased by 1,783 MW. The capacity uplift was driven by large scale wind farms (1,193 MW), as well as rooftop solar (551 MW).

Large scale renewable energy generation and storage projects in development in Victoria generated $846 million capital expenditure and 662 jobs during 2023.

Table 1 shows the regional breakdown of investment and employment. The East region (which includes Gippsland and Ovens Murray) accounted for a small share projects in development, with a total capacity of 102 MW.

Table 1 Renewable energy capacity, investment & jobs, Victoria

	Capacity (MW)		Capex ($)		Jobs	
	Wind	Solar	Wind	Solar	Wind	Solar
Barwon (incl metro)	132	25	C	3	C	3
Central Highlands*	1,744	7	227	C	132	C
Central North*	0	95	0	74	0	120
East*	0	102	0	C	0	C
Great South Coast	611	0	411	0	298	0
North West*	209	47	C	26	C	48
Total	**2,696**	**276**	**653**	**192**	**458**	**204**

Source: VRET Progress Report 2022-23, Department of Energy, Environment and Climate Action. Note information sourced directly from project proponents and publicly available information from websites and media articles. C = not reported as results reflect single projects. Totals may not sum due to rounding.

* RDV regions: Central North includes Goulbourn and Loddon Campaspe East includes Gippsland and Ovens Murray, North West includes Mallee and Wimmera Southern Mallee

SUPPLY-CHAIN MATURITY

The transition to renewable energy production has led to the establishment of a major global network of businesses involved in designing, manufacturing, distributing, installing and maintaining all aspects of new energy infrastructure.

The renewable energy sector in Australia continues to grow and diversify with different sources of energy generation and storage investment, however domestic supply-chains vary in terms of maturity depending on the energy type.

Some renewable energy types, such as small and large scale solar and onshore wind, have domestic supply chains that are more advanced than other emerging energy types such as battery storage, hydrogen and offshore wind. Keppel Prince (located in Portland, Victoria) is the only Australian manufacturer of onshore wind turbine towers.

Danish company Vestas is the world leading global supplier of wind turbine components and has partnered with Keppel Prince on several onshore wind farm projects in Australia. Vestas established a Renewable Energy Hub (VREH) at the former Ford manufacturing site in Geelong in 2019 for the assembly of wind turbines.

The technology and supply-chain capability to support the offshore wind industry in Australia is in its infancy. There are currently no Australian manufacturers of wind turbine blades or nacelles. This circumstance presents both a limitation to the availability of local inputs to support development of offshore wind in Australia, as well as an opportunity to attract global businesses to the country if a critical mass of projects and uninterrupted demand for inputs can be established.

Whilst specialised component manufacturing is currently immature in Australia, there are existing capabilities that are more established further up and down the supply-chain, including professional and technical services, transport and logistics, assembly and installation, construction, operation and maintenance.

Analysis of UK's offshore wind sector found that a strong project pipeline was fundamental to supply-chain development for offshore wind in that region, but even with this pipeline, the domestic content of early projects was only around 32% (a target of 60% domestic content has since been set).

The case study identified that creating a coherent investment proposition will be the best way for government to build a healthy project pipeline, minimising the associated costs and maximising domestic benefits.

Consultation with renewable energy project proponents in Gippsland as part of the Wellington Shire study identified that access to local supplies and suppliers provides competitive benefits to the projects, but that the proportion of local content available can vary widely.

JOBS & SKILLS

Overall Renewable Energy

Renewable energy as a source of employment across Australia is projected to grow strongly in years to come.

UTS estimate that at least 25,000 people were employed across renewable energy supply chains in 2019 (almost 10,000 of which were in rooftop solar), and that by 2035, the renewable energy sector could employ as many as 46,000 people with around 75% of job opportunities expected to be distributed across regional and rural Australia.

The sector currently employs more people than the domestic coal sector. Renewable energy can play a meaningful role in transition for coal regions such as the Latrobe Valley – but a comprehensive transition plan for industry diversification, renewable planning, and investment is needed to realise these opportunities for the current coal workforce.

Whilst construction and installation jobs are the most prevalent in the renewable energy labour market at present (75%), by 2035 as many as half of renewable energy jobs could be ongoing jobs in operation and maintenance. Renewable energy will continue to create employment for a diverse range of occupations.

The leading jobs types are expected to be trades and technicians, labourers and professionals. Around one-in-five renewable energy workers is an electrician or electrical trade assistant. Other major types of workers include roofers and installers (rooftop solar), concreters and construction labourers, drivers, mechanical trades, engineers and a range of skilled professionals and managers.

25,000

People employed in renewable energy supply chain in **2019**

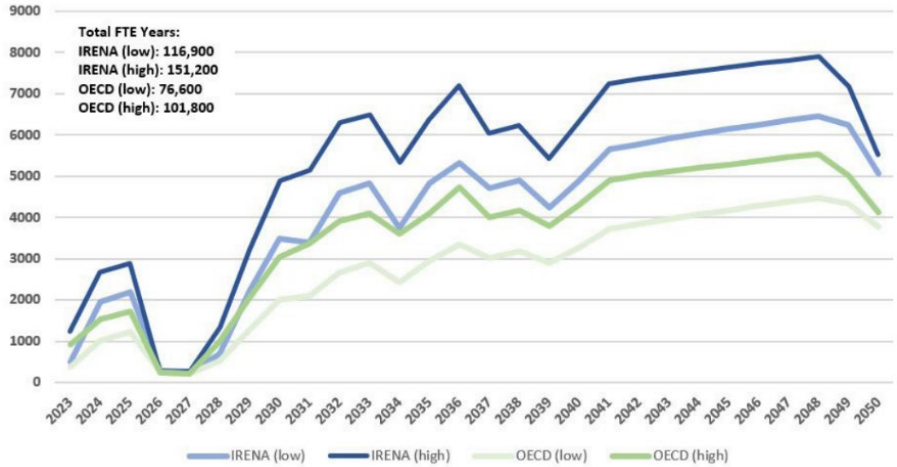
46,000

People projected to be employed in renewable energy supply chain in **2035**

OFFSHORE WIND

Employment in offshore wind is projected to increase strongly in Australia over the next 25 years. Scenarios prepared by Blue Economy indicate that offshore wind employment is expected to peak at between 4,000 and 8,000 jobs (FTE per annum) in the late 2040s.

Figure 10 Projected employment in OSW, Australia



Source: Blue Economy, 2021. Scenarios relate to build out of 27GW from 2025 to 2050 and 10-25% local employment.

Literature consistently references opportunities to adapt skills related to traditional resource activities to apply to the technical requirements and activities of renewable energy projects. There is a particularly complementary relationship between the skills needed for offshore oil and gas activity and offshore wind.

Development of a capable local workforce will be an ongoing challenge for Australia and Gippsland in particular, and will require several industry pathways to be established.

"International experience... has found the main pathways into offshore wind are from other technically related sectors (such as offshore industries and the energy sector), new entrant apprentices and graduates and the workforce with skills that cut across sectors (e.g. business / commercial, IT and data analytics, drone and underwater ROV operators, etc). Consequently, the development of offshore wind energy could be an important source of alternative employment for the offshore oil and gas workforce and potentially onshore workers in fossil fuels industries."

(Blue Economy, p.10)

ENERGY TRANSITION IN GIPPSLAND

In Gippsland, renewable energy opportunities are emerging in the context of a region which generates the majority of Victoria's electricity and gas. Gippsland produces approximately 85% of Victoria's electricity, 97% of Victoria's natural gas and 26% of Australia's oil.

Extraction, production and processing activities create substantial local employment and supply chain benefits prominent in the Latrobe Valley and Sale.

The recent and planned closures of major coal-fired power stations in the Latrobe Valley are accelerating the need for energy transition in the region and associated supply-chain and employment repositioning:

- Hazelwood Power Station closed in 2017;
- Yallourn Power Station is planned to close in 2028;
- Loy Yang A Power Station is planned to close in 2035; and
- Loy Yang B Power Station is planned to close in 2047.

The three planned closures will reduce generation by 4.7GW. Policy changes, community views and price volatility are among the many uncertainties and challenges faced by existing coal-fired generators and driving earlier closures.

AEMO forecasts faster withdrawals than the current announced dates. Under the 'Step Change' Scenario, all Australian coal capacity would cease by 2040 and Victorian coal would cease by 2032. In any case, Victoria's transition away from coal fired power is ongoing and the exact timeframe for ceasing production is unknown.

Overall gas production is projected to decline in the long term as renewable energy replaces non-renewable incumbents. Esso Australia is progressively decommissioning its older oil and gas facilities in Bass Strait, while concurrently investigating opportunities for carbon capture and CO2 extraction.

The existing transmission infrastructure, business base and skilled workforce presents an opportunity for renewable energy projects to be established in the region, however the condensed timeframes within which the transition must occur will present challenges for businesses, workers, developers and governments.

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SECTION 4

RENEWABLE ENERGY PROJECTS, GIPPSLAND

INTRODUCTION

This section provides an overview of the renewable energy projects currently proposed in, or proximate to the municipalities of South Gippsland, Latrobe and Wellington.

Project information and data was primarily sourced from direct consultation with proponents (for the Wellington Shire Study) and supplemented through publicly available information.

It is important to note that the content of this section is based on 'point-in-time' information available in 2024, and that projects are being announced and changed on a regular basis.

Most projects identified are in the early feasibility and planning stages, meaning that specific details about locations, employment requirements and timeframes are highly indicative. This information should therefore be used as a guide only, and is subject to change.

KEY FINDINGS

- There are a diverse range of project types proposed in Gippsland, and include:
    - 6-12* offshore wind farms;
    - 3 onshore wind farms;
    - 10 solar farms;
    - 5 battery projects; and
    - 3 hydrogen projects.
- OSW projects proposed off the coast of Gippsland have a cumulative construction period that extends to beyond 2040. Construction job estimates vary. However, OSW projects are estimated to require more than 8,000 construction workers (in aggregate).
- The timing of construction of OSW projects will depend on the issue of feasibility licenses, sequencing and completion of various approvals processes, the availability of labour and materials, the ultimate location and role of ports, and the timeframe within which offshore wind energy production becomes commercially competitive in Victoria.
- Offshore wind projects are expected to be sequenced, however any overlap will create 'pinch points' for worker demand, housing, infrastructure and services.
- Onshore and solar farm renewable projects are dispersed across the region. Any potential overlap in project timing will increase competition for local labour.

*Total number yet to be finalised (subject to feasibility and granting of commercial licenses).

PROJECT PIPELINE

There are a diverse range of project types proposed in Gippsland, including onshore wind, offshore wind, solar, battery and hydrogen.

The proposed projects include:

- Offshore wind farms (6-12*);
- 2 onshore wind farms;
- 10 solar farms; and
- 5 battery projects; and
- 3 hydrogen projects.

If all projects were to be delivered as planned, more than 15 GW^ of energy could be generated, which is more than triple the current non-renewable generation in the region.

The cumulative investment and job impacts are significant. The cumulative construction phase (for all renewable energy projects) is expected to extend to as far as 2040.

*Total number yet to be finalised (subject to feasibility and granting of commercial licenses).
^excludes 6 additional OSW projects under consideration but currently do not have a feasibility licence.

Offshore wind farms (6-12*)

Onshore wind farms (3)

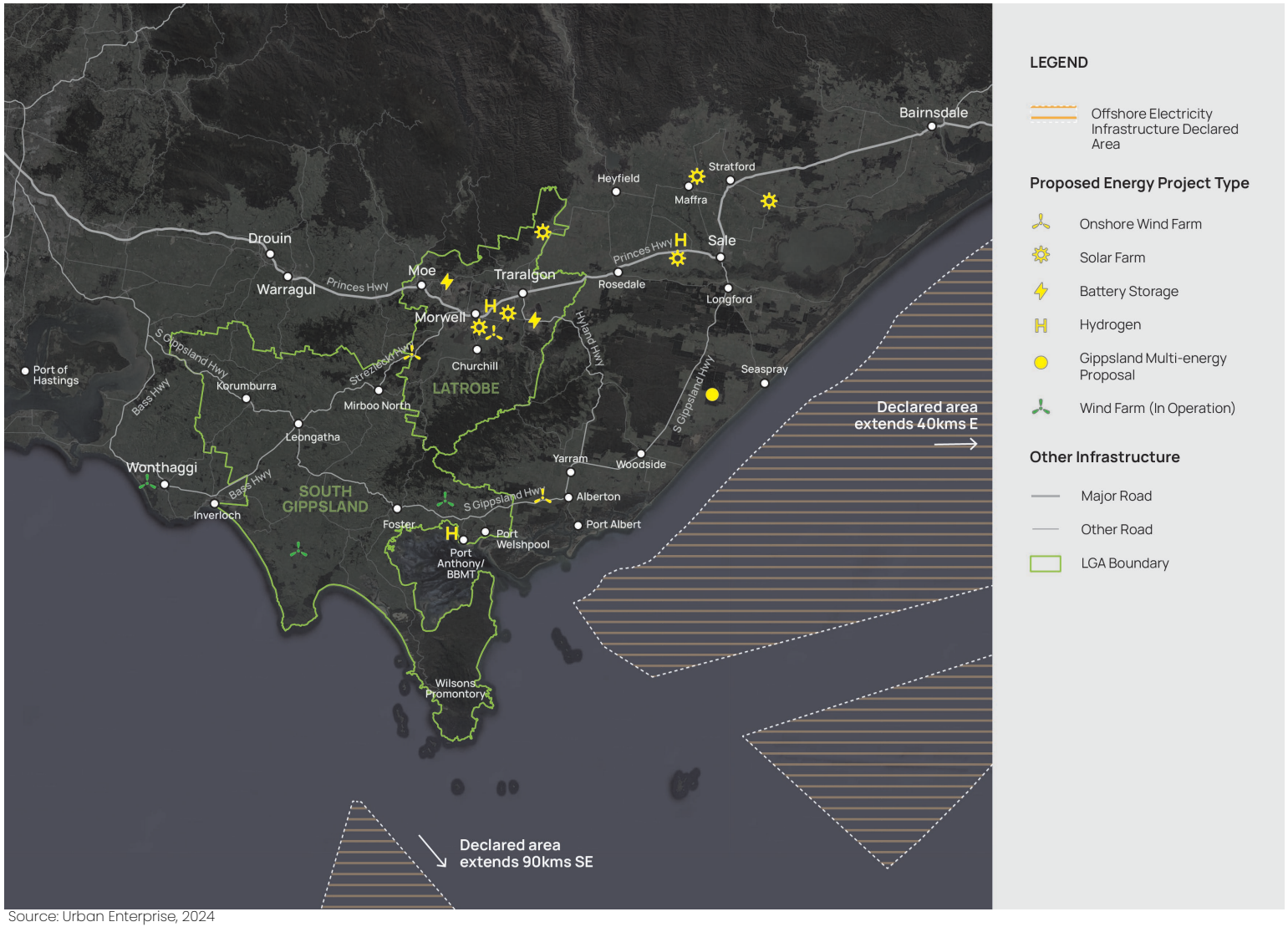
Solar farms (10)

Battery storage (5)

Hydrogen (3)

PROJECT LOCATIONS

Figure 11 Renewable energy projects, Gippsland



Source: Urban Enterprise, 2024

OFFSHORE WIND

Power from offshore wind is generated from turbines at sea, with energy transported through a series of cables and substations to onshore connection points. Offshore wind is a powerful renewable energy source due to stronger and more consistent winds off the coast compared with onshore, and the ability to generate power at different times of the day. This helps create a more reliable and secure source of energy.

Offshore wind farms are typically larger and generate more energy than other forms of renewables and require a significant level of investment, infrastructure and labour, as well as connections to transmission lines onshore.

This industry is in its infancy in Australia, with many of the technical components (i.e. turbines) and skilled jobs imported from overseas. The ongoing operation and maintenance of offshore wind farms requires a combination of 'remote' activities (onshore) and 'on site' activities (offshore).

The shallow waters off the southern coast of Gippsland was formally declared by the Federal Government as the first zone for offshore wind generation in December 2022. Offshore wind developers were invited to apply for a feasibility licence within the declared area.

Applications were received in April, 2023. It is understood that 37 applications were received.

Of the 37 feasibility licence applications received:

- 6 projects have been granted a feasibility licence (May 2024), and can progress project feasibility.
- 6 more projects are under preliminary consideration and may received a feasibility license subject to consultation.

It is noted that the timing of construction of offshore wind projects will depend on the outcomes of feasibility, the issue of commercial licences, the sequencing and completion of various approvals processes, the availability of labour and materials, the ultimate location and role of ports, and the timeframe within which offshore wind energy production becomes commercially competitive in Victoria.

Given these variables, the commencement dates, sequencing and duration of construction phases is uncertain at this point.

OFFSHORE WIND

As previously mentioned, 6 OSW projects have been granted a feasibility licence. These include:

- Star of the South (2.2 GW);
- Gippsland Skies (2.5 GW);
- Orsted 1 (2.8 GW);
- Kut-Wut Brataualung (2 GW);
- Blue Mackerel North (1 GW); and
- High Sea Wind Project North (1.28 GW).

A further 6 OSW projects are under consideration and may also receive a feasibility licence, but is subject to consultation and other considerations. These projects include:

- Iberdrola (up to 3 GW);
- Great Eastern Offshore Wind (2.5 GW);
- Navigator North (1.5 GW);
- Orsted 2 (2 GW);
- Gippsland Dawn (2.1 GW);
- Kent Offshore*; and

* Ultimate capacity to be confirmed (subject to feasibility and granting of commercial licenses))

Energy generation, Cost and Jobs

- 6 OSW projects have received a feasibility licence, with a further 6 projects that may receive a license subject to further consultation.
- Victoria's OSW targets indicate that at least one 2GW project will need to be operational by 2032, another 2GW by 2035, and a further three 1.5-2GW projects by 2040.
- If all 12 projects are ultimately delivered, this could generate up to 25 GW of energy.
- Approximate cost of $7 billion per project (1.5-2.5GW in 2024 dollars)
- For a 1.5-2.5GW OSW project, an estimated 1,500-2,000 jobs would be required during the construction phase. The location of job roles would likely be split between a catchment area around construction port(s), the operations and maintenance port and off-site.
- OSW proponent Star of the South expect to require 760 jobs sourced from within Gippsland during the construction phase, and 200 jobs at the Gippsland O&M port.

ONSHORE WIND

Onshore wind farms are typically located across regional and rural areas. Onshore wind is a more mature form of renewable energy in Australia, with over 100 wind farms operational across the country (including 3 in the Gippsland region).

Onshore wind power is currently the cheapest source of renewable energy, and is Australia's leading source of clean energy, supplying approximately 36% of the country's clean energy and 9.9% of Australia's overall electricity.

Energy generation, Cost and Jobs

- 3 projects are already operational, and a further 2 are proposed (1 approved and 1 under assessment).
- Proposed projects will deliver around 300 MW of energy generation.
- Cumulative construction investment of $700 million, and up to 250 workers required during construction phases.

Table 2 Onshore wind project pipeline, December, 2023

Project	Location	Capacity (MW)	Status
Wonthaggi Wind Farm	3km west of Wonthaggi	12	Operational
Bald Hills Wind Farm	12km south west of Fish Creek	107	Operational
Toora Wind Farm	2km north east of Toora	21	Operational
Delburn Wind Farm	10km south west of Morwell	200	Approved
Gelliondale Wind Farm	7km south-west of Yarram	100	Permit Under Consideration
Total		**440**	

Source: Renewable energy projects, Department of Transport and Planning, Dec 2023

SOLAR FARMS

Large scale solar typically uses solar photovoltaic (PV) technology to generate electricity from fields of solar PV panels.

The solar panels convert the energy from sunlight into direct current electricity, then inverters convert the power into alternating current that can be integrated into the electricity grid.

Table 3 Solar farm project pipeline, December, 2023

Project	Location	Capacity (MW)	Status
Fraser Solar Farm	2km south of Toongabbie	77	Under Construction
Seaspray Solar Farm	10 km east of Stradbroke	5	Approved
Fulham Solar Farm	3km south of Fulham	80	Approved
Longford Solar Farm	15km west of Longford	5	Approved
Maffra Solar Farm	2km north of Maffra	37	Approved
Perry Bridge Solar Farm	15km west of Perry Bridge	50	Approved
Shady Creek Solar Farm	20km north of Trafalgar	60	Permit Under Consideration
Hazelwood North Solar Farm	2km east of Hazelwood North	450	Permit Under Consideration
Maffra - Briagolong Solar Farm	5km north of Maffra	5	Permit Under Consideration
Bairnsdale Solar Farm	10km east of Bairnsdale	50	Permit Under Consideration
Total		**819**	

Source: Renewable energy projects, Department of Transport and Planning, Dec 2023

Energy generation, Cost and Jobs

- 10 solar farms in the project pipeline, with a combined capacity of more than 800 MW.
- 5 projects are approved and 4 have issued permit applications.
- The proposed Hazelwood North Solar Farm accounts for more than half of the pipeline energy generation capacity.
- Cumulative construction investment of more than $1 billion, with a requirements for 1,200 workers.

BATTERY

Batteries store and release electricity on-demand. These projects are typically co-located with other renewable energy projects (such as solar or wind) to help maintain a reliable energy supply, as electricity generated from renewable projects can be stored within the battery during times of low demand and released at times of high demand.

Batteries provide flexible distribution of electricity and help maintain grid stability. Several battery storage projects are proposed in Gippsland at present.

HYDROGEN

Hydrogen produced with renewable energy (i.e. wind, solar) is an emerging technology and can produce an emissions-free energy source. Australia is recognised as "a potential hydrogen production powerhouse."

There are currently 103 hydrogen projects in Australia, valued at over $160 billion, with potential to grow this industry across the Gippsland region, leverage existing renewable projects and create export opportunities.

Hydrogen can also be used as an alternative for many domestic uses, including a fuel source (e.g. hydrogen fuel cell vehicles), cooking and heating.

Table 4 Battery & Hydrogen project pipeline, December, 2023

Battery	**Location**	**Capacity (MW)**	**Status**
Latrobe Valley BESS	5km south east of Morwell	200	Approved
Wooreen BESS	6km south east of Morwell	350	Approved
Loy Yang A BESS	Loy Yang	200	Approved
Longwarry BESS	Longwarry	5	Approved
Bennetts Creek BESS	5km south east of Morwell	100	Permit Under Consideration
Total		**860**	
Other	**Location**	**Capacity (MW)**	**Status**
Bass Strait Renewables (hydrogen production)	Agnes, Corner Inlet	Up to 60 tonnes (per day)	Proposed
H2X hydrogen vehicle manufacturing	Fulham, west of Sale		Proposed
Gippsland Energy Park (solar, hydrogen, wind)	Giffard West		Proposed
Hydrogen Energy Supply Chain (HESC)	Latrobe Valley		Pilot Completed

Source: Renewable energy projects, Department of Transport and Planning, Dec 2023

SCALE, TIMING & SPATIAL FACTORS

Understanding the indicative scale, timing and location of projects will help to appropriately plan for periods of high demand and potential 'pinch points' for labour, housing, accommodation and infrastructure.

Offshore wind projects proposed off the coast of Gippsland have a cumulative construction period that extends to 2040, and will require more than 8,000 construction workers.

Offshore wind projects are spatially proximate to Gippsland's coast, but jobs and skills will be drawn from a regional, state, national and international catchment.

Offshore wind projects are expected to be sequenced, however any potential overlap will create 'pinch points' for worker demand, housing, infrastructure and services.

Onshore renewable projects are dispersed across the region, and have lesser requirements for labour during the construction phase. However, an overlap in timing will increase competition for local labour.

SECTION 5

READINESS CONSIDERATIONS

INTRODUCTION

This section discusses the various needs to construct, operate and maintain the pipeline of renewable energy projects.

Renewable energy project needs should have regard to the following objectives:

- Facilitating the successful delivery of projects;
- Optimising economic benefits that flow to the local economy; and
- Mitigating adverse implications where possible.

For the purpose of this Study, readiness needs and considerations are categorised into four key themes.

1. Business supply-chain;
2. Jobs and skills;
3. Housing and accommodation; and
4. Infrastructure (ports, roads, etc).

Business Supply Chain

Jobs, Skills & Workforce

Housing & Accommodation

Infrastructure

BUSINESS SUPPLY-CHAIN

A general overview of the key development phases of a generic renewable energy project is shown in Table 5.

Projects draw on the provision of a range of technical services, primary resources, manufactured components, equipment and services over the four main phases shown.

Table 5 Key project phases and supply-chain requirements

PHASE	OVERVIEW	SUPPLY-CHAIN NEEDS
1. FEASIBILITY / DEVELOPMENT	Feasibility analysis, site investigations and concept design, due diligence, technical studies and planning approvals.	Project management, financial and legal services., engineering and surveying, planning and environmental, stakeholder engagement.
2. CONSTRUCTION	Engineering, procurement, construction and installation.	Specialised manufacturing, installation services, general construction, trade and labourers, marine transport and logistics.
3. OPERATION	Operation, maintenance and servicing.	Technicians, coordinators, management, environmental, consenting and planning, technical survey contractors, machinery operators, engineers and surveyors, project management, coordination and administration, marine transport and logistics – crew and freight vessels.
4. DECOMMISSIONING	Removal of infrastructure, remediation and repair.	Planning and environmental consenting, environmental and technical survey contractors, project control, finance, legal and accounting. Deinstallation services, general construction, trade and labourers, marine transport and logistics, waste services.

Source: Urban Enterprise, based on literature and consultation with proponents.

Role of Local and Regional Suppliers

To effectively facilitate and deliver the proposed pipeline of renewable energy projects, suppliers will be sourced from global, national, regional and local networks.

Given the relative supply-chain immaturity in Australia, specialised components are expected to be manufactured overseas and transported via heavy vessels to a construction port in Australia; where the components will be handled and assembled prior to being floated to the offshore location for installation into fixed foundations.

The extent to which local suppliers can be utilised will depend on the location, expertise, cost and capacity of local businesses to deliver the necessary inputs and services. Proponents indicated that local content will be used wherever possible to optimise local economic benefits and reduce costs, but that specialised components and services will need to be procured from national and global networks.

In general, the proportion of local content utilised is expected to increase as projects progress through the development phases, with low local content in the manufacturing stages and relatively high local supplier utilisation during operations and maintenance.

The nature and location of supply chain needs and opportunities in South Gippsland and Latrobe will depend on future decisions regarding key aspects of offshore wind and other projects, especially the location of key construction and operations ports, and the critical mass of projects that can be established in the region such that overseas businesses are attracted to Australia and Gippsland.

The International Renewable Energy Agency (IRENA) estimates that 35% of offshore wind labour requirements relate to segments of the value chain that are easier to localise, including the installation and grid connection and operations and maintenance phases. While manufacturing opportunities should not be ignored, suppliers involved in these less specialised phases should be a priority for Council to support and develop.

Table 6 local and regional supply chain opportunities

	Manufacture and installation of less specialised components, such as cables, foundations, transmission and sub-stations.
	General construction services and materials, including concrete, earthworks and electrical, civil and metal trades.
	Equipment and machinery, such as fencing, vehicles and servicing
	Marine vessels, logistics and servicing.

Based on the literature reviewed, the following three main types of opportunities exist to maximise supply chain efficiencies and benefits in Latrobe and South Gippsland:

1. Building the capacity of existing local businesses to provide the supplies and services required by renewable energy projects;
2. Attracting global component manufacturing businesses to the region in response to the critical mass of demand; and
3. Capitalising on existing expertise of businesses servicing the offshore oil and gas industry in Bass Strait.

The associated implications of these needs and opportunities are:

- The need for existing businesses to be able to adapt, attract labour and expand (including suitable premises and land);
- The need for strategic industrial land locations to be available for prospective businesses seeking a South Gippsland/Latrobe location; and
- The likelihood of substantial indirect demand for other local supplies and services during construction phases, such as retail and hospitality, housing and community services.

SUMMARY OF SUPPLY CHAIN NEEDS

- A global supply chain, particularly to design, manufacture and import specialised components.
- A local and regional supply-chain to support construction and operational activities, including general construction, labour and trades, parts manufacturing, transport, logistics and professional services.
- A diversity of business capabilities to support discrete project construction and operational needs.
- Indirect supply-chain needs to support workforce, including retail, hospitality, accommodation, health and education.
- Adequate, suitable and well-located zoned industrial land to leverage investment in renewable energy projects, including:
    - Strategic and 'opportunistic' business investment; and
    - Investment from existing businesses seeking to re-locate or expand to leverage cumulative investment.

JOBS & SKILLS

The renewable energy projects proposed in the Gippsland region will generate substantial demand for labour during both the construction and operation phases.

The Gippsland Energy Skills Mapping Report (2022) estimates that over 8,000 development and construction jobs and 1,500 ongoing operations jobs could be created in the Gippsland energy sector (2022-32) based on current projects in the development pipeline.

The labour attraction task will be substantial. Blue Energy notes that a major UK study of offshore wind found there were three main pathways into the industry:

- Movers from other technically related industries (offshore and energy);
- Apprenticeships and graduates; and
- Movers with cross-sector skills (e.g. business, IT, data analytics, etc).

Although the focus on 'movement' from other sectors is positive in terms of utilising the substantial workforce involved in the retiring non-renewable energy sector in Gippsland, the increase in labour demand and movement from other ongoing industries will clearly have implications for parts of Gippsland's economy.

Table 7 Gippsland jobs in new energy, 2022-32

Project type	Construction (FTE)	Ongoing (FTE)
Solar	4,100	80
Wind	2,500	550
Batteries	130	6
Hydrogen	490	540
High Voltage Direct Current (HVDC) systems	250	50
GREZ Transmission project	740	330
Total	**~8,200**	**~1,550**

Source: Gippsland Energy Skills Mapping Report, 2022

The proposed pipeline of projects will require different job roles and specific skill requirements during each phase of the development lifecycle. The job and skill requirements for a generic offshore wind farm project are summarised in Table 8.

The spatial area across which employment will be needed is difficult to define at this point, however the following characteristics are known:

- Proximity to ports will be a key spatial driver during construction and operational phases. There will be a need for workers at different on and offshore locations for roles relating to transport and logistics, assembly and technical installation.
- As the preferred construction hub location, Port of Hastings will be a key attractor for labour (as will Port of Corner Inlet if it is ultimately an operations and maintenance hub).
- During the operational phase of the project, jobs are anticipated to be a mix of operational and maintenance roles that would largely be required on, or proximate to the subject site and main port. Some of the professional service roles could be undertaken remotely (i.e. off-site).
- There is a general aspiration to primarily source labour from the region, however it is accepted that due to skills and labour force limitations some labour will need to be sourced from the national and global catchment.

Table 8 Summary of jobs role requirements, generic offshore wind farm

PHASE	JOB ROLES AND SKILLS
1. FEASIBILITY / DEVELOPMENT	Engineers, environmental and consenting professionals, stakeholder engagement, offshore/onshore surveyors, planners and managers in professional roles, along with contractors.
2. CONSTRUCTION	Trades and technicians (e.g. electricians, wind farm technicians), machine operators, drivers, transport and logistics (vessel operators). Environmental and consenting professionals, stakeholder engagement, offshore and onshore surveyors (various disciplines) and managers in professional roles, along with contractors.
3. OPERATIONAL	Engineers, managers, technicians (electrical and mechanical), machine operators, drivers, transport and logistics (vessel operators), coordinators and supervisors.
4. DECOMMISSIONING	Deinstallation services, general construction, trade and labourers, marine transport and logistics, remediation and repair.

Source: Urban Enterprise 2024, derived from consultation with proponents / Offshore Wind Jobs Guide, Star of the South 2023

Proponents indicated a general aspiration to source labour from within Gippsland (especially Wellington, Latrobe City and South Gippsland), however it is accepted that due to skills and labour force limitations some labour will need to be temporarily imported.

As the preferred construction port, Port of Hastings will be a key attractor for labour (as will Port of Corner Inlet if it is ultimately an operations and maintenance hub). This outcome is anticipated in the Victorian Government's Offshore Wind Implementation Statements and Policy Directions Paper, as depicted in Figure 12.

Consultation with Bass Coast Shire Council regarding the experience of labour demand during construction of the Victorian Desalination Plant in Wonthaggi revealed that competition for local trades increased substantially. This re-directed business activity from other local projects, which suffered as a result.

Figure 12 Catchments and labour mobility to offshore wind hubs

Source: Victorian Government Offshore Wind Implementation Statement 1, 2022.

In the case of the Desalination Plant in Wonthaggi, the project required approximately 10,500 workers over a three year construction period, with a peak of 4,500 workers. Competition for local trades increased substantially during this time, and re-directed business activity away from local projects to serve the Desalination Plant. Local construction projects suffered as a result, including supply-chain delays and escalated costs.

Workforce Transition to Renewables

The potential transition of workers from non-renewable to renewable energy is an opportunity that is widely acknowledged, but the extent to which it can be realised remains uncertain.

Given the scale of workers and diversity of skills required, there will be a need for workers employed in 'sunset' industries with transferrable skills to transition to the renewable energy sector.

IRENA notes that *"as the offshore wind energy sector grows, it offers greater opportunities for individuals and businesses from the offshore oil and gas sector in different segments of the offshore wind value chain",* including project planning, manufacturing, installation and grid connection and operation and maintenance.

The Gippsland Energy Skills Mapping Report (2022) notes that there is no direct occupational match for the core mining workforce, which consists of drillers, miners, and shot firers, or for the mechanical trades.

The following considerations relating to workforce transition are drawn from relevant research:

- Existing workers in non-renewable energy production generally acknowledge that a potential 'pivot' to the renewable energy sector is an opportunity, but it is too early to make a decision.
- For workforce transition to be a realistic prospect, there needs to be clarity and certainty on the nature of employment (description of role), conditions (tenure and salary) and the extent of training/certification that will be required.
- A proportion of workers see their future in non-renewable energy sectors, and expect their employment to continue elsewhere in the region, or will seek employment in other parts of Australia where these sectors will endure for a longer period.
- A proportion of workers intend to, or will consider retirement, indicating a diminishing pool of labour employed in traditional energy sectors.

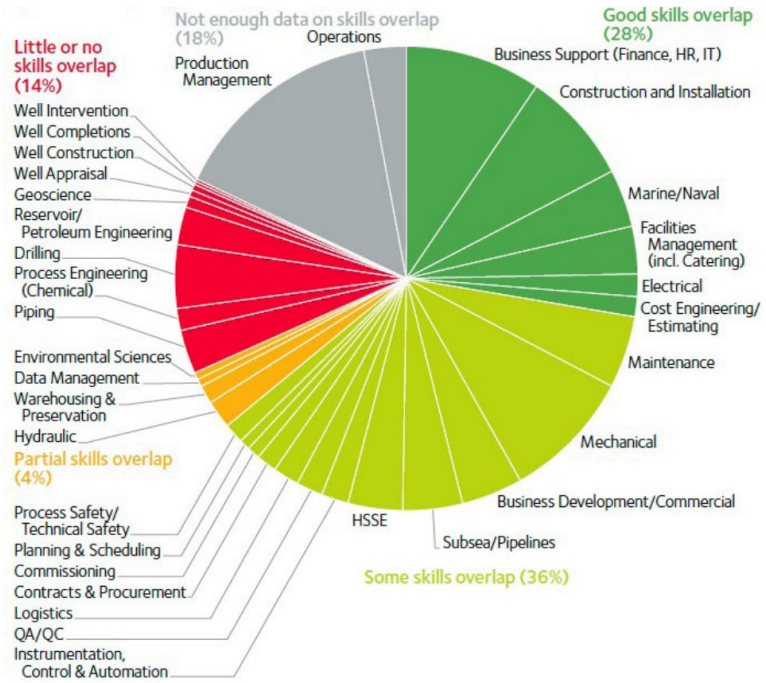
Skills Overlap with Oil & Gas

There are many similarities between the skills needed to support offshore oil and gas extraction and offshore wind energy production.

Figure 13 shows the extent to which the respective sector occupation requirements overlap, indicating that almost two thirds of skills required for oil and gas overlap with those required for offshore wind (64% have either "good" overlap or "some" overlap).

This is a key consideration for Gippsland given the well-established and mature offshore oil and gas sector in Bass Strait off the South Gippsland and Wellington coast.

Figure 13 Occupation match: offshore oil & gas / offshore wind



Source: Friends of the Earth; Global Witness and Greener Jobs Alliance, 2019; Blue Energy.

Almost two thirds of skills required for oil and gas overlap with those required for offshore wind (64% have either "good" overlap or "some" overlap).

Education & Training Pathways

The Gippsland Energy Skills Mapping Report (2022) prepared by Federation University in conjunction with the Latrobe Valley Authority (LVA) and TAFE Gippsland notes the following in relation to the current education and training offering:

"Seven universities in Australia currently offer renewable energy programs. From these, three universities in Victoria provide undergraduate programs specialising in advanced renewable engineering. The undergraduate programs are mostly at basic and intermediate levels, covering aspects of electrical, sustainable, electronics, and communication fields of study. Despite postsecondary education related to clean energy and industry engagement in developing these programs, skill shortages exist and are expected to worsen.

There are over 250 units available in the vocational education and training (VET) sector, covering electrical engineering and renewable energy specialisations across Victoria. However, there are still some new programs and course development opportunities, especially in hydrogen technology, smart grids and battery development."

To meet the construction and operational labour requirements for regional renewable projects, several areas of focus for growth in jobs and participation will be important for readiness:

- Employment pathways for different renewable energy project types through targeted programming, delivered by education, skills and training providers;
- Opportunities for re-skilling, upskilling and transition for workers with transferrable skills; and
- Opportunities to mobilise cohorts that are inactive in the labour market, particularly low and unskilled positions.

In all cases, dedicated training and skills development will be required.

The Skills Mapping Report (2022) recommends the following actions to address new energy workforce and skills needs, all of which are relevant to this Study:

- State-of-the-art infrastructure, equipment, and laboratories in Gippsland to deliver new energy training and education.
- New programs developed and offered in Gippsland to meet the requirements of the new energy sector in the next 2-10 years.
- Partner with industry to ensure education and training programs are fit-for-purpose.
- Raise awareness of new energy careers.
- Develop clear pathways between secondary, vocational and higher education in clean energy careers.

SUMMARY OF JOBS, SKILLS & WORKFORCE NEEDS

- In Gippsland, more than 8,000 jobs in development and construction phases and 1,500 ongoing operations jobs could be created in the renewable energy sector in the decade to 2032 (based on current projects in the development pipeline).
- The proposed pipeline of projects will require different job roles and specific skill requirements during each phase of the development lifecycle:
    - **Feasibility/development phase** will primarily require engineers, environmental and consenting professionals, stakeholder engagement, offshore/onshore surveyors, planners and managers in professional roles, along with contractors.
    - **The construction phase** will primarily require a range of trades and technicians (e.g. electricians), machinery operators, drivers, transport and logistics (vessel operators), coordinators, inspectors and supervisors, as well as managers in professional roles.
    - **The operational phase** will require a mix engineers, managers, technicians (electrical and mechanical), machinery operators, drivers, transport and logistics (vessel operators), coordinators and supervisors.
- Proximity to ports will be a key spatial driver during construction and operational phases. There will be a need for workers at different on and offshore locations for roles relating to transport and logistics, assembly and technical installation.
- As the preferred construction hub location, Port of Hastings will be a key attractor for labour (as will Port of Corner Inlet if it is ultimately an operations and maintenance hub).
- To ensure the labour force requirements can be met, the region will require the following:
    - Available employment pathways for different renewable energy project types through targeted programming, delivered by education, skills and training providers.
    - Opportunities for re-skilling, upskilling and transition for workers with transferrable skills.
    - Opportunities to mobilise cohorts that are inactive in the labour market, particularly low and unskilled positions.

HOUSING & ACCOMMODATION

Temporary and permanent workers employed during construction and operational phases of projects will require a mix of housing and accommodation.

Housing Demand: Construction Phase

Construction phase labour is expected to result in strong demand for rental housing and short-stay accommodation across the region.

For major offshore wind projects off the coast of Gippsland, the construction worker housing catchment is anticipated to cover:

- **A regional catchment area surrounding Port of Hastings**, the preferred location for an offshore wind construction hub.
- **A regional catchment area close to the Port of Corner Inlet** - including smaller townships such as Yarram and Foster, but also extending to larger regional centres such as Leongatha, Sale, Traralgon, Korumburra, and so on.

A mix of housing and accommodation locations, types and tenure will be needed to support the labour force, however given the short term and contract nature of construction-related employment, it is expected that rental tenure and long-stay visitor accommodation will be the main housing type required for workers not already living in the region.

Housing Demand: Operational Phase

Housing needs during the operational phase will differ from the construction phase for the following reasons:

- Longer tenure employment conditions are likely to result in both owner-occupier and rental tenure demand; and
- Location of demand is likely to be proximate to operation and maintenance hubs which are expected to be located around ports (such as Port of Corner Inlet – BBMT/Port Anthony).

The ultimate operational job requirements for offshore wind are in the order of 1,000 jobs per annum. If Barry Beach Marine Terminal and Port Anthony at the Port of Corner Inlet become a key operation and maintenance hub serving offshore wind, then many workers employed in this area will likely seek to live in towns and settlements within a reasonable commuting distance, including in South Gippsland Shire and Wellington Shire.

Scale Of Housing Needs

The scale of housing demand associated with renewable energy projects is not yet clear, however an indicative estimate of the potential direct annual employment associated with construction and operations is shown in Figure 14.

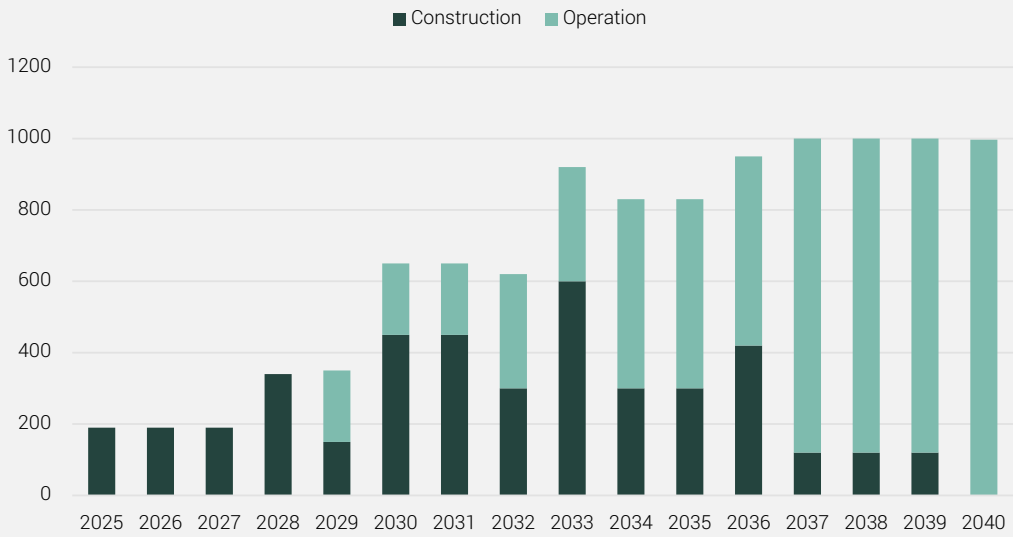
This is based on the Victorian government aspirational scenario of 9GW of offshore wind generation operating in Gippsland by 2040 and the employment numbers provided by proponents converted into annualised job estimates.

Job levels account for all direct jobs in Victoria, regardless of location (depending on the ultimate port locations). Indirect employment outcomes are not included.

This is an indicative estimate which provides a scenario of total direct employment on an annualised basis. Overall, annual employment is expected to exceed 800 jobs during the mid 2030s and 1,000 jobs by 2037. This scale of employment will generate substantial demand for housing in the region.

Annual employment in offshore wind (in Gippsland) is expected to exceed 800 jobs during the mid 2030s and 1,000 jobs by 2037. This scale of employment will generate substantial demand for housing in the region.

Figure 14 Indicative offshore wind direct employment (annual)



Source: Urban Enterprise, based on 9GW operational in Gippsland by 2040, construction employment averaged across a 4 year construction period for each project. Projects sequenced throughout period for minimum overlap.

COMMUNITY READINESS

The emerging renewable energy industry and broader energy transition that is occurring in the region is a major economic event in Gippsland's history.

It is essential that the needs of the Gippsland community are met, particularly in relation to:

- Receiving regular engagement and clear communication to obtain and understand relevant and accurate information; and
- Creating social license, and optimising economic impacts that create lasting benefits.

Community information and awareness will be critical to build understanding and avoid misinformation, especially in the context of a complex stakeholder and regulatory environment, regular announcements and project changes and the strong likelihood of opposition on the basis of certain potential project impacts.

The community will be well served by clear, accurate and up-to-date information from a trusted source.

It will be important to encourage and optimise benefits that flow to the local community. There is an opportunity for local Councils to support funding mechanisms that contribute to meaningful community projects. This includes aspirational projects that:

- Deliver lasting legacy benefits; and
- Address related and flow-on issues from renewable energy projects (e.g. fund/deliver temporary housing that could be re-purposed/re-used for community benefit).

This could take the form of various development-led funding models for community programs, infrastructure and initiatives.

South Gippsland and Latrobe City Councils will require adequate resourcing and governance structures to ensure responsibilities around readiness can be effectively managed.

This includes responsibilities that relate to facilitating, supporting and managing enquiries, engagement, and impacts of multiple renewable energy projects.

SUMMARY OF HOUSING & ACCOMMODATION NEEDS

- Housing to support key workers during the construction phase of projects. Tenure and type will include a mix of rental housing, short stay rentals and commercial accommodation.
- Rental housing demand generated from OSW projects is likely to be most prominent in proximity, and within reasonable commuting distance to the port.
- If rental demand cannot be accommodated in settlements proximate to the port, some 'spillover' rental demand is likely to extend to regional centres (e.g. Traralgon, Sale, Moe, Wonthaggi).
- Demand for short and long stay commercial accommodation will be drawn on in proximity to ports, coastal crossings, transmission corridors and substation locations.

ENABLING INFRASTRUCTURE

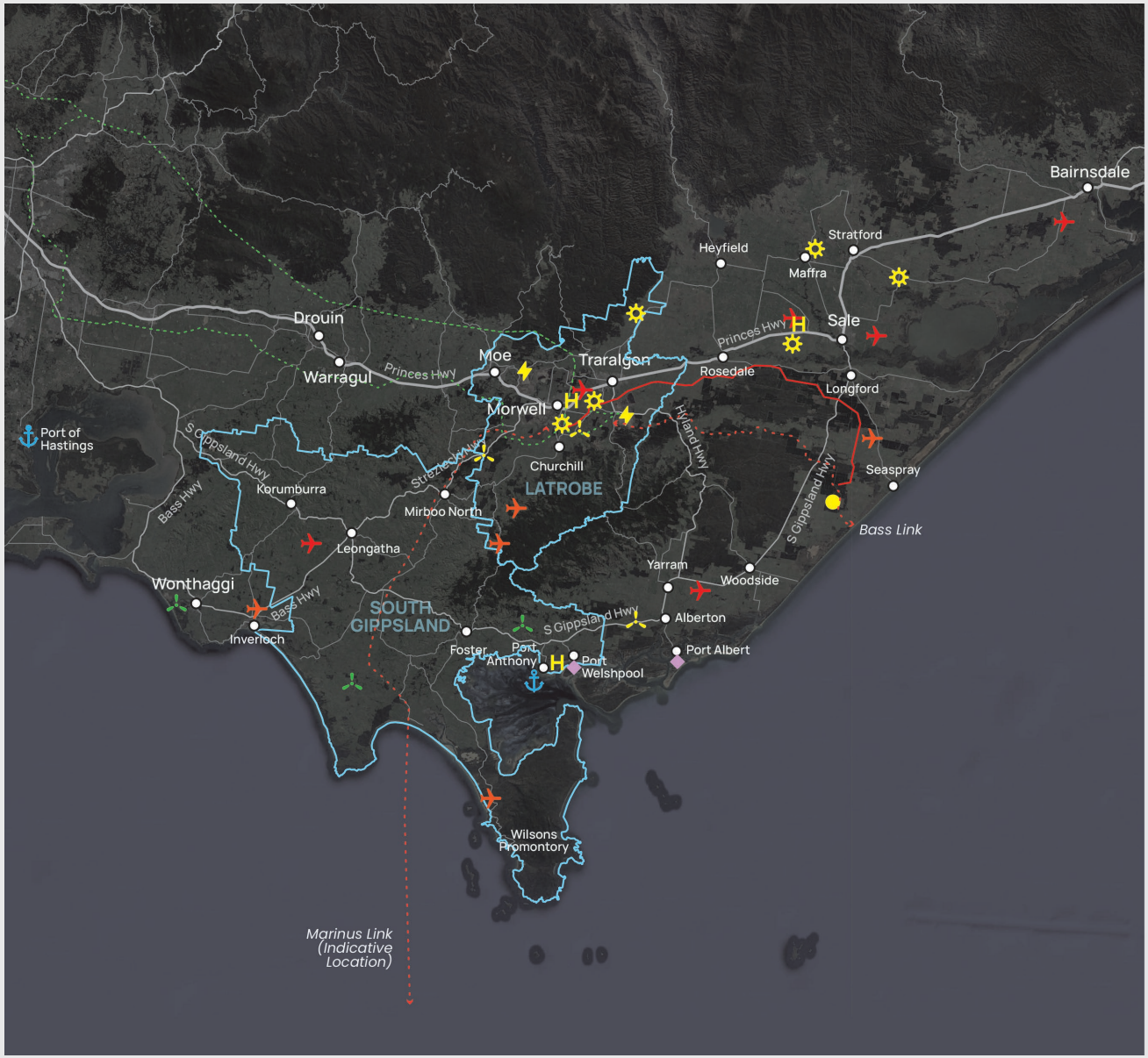
Enabling infrastructure will be critical for the construction and operational phases of proposed projects, including:

- Transmission infrastructure to support the transportation of energy from areas of generation to consumption.
- Transport infrastructure (roads, ports, airports) to facilitate freight and cargo to support the efficient delivery and operation of projects.
- Local civil infrastructure works in townships to support potential residential and employment land expansion and development.

Key infrastructure assets are shown overleaf, and include:

- An existing 500 kV transmission line connects Melbourne to the Latrobe Valley. The investigation area for the proposed new G-REZ transmission route extends from Hazelwood through south of Rosedale and Longford to Giffard.
- Port of Hastings is the preferred location for an offshore wind construction hub (subject to approvals). Other deepwater commercial ports (e.g. Geelong, Bell Bay) may also support construction and assembly requirements for offshore wind.
- The closest commercial port with access to proposed offshore wind projects is the Port of Corner Inlet (Barry Beach Marine Terminal/Port Anthony).
- Several airports exist in the region, including a CASA registered airport in Latrobe.
- Major road transport routes include the Princes Freeway and South Gippsland Highway.

Figure 15 Gippsland Enabling Infrastructure



LEGEND

Proposed Energy Project Type

- Onshore Wind Farm
- Solar Farm
- Battery Storage
- Hydrogen
- Gippsland Multi-energy Proposal
- Wind Farm (In Operation)

Airport & Ports

- CASA Registered Airport
- Other Airport
- Port
- Boat Access

Other Infrastructure

- 500kV Transmission Line
- Proposed AUSNET Transmission Route
- Proposed Marinus/ Bass Link Route (Indicative location)
- Major Road
- Other Road
- LGA Boundary

Source: Urban Enterprise, 2024

PORTS

Port access and infrastructure will be required to support the delivery and operation of offshore wind projects:

- A Construction Hub during the construction phase for receiving, handling and assembling wind turbine components; and
- An Operation and Maintenance Hub (O&M) during the operational phase to support storage and transport of supplies and crew.

For offshore wind projects, turbines will be manufactured overseas and transported to Australia via major commercial vessels (up to 200m in length). In order to accommodate vessels of this size and accommodate a construction hub, ports will require:

- Water depth of at least 10.5 metres;
- Extensive quay side access with heavy load capacity; and
- Expansive laydown areas to accommodate major components - turrets, blades etc. (approx. 25-80 ha).

Offshore Wind Implementation Statement 3 identifies the Port of Hastings as the preferred location for a construction hub subject to environment and planning approvals. If this occurs, a notable proportion of construction jobs associated with offshore wind are likely to be concentrated in and around Hastings in Mornington Peninsula Shire and south east Melbourne. Although the location of the OSW construction hubs are yet to be finalised.

Other deepwater commercial ports may also support construction and assembly needs for offshore wind projects such as Geelong or Bell Bay.

A port O&M hub will be needed to support offshore wind projects, namely to transport crew and supplies to offshore wind farm locations. The core requirements for an offshore O&M hub include:

- Adequate lay down areas and hardstands;
- All weather storage facilities for supplies, parts and equipment; and
- Quay side access for transfer vessels for crew and supplies.

TRANSMISSION

VicGrid is the Victorian Government agency responsible for planning and developing the new infrastructure that will transport offshore wind energy to the electricity grid.

VicGrid is leading the roll-out of the Victorian Transmission Investment Framework (VTIF) – an integrated approach to planning and delivering transmission infrastructure.

The VTIF introduces a strategic and proactive process to coordinate investment in transmission, generation and storage infrastructure across Victoria's Renewable Energy Zones.

VicGrid is also currently developing the Victorian Transmission Plan (VTP), a long-term strategic plan for Victoria's transmission and Renewable Energy Zone development that will support the energy transition.

Offshore wind is a key pillar in the renewable energy transition, especially in Gippsland.

New transmission is needed to extend the existing network from the Latrobe Valley to a connection hub near the Gippsland coast, which offshore wind generators will connect to.

VicGrid will lead the development of this new transmission to provide coordinated connection hubs for offshore wind generators in Gippsland, and to accommodate renewable energy more broadly.

Coordination avoids multiple developers building individual transmission lines that could create a 'spaghetti effect' across the landscape.

In March 2024, VicGrid released the Offshore Wind Energy Transmission Gippsland Options Assessment Report. The report outlines how VicGrid identified and assessed options for new transmission infrastructure to connect offshore wind energy with the existing network.

VicGrid identified a Study Area for the transmission infrastructure using an assessment that compared different options against a set of criteria, informed by community consultation, desktop analysis and technical advice.

The assessment considered a broad range of potential transmission corridors and technical options. The study area spanned 3-12 km width that will be refined further to select a preferred corridor, and ultimately a route.

The Study Area contains 2 preferred technologies, both high-voltage overhead lines.

An Assessment Method gave equal consideration to maximising positive outcomes of each option (Project Objectives) and minimising negative outcomes (Guiding Principles).

VicGrid identified 12 potential transmission corridor options, and used the Assessment Method to undertake a high-level analysis of the options and identify key points of difference.

Five options were identified for detailed assessment using the criteria in the Assessment Method.

This assessment identified a preferred option (Corridor 5), which has the following features in:

- Shorter length (approximately 68 km) and fewer engineering complexities.
- Avoids major residential areas and sensitive community assets.
- Opportunities to explore alignment with other infrastructure, including roads and the Basslink transmission line.
- Balances different land uses, interacting with a lower proportion of agricultural land and a higher proportion of public and plantation land.
- Central to the offshore wind declared area, with flexibility to respond and extend to different offshore wind farm locations.

Option C5 was identified as the preferred corridor option, and is shown in Figure 16.

The Gippsland preferred option is a new set of 330 kV or 500 kV HVAC overhead transmission lines from a new connection hub near Giffard to an area near Loy Yang Power Station. This will enable offshore wind developers to connect and transport 2 GW of renewable energy across Victoria.

It should be noted that further technical studies, on-the-ground environmental assessments and engagement with landholders, First Peoples and local communities is still to be completed to better understand and refine the area.

Figure 16 Preferred Corridor Option and Connection Hubs

Source: Offshore Wind Energy Transmission Gippsland Options Assessment Report, VicGrid, March 2024

The study area and indicative connection hub as per the Options Assessment Report (2024) is shown in Figure 17.

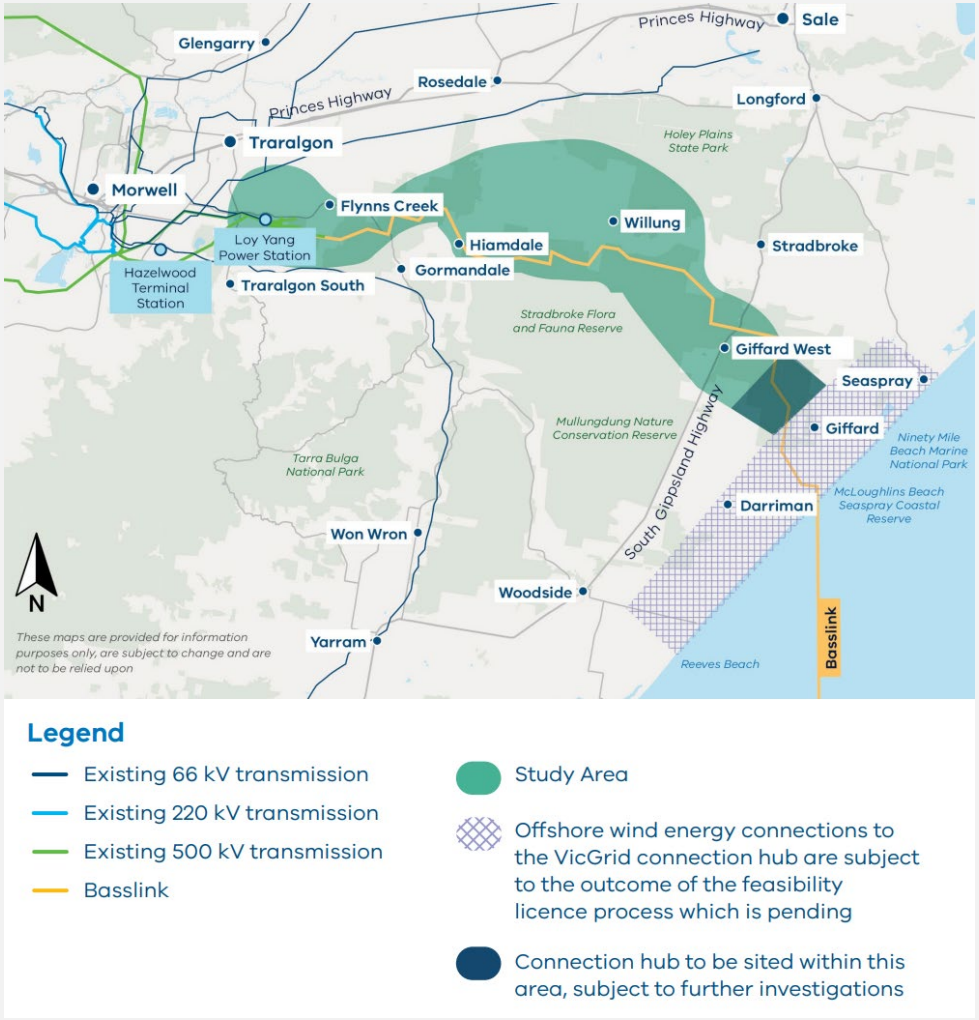
Additional discrete transmission infrastructure may be required to meet future transmission needs. Proponents indicated that investigation of transmission options is ongoing, but includes options to:

- Construct stand-alone, project specific transmission infrastructure, with a view to sharing or co-locating with existing lines (e.g. Basslink offshore and easements onshore);
- Share/co-locate transmission routes with other projects to reduce the need for multiple alignments; and
- Utilise VicGrid's transmission corridor and infrastructure where possible.

Coordination of transmission infrastructure will be critical to the success of the renewable sector in Gippsland, particularly offshore wind. The key challenges associated with transmission include:

- Ensuring transmission infrastructure has the capacity to accommodate the scale of projects proposed; and
- Co-locating and sharing transmission infrastructure and alignments (including shore crossing points) where possible to minimise environmental impacts.

Figure 17 Study Area and indicative connection hub



Source: Offshore Wind Energy Transmission Gippsland Options Assessment Report, VicGrid, March 2024

ROADS

Major roads will be utilised to facilitate freight and cargo movements (e.g. equipment, machinery, parts) to support renewable energy projects, along with onshore workers.

The majority of Gippsland's freight is currently transported using Gippsland's major road network, specifically the Principal Freight Network and other State Arterial roads.

The National Road Network currently extends along the Princes Highway between Melbourne, Traralgon and Sale. These road networks are supported by and connect to a range of other freight infrastructure including sea, air and rail.

Key readiness needs for the regional road network identified through consultation with DoT include:

- Project route mapping to identify issues, gaps, and a list of priority projects.
- The proposed locations of transmission infrastructure relative to arterial roads and road reserves so that any implications for the road network can be identified.

SERVICE INFRASTRUCTURE FOR LAND DEVELOPMENT

To facilitate any potential expansion and development of urban areas, the capacity and capability of civil infrastructure and services must be considered, including:

- Drainage;
- Sewerage reticulation;
- Water supply;
- Electricity; and
- Telecommunications.

SUMMARY OF INFRASTRUCTURE NEEDS

- Transmission infrastructure to support the transportation of energy from areas of generation to consumption markets.
- Transport infrastructure (roads, ports, airports) to facilitate freight, cargo and crew movements.
- For ports:
    - A Construction Hub during the construction phase for receiving, handling and assembling wind turbine components; and
    - An Operation and Maintenance Hub (O&M) during the operational phase to support storage and transport of supplies and crew.
- Civil service infrastructure, particularly adequate drainage, sewer and water treatment to support urban growth and potential expansion, and to facilitate residential and industrial development.

PART B

READINESS

SECTION 6

SUPPLY-CHAIN, JOBS & SKILLS

INTRODUCTION

This section profiles South Gippsland and Latrobe City's economic and employment capability to identify gaps and opportunities to serve different stages of the renewable energy project supply-chain and development lifecycle.

Although the focus is on South Gippsland and Latrobe, this section also has regard to the adjoining municipality of Wellington Shire.

ECONOMIC SNAPSHOT

A snapshot of key economic metrics for Latrobe, South Gippsland and Wellington are shown in Table 9.

Together, the three municipalities accommodate around 155,000 residents, more than 60,000 local jobs and over 13,000 businesses.

Latrobe is the largest economy in the region, with a Gross Regional Product of $6.25 billion and generating close to $14 billion in annual economic output – which accounts for more than half of the region's GRP and output.

South Gippsland and Wellington make up the balance of economic activity in the region, but are smaller economies relative to Latrobe. This is largely a result of a smaller population and business base, and less zoned land for business.

Table 9 Economic snapshot, 2022

Indicator	Latrobe	South Gippsland	Wellington	Total
GRP ($B)	$6.25	$1.94	$3.90	**$12.09**
Local Jobs	32,278	11,202	17,079	**60,559**
Businesses	5,017	3,964	4,312	**13,293**
Output ($B)	$13.73	$4.09	$7.36	**$25.18**
Value-added ($B)	$5.90	$1.80	$3.60	**$11.30**
Export Value ($B)	$5.30	$1.40	$3.60	**$10.30**

Source: Business Counts, ABS Census, June 2022

LATROBE

Latrobe's economy is primarily driven by coal extraction and coal fired power generation, and the well established supply-chain that has developed over a long period of time to support these activities, including engineering, design manufacturing, logistics, civil trade and construction.

As one of Victoria's four major regional centres, the notable resident population across the municipalities four main centres of Traralgon, Morwell, Moe/Newborough and Churchill support key sectors of health care, education, retail, hospitality, professional services and tourism.

Key economic areas and assets in Latrobe City include:

- Major industrial zoned precincts and hubs in Morwell, Traralgon and Moe;
- Latrobe Regional Hospital;
- TAFE Gippsland;
- Coal fired power stations; and
- Latrobe Regional Airport.

SOUTH GIPPSLAND

South Gippsland's economy is primarily driven by food and fibre, construction, energy and tourism.

South Gippsland's economy relies on productive land that is suitable for agriculture, food processing, rural services sectors, nature-based assets that are key motivators for tourist visitation, and other natural advantages that support energy generation (offshore oil and gas).

South Gippsland's main townships of Leongatha, Korumburra and Foster accommodate the majority of population, business and workers, and are critical to other important sectors such as retail, hospitality, health care and education.

Key economic areas and assets in South Gippsland include:

- Vast areas of farming zoned land that is productive and suitable for agricultural activities;
- Industrial zoned precincts in Leongtha and Korumburra;
- Barry Beach Marine Terminal and Port Anthony at the Port of Corner Inlet;
- Nature-based assets such as Wilsons Promontory National Park, extensive coastline, Strzelecki Ranges and Port Welshpool;
- Leongatha Hospital; and
- Foster Hospital.

Morwell Industrial Precinct

Leongatha Industrial Precinct

BUSINESS BASE

There are more than 13,000 businesses operating across the three municipalities.

Agriculture (3,406) and the construction industry (2,375) account for 43% of businesses in the region.

Other industries that include a high number of businesses:

- Rental, hiring and real estate services (1,112);
- Professional, scientific and technical services (849); and
- Retail trade (819).

This indicates the importance of these sectors to the productivity of the economy. It also shows that there is some alignment with supply-chain needs for renewable energy projects, particularly during construction and operational phases.

Table 10 Business by industry, June 2022

Industry Sector	Latrobe	South Gippsland	Wellington	Total
Construction	1,047	643	685	2,375
Rental, Hiring and Real Estate Services	506	282	324	1,112
Agriculture, Forestry and Fishing	455	1,503	1,448	3,406
Professional, Scientific & Technical Services	394	232	223	849
Other Services	392	168	212	772
Retail Trade	380	185	254	819
Transport, Postal and Warehousing	343	167	192	702
Health Care and Social Assistance	304	131	206	641
Administrative and Support Services	295	104	138	537
Accommodation and Food Services	284	149	194	627
Manufacturing	192	138	133	463
Financial and Insurance Services	144	90	61	295
Wholesale Trade	104	70	84	258
Arts and Recreation Services	61	25	56	142
Education and Training	44	29	41	114
Information Media & Telecommunications	24	20	18	62
Electricity, Gas, Water & Waste Services	22	10	13	45
Public Administration and Safety	9	4	6	19
Mining	8	11	20	39
Total	**5,017**	**3,964**	**4,312**	**13,293**

Source: Business Counts, ABS Census, June 2022

Most renewable energy proponents in Gippsland expressed a desire to utilise local and regional suppliers where possible.

Offshore wind proponent Star of the South published a supply chain study, which investigated the opportunities for local businesses to participate in the construction and operational needs of the project.

The study delineates between existing local capabilities, opportunities to build on existing capabilities, and new capabilities that would require investment and development.

In total, close 200 business operating in Gippsland were identified as potential suppliers that could be utilised.

Examples of businesses that could be utilised specialise in engineering, manufacturing, civil contracting, mechanical and electrical services, machinery and equipment services and hire, earthmoving and site clearing, traffic management, fabrication and welding, transport services, waste management and recycling services, equipment hire, office supplies and catering.

The analysis also identifies a range of local businesses based in South Gippsland and Latrobe as potential beneficiaries from the development, including:

- Abrasive blasting and coatings
- Civil and commercial construction
- Facility management
- Industrial maintenance
- Property and building maintenance
- Logistics and warehousing
- Engineering and fabrication
- Operations and maintenance
- Machinery and equipment hire
- Electric motor and generator repairs and maintenance
- Quality assurance
- Office supplies
- IT services
- Recruitment services
- Visa and migration services
- Safety training, emergency response
- Vessels and subsea services

In total, close to 200 businesses operating in Gippsland were identified as potential suppliers that could be utilised.

EMPLOYMENT

The highest employing industries in the region are shown in Table 11.

South Gippsland and Wellington have a comparable employment mix. The highest employing industries are health care and social assistance, agriculture, retail, education and training, and construction.

In Latrobe City, close to one-fifth of local employment is in health care and social assistance. Other high employing sectors are largely population-based service industries such as retail, public administration and safety, and education and training.

Electricity, gas water and waste services is a significant employer (2,337) as is expected with the operation of the Yallourn and Loy Yang coal-fired power stations.

Between 2016 and 2021 census periods, local employment in Latrobe increased by 2,773 jobs (+8.6%). In south Gippsland, local employment increased by 983 jobs (8.8%) over the same period; indicating consistent jobs growth.

Table 11 Employment by industry, 2021

Industry	Latrobe	South Gippsland	Wellington	Total
Health Care and Social Assistance	6,308	1,477	2,621	10,406
Retail Trade	3,343	1,018	1,659	6,020
Public Administration and Safety	2,957	374	2,015	5,346
Construction	2,762	927	1,517	5,206
Education and Training	2,745	1,017	1,569	5,331
Electricity, Gas, Water and Waste Services	2,337	186	255	2,778
Manufacturing	2,141	954	905	4,000
Accommodation and Food Services	2,105	712	1,021	3,838
Other Services	1,289	435	636	2,360
Professional, Scientific and Technical Services	1,077	424	590	2,091
Transport, Postal and Warehousing	1,074	494	504	2,072
Administrative and Support Services	760	231	300	1,291
Agriculture, Forestry and Fishing	651	2,028	2,189	4,868
Wholesale Trade	561	313	276	1,150
Financial and Insurance Services	526	158	157	841
Information Media and Telecommunications	471	56	66	593
Mining	425	96	461	982
Rental, Hiring and Real Estate Services	394	99	175	668
Arts and Recreation Services	352	203	163	718
Total	**32,278**	**11,202**	**17,079**	**60,559**

Source: Business Counts, ABS Census, June 2022

SPECIALISATIONS

Employment specialisations can be identified through the Location Quotient (LQ) technique, which measures the proportion of employment in the study area municipalities compared with regional Victoria. Industries with an LQ of higher than 1 indicates a comparative advantage.

The LQ analysis for Latrobe indicates employment specialisations in old energy sectors and well established supply-chains, including mining and electricity generation, which present opportunities to pivot or transition to support the new energy task.

South Gippsland has less prominent employment specialisations, however agriculture, forestry and fishing supports more than double the employment compared with regional Victoria.

It will be critical that specialised sectors such as agriculture can continue to operate productively and effectively alongside the emerging renewable energy sector.

Figure 18 Employment specialisations (LQ>1.1), Latrobe City, 2021

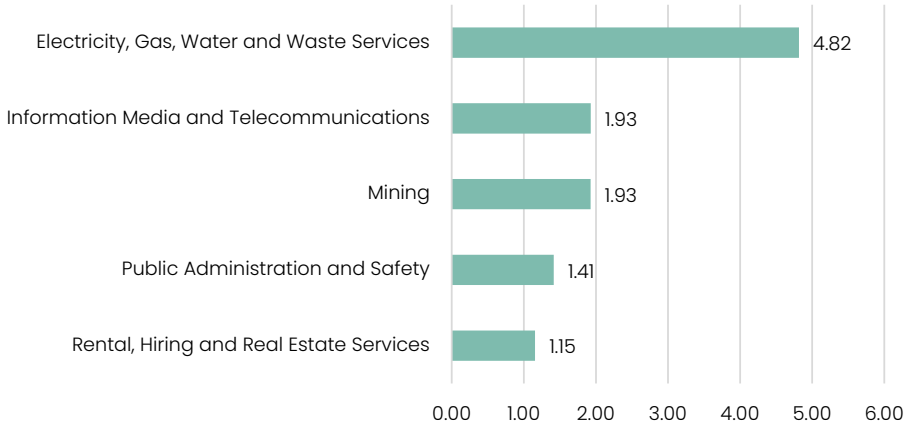
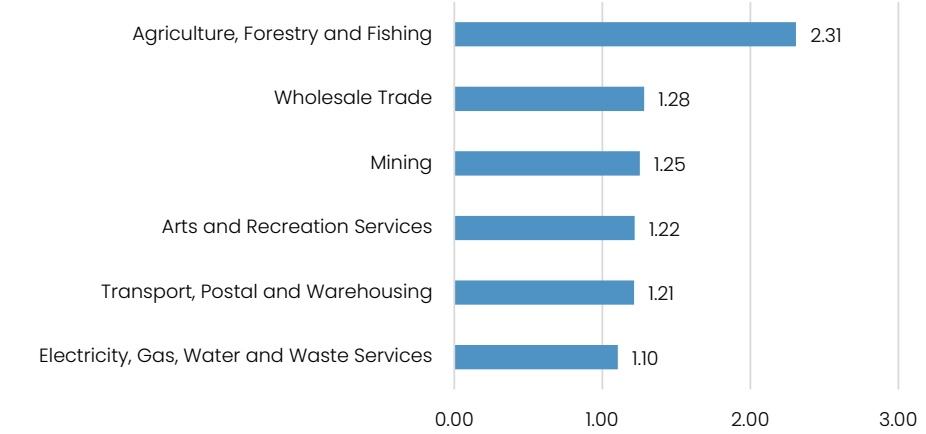


Figure 19 Employment specialisations (LQ>1.1), South Gippsland, 2021



Source: Urban Enterprise 2024, derived from Census of Employment, ABS 2021

ENERGY SECTOR JOBS

The traditional energy sector in Gippsland has long been a primary driver and specialised area of the regional economy. The region's competitive advantage in resource mining and energy generation has developed over a long period of time, which has led to a well-established and efficient supply chain, a high level of employment, and associated flow on benefits.

A major comparative advantages of the region is engineering capability that developed to support the energy sector, particularly in the Latrobe Valley. The Latrobe City Economic Development Strategy (2016-2020) identifies the region as the 'Engineering capital of Australia', and states that:

> *"The technology developed in the Latrobe Valley was leading for its time and the machinery developed to extract coal and generate electricity was replicated in many other areas.*
>
> *The standout strength of the region is the engineering knowledge and skills.... a focus on Science, Technology, Engineering and Mathematics (STEM) is required to position the economy for the future industries and jobs"*
> (p. 5)

At a high level, supply-chain sectors in traditional energy that generally align with renewable energy project requirements are outlined in Table 12.

These activities are primarily associated with oil, gas and coal exploration, extraction and energy generation, including construction, operation and maintenance of major infrastructure both on and offshore.

Table 12 Energy supply-chain industries & sub-sectors

Industry category	Sub-sector Activity
Mining	Oil and gas extraction Exploration and mining support Coal mining
Electricity, gas, water and waste services	Electricity generation Electricity distribution Electricity transmission Gas supply
Transport, postal and warehousing	Water transport (freight and passenger) Port and water transport terminal operations Pipeline and other transport Stevedoring services
Manufacturing	Transport Equipment Manufacturing Primary Metal and Metal Product Manufacturing Petroleum and Coal Product Manufacturing Machinery and Equipment Manufacturing
Construction	Heavy and civil engineering construction Site preparation services Building structure services Building installation services
Professional, scientific and technical services	Engineering Design and Engineering Consulting Services Surveying and Mapping Services

Source: Urban Enterprise 2024, derived from Census of Employment, ABS

LABOUR FORCE & SKILLS OVERLAP

As shown in Table 13, there is substantial regional employment in sectors and sub-sectors that are directly relevant to renewable energy needs, presenting the opportunity to apply these skills and experience to the new energy challenge.

There are almost 10,000 jobs in Latrobe and over 3,000 jobs in South Gippsland in sectors that are aligned to some of the general construction, manufacturing and transport activities required to deliver and maintain renewable energy projects.

Specialised energy-related sectors, include:

- Coal mining and electricity distribution (Latrobe);
- Oil and gas extraction (Wellington);
- Engineering design and consulting services (Latrobe); and
- Site preparation services (Latrobe, Wellington and South Gippsland).

Table 13 Jobs in energy related sectors and sub-sectors, 2021

Industry Sector	Latrobe	South Gippsland	Wellington
Construction	3,169	1,418	1,854
Manufacturing	2,213	925	991
Electricity, Gas, Water and Waste Services	1,837	193	425
Transport, Postal and Warehousing	1,065	528	610
Professional, Scientific & Technical Services	1,048	581	668
Mining	402	62	453
Total	**9,816**	**3,081**	**5,001**

Industry Sub-Sectors	Latrobe	South Gippsland	Wellington
Coal Mining	293	0	0
Electricity Distribution	255	17	13
Engineering Design and Consulting Services	197	26	64
Site Preparation Services	128	75	97
Gas Supply	83	7	33
Machinery and Equipment Manufacturing	17	0	0
Surveying and Mapping Services	15	12	11
Electricity Generation	8	0	0
Oil and Gas Extraction	5	7	366
Port and Water Transport Terminal Operations	5	9	0
Building Installation Services	5	0	0
Electricity Transmission	4	0	0
Primary Metal and Metal Product Manufacturing	3	0	0

Source: Urban Enterprise 2024, derived from Census of employment, ABS Census, 2021

UNEMPLOYMENT & PARTICIPATION

Unemployment in South Gippsland is extremely low (2.5%). Unemployment has remained under 4% for several years.

The rate of unemployment in Latrobe is 5.5%, and has trended down in the past two years; indicating a tightening of the labour market.

With the exception of Latrobe City, regional unemployment is at record low rates, and has rarely exceeded 6% in the past decade.

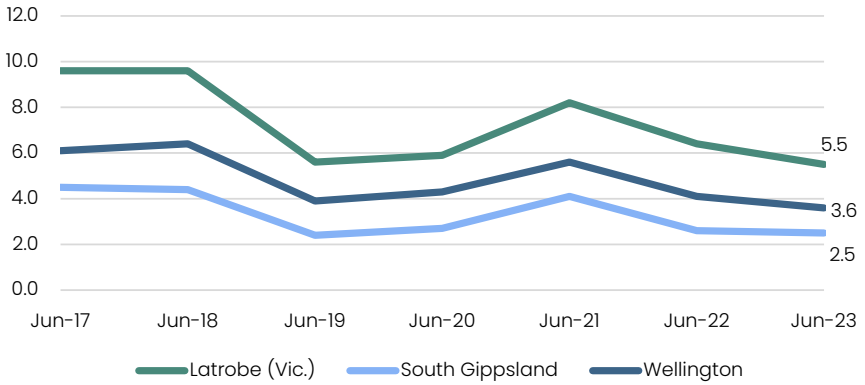
Importantly, the labour force participation rate in Gippsland (59%) sits well below Victoria (67.6%), and is lower than other parts of regional Victoria, and markedly so in some cases.

Low unemployment and participation rates are likely to present challenges in the recruitment and retention of labour to support renewable energy projects concurrent to existing business demand.

As a result, there will be a need to:

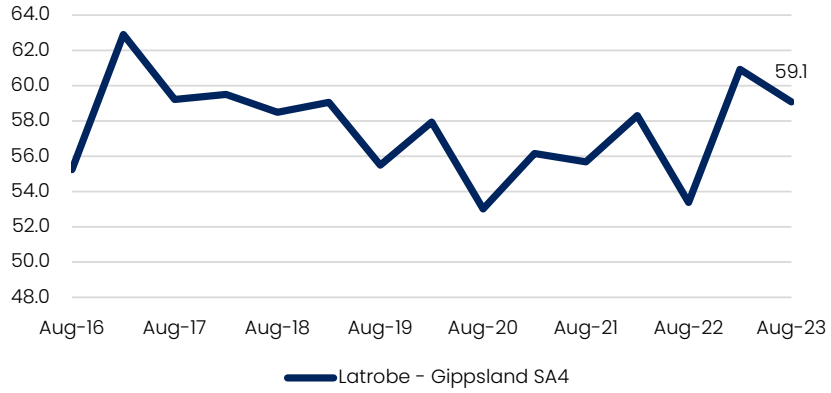
- Import labour from outside Gippsland;
- Attract regional workers from other sectors;
- Facilitate workforce transition; and
- Engage those not currently participating in the labour force or underemployed where possible.

Figure 20 Unemployment rate, June 2017-23



Source: Unemployment rate (smoothed), ABS Census, 2017-23

Figure 21 Participation rate, Latrobe-Gippsland SA4, Aug 2016-23



Source Labour force status by labour market region (ASGS) and sex, ABS Census, 2016 - 2023:

LABOUR SHORTAGES & SKILLS GAPS

Figure 22 shows that the number of job vacancies in Gippsland has risen sharply since mid-2020 (around the onset of the COVID pandemic) and is currently in excess of 3,000 positions.

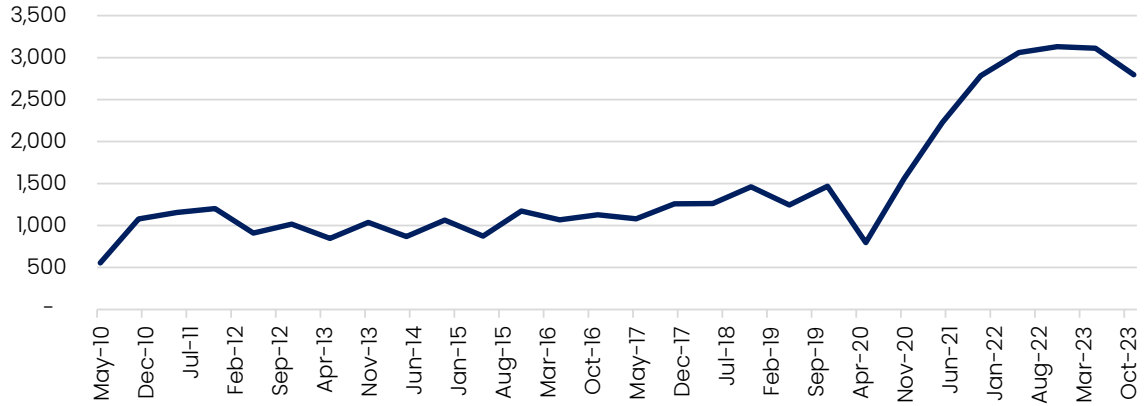
These circumstances demonstrate that Gippsland businesses are experiencing difficulties in recruiting workers with relevant skills sets, and these challenges are likely to be limiting productivity and economic growth.

Figure 23 shows advertised job vacancies by occupation. Close to 800 professional roles were advertised in November 2023; the most in demand occupation across Gippsland.

Current gaps in job roles that are relevant to the renewable energy supply chain, include technicians and trade workers, labourers, and machinery operators and drivers.

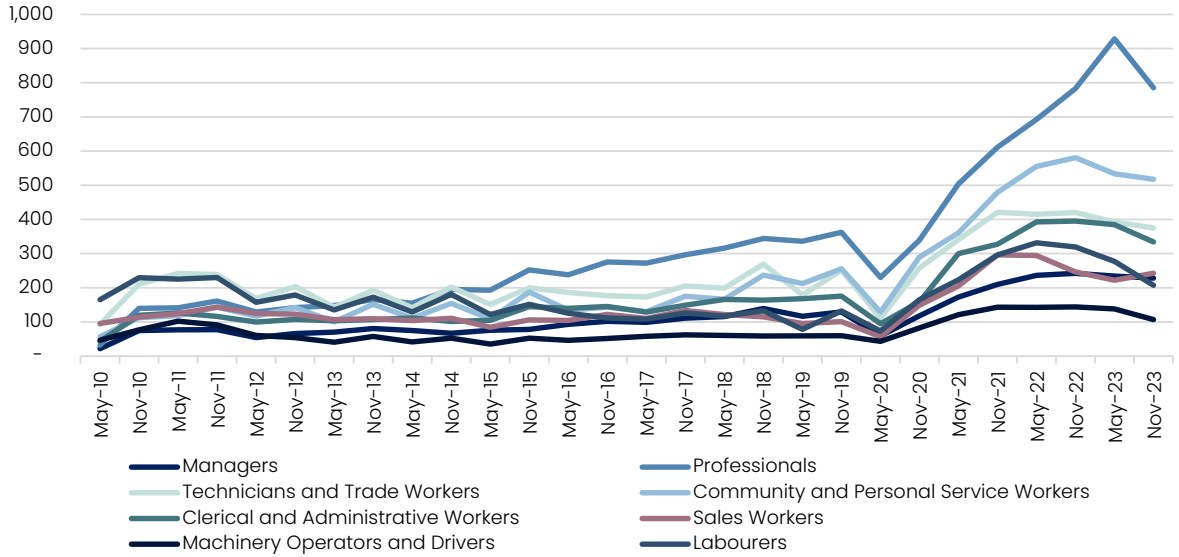
Job vacancies data suggests that Gippsland's economy is currently facing challenges with labour shortages and skills gaps. Persistent long term unemployment in Gippsland indicates that labour shortages and skills gaps could persist over time; meaning that the new energy projects will face challenges in utilising and drawing from the regional labour pool.

Figure 22 Advertised job vacancies, Latrobe-Gippsland SA4, 2010-23



Source: Internet Vacancy Index, Gippsland, National Skills Commission, 2023

Figure 23 Advertised job vacancies by occupation, 2010-23



Source: Internet Vacancy Index, Gippsland, National Skills Commission, 2023

ISSUES AND OPPORTUNITIES: SUPPLY-CHAIN, JOBS & SKILLS

1. Latrobe has industry specialisations in engineering, manufacturing and civil construction services; all of which are relevant to the renewable energy supply-chain.
2. The utilisation of regional suppliers by renewable energy proponents/developers is unknown at this point. Advocating minimum targets for utilisation would encourage regional economic benefits.
3. There is high awareness of the impending renewable energy investment pipeline across the business base. However, there is some uncertainty around the potential to capture the economic opportunity locally. Ongoing engagement and communication will be critical.
4. There is an existing workforce in the region with skills and capabilities that can be adapted and transferred to renewable energy projects, especially those related to offshore oil and gas, traditional energy, resource production and services.
5. Existing industry specialisations need to productively operate concurrent to the renewable energy sector (e.g. agriculture, tourism, construction).
6. Labour shortages pose risks for the productivity of Gippsland's economy under 'business as usual' conditions. This could impact the efficient delivery of renewable energy projects and the opportunity to attract new business to the region.
7. Current gaps in job roles that are relevant to the renewable energy supply chain, include technicians and trade workers, labourers, and machinery operators and drivers.
8. Renewable energy projects will increase competition within the regional labour force, which already has limited capacity. Further, persistent unemployment and labour shortages in Gippsland suggests that new energy projects will face challenges in utilising the regional workforce.
9. Many larger businesses in South Gippsland are performing well under 'business as usual' conditions. But limitations are evident in terms of their potential to pivot to renewable energy due to operational constraints, labour shortages and site constraints.
10. The critical mass of renewable energy projects may attract new business entrants to establish in Gippsland. 'Market ready' industrial land supply availability will be critical in serving demand from the new energy supply chain.

SECTION 7

HOUSING & ACCOMMODATION

INTRODUCTION

This section assesses housing demand conditions, and the capacity and suitability of housing and commercial accommodation to meet the needs generated by ongoing and construction phase workers in renewable energy.

A residential land supply assessment is also provided for South Gippsland Shire's higher order townships, including Leongatha, Korumburra, Foster and Mirboo North.

HOUSING & ACCOMMODATION CATCHMENT: OSW

The majority of jobs (cumulative) during the construction phase for offshore wind will be concentrated in and around the construction port (slated for Port of Hastings) and operations port.

If BBMT/Port Anthony performs a supporting role during the construction phase, an O&M role, as well as alongside onshore jobs requirements, then towns in southern Wellington and South Gippsland may perform key service roles, including Yarram, Foster and Leongatha.

It is acknowledged that the ultimate location of accommodating and housing workers will in part depend on the availability and suitability of housing and accommodation. For this reason, there is the possibility that some workers will be directed to larger regional centres such as Sale and Traralgon.

Figure 24 shows existing towns within a 60 minute (drive) from Corner Inlet (BBMT / Port Anthony).

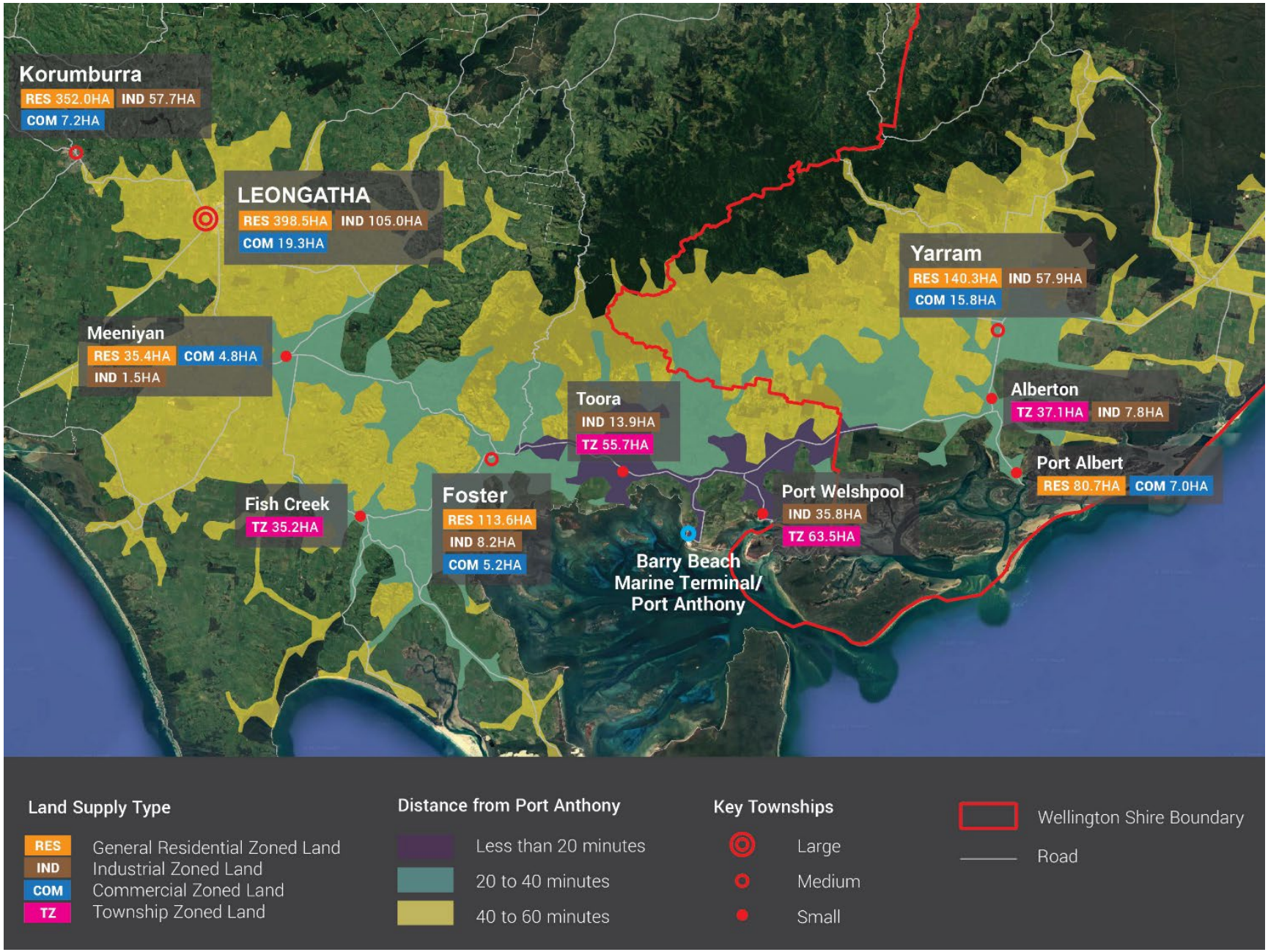
The following considerations are relevant:

- Foster and Yarram are the closest 'District Towns' to BBMT & Port Anthony, and are likely to appeal to workers due to proximity and access (approx. 25-30 min drive) along with existing amenity and services.
- Yarram has a higher provision of residential, commercial and industrial zoned land compared with Foster.
- Smaller settlements located less than 40 mins (drive) from BBMT & Port Anthony could play a housing role for workers (depending on availability), including Port Welshpool, Toora, Fish Creek and Meeniyan.
- Leongatha is the only 'principal centre' within 60 minutes (drive) of Corner Inlet, with the added advantage of being located closer to the Port of Hastings and Melbourne.

The figure shows that there are limited options to seek any scale of housing across existing zoned areas within a reasonable distance from Corner Inlet.

Several towns within a 60-minute catchment of BBMT/Port Anthony are likely to be utilised as a result, especially for ongoing housing needs.

Figure 24 Zoned land supply for towns within commuting distance from Corner Inlet (20, 40, 60 minute drive time)



SETTLEMENT, SOUTH GIPPSLAND

The proximity of some of South Gippsland's townships to the BBMT and Port Anthony indicates that key workers in this location will seek housing or commercial accommodation during various stages of the development cycle for OSW projects. In addition, any potential future renewable energy project proposals that emerge in South Gippsland will likely draw on nearby towns for housing or accommodation.

Clause 02.03-1 (Settlement) of South Gippsland Shire's planning scheme states the following:

Settlements in the Shire are highly dispersed, with Leongatha, Korumburra, Mirboo North and Foster containing the majority of the permanent population. Housing growth is mostly occurring in... ...Leongatha, Korumburra and Nyora.

Council seeks to direct growth to settlements in accordance with their role and function as set out in the South Gippsland settlement hierarchy.

A summary of the settlement hierarchy is shown in Table 19.

Local policy directs the majority of future housing growth in Leongatha and Korumburra, as the Shire's only principal centre and large district town.

Foster and Mirboo North are District Towns that will accommodate lower growth that complements the character of the towns and adequately considers bushfire protection and management.

All other settlements are expected to accommodate limited growth in future. Coastal Villages, Hamlets and Localities in particular face several challenges around environmental and biodiversity sensitivities and risks around climate change. As a result, local policy does not support future urban expansion of these areas.

Table 19 Settlement hierarchy, South Gippsland Planning Scheme

Settlement Hierarchy	Settlement	Housing & Residential Development Objectives
Principal Centre	Leongatha	Principal regional service centre in the Shire. Support housing growth
Large District Centre	Korumburra	Provide sufficient residential land to provide for sequential and staged residential development at a range of densities within existing infrastructure networks, to accommodate future township growth.
District Towns	Foster, Mirboo North	Growth should complement the existing character of the township and ensure adequate protection from and management of bushfire hazards.
Small Towns	Fish Creek, Loch, Meeniyan, Nyora, Poowong and Toora	
Villages	Koonwarra and Welshpool	
Coastal Villages	Port Welshpool, Sandy Bay, Tarwin Lower, Venus Bay, Walkerville, Waratah Bay and Yanakie	
Hamlets	Bena, Buffalo, Dumbalk, Jumbunna, Kongwak, Mirboo, Port Franklin, Ruby and Stony Creek	
Localities	Agnes, Arawata, Darlimurla, Hedley, Kardella, Nerrena, Strzelecki and others	

Source: South Gippsland Planning Scheme

HOUSING STOCK & TENURE

In 2021, there were more than 76,000 dwellings across Latrobe, South Gippsland and Wellington.

The housing stock across the three municipalities is heavily weighted. towards separate houses Around 12% of Latrobe's housing stock includes townhouses and units; the highest of any municipality.

The majority of housing stock accommodates owner occupiers, but around 25% of dwellings in South Gippsland and Wellington are unoccupied, indicating a high proportion of holiday homes and properties used for short-term rentals.

Rental tenure is prominent in Latrobe City and Wellington, with between 22% and 25% of households renting.

South Gippsland has a lower proportion of renters (16%), and also has very limited active bonds compared with Latrobe and Wellington.

Table 14 Dwelling stock & tenure, 2021

	Latrobe	South Gippsland	Wellington
Number of Dwellings	35,685	17,145	23,554
Occupancy (%)	92%	76%	76%
Dwelling Structure			
Separate House	87%	96%	91%
Semi-detached, townhouses	6%	2%	4%
Flat, unit or apartments	6%	1%	4%
Other Dwellings	1%	1%	2%
Tenure			
Owned (Outright or Mortgage)	67%	77%	71%
Rented	25%	16%	22%
Other	7%	7%	7%

Source: A Guide to Property Values, Valuer-General, 2022

Around 25% of dwellings in South Gippsland and Wellington are unoccupied, indicating a high proportion of holiday homes and properties used for short-term rentals.

RENTAL MARKET

There are close to 450 active bonds in Latrobe, but have declined year on year since the peak of 655 in 2016. Alongside declining bonds, median rents have increased to a record high of $360 in 2023.

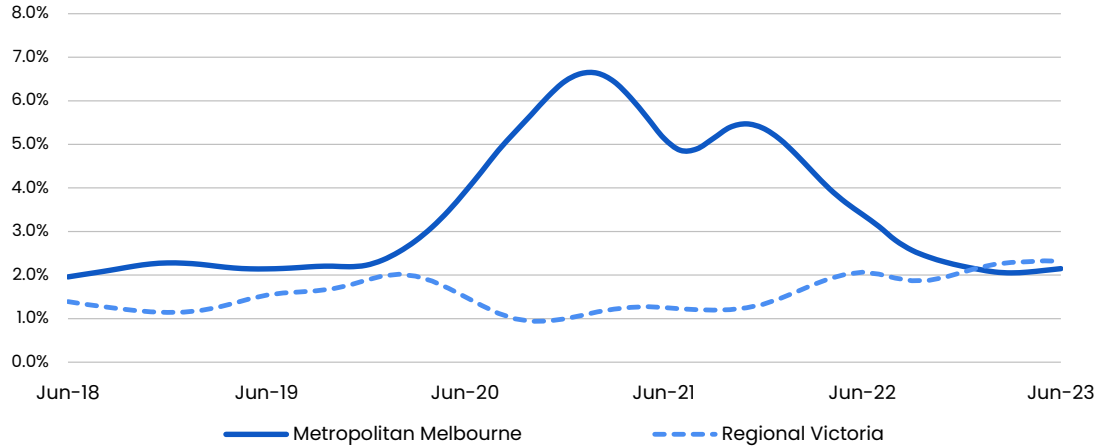
South Gippsland currently has less than 100 active bonds and a median rent of $400, which is a record high price.

Since 2018, active bonds in South Gippsland have remained around 100, indicating that rental properties are extremely scarce in the municipality, and households seeking this tenure type are not well served.

If current rental market conditions persist, demand for rental tenure generated by key workers is likely to go unmet. This means that workers may seek rental tenure in other proximate towns. Although Latrobe has four times as many active bonds, similar conditions exist – evidenced by record high rents and anecdotally low vacancy rates.

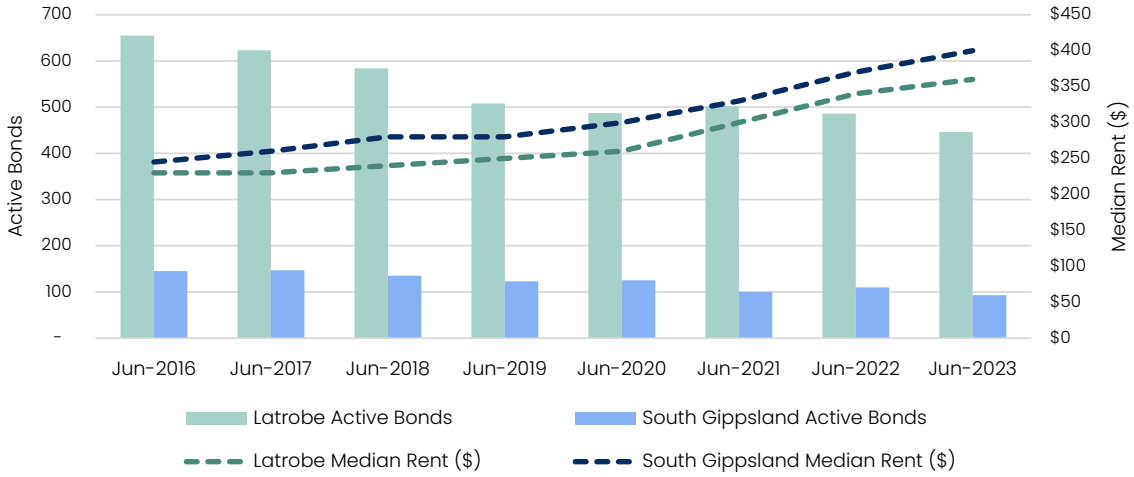
Without an increase in available rental properties, key workers are likely to seek alternative tenure (short term rental) or commercial accommodation (long term).

Figure 25 Active bonds & median rents, Melbourne and Regional Vic



Source: Homes Victoria Rental Report, Department of Families, Fairness and Housing, June 2023

Figure 26 Active bonds & median rents, Latrobe and South Gippsland



Source: Quarterly median rents by local government area, Department of Families, Fairness and Housing, June 2016 – June 2023

RESIDENTIAL PROPERTY VALUES

Residential property value trends can provide a useful indication of owner occupier and investor demand for housing over time.

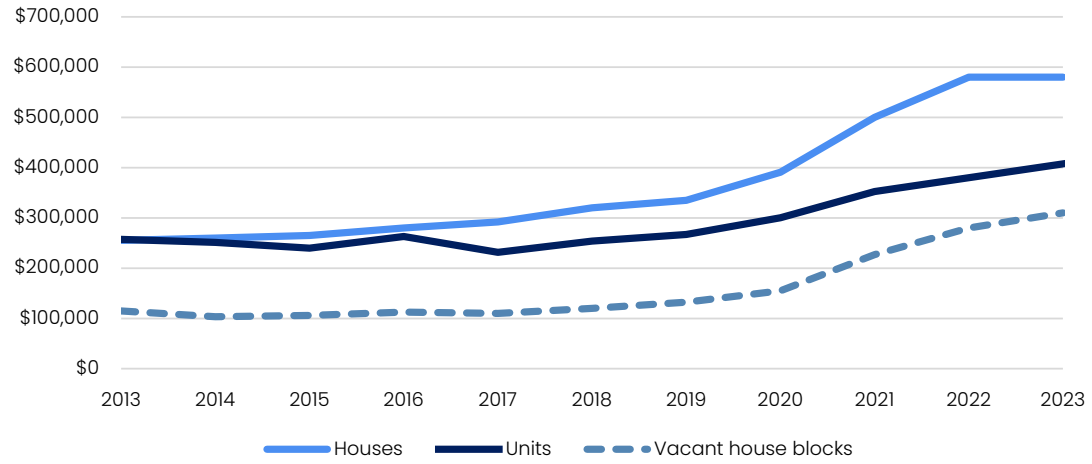
The median house price in South Gippsland is $580,000 and $380,000 in Latrobe, indicating a notable discrepancy in median values.

Both municipalities have recorded strong growth in residential property values:

- **South Gippsland** – 12.6% growth p.a. (ave last 5 years)
- **Latrobe** – 10.6% growth p.a. (ave last 5 years)

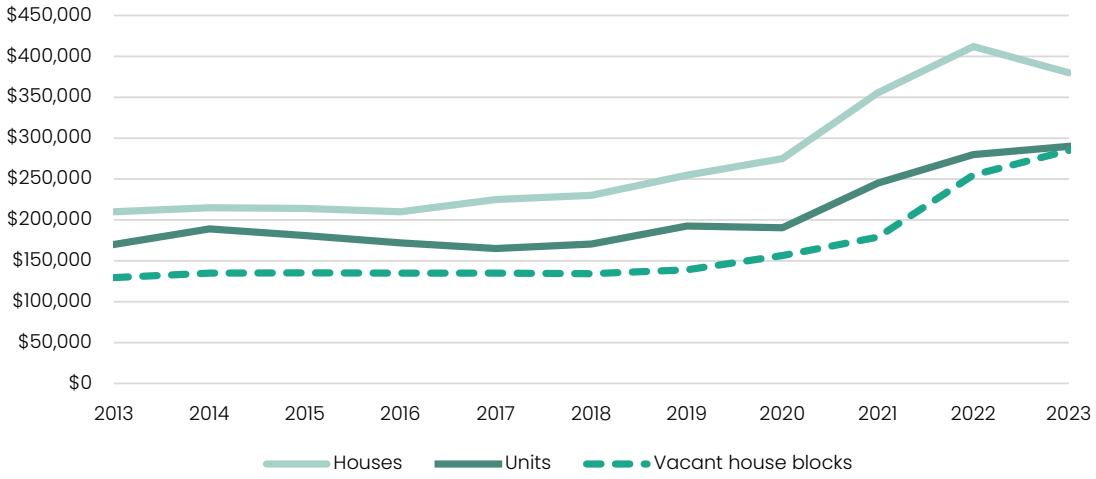
Of particular note is the strong growth in vacant house blocks in both municipalities, recording 26% and 22% average annual growth in the last 5 years. This highlights the ongoing appeal of new house and land product across greenfield locations.

Figure 27 Residential property values, South Gippsland



Source: A Guide to Property Values, Valuer-General, 2022

Figure 28 Residential property values, Latrobe



Source: A Guide to Property Values, Valuer-General, 2022

POPULATION GROWTH

South Gippsland, Latrobe and Wellington have a combined population of around 155,000 residents.

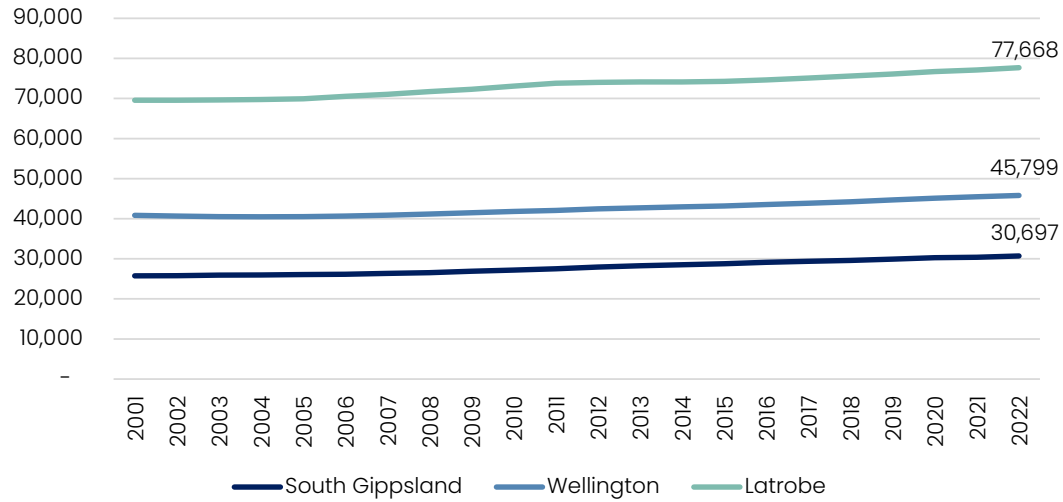
Latrobe City accounts for around half of the population across the three municipalities, primarily concentrated in regional centres in the Latrobe Valley.

Historical population growth across the region is low, averaging between 0.5% and 0.7% per annum since 2018.

Table 14 shows the change in annual growth rates in each municipality since 2003. Annual growth rates have remained below 1% over the past 20 years.

The main implication of low population growth in the context of renewable energy investment in the region, is the challenge around drawing on regional labour to support projects.

Figure 29 Population growth, 2001-22



Source: ERP, ABS, 2001-22

Table 14 Average annual population growth rate, 2003-22 (5-yr)

Average Annual Growth	2003-07	2008-12	2013-17	2018-22
Latrobe	0.4%	0.6%	0.3%	0.5%
South Gippsland	0.3%	1.0%	0.8%	0.7%
Wellington	0.2%	0.6%	0.5%	0.7%

Source: Urban Enterprise 2024, derived from ERP, ABS, 2001-22

DWELLING GROWTH

Dwelling growth in South Gippsland, Latrobe and Wellington has averaged around 800 per annum since 2006, and includes:

- ~330 dwellings p.a. in Latrobe;
- ~260 dwelling p.a. in Wellington; and
- ~220 dwellings p.a. in South Gippsland.

This represents the level of dwelling growth that has historically been required to meet demand.

Table 16 provides an overview of dwelling approvals for a select group of settlements in South Gippsland Shire.

Between 2015 and 2021, the collection of settlements averaged approximately 75 dwelling approvals per annum. This includes a peak of 124 in 2021.

Table 15 Annual dwelling growth, 2006-21

	Annual dwelling change			
LGA	2006-21	2011-21	2016-21	Ave
Latrobe	360	320	304	328
South Gippsland	215	201	247	221
Wellington	259	254	262	258
Total	**834**	**776**	**813**	**807**

Source: Census of Population & Housing, ABS, 2006-21

Table 16 Annual dwelling approvals, select settlements in South Gippsland,2015-22

Settlement	2015	2016	2017	2018	2019	2020	2021	2022[1]
Toora	3	2	1	1	0	1	4	1
Foster	2	5	5	3	15	19	28	8
Fish Creek	2	1	1	1	0	0	2	0
Meeniyan	3	0	6	2	1	1	3	2
Leongatha	27	21	13	23	49	22	57	25
Korumburra	18	25	26	39	27	25	30	32
Total	**55**	**54**	**52**	**69**	**92**	**68**	**124**	**68**

Source: Dwelling approvals, ABS, 2015-22

PROJECTIONS

Population and dwelling projections for Latrobe City and South Gippsland suggest that historically low rates of growth will continue, with a minor uplift in population growth in Latrobe.

15-year projections for each municipality indicate the following:

- Latrobe City will require ~300 new dwellings per annum; and
- South Gippsland will require ~200 new dwellings per annum.

This represents the level of dwelling activity that will be required to meet demand for new housing and maintain an equilibrium in the housing market.

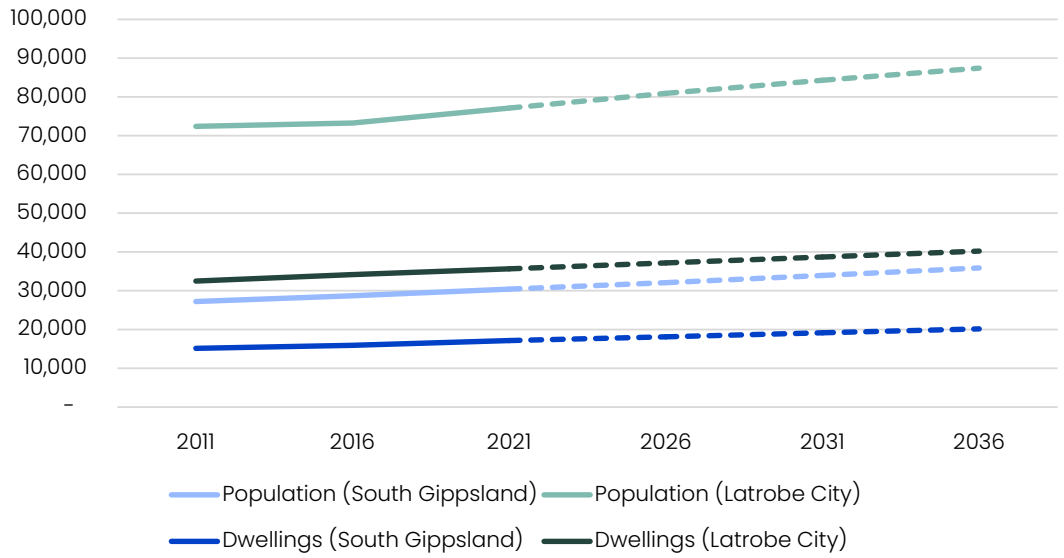
This is in the context of declining active bonds, record low vacancy rates in the rental market, and a high proportion of holiday homes – all of which indicates a potential under provision of housing within the local housing market.

Table 17 Annual population and dwelling growth, 2021-36

	AAG (2021-36)	
	Latrobe	South Gippsland
Population	+687	+365
Dwellings	+305	+202

Source: Urban Enterprise, derived from Forecast id, id consulting, March 2023

Figure 30 Population & dwelling projections, 2021-36



Source: Forecast id, id consulting, March 2023

COMMERCIAL ACCOMMODATION

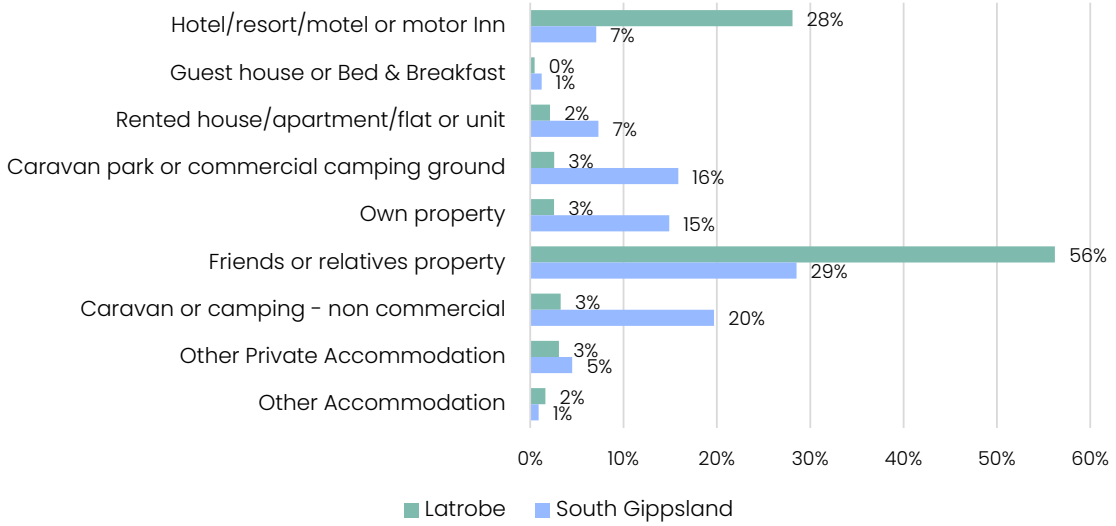
Tourism is an important sector within South Gippsland's economy, with holiday homeowners and short stay visitors dispersed across several smaller coastal settlements and day trips also common.

Domestic overnight visitors to South Gippsland typically stay with friends/relatives, in caravan parks or camping grounds, and holiday homes. The ABS Census revealed that there were approximately 3,200 unoccupied dwellings across the southern area of South Gippsland in settlements such as Foster, Sandy Point, Fish Creek, Port Welshpool, Venus Bay and Meeniyan.

An audit of commercial accommodation in South Gippsland and Latrobe shows that the two municipal areas have a capacity of 711 commercial accommodation rooms, 1,020 camping & caravan sites and close to 750 rooms in self-contained short term rentals.

Commercial accommodation establishments are predominantly a mix of motels and self-contained houses and units and could be used to accommodate some short to medium term stays for workers. However, commercial accommodation in the region typically supports the tourism industry, and potential displacement of holiday and leisure visitors could occur.

Figure 31 Accommodation utilised, 2018-22 (ave)



Source: National Visitor Survey, Tourism Research Australia, 2017 - 2023

Table 18 Supply of commercial accommodation

Accommodation Type	Latrobe	South Gippsland	Total
Commercial accommodation (no.) (e.g., Hotel, Motel, Bed & Breakfast.)	17	29	46
Total rooms	*448*	*263*	*711*
Caravan, camping, holiday Parks	5	12	17
Total Sites	*430*	*590*	*1,020*
Self-contained accommodation listings	*108*	*640*	*748*

Source: AirDNA, 2023 / Accommodation audit, Urban Enterprise, 2024

ISSUES AND OPPORTUNITIES: HOUSING & ACCOMMODATION

1. Construction port locations for OSW are still unresolved, which makes it difficult to define housing catchments with certainty.
2. The rental market in Latrobe and South Gippsland is constrained. There is very limited capacity to accommodate any uplift in demand that may arise from renewable energy projects.
3. Any uplift in rental demand is likely to manifest into lower vacancy rates, higher rents, and potential unmet demand for residents.
4. Commercial accommodation plays an important role in serving the tourism industry. Demand for commercial accommodation arising from renewable energy projects may displace tourist visitors, especially over the summer period.
5. At present, there is limited policy flexibility or strategic support to accommodate key worker housing. This should be considered in order to meet demand for worker housing.

RESIDENTIAL LAND SUPPLY & DEVELOPMENT ACTIVITY, SOUTH GIPPSLAND

This section provides an assessment of residential land supply in the townships of Leongatha, Korumburra and Foster in South Gippsland Shire.

The objective of this is to indicate the extent to which these townships can realistically accommodate new broadhectare housing.

Infrastructure and servicing constraints are based on observations, desktop analysis and discussions with South Gippsland Shire Council. No technical assessments pertaining to land capability, infrastructure and servicing have been prepared.

METHODOLOGY

To assess residential land supply, the following methodology was adopted:

- Define the study area and zones to be included, which include:
    - Leongatha, Korumburra and Foster
    - General Residential Zone (GRZ), Low Density Residential Zone (LDRZ) and Township Zone (TZ).
- Using GIS, property boundary, planning zones & overlay, identify Vacant and underutilised broadhectare sites that are theoretically available for development and consumption.
    - Broadhectare is defined as a site with an area that is 1 ha or greater.
    - Vacant is defined as having no structures featured, no definitive use or activity apparent on site
    - Underutilised is defined as having a structure featured on a very small portion, apparent activity but no full utilisation of the site.
- Manually verify vacant and underutilised sites in collaboration with South Gippsland Shire Council, and supplement by reviewing satellite imagery (NearMap)

LAND SUPPLY SUMMARY

Across Leongatha, Korumburra and Foster, there is an estimated 181.44 ha of zoned residential land that is vacant or underutilised, and can theoretically be developed.

86.9 ha of zoned land is vacant and 94.9ha is underutilised. The GRZ applies to 152.4ha, and LDRZ applies to the balance (29ha).

The Land supply summary for each town is summarised in Table 20. Note that FZ land with rezoning potential (i.e. identified for potential urban expansion) has been excluded from this table.

Across the three townships, there is an estimated:

- 152.4ha of vacant and underutilised GRZ land (69.4ha vacant / 83ha underutilised).
- 29 ha of vacant and underutilised LDRZ land (17.2 ha vacant / 11.8 ha underutilised).

Approximately 70% of vacant GRZ land is located in Korumburra (48.5 ha), 22% in Leongatha (15.5ha) and 8% in Foster (5.4ha).

Analysis of each township is discussed in-turn on the following pages.

Table 19 Residential Land supply summary (ha)

Zone	Vacant (ha)	Underutilised (ha)	Total (ha)
GRZ1	69.41	83.01	152.43
LDRZ	17.18	11.84	29.02
Total Residential	**86.90**	**94.85**	**181.44**
FZ*	12.13	431.59	443.72
RLZ^	-	70.74	70.74
Total	**98.73**	**597.18**	**695.91**

Source: Urban Enterprise, 2024
*FZ land has been included where it is subject to a rezoning application or is identified as an urban expansion opportunity through local strategic planning (e.g. A Structure Plan or Outline Development Plan).
^RLZ land in Korumburra subject to potential rezoning to LDRZ

Table 20 Residential Land supply summary, townships

	GRZ1 (ha)		LDRZ (ha)		Total
	Vacant	Underutilised	Vacant	Underutilised	
Leongatha	15.54	21.34	10.69	8.61	**86.90**
Korumburra	48.49	47.84	6.49	3.23	**106.06**
Foster*	5.38	13.83	0.0	0.0	**19.21**
Total	**69.41**	**83.01**	**17.18**	**11.84**	**181.44**
	152.43		**29.02**		

Source: Urban Enterprise, 2024
*In addition to existing zoned land the Foster Structure Plan indicates potential future urban expansion in the Farming Zone. Preliminary this includes 309.27 ha (in aggregate)

LEONGATHA

Vacant, underutilised and undevelopable sites in Leongatha are shown in Figure 32.

There is an estimated 26ha of vacant GRZ and LDRZ land in Leongatha.

A further 134.5ha of land has future rezoning potential as these sites are either within the Outlined Development Plan (ODP) area in southern Leongatha (e.g. C3, D3, F1, F2) or are the subject of an active rezoning application (A2).

In summary, Leongatha has limited vacant GRZ broadhectare land that is available for future subdivision and development.

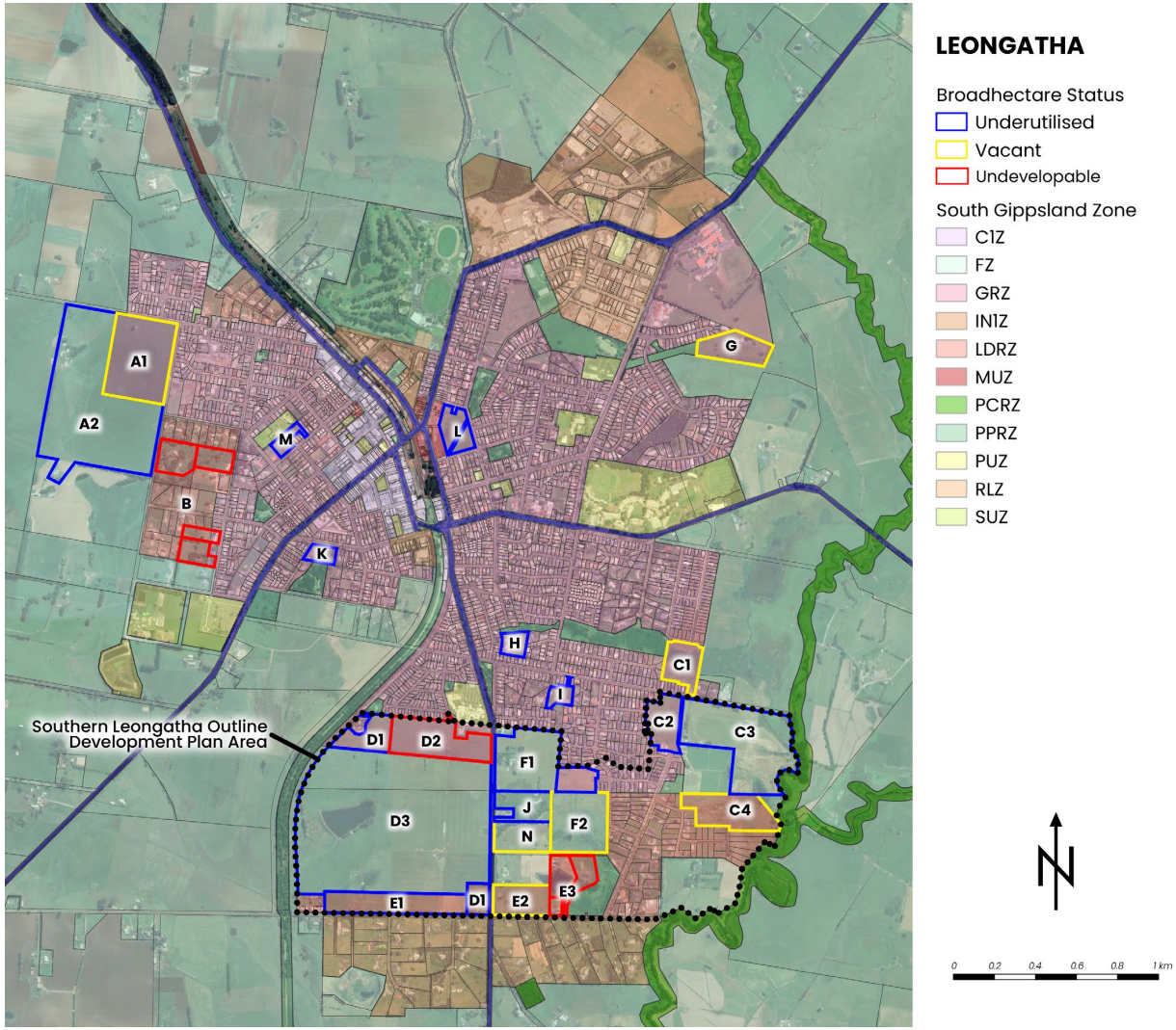
Further details pertaining to individual sites in Figure 31 are in **Appendix A.**

Table 21 Residential Land supply summary, Leongatha

	Vacant (ha)	Underutilised (ha)	Total (ha)
GRZ1	15.54	21.34	36.88
LDRZ	10.69	8.61	19.29
FZ (rezoning potential)			134.45*
Total	26.23	60.68	190.62

Source: Urban Enterprise, 2024

Figure 32 Vacant, underutilised & undevelopable sites, Leongatha



Source: Urban Enterprise, 2024
* Sites A2, C2, C3, C4, D1, D2, D3, E1, E2, E3, F1, F2, J & K) are currently Farming Zone but in the Outline Development Plan. Together these areas total 134.45ha (415 lots) and present as future rezoning opportunities.

KORUMBURRA

Vacant, underutilised and undevelopable sites in Korumburra are shown in Figure 33.

There is an estimated 106ha of vacant and underutilised GRZ and LDRZ land in Korumburra, including:

- 48.5ha of vacant GRZ and 48ha of underutilised GRZ land;
- 6.5ha of vacant LDRZ and 3.2ha of underutilised land.

A further 70ha in the RLZ has been identified as having rezone potential to LDRZ (site I).

Overall, Korumburra has the most substantial zoned land supply available, primarily located on the western fringe of the urban area.

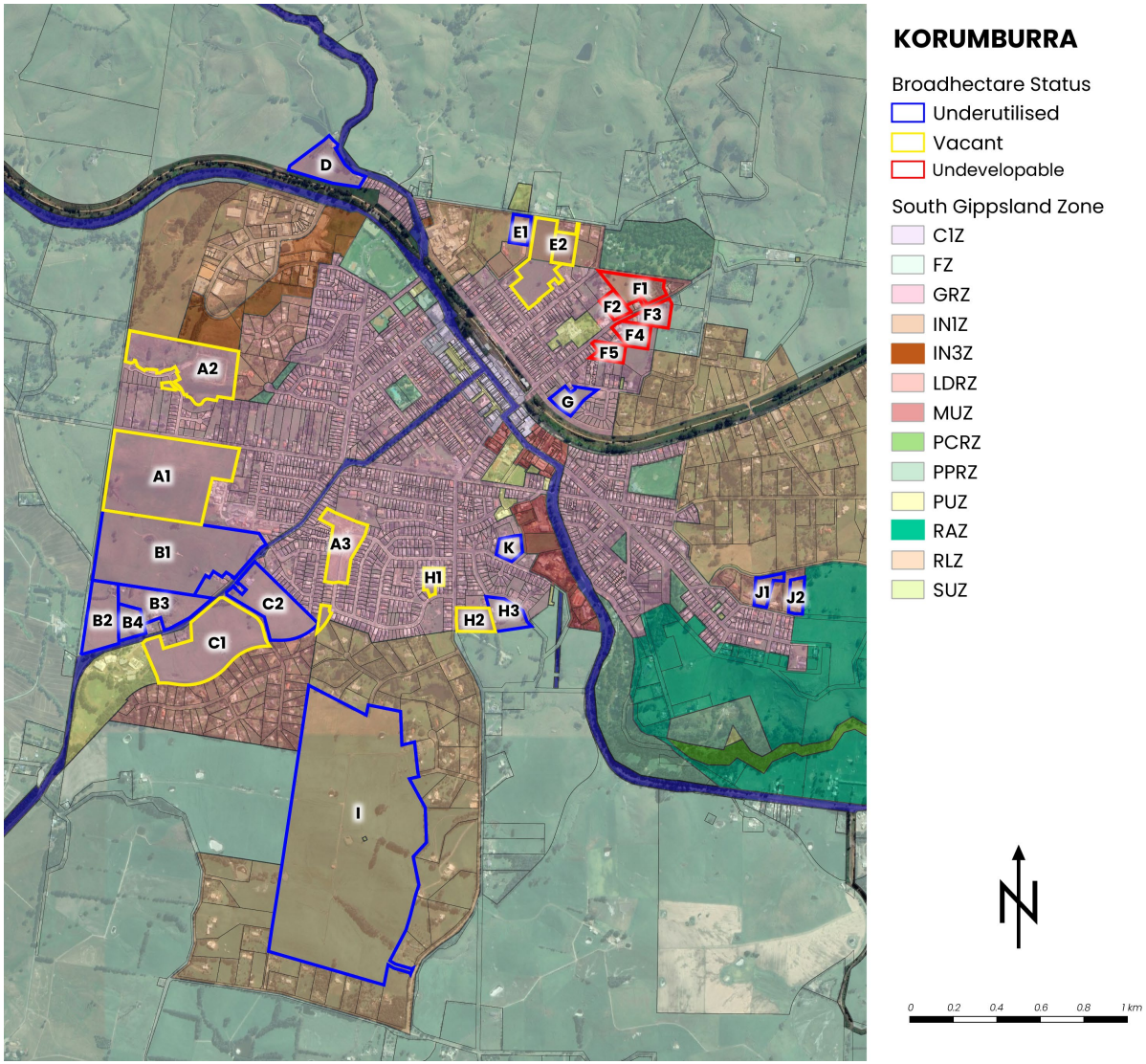
Further details pertaining to individual sites in Figure 33 are in **Appendix A.**

Table 22 Residential Land supply summary, Korumburra

	Vacant (ha)	Underutilised (ha)	Total (ha)
GRZ1	48.49	47.84	96.34
LDRZ	6.49	3.23	9.72
RLZ (rezoning potential)	-	-	70.74*
Total	54.99	51.08	176.80

Source: Urban Enterprise, 2024

Figure 33 Vacant, underutilised & undevelopable sites, Korumburra



Source: Urban Enterprise, 2024
*Site I: Rezoning from rural living (70.74ha) to low density residential (124 lots)

FOSTER

Vacant and underutilised areas in Foster are shown in Figure 34. A draft Structure Plan has been prepared for Foster and shows potential urban expansion areas to the south and the west.

There is only 5.4 ha of vacant GRZ land in Foster, and a further 13.8 ha of underutilised land.

Taking in FZ land in the potential urban expansion areas, a further 309 ha of land could be added in future, but is subject to detailed investigation and precinct planning. When completed in late 2024, the updated Foster Structure Plan will identify the preferred township growth areas.

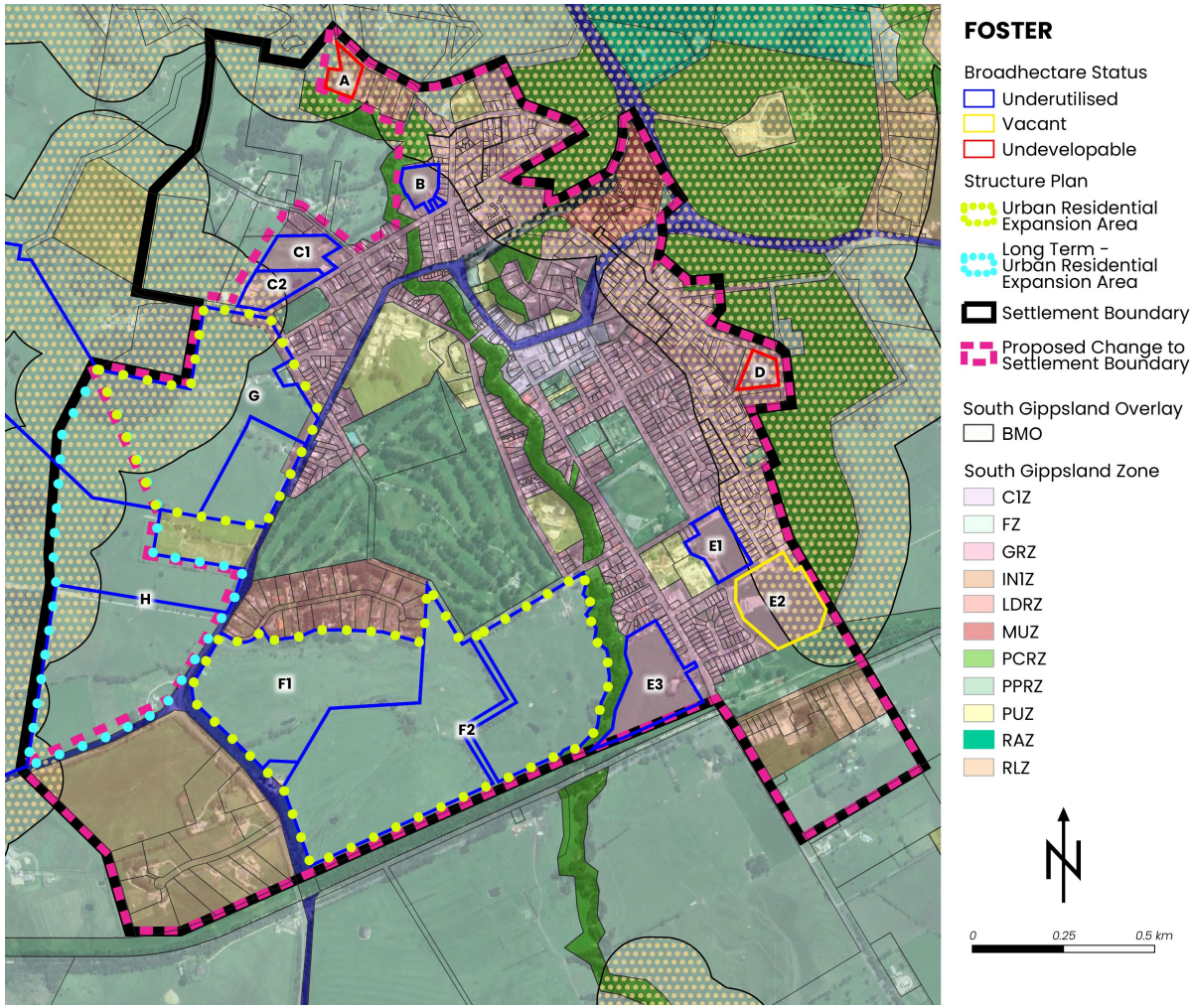
Residential development in Foster is highly constrained by the BMO, which encompasses the east, north and north western fringes of the urban area.

Table 23 Residential Land supply summary, Foster

	Vacant (ha)	Underutilised (ha)	Total (ha)
GRZ1	5.38	13.83	19.21
LDRZ	-	-	-
FZ (rezoning potential)	-	-	309.27*
Total	**5.38**	**13.83**	**328.48**

Source: Urban Enterprise, 2024

Figure 34 Vacant, underutilised & undevelopable sites, Foster



Source: Urban Enterprise, 2024
*FZ Land (Sites F, G & H) are currently farming zone and inactive. Together these areas total 309.27ha (3093 lots) and present as future rezoning opportunities.

THEORETICAL LOT CAPACITY

This section estimates the theoretical lot capacity of key residential sites in Leongatha, Korumburra and Foster. Sites that are not currently zoned for residential uses, but are identified as urban expansion areas are included (e.g. Structure Plan or ODP).

In order to determine the theoretical lot capacity within identified residential sites, the following method was adopted:

1. Determine physical constraints, and the planning and development status of sites in collaboration with Council, and classify the developability of sites as either developable, developable (but uncertain) or undevelopable.
2. Assign an indicative timeframe for the development of sites, including:
    - Short term (<2 years) – Received planning approval or has an approved Development Plan. Development has either commenced or imminent.
    - Medium term (2-6 years) – Development approval not yet received, but planning for the site is active.
    - Long term (6+ years) – Future development of the site is possible, but several barriers need to be resolved.
    - Uncertain (inactive) – Planning for the site is inactive and therefore timing of development is uncertain and cannot be indicated.
3. Estimate the net developable area of broadhectare sites by deducting 30% of the gross land area for roads, potential encumbrances and infrastructure requirements (e.g. drainage).
4. Calculate an average lot size in each town to be applied to the NDA by reviewing and measuring recent housing developments. Adopt:
    - 800sqm for Leongatha (GRZ, ODP);
    - 750sqm for Korumburra (GRZ); and
    - 700sqm for Foster (GRZ).
5. Identify potential urban expansion areas through existing strategic plans such as the Southern Outline Development Plan in Leongatha and the draft Foster Structure Plan. Repeat steps 3 and 4 for urban expansion areas.

The theoretical lot capacity for vacant and underutilised residential zones sites in Leongatha, Korumburra and Foster are summarised in Table 24 overleaf.

For the total lot capacity to be realised, it would require all identified supply areas to be developed. This is highly unlikely to occur for one or a combination of the following reasons:

- Existing uses continue;
- Servicing constraints;
- Landowners with no intention, expertise or financial capacity to sell or develop their land;
- Physical encumbrances on the land;
- Offsite infrastructure costs (roads, drainage, etc) impact economic viability of broad-hectare development.

Leongatha

- ~100 lots are currently underway.
- There is capacity to deliver 160 lots in existing zoned land, and a further 600+ lots in unzoned land.
- The development potential of around 50% of zoned lot capacity is considered uncertain.
- Unzoned land in the ODP area is likely to be needed to meet longer term demand for new housing.

Korumburra

- ~85 lots are currently underway.
- Capacity to accommodate 705 lots in existing zoned land, and a further 100+ lots in unzoned land.
- The majority of lot capacity has uncertain development potential or is inactive (~350-500 lots)

Foster

- Foster has no new lot capacity in the immediate pipeline.
- Foster has capacity to accommodate ~140 lots in existing zoned land, and a further 3,000+ lots in unzoned land.
- Unzoned lot capacity is located in potential future urban expansion areas identified in the Structure Plan. Therefore, development potential is uncertain, and is a much longer term prospect.

Table 24 Theoretical lot capacity summary

Leongatha	**Short Term** (>2 Years)	**Medium Term** (2-6 Years)	**Long Term** (6+ Years)	**Uncertain** (inactive)	**Total**
Developable	10 lots	14 lots	-	56 lots	80 lots
Developable (Uncertain)	-	36 lots	46 lots	-	82 lots
Total	**10 lots**	**50 lots**	**46 lots**	**56 lots**	**162 lots**
				Underway	*103 lots*
				Potential future urban expansion	*616 lots*
				Undevelopable	*20.43 ha*

Korumburra	**Short Term** (<2 Years)	**Medium Term** (2-6 Years)	**Long Term** (6+ Years)	**Uncertain** (inactive)	**Total**
Developable	34 lots	114 lots	-	51 lots	199 lots
Developable (Uncertain)		165 lots	40 lots	301 lots	506 lots
Total	**34 lots**	**279 lots**	**40 lots**	**352 lots**	**705 lots**
				Underway	*84 lots*
				Potential future urban expansion	*109 lots*
				Undevelopable	*6.95 ha*

Foster	**Short Term** (<2 Years)	**Medium Term** (2-6 Years)	**Long Term** (6+ Years)	**Uncertain** (Inactive)	**Total**
Developable	-	54 lots	-	0	54 lots
Developable (Uncertain)	-	-	-	138 lots	138 lots
Total	**0 lots**	**54 lots**	**0 lots**	**138 lots**	**192 lots**
				Underway	*0 lots*
				Potential future urban expansion	*3,093 lots*
				Undevelopable	*2.10 ha*

Source: Urban Enterprise, 2024

ISSUES AND OPPORTUNITIES: RESIDENTIAL LAND SUPPLY, SOUTH GIPPSLAND

1. To meet ongoing demand for new dwellings within current conditions, approximately 200 new dwellings are needed each year in South Gippsland Shire (to 2036). The majority of growth is expected to be directed to Leongatha and Korumburra as the municipality's highest order settlements.
2. Vacant residential zoned land in Leongatha is becoming limited. Planning for development of unzoned land in the Southern ODP and where a logical extension of a contiguous area can be provided, should be supported.
3. Korumburra has the most substantial residential land stocks and theoretical lot capacity. However, the development potential for most of this land is uncertain or is currently inactive. Improving developability of zoned land areas and activating zoned land stocks should be a focus over the medium term.
4. Foster has no active development fronts, and zoned broadhectare land has practically exhausted. An increase in demand for greenfield lot and house product cannot currently be met. Planning for urban expansion (as per the Structure Plan recommendations) should continue.
5. It is likely that new housing and rental stock will be needed in Leongatha, Korumburra and Foster - both to serve business as usual demand, but also a potential uplift in demand from temporary and permanent workers associated with activity at the Port of Corner Inlet, transmission corridors and coastal crossings.
6. Coastal Villages, Hamlets and Localities in South Gippsland face several challenges around environmental and biodiversity sensitivities and risks around climate change. As a result, local policy does not support future urban expansion of these areas.

SECTION 8

INDUSTRIAL LAND SUPPLY & CONSUMPTION

INTRODUCTION

This section provides an industrial land supply analysis for Latrobe City municipality. South Gippsland commissioned an industrial land supply and demand assessment in 2023, and is referenced in this Study.

The purpose of this analysis is to determine the quantum of zoned land supply that is available for development and market consumption, especially potential business demand associated with the renewable energy supply-chain.

The scope of the land supply analysis is limited vacant and underutilised zoned industrial sites in Morwell, Traralgon, Moe & Churchill. Maryvale has been excluded from the analysis.

Infrastructure and servicing constraints are based on observations, desktop analysis and discussions with Latrobe City Council. No technical assessments pertaining to land capability, infrastructure and servicing have been prepared.

METHODOLOGY

To assess residential land supply, the following methodology was adopted:

- Define the study area and zones to be included, which include:
  - Morwell, Moe, Traralgon and Churchill.
  - Industrial 1 Zone (IN1Z), Industrial 2 Zone (IN2Z) and Industrial 3 Zone (IN3Z).
- Using GIS, property boundary, planning zones & overlay, identify vacant and underutilised sites that can theoretically be developed.
- Vacant is defined as a site with no capital improvements, definitive use or activity that is apparent.
- Underutilised is defined as a site with a capital improvement located on a very small portion (<5% of site area). Activity is apparent on the site, but without full utilisation.
- Manually verify vacant and underutilised sites in collaboration with Latrobe City Council, and supplement by reviewing satellite imagery (NearMap).

LAND SUPPLY SUMMARY, TOTAL

There is an estimated 717 ha of vacant and underutilised industrial land supply in Latrobe City.

- 605 ha (84%) is vacant; the majority of which is IN1Z.
- 634 ha (88%) of vacant and underutilised land is IN1Z.
- A further 111 ha of IN1Z land is underutilised.

Table 25 Industrial land supply summary

Zone	Vacant (ha)	Underutilised (ha)	Total (ha)
IN1Z	522.89	111.05	633.94
IN2Z	64.10	-	64.10
IN3Z	18.57	1.08	19.66
Total	**605.56**	**112.13**	**717.69**

Source: Urban Enterprise, 2024

INDUSTRIAL LAND SUPPLY SUMMARY

Vacant and underutilised industrial land availability in Latrobe City is summarised in Table 26.

Key observations are as follows:

- There is approximately 605ha of vacant industrial land in Latrobe City, and a further 112 ha of underutilised land.
- The overwhelming majority of vacant land (91%) is dispersed across Morwell (550 ha).
- Traralgon and Moe include 19 ha and 18 ha of vacant IN1Z land respectively.
- Churchill includes one small IN3Z precinct, with around 6 ha of vacant land left.

Industrial land supply for each township is assessed in further detail on the following pages.

Morwell is assessed at a precinct level, given the substantial zoned land that is available compared with other towns.

Industrial land supply summaries for Moe, Traralgon and Churchill are detailed in Appendix B.

Table 26 Industrial land supply summary, Latrobe City

Town	Zone	Vacant (ha)	Underutilised (ha)	Total (ha)
Morwell	IN1Z	485.8	80.4	566.2
	IN2Z	64.1	0.0	64.1
	IN3Z	0.6	0.3	0.8
	Sub-total	**550.5**	**80.7**	**631.1**
Traralgon	IN1Z	19.0	6.3	25.3
	IN2Z	0.0	0.0	0.0
	IN3Z	1.0	0.0	1.0
	Sub-total	**20.0**	**6.3**	**26.3**
Moe	IN1Z	18.1	24.4	42.5
	IN2Z	0.0	0.0	0.0
	IN3Z	10.8	0.6	11.4
	Sub-total	**28.9**	**25.0**	**53.9**
Churchill	IN1Z	0.0	0.0	0.0
	IN2Z	0.0	0.0	0.0
	IN3Z	6.1	0.2	6.4
	Sub-total	**6.1**	**0.2**	**6.4**
Total	IN1Z	522.9	111.0	633.9
	IN2Z	64.1	0.0	64.1
	IN3Z	18.6	1.1	19.7
	Total	**605.6**	**112.1**	**717.7**

Source: Urban Enterprise, 2024

MORWELL

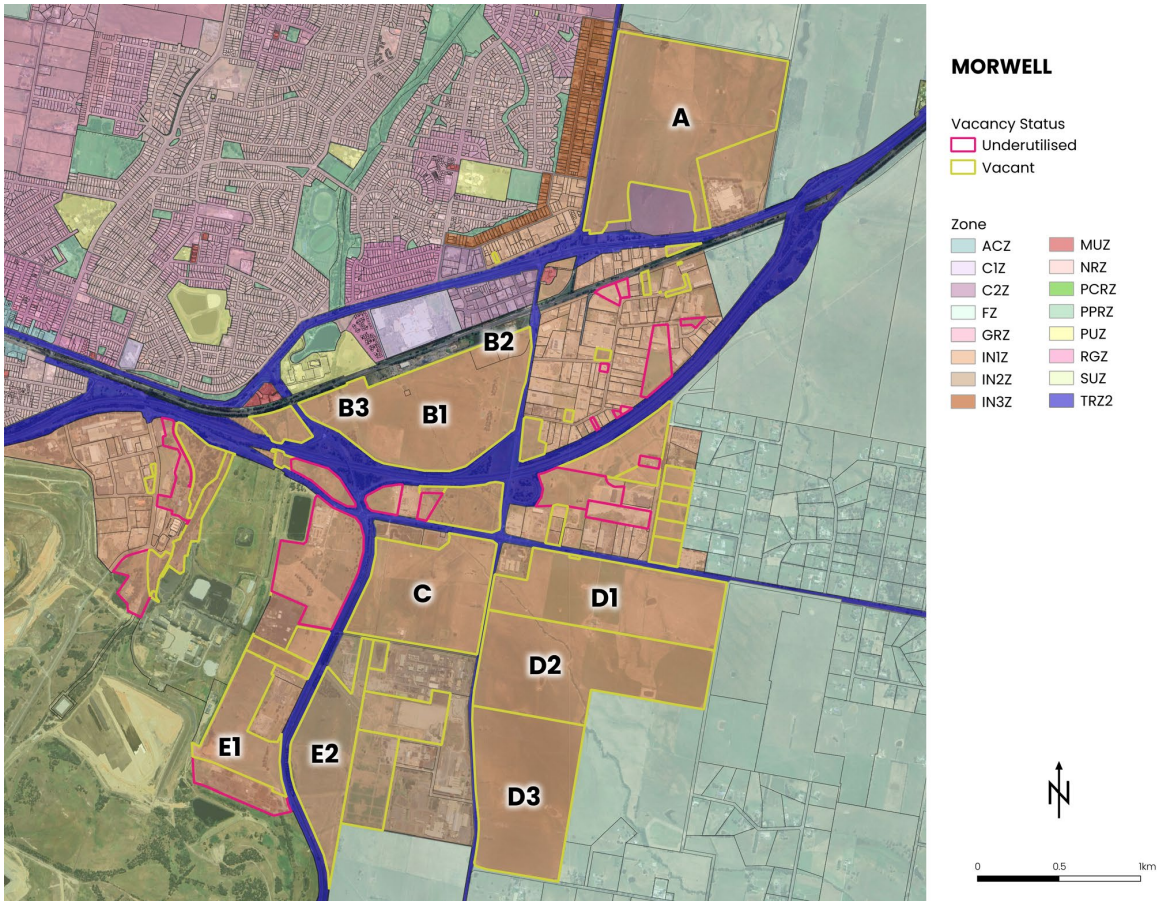
Morwell currently includes 550ha of vacant and 80 ha of underutilised industrial land.

Key vacant sites are identified in Figure 35. There are large industrial zoned areas clustered to the south of the Princes Highway, along Enterprise Drive and in Hazelwood North (east of the decommissioned coal fire power station).

Although it appears that Morwell is well supplied for industrial zoned land, many precincts identified have various development constraints that impact the developability of the land.

Individual precincts are assessed in more detail on the following pages.

Figure 35 Industrial land supply, Morwell



ID	Location	Area (ha)	Zone	Overlays
A	Princes Drive, Morwell	89ha vacant	IN1Z	BMO, DDO, DPO, LSIO
B1	Enterprise Drive, Morwell		IN1Z	
B2	Enterprise Drive, Morwell	69ha Vacant	IN1Z	DDO
B3	Enterprise Drive, Morwell		IN1Z	FO, DDO
C	Porters Road, Hazelwood North	48ha vacant	IN1Z	DDO, ESO, FO, LSIO
D1	Firmins Lane, Hazelwood North	55ha vacant	IN1Z	DDO, ESO, FO, SRO
D2	Tramway Road, Hazelwood North	67ha vacant	IN1Z	FO, LSIO, SRO
D3	343 Tramway Road, Hazelwood North	58ha vacant	IN1Z	
E1	Monash Way, Morwell	23ha vacant	IN1Z	
E2	Monash Way, Hazelwood North	34ha vacant	IN2Z	

Source: Urban Enterprise, 2024

Precinct A, Morwell

Precinct A is generally bound by Alexanders Drive to the east, Princes Drive to the south and National Road to the north.

The 89 ha precinct is zoned Industrial 1.

Constraints

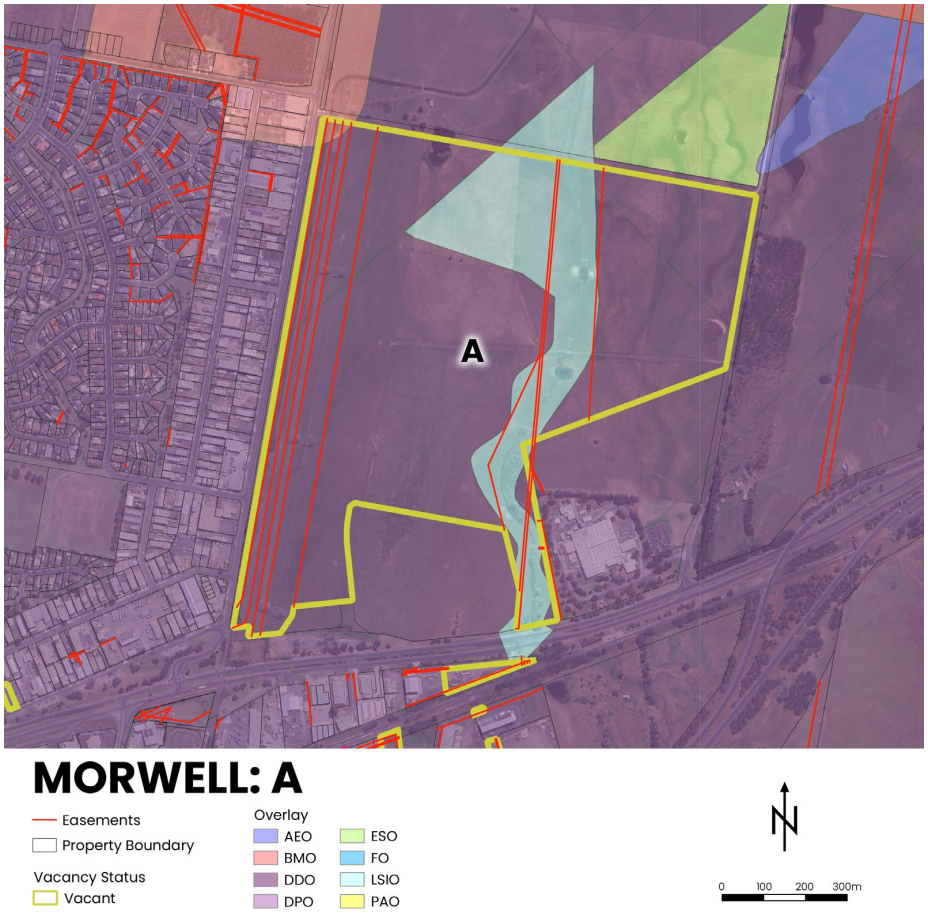
Several constraints are evident and include:

- Heavy rail spur line along western boundary (east of Alexanders Rd).
- Powerline easement running from north to south, near the Alexanders Road boundary.
- Traralgon-Morwell shared path traverses the precinct.
- Potential signalised intersection required to provide vehicular access and connect Princes Drive with the site.

Planning and Development Status

A Development plan for the land in the north west corner of Precinct A was approved around 10 years ago. The Plan includes a staged industrial subdivision, providing industrial allotments between 1,000-2,500sqm.

Figure 36 Industrial land supply, Precinct A, Morwell



ID	Location	Area (ha)	Zone	Overlay
A	Princes Drive, Morwell	89ha vacant	IN1Z	BMO, DDO, DPO, LSIO

Source: Urban Enterprise, 2024

Precinct B, Morwell

Precinct B is located to the north of Princes Highway, and is generally bound by Enterprise Drive to the north, Tramway Road to the east and Monash Way to the west.

The 69 ha IN1Z precinct is vacant.

Constraints

B1, B2– DDO applies to the area, which relates to the Airport. Overlay is manageable.

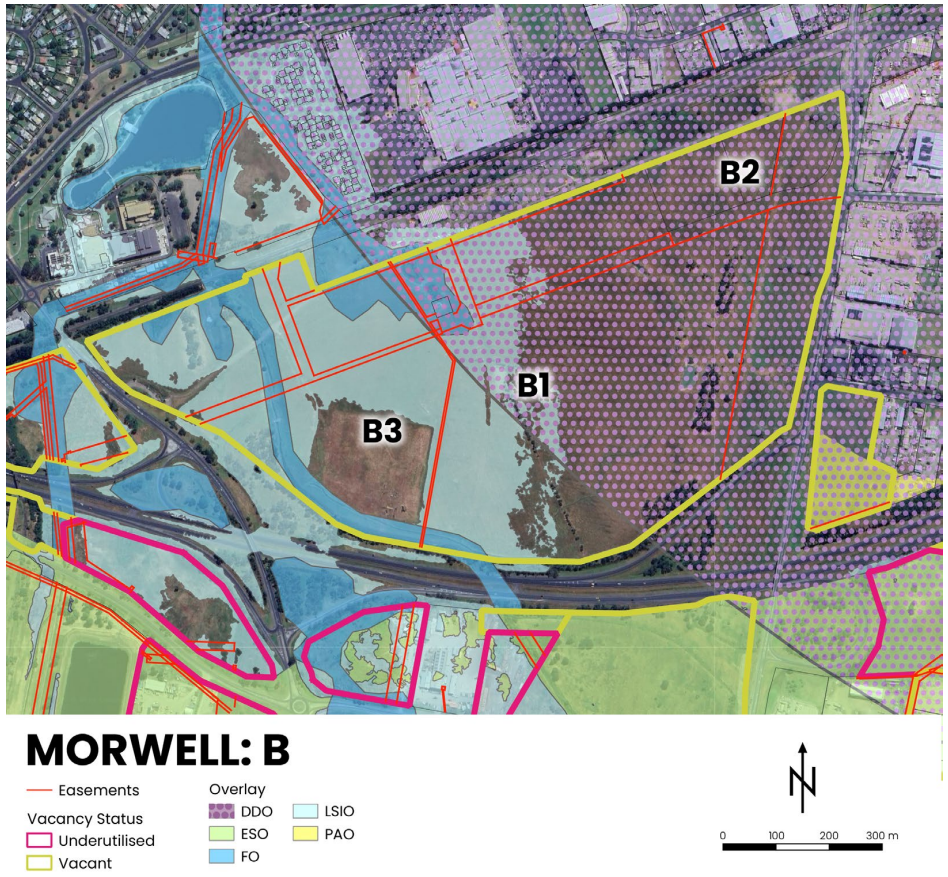
B3 - Heavily constrained. FO & LSIO applies to majority of land, along with some easements. Considered to be mostly undevelopable.

Planning and Development Status

B1, B3 – No status

B2 - Council owned land that is designated for a transport and logistics precinct. Planned subdivision approved, with works expected to commence in June 2024.

Figure 37 Industrial land supply, Precinct B, Morwell



ID	Location	Area (ha)	Zone	Overlay
B1	Enterprise Drive, Morwell	69 ha vacant	IN1Z	DDO
B2	Enterprise Drive, Morwell		IN1Z	DDO
B3	Enterprise Drive, Morwell		IN1Z	FO, LSIO
Total: 69 ha vacant				

Source: Urban Enterprise, 2024

Precinct C, Morwell

Precinct C is generally bound by Firmins Lane to the north, Tramway Road to the east and Monash Way to the south.

The 48ha precinct is IN1Z.

Constraints

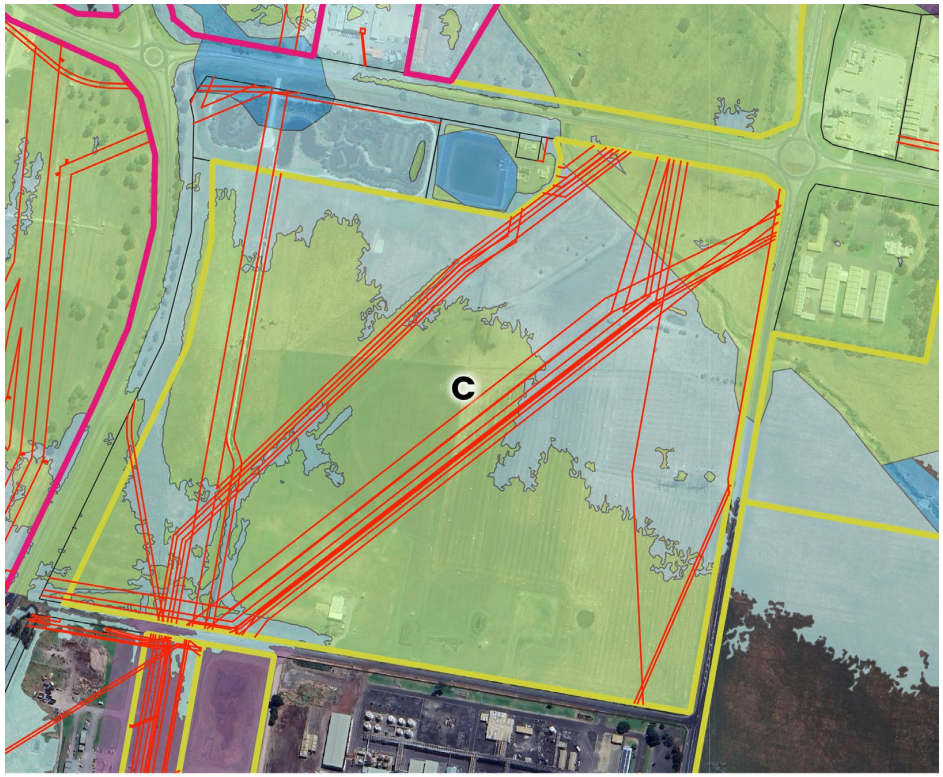
Many constraints are evident, which renders the land undevelopable in its current state.

- ESO applies to the entire precinct.
- LSIO applies to the north-east area.
- Powerline on Eastern side of site and through NE corner
- Adjacent to wetlands area and a basin.
- Many easements associated with the adjacent coal fired power station (decommissioned) dissect the site, extending from south-west corner to north-east corner

Planning and Development Status

No status.

Figure 38 Industrial land supply, Precinct C, Morwell



ID	Location	Area (ha)	Zone	Overlay
C	Porters Road, Hazelwood North	48ha vacant	IN1Z	DDO, ESO, FO, LSIO

Source: Urban Enterprise, 2024

Precinct D, Morwell

Precinct D is generally bound by Firmins Lane to the north, Tramway Road to the west and Church Road to the south.

The 180ha precinct is IN1Z.

Constraints

D1 - Waterhole Creek extends from the north western corner to the south eastern corner. LSIO applies to the north eastern corner and central part of D2.

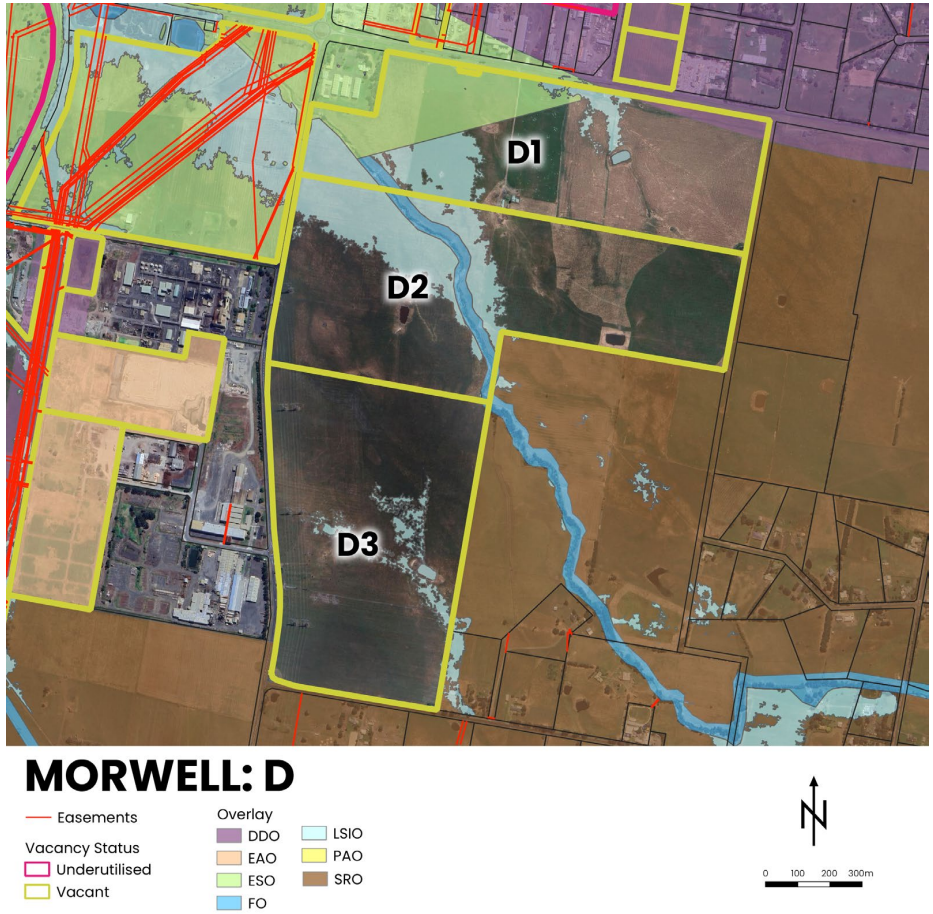
D2 - Powerlines travel through south-western corner. Waterhole creek runs NW to SE

D3 - Powerlines present along the western boundary. Some scattered LSIO in the central and south-eastern areas.

Planning and Development Status

No status.

Figure 39 Industrial land supply, Precinct D, Morwell



ID	Location	Area (ha)	Zone	Overlay
D1	Firmins Lane, Hazelwood North	55ha vacant	IN1Z	DDO, ESO, FO
D2	Tramway Road, Hazelwood North	67ha vacant	IN1Z	FO, LSIO
D3	343 Tramway Road, Hazelwood North	58ha vacant	IN1Z	LSIO

Source: Urban Enterprise, 2024

Precinct E, Morwell

Precinct E is generally bound by Monash Way to the west, Tramway Road to the east and Bonds Lane to the south.

The 57ha precinct is IN1Z.

Constraints

E1, E2 – Many easements associated with the adjacent coal fired power station (decommissioned) dissect the site in many directions.

The land in E2 and E3 is undevelopable.

Planning and Development Status

No status.

Figure 40 Industrial land supply, Precinct E, Morwell

ID	Location	Area (ha)	Zone	Overlays
E1	Monash Way, Morwell	23ha vacant	IN1Z	
E2	Monash Way, Hazelwood North	34ha vacant	IN2Z	

Source: Urban Enterprise, 2024

INDUSTRIAL LAND CONSUMPTION

Land consumption is the amount of land that changes from vacant to occupied (having a clear industrial use or structure not previously identified).

Historical consumption rates can provide an indication of industrial land demand, albeit land can only be consumed where 'market ready' zoned land is available for business consumption and occupation.

A high level review of industrial land consumption in Moe, Morwell and Traralgon was completed for the 5-year period between November 2018 and November 2023 to understand the average annual rate of consumption under 'business as usual' conditions

In the 5-year period, a total of 24.2 ha of industrial land was consumed across the four townships. This equates to an average of 4.8ha per annum.

Consumption rates can vary considerably from year to year, and can on only occur where 'market ready land is available.

Figure 41 shows the locations and sites in Morwell, Traralgon and Moe where consumption has occurred in recent years. These appear to be some of the only active industrial precincts in Latrobe City.

Table 26 Industrial land consumption

	No. of Sites	Total area (ha)	Ave consumption p.a. (ha)
Moe	8	1.68	0.28
Morwell	11	17.98	3.60
Traralgon	21	4.55	0.91
Total	**40**	**24.21**	**4.84**

Source: Urban Enterprise, 2024

Figure 41 Industrial land consumption, Moe, Morwell, Traralgon, 2018-23

Source: Urban Enterprise, 2024

SOUTH GIPPSLAND

South Gippsland Shire commissioned Spatial Economics to complete an industrial land supply and demand assessment in 2023.

The assessment found that the Shire had a total of 783 ha of zoned industrial land stocks, of which 590 hectares (75%) were assessed as likely to be available (i.e. effective 'supply') for industrial purpose development.

- Barry Beach/Port Anthony – 530 ha
- Leongatha – 96 ha;
- Korumburra – 69 ha;
- Welshpool – 37 ha;
- Mirboo North – 22 ha;
- Toora – 13 ha;
- Foster – 12 ha;
- Nyora – 3.4 ha;
- Meeniyan – 1.3 ha; and
- Loch – 0.7 ha.

The overall quantum and declining levels of industrial land production and consumption across South Gippsland appears to be directly attributable to:

- The overall undersupply of zoned industrial lands; and
- The lack of economically viable opportunities to increase supply across the municipality.

If the shortage of suitable, and economically viable, sites for industrial subdivisions is addressed there is an opportunity for South Gippsland to both:

- Capture a proportion of industrial activity from the wider region; and
- Reduce and/or recapture some of the industrial land users who have been 'lost' to South Gippsland due to the lack of suitable industrial lots and land supply opportunities.

The assessment estimates that the municipality will require between 72 and 138 net developable hectares of zoned industrial land to 2041.

This requirement is in addition an estimated current deficiency of approximately 9 net developable hectares of zoned industrial land in South Gippsland, located in the industrial nodes of Korumburra and Leongatha.

The assessment indicates that there is a current undersupply of industrial land supply in Leongatha and Korumburra. Council should seek to support the development of zoned land stocks to ensure land is available for market consumption.

The substantial zoned land stocks on Barry Road adjacent to Barry Beach Marine Terminal and Port Anthony is a highly strategic landholding but with potential development constraints, including environmental, heritage and flooding.

The extent of developability is unknown, but should be investigated, given the potential to utilise for renewable energy supply chain uses, especially offshore wind and hydrogen exports.

SPECIAL USE ZONE, LATROBE CITY

The Latrobe Valley Regional Rehabilitation Strategy (LVRRS) outlines policy and provides guidance to progress mine rehabilitation planning.

Hazelwood ceased operations in 2017 and Yallourn and Loy Yang A have brought forward their power station closure dates. This means careful consideration and planning for mine rehabilitation needs to be undertaken.

Mine rehabilitation is complex and involves different risks and opportunities. The final rehabilitated landforms are expected to take decades to deliver.

The Special Use Zone 1 (SUZ1) currently applies to coal mines and power stations in Latrobe City, including around Loy Yang and Yallourn. The purpose of the SUZ1 is:

- To provide for brown coal mining and associated uses.
- To provide for electricity generation and associated uses.
- To provide for interim and non-urban uses which protect brown coal resources and to discourage the use or development of land incompatible with future brown coal mining and industry.

There are also buffer requirements that restrict certain activities proximate to mining and coal power generating activities.

As these areas continue to rehabilitate, there may be an opportunity to investigate re-purposing or activating unused and surplus SUZ1 land for alternative and productive uses in Loy Yang and Yallourn.

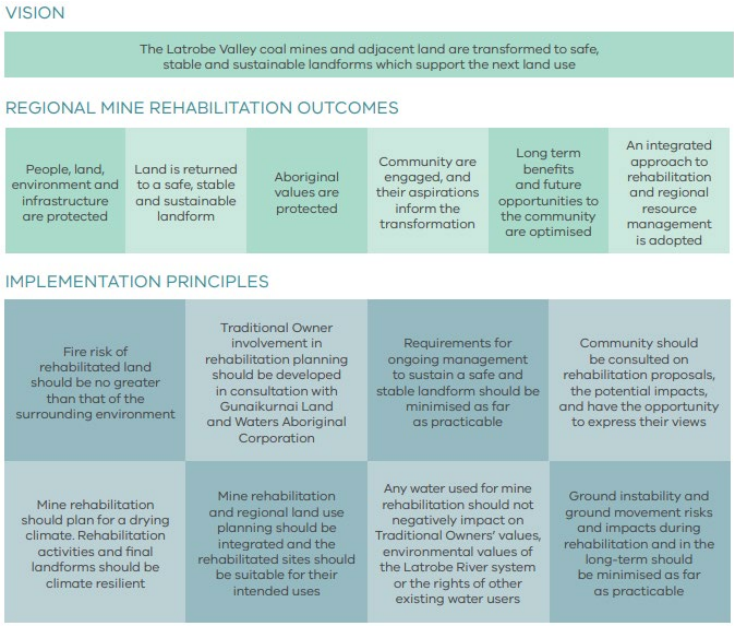
The State Earth Resources Regulator is responsible for regulating coal mining activities.

Investigating the potential to utilise surplus or underutilised SUZ1 land in Latrobe City would require:

- Coordination between local, State and Federal Government, along with the private sector – especially the State Earth Resources Regulator; and
- Alignment with Latrobe Valley Regional Rehabilitation Strategy.

A report on a strategic land use vision for the mines and the area in the vicinity of the mines (the draft Preliminary Land Use Vision - PLUV) was prepared in 2019. The PLUV identifies opportunities for land use change based on the following four themes:

- Tourism, Liveability, Recreation
- Industry, Business, Commerce
- Agriculture, Energy, Water
- Services, Education, Training



Source: Latrobe Valley Regional Rehabilitation Strategy

ISSUES AND OPPORTUNITIES

1. Morwell is well served for zoned industrial land stocks, and appears to be the logical area to accommodate future demand for industrial sites, especially related to the renewable energy supply chain.
2. Many constraints and encumbrances are evident across different precincts in Morwell; including easements and buffers associated with coal mining and coal fired power generation. There may be an opportunity to advocate for these planning barriers (associated with decommissioned areas) to be reviewed in order to improve the developability of zoned land.
3. Council should seek to address infrastructure and other development constraints that present barriers to development in Precinct A, B1, D1, D2, and D3 in Morwell.
4. Other towns in Latrobe City such as Traralgon, Moe and Churchill have limited vacant industrial land. These towns should continue to serve 'business as usual' demand from population-service industries and industry specialisations.
5. There is a current undersupply of industrial land supply in Leongatha and Korumburra. Council should seek to support the development of zoned land stocks to ensure land is available for market consumption.
6. The majority of South Gippsland's vacant zoned industrial land is located on Barry Rd adjacent to the Port (~550ha+). This area appears to include many development constraints, and the extent of developability is unknown. However, this land is highly strategic that may be appealing to future investment that serves the OSW supply-chain and hydrogen exports.
7. As coal mines in and around Loy Yang and Yallourn plan to close and rehabilitate over time, there may be an opportunity to investigate re-purposing or activating unused and surplus SUZ1 land for alternative and productive uses (e.g. industry hubs).

SECTION 9

INFRASTRUCTURE

INTRODUCTION

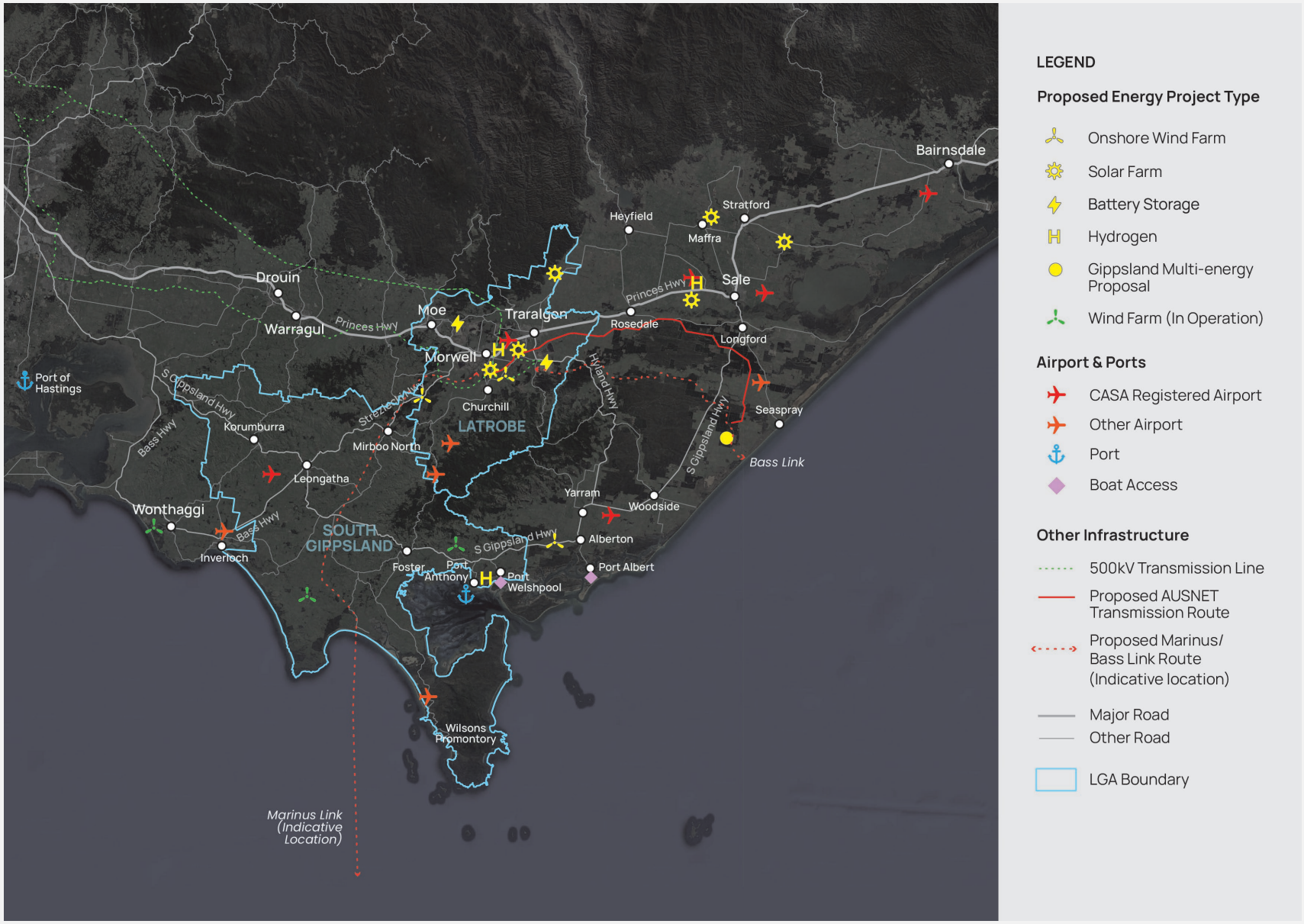
This section includes a review of the infrastructure issues and opportunities relevant to ports, roads, transmission and civil infrastructure.

MAJOR INFRASTRUCTURE ASSETS

Major infrastructure assets are shown overleaf, and include:

- An existing 500 kV transmission line connects Melbourne to the Latrobe Valley. The investigation area for the proposed new G-REZ transmission route extends from Hazelwood through south of Rosedale and Longford to Giffard.
- Port of Hastings is the preferred location for an offshore wind construction hub (subject to approvals). Other deepwater commercial ports (e.g. Geelong, Bell Bay) may also support construction and assembly requirements for offshore wind.
- The closest commercial port with access to proposed offshore wind projects is the Port of Corner Inlet (Barry Beach Marine Terminal/Port Anthony).
- Several airports exist in the region, including a CASA registered airport in Latrobe.
- Major road transport routes include the Princes Freeway and South Gippsland Highway.

Figure 42 Gippsland Enabling Infrastructure



Source: Urban Enterprise, 2024

PORTS

For offshore wind, longer term hydrogen export opportunities and other logistics purposes, ports will be critical to facilitating construction and operations and maintenance activities over a long period.

The following summarises the high level 'readiness' of key ports in proximity to projects.

Port of Hastings

The Port of Hastings is the largest port servicing Gippsland, has deep water access and has substantial adjacent land that could be used for construction purposes.

Victoria's Offshore Wind Implementation Statement 3 (2023) identifies the Port of Hastings as the preferred location for a construction hub.

Consultees communicated that the requirements to upgrade Port of Hastings to accommodate a construction hub for offshore wind will be substantial.

Port of Corner Inlet

Port of Corner Inlet located in South Gippsland (adjacent to the Wellington Shire municipal boundary) is the main commercial port in southern Gippsland.

The port is generally split into three separate but adjacent areas:

- Port Anthony (the southern area) - Approximately 180m of wharf face, with one commercial berth.
- Barry Beach Marine Terminal (BBMT) (the central area) – Approximately 400m of wharf face.
- Private freehold (northern area) is privately owned freehold land. No wharf face.

BBMT at Corner Inlet is currently used as an operational and maintenance hub (O&M) to service the oil and gas industry, with 23 offshore platforms and installations in the Bass Strait.

Port Considerations

Port planning and investment will be central to the region's readiness for offshore renewable energy projects.

At present, although the Port of Hastings has been nominated as the preferred construction port and hub, there remains a level of uncertainty regarding the extent of developability and utilisation, given the environmental sensitivities in the area.

Several construction ports may be drawn on to support Gippsland's offshore wind sector, including Geelong and Bell Bay in Tasmania.

The regional economic benefits associated with Corner Inlet becoming the location for an offshore wind construction hub would be substantial, with nearby towns the most likely beneficiaries.

Advantages of Corner Inlet include:

- Proximity – Located closer to proposed offshore wind projects than other deep-water ports, with notable travel time and cost savings. For example, Star of the South is approximately a 6 hour travel time from Corner Inlet, compared with 13-14 hours from Hastings, and 17-18 hours from Geelong.
- Wharf face & quay side access – BBMT has a wharf face in excess of 400m, allowing it to accommodate major construction vessels. The adjacent Port Anthony has a wharf face in the order of 180m.
- Land area – BBMT has around 80 ha of land area, with additional land available at Port Anthony.

However, the water depth at Corner Inlet is estimated at around 6.5 metres, which is not at a level to accommodate vessels used as part of a construction hub. For Corner Inlet to be considered, dredging would be required to deepen the channel to achieve a draft of 10.5 metres on the entrance to Corner Inlet and in the Barry Beach channel.

While the potential for Corner Inlet to ultimately function as a construction hub remains uncertain and subject to other processes, it is clearer that Port of Corner Inlet is an attractive location for an offshore wind O&M hub given its existing role servicing offshore oil and gas activities.

It is noted that the decommissioning of oil and gas platforms are planned to occur in the Bass Strait in the coming years. Preliminary discussions with port authorities indicated that BBMT has adequate capacity to accommodate an offshore O&M hub alongside decommissioning and other operations.

It is likely that Port of Corner Inlet will be the most logical and suitable candidate to accommodate an offshore wind O&M hub in Gippsland, and that some construction activities may also be possible subject to approvals and investment.

ROADS

The current state of play and issues for the road network are summarised below. This information was informed via consultation with the Department of Transport (DTP) as part of the Wellington Study.

- A strength of the Gippsland region is its arterial road network which currently supports a wide range of heavy vehicle and special purpose vehicle movements.
- The South Gippsland Highway and Princes Highway form part of the Principal Freight Network and are generally in good condition.
- Overall, the arterial road network through Gippsland is more than 90% 'complete' in terms of being fit for purpose to accommodate large vehicles, freight and B Doubles.
- Strategic road upgrades to respond to energy project needs could be an important legacy benefit for communities.

Roads Considerations

In most instances, ongoing strategic upgrades to the arterial road network will be the responsibility of the State government, with South Gippsland and Latrobe City important stakeholders.

Major offshore wind construction movements are expected to primarily occur offshore by marine vessels, meaning that road will not be required to accommodate large scale equipment and logistics exercises. However, roads are still critical for transporting smaller components, material and key workers, especially to and from the Port of Corner Inlet.

Onshore wind will place substantial demands on the road network, and ongoing construction and operations movements will increase throughout the Gippsland road network as the scale and complexity of projects in the area increases (especially transmission network construction).

DTP advised that transmission routes will be an important consideration for the arterial road network, especially relating to points at which the transmission infrastructure needs to cross roads or interface / share road reserves.

Given the main impacts will be on arterial roads, consultation with DoT was completed to determine the information that will be needed to inform a strategic response at the State and regional level. The following next steps are advised:

A Regional Strategic Action Plan for declared roads will be needed to identify priority road actions for funding. This should be informed by:

- Existing route mapping and condition ratings,
- Locations and requirements of key onshore movements to projects;
- Locations of proposed transmission lines and easements, including potential arterial road crossing points and any proposed shared use of road reserves for transmission purposes.
- Gaps in the existing network;
- Key actions and projects; and
- Prioritisation of projects based on costs and benefits.

At the local level, South Gippsland and Latrobe City will need to be in a position to efficiently respond to individual project applications in respect of:

- Temporary access plans;
- Key infrastructure upgrades that are likely to be needed (especially access intersections); and
- Local policy and guidelines on how the impacts of major energy projects on local roads will be assessed and funded by proponents (including investigation of any cost sharing opportunities).

Given that similar issues will be experienced across South Gippsland, Latrobe and Wellington on local, regional and State significant road issues, there is a clear opportunity for each Council to liaise closely on these issues. This will be especially important as projects progress further and announcements are made regarding port locations, construction plans and other key elements of the pipeline of energy projects in the region.

CIVIL INFRASTRUCTURE

In the context of this Study, civil infrastructure primarily refers to water, sewer and drainage infrastructure required to support urban development and expansion.

Based on consultation with Gippsland Water and South Gippsland Water, the following readiness considerations are relevant:

- Several wastewater treatment plants in Latrobe City and South Gippsland are approaching capacity (e.g. Korumburra, Foster, Morwell). Potential upgrades or new treatment plants may be required to support new industrial business users.
- Korumburra and Foster are well served for town water supply, and can accommodate growth.
- Leongatha's town water supply is constrained. Constructing a connection between Korumburra and Leongatha is an opportunity, but would be costly and complex.
- Sewer networks will need to upgrade and expand in line with urban development and expansion.

Importantly, water authorities expressed that there is a lack of coordination across civil infrastructure needs and delivery. Consultation and communication between Council's and service authorities will be critical. Latrobe City and South Gippsland will advocate and seek support for the planning of key infrastructure, such as waste and water.

ISSUES AND OPPORTUNITIES

1. Certainty regarding transmission alignments is important for proponents and the community. The ultimate transmission network should be consolidated wherever possible to maximise efficiencies and minimise visual and environmental impacts.
2. Port infrastructure and related land will be needed to support offshore wind and hydrogen export opportunities. Port of Corner Inlet is well placed to perform an O&M role and potentially a construction role which would benefit the delivery of projects and the Gippsland economy.
3. Preparations for upgrades to the arterial and local road networks will be needed to ensure readiness for construction phases of project. This will require State, regional and local involvement and could create legacy benefits for communities in areas which currently have sub-standard road networks.
4. The urban infrastructure network in Latrobe City and South Gippsland could limit the ability of certain areas to accommodate housing and business growth in response to projects. This is particularly relevant to drainage, town water supply and wastewater treatment.

SECTION 10

DIRECTIONS & ACTION PLAN

DIRECTIONS

Ten strategic directions are recommended to ensure local readiness, facilitate investment and maximise economic benefits the flow to local municipalities and the broader Gippsland region.

Directions have been formulated to directly respond to the issues and opportunities presented in this Study.

An Action Plan is detailed on the following pages to guide implementation.

Themes	Directions
Supply-Chain	1. Support and promote the existing business base to integrate into the renewable energy supply-chain. 2. Position the Gippsland region to attract national and global suppliers to the renewable energy sector. 3. Plan for Gippsland to become a primary hub for renewable energy supply-chain.
Jobs & Skills	4. Attract, develop and grow the regional labour force to service employment needs.
Housing & Accommodation	5. Plan for a diversity of housing and accommodation needs across Gippsland. 6. Encourage key worker housing to accommodate temporary and seasonal labour force needs. 7. Plan and logically sequence residential development in South Gippsland's larger settlements.
Infrastructure	8. Advocate for Port of Corner Inlet to become an Operations Hub to service the offshore wind industry. 9. Address civil infrastructure barriers to urban development in key residential and industrial locations. 10. Ensure transport and transmission readiness through early investigations and strategic planning.

ACTION PLAN

Recommended actions are identified which align with strategic directions and respond to issues and opportunities.

The Action Plan has regard to the context of local and state planning frameworks and broader regional priorities for Gippsland.

The action plan will need to be implemented in partnership with many stakeholders, including state and federal Government departments and agencies, regional economic development bodies, education and training providers, business and industry, community and First Nations groups and stakeholders.

Many actions will be subject to further investigation, stakeholder engagement and environmental approvals.

An indicative timeframe, lead and partner stakeholders are recommended for each action.

It is acknowledged that the implementation of actions will be subject to future resourcing, budgeting and prioritisation to be determined by each Council.

Actions are categorised as either High, Medium or Low priorities.

High priority actions should be undertaken in the short term, often because they are needed to commence a process which is lengthy, such as skills training and land supply augmentation, or because they are designed to address a clear priority or urgent need.

It is noted that many of the actions are preliminary, in the sense that many key elements remain uncertain such as the ultimate construction ports for OSW projects. In this context, it is important that a degree of flexibility and responsiveness is embedded into implementation. As such, this action plan should be regularly monitored and reviewed and choice intervals.

In particular, some actions relating to the scale, location and timing of housing needs associated with renewable projects will depend on the ultimate location and role of ports, and the timeframe over which projects are delivered.

Actions that are preliminary are marked with an asterisk in the action number. These recommended actions are subject to further announcements, investigation, monitoring and/or finalisation.

THEME: SUPPLY-CHAIN

Direction 1 - Support and promote the existing business base to integrate into the renewable energy supply chain.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
1.1	Liaise with renewable energy proponents regarding supply chain needs to refine the business and skill types required to support construction and operation.	Lead	Lead	Medium
1.2	Advocate for State and Federal Government to introduce local supplier mandates (minimum quotas) to ensure Gippsland businesses benefit from renewable energy project investment.	Advocate	Advocate	Medium
1.3	Prepare a database of local businesses engaged in activities that are relevant and related to the renewable energy supply chain and communicate opportunities.	Lead	Lead	Medium
1.4	Assist businesses to become 'supply chain ready' through the AusTender, Industry Capability Network (ICN) Gateway and the Latrobe City Industry alliance.	Lead	Lead	Medium
Direction 2 - Position the Gippsland region to attract national and global suppliers to the renewable energy sector.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
2.1	Incorporate and embed economic development objectives for the renewable energy sector into regional and local planning policy to establish a supporting policy context to attract and facilitate investment.	Partner	Partner	Medium
2.2	Engage with Invest Victoria, Latrobe Valley Authority, DJSIR, RDV and regional Councils to establish a value proposition and investment attraction strategy for large scale renewable energy project suppliers to establish in Gippsland.	Partner	Partner	Medium
2.3	Advocate for the preparation of a Gippsland Renewable Energy Investment and Growth Strategy.	Partner	Partner	Medium
2.4	Advocate for funding to support a dedicated Renewable Energy Unit within Council to: • Manage economic development and other enquiries and actions; • Coordinate with renewable energy related stakeholders; and • Liaise with and support different levels of government.	Advocate	Advocate	High

* Indicates actions that are subject to further announcements, investigation, monitoring and/or finalisation.

THEME: SUPPLY-CHAIN

Direction 3 - Plan for Gippsland to become a primary hub for the renewable energy supply chain.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
3.1	Advocate to address infrastructure and other development constraints that present barriers to industrial development in Precinct A, B1, D1, D2, and D3 in Morwell.^		Lead	High
3.2*	Support ongoing investigations around unused and/or surplus SUZ1 land surrounding Yallourn and Loy Yang – specifically the potential to re-purpose or activate this land for productive uses in the future (e.g. industry hubs).		Partner	Medium
3.3	Ensure that Traralgon and Moe have sufficient zoned industrial land stocks to meet ongoing population-led demand for serviced industrial (e.g. light industrial).		Lead	Medium
3.4*	Adopt South Gippsland's Industrial Land Strategy and implement recommendations, especially in relation to: - Addressing the deficiency of zoned land stocks in Leongatha and Korumburra; - Monitoring the quantum, location and type of industrial planning approvals and subdivision activity; - Monitoring industrial land 'consumption' and update industrial land capacity estimates to reflect residual capacity; and - Regularly engage with industrial landowners, businesses, developers and industry representatives to gather insights regarding potential industrial land development and supply issues.	Lead		Medium
3.5	Advocate for precinct investigations to be completed for the existing industrial zoned area on Barry Road, adjacent to the Port – to determine the future development potential of this land.	Advocate, lead and partner.		Medium

^ Refer to Section 8 of this study for precinct references.
* Indicates actions that are subject to further announcements, investigation, monitoring and/or finalisation.

THEME: JOBS & SKILLS

Direction 4 - Attract, develop and grow the regional labour force to service employment needs.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
4.1	Advocate for tertiary education and training providers to provide programs that match the jobs roles, qualifications and skills required to deliver, operate and maintain renewable energy projects and supplementary activities (e.g. transmission).	Advocate	Advocate	High
4.2	Advocate for the preparation of a regional skills attraction and training strategy, and participate in a working group of regional education and training providers to grow and strengthen locally based training opportunities and pathways into the renewable energy industry.	Advocate	Advocate	High
4.3	Facilitate and promote connections between renewable energy proponents and local secondary schools (through careers advisers and STEM networks) in relation to career pathways into the renewable energy industry.	Partner	Partner	High
4.4	Engage with oil and gas businesses and supply chain representatives to explore the need and opportunity to adapt and transfer skills and services from offshore oil and gas to offshore wind applications.	Partner	Partner	Medium
4.5	Continue to participate in coordination and advocacy efforts relevant to the renewable energy sector through peak bodies such as One Gippsland and Committee for Gippsland.	Partner	Partner	Ongoing
4.6	Continue to facilitate an annual round table event with businesses, industry, community and government stakeholders to discuss economic issues and opportunities, and create a forum to discuss happenings in the renewable energy sector locally.	Lead	Lead	Ongoing

THEME: HOUSING & ACCOMMODATION

Direction 5 - Plan for a diversity of housing and accommodation needs across Gippsland.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
5.1	Attract and facilitate residential investment that seeks to deliver a diversity of housing and tenure, especially rental properties, social and affordable housing.	Partner Advocate	Partner Advocate	High
5.2*	Advocate State government to expedite rezoning processes in identified urban expansion areas (following technical assessments) to provide for a broad range of housing growth opportunities.	Advocate	Advocate	High
5.3	Facilitate an increase in commercial accommodation investment in South Gippsland Shire, including areas proximate to the Port of Corner Inlet.	Advocate		Medium
Direction 6 - Encourage key worker housing to accommodate temporary and seasonal labour force needs.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
6.1	Liaise with renewable energy project proponents regarding the expected duration of construction phases, expected household sizes, and tenure requirements for workers during construction phases.	Lead	Lead	Medium
6.2	Monitor announcements and liaise with government stakeholders and project proponents regarding new drivers of housing demand and expected timing of accommodation needs.	Lead	Lead	Ongoing
6.3	Incorporate support for key worker housing into local policy and strategy.	Advocate	Advocate	High
6.4	Advocate to the State Government for the preparation of a key worker housing study for the region; establishing options for housing models, types, preferred locations, planning policy barriers and servicing requirements to support expected peaks in housing demand throughout project's construction phases.	Advocate	Advocate	High
6.5	Advocate for funding through the State Government's Regional Housing Fund to facilitate the delivery of new housing.	Advocate	Advocate	High
6.6	Update existing commercial accommodation operators of impending periods of high demand.	Partner	Partner	Ongoing
6.7	Engage with property owners of long term unoccupied dwellings in South Gippsland Shire to identify the potential for seasonal or temporary workers to be accommodated in existing dwellings. Advocate for landowners to consider utilising unoccupied dwellings for permanent or short term rental tenure.	Partner		Low

* Indicates actions that are subject to further announcements, investigation, monitoring and/or finalisation.

THEME: HOUSING & ACCOMMODATION

Direction 7 - Plan and logically sequence residential development in South Gippsland's larger settlements.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
7.1*	Plan for a long term supply of broad hectare residential land supply in Leongatha, Korumburra and Foster to accommodate 'business as usual' housing demand; in addition to any potential increase in demand that results from renewable energy projects.	Lead		High
7.2	Continue to engage with landowners of major vacant and underutilised residential landholdings in Korumburra and Leongatha to confirm development intentions and constraints.	Lead		Medium
7.3*	Advocate State government to expedite rezoning processes in identified urban expansion areas (following technical assessments) to provide for a broad range of housing growth opportunities.	Advocate	Advocate	High
7.4*	Complete and adopt the Foster Structure Plan. Plan and logically sequence urban expansion opportunities to address the scarcity of vacant residential zoned land.	Lead		High
7.5	Discourage residential expansion in South Gippsland Shire's coastal villages and hamlets.	Lead		Ongoing

* Indicates actions that are subject to further announcements, investigation, monitoring and/or finalisation.

THEME: INFRASTRUCTURE

Direction 8 - Advocate for Port of Corner Inlet to become an Operations and Maintenance Hub to service the offshore wind industry.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
8.1	In partnership with landowners and DEECA, confirm the suitability for BBMT/Port Anthony to establish an Operations and Maintenance Hub for the offshore wind sector and advocate for this outcome.	Partner	Advocate	High
8.2	Engage with proponents and landowners regarding the suitability of BBMT/Port Anthony for offshore wind construction assembly support, which considers all potential local benefits alongside impacts.	Partner		High
8.3	In partnership with landowners and occupiers, identify opportunities and barriers to accommodating renewable energy related activities adjacent to BBMT/Port Anthony, especially hydrogen exports and offshore wind supply chain.	Partner		Medium
Direction 9 - Address civil infrastructure barriers to urban development in key residential and industrial locations.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
9.1	Advocate for funding support to provide enabling civil infrastructure across zoned residential and employment land areas to: • Improve the viability and developability of zoned land; • Facilitate residential and industrial development in strategic locations; and • Ensure housing and business demand can be met.	Advocate	Advocate	High
9.2	Advocate for funding to address known residential and industrial development constraints in Leongatha, Korumburra, Foster and Toora in terms of town water supply and wastewater treatment.	Advocate		High
9.3	Support and advocate for proponent-led funding mechanisms that contribute to meaningful community projects, with a preference for project funds to be collectively accrued (e.g. fund/deliver temporary housing that could be re-purposed/re-used for community benefit).	Advocate	Advocate	High

THEME: INFRASTRUCTURE

Direction 10 - Ensure transport and transmission readiness through early investigations and strategic planning.				
No.	**Action**	**SG Role**	**LC Role**	**Priority**
10.1	In partnership with Gippsland Councils, DTP and other relevant agencies, prepare a Regional Strategic Action Plan for arterial and local roads to support energy projects. This should have regard to the existing Gippsland Freight Master Plan.	Partner	Partner	High
10.2	In partnership with Gippsland councils and DTP, develop a policy and approach to the assessment of future project applications in respect of local road and access requirements and funding responsibilities.	Partner	Partner	High
10.3	Investigate the suitability of using Latrobe Airport to support the renewable energy sector (e.g. crew and/or freight transport).		Lead	Medium
10.4	Advocate for improved public transport services in South Gippsland and Latrobe City to enable movement of workers and students to education, training and employment locations in the Latrobe Valley, South Gippsland and Melbourne.	Advocate	Advocate	Low
10.5	Advocate for a simplified and expedited approach to transmission network planning and regulation in Gippsland.	Advocate	Advocate	High
10.6	Advocate for a network which minimises the number of easements and shore crossing points and maximises opportunities for infrastructure co-location and cost sharing.	Advocate	Advocate	High
10.7	Advocate to VicGrid to ensure that planned transmission investment aligns with the timing and scale of private sector renewable energy investment. Ensure that best practice and equitable landowner compensation arrangements are established by the State Government.	Advocate	Advocate	High

APPENDICES

APPENDIX A

RESIDENTIAL LAND SUPPLY ANALYSIS

LEONGATHA

Site	Area (ha)	Vacancy	Zone	Status	Developability	Notes	Lot Yield Range	Timing
A1	11.99	Vacant	GRZ1	Active	Underway	Development plan approved. Permit approved. Subdivision currently in development.	105	Short Term (>2 Years)
A2	30.73	Underutilised	GRZ1	Active	Developable	Rezoning application underway.	269	Long Term (6+ Years)
B	7.60	Underutilised	LDRZ	Inactive	Undevelopable	Cluster of smaller sites. Highly problematic for subdivision. Waterway and waterlogging issues.		Undevelopable
C1	3.55	Vacant	GRZ1	Active	Developable	Development plan approved. Lots currently under development.	31	Short Term (>2 Years)
C2	6.19	Underutilised	GRZ1	Active	Developable (Uncertain)	Located in Outline Development Plan. Development plan approved. No progression on development	54	Medium Term (2-6 Years)
C3	16.74	Underutilised	FZ	Active	Developable	Located in Outline Development Plan. Rezoning application underway.	146	Medium Term (2-6 Years)
C4	6.64	Vacant	LDRZ	Active	Developable	Located in Outline Development Plan. Springs Estate. Permit approved. Developer rolling out stages.	15	Medium Term (2-6 Years)
D1	3.44	Underutilised	GRZ1	Active	Developable (Uncertain)	Located in Outline Development Plan. Permit application under assessment	30	Long Term (6+ Years)
D1	1.62	Underutilised	LDRZ	Active	Developable	Located in Outline Development Plan. Permit application under assessment	4	Medium Term (2-6 Years)
D2	7.94	Underutilised	GRZ1	Inactive	Undevelopable	Located in Outline Development Plan. Constrained by adjacent helipad. Generally problematic		Undevelopable
D3	62.16	Underutilised	FZ	Inactive	Developable (Uncertain)	Located in Outline Development Plan. Constrained by need for significant highway infrastructure and sewer upgrades	544	Uncertain - Long Term (6+ Years)
E1	6.98	Underutilised	LDRZ	Active	Underway	Located in Outline Development Plan. Development plan approved. Current subdivision at 8 lots	16	Medium Term (2-6 Years)
E2	4.05	Vacant	LDRZ	Active	Developable (Uncertain)	Located in Outline Development Plan. Planning permit approved. Relocation of aged care facility from central Leongatha.	9	Medium Term (2-6 Years)
E3	4.89	Underutilised	LDRZ	Inactive	Undevelopable	Located in Outline Development Plan. Issues with drainage		Undevelopable
F1	9.03	Underutilised	FZ	Active	Developable (Uncertain)	Located in Outline Development Plan. Constrained by highway access and drainage issues. Significant issues with infrastructure upgrades.	79	Long Term (6+ Years)
F2	8.09	Vacant	FZ	Inactive	Developable (Uncertain)	Located in Outline Development Plan. Need to rezone to address drainage issues. Constrained by highway access and drainage issues. Significant issues with infrastructure upgrades.	71	Long Term (6+ Years)
G	4.33	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Inactive. No development enquiries on this site in past 20 years. Has slope constraints.	38	Long Term (6+ Years)
H	1.35	Underutilised	GRZ1		Developable		12	Uncertain - Long Term (6+ Years)
I	1.15	Underutilised	GRZ1		Developable		10	Uncertain - Long Term (6+ Years)
J	3.65	Underutilised	FZ		Developable	Located in Outline Development Plan.	32	Uncertain - Long Term (6+ Years)
K	1.10	Underutilised	GRZ1		Developable		10	Uncertain - Long Term (6+ Years)
L	2.68	Underutilised	GRZ1		Developable		23	Uncertain - Long Term (6+ Years)
M	1.10	Underutilised	GRZ1		Developable		10	Uncertain - Long Term (6+ Years)
N	4.05	Vacant	FZ		Developable	Located in Outline Development Plan.	35	Uncertain - Long Term (6+ Years)

KORUMBURRA

Site	Area (ha)	Vacancy	Zone	Status	Developability	Notes	Lot Yield Range	Timing
A1	18.99	Vacant	GRZ1	Active	Developable (Uncertain)	Development plan submitted.	177	Medium Term (2-6 Years)
A2	10.19	Vacant	GRZ1	Active	Underway	Botanica Estate. First 24 lots already released. 60 lots currently under development.	95	Short Term (>2 Years)
A3	4.46	Vacant	GRZ1	Active	Developable	Daisybank Estate - Isabella Blvd. Underway and completed under 2 years.	42	Short Term (>2 Years)
B1	20.79	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Previously had subdivision plans. Waterways and easements present.	194	Uncertain - Long Term (6+ Years)
B2	4.44	Underutilised	GRZ1	Active	Developable (Uncertain)	Recently rezoned to GRZ. Intersection upgrade required before development can occur.	41	Uncertain - Long Term (6+ Years)
B3	4.82	Underutilised	GRZ1	Inactive	Developable (Uncertain)	No development interest in this site. Inactive.	45	Uncertain - Long Term (6+ Years)
B4	1.60	Underutilised	GRZ1		Developable		15	Uncertain - Long Term (6+ Years)
C1	12.16	Vacant	GRZ1	Active	Developable	Development plan under preparation.	114	Medium Term (2-6 Years)
C2	6.69	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Longer term opportunity. No development interest since rezoning.	62	Long Term (6+ Years)
D	3.83	Underutilised	GRZ1	Active	Developable (Uncertain)	Development plan & planning permit approved, but yet to be acted on.	36	Uncertain - Long Term (6+ Years)
E1	1.09	Underutilised	LDRZ	Inactive	Developable	Highly constrained: topographical and drainage.	2	Uncertain - Long Term (6+ Years)
E2	6.47	Vacant	LDRZ	Inactive	Developable (Uncertain)	Highly constrained: topographical and drainage.	12	Uncertain - Long Term (6+ Years)
F1	2.81	Underutilised	LDRZ	Inactive	Undevelopable	Highly constrained: topographical and drainage.		Undevelopable
F2	1.02	Underutilised	GRZ1	Inactive	Undevelopable	Highly constrained: topographical and drainage.		Undevelopable
F3	1.55	Underutilised	GRZ1	Inactive	Undevelopable	Highly constrained: topographical and drainage.		Undevelopable
F4	1.57	Underutilised	GRZ1	Inactive	Undevelopable	Highly constrained: topographical and drainage.		Undevelopable
F5	1.13	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Highly constrained: topographical and drainage.	2	Uncertain - Long Term (6+ Years)
G	1.45	Underutilised	GRZ1	Active	Developable (Uncertain)	Candidate for subdivision. Has active waterway. No current development application.	14	Uncertain - Long Term (6+ Years)
H1	0.91	Vacant	GRZ1	Inactive	Developable	Daisybank Estate. Permit approved. Several easements identified – limiting development.	8	Uncertain - Long Term (6+ Years)
H2	1.78	Vacant	GRZ1	Inactive	Developable (Uncertain)	Contour constrained site. 15 lots approved in 2019.	17	Medium Term (2-6 Years)
H3	2.04	Underutilised	GRZ1	Inactive	Developable (Uncertain)	No application to develop in past 20 years. Inactive.	19	Uncertain - Long Term (6+ Years)
I	70.74	Underutilised	RLZ	Inactive	Developable (Uncertain)	Potential to rezone to LDRZ.	124	Uncertain - Long Term (6+ Years)
J1	1.11	Underutilised	LDRZ		Developable		2	Uncertain - Long Term (6+ Years)
J2	1.03	Underutilised	LDRZ		Developable		2	Uncertain - Long Term (6+ Years)
K	1.05	Underutilised	GRZ1		Developable		10	Uncertain - Long Term (6+ Years)

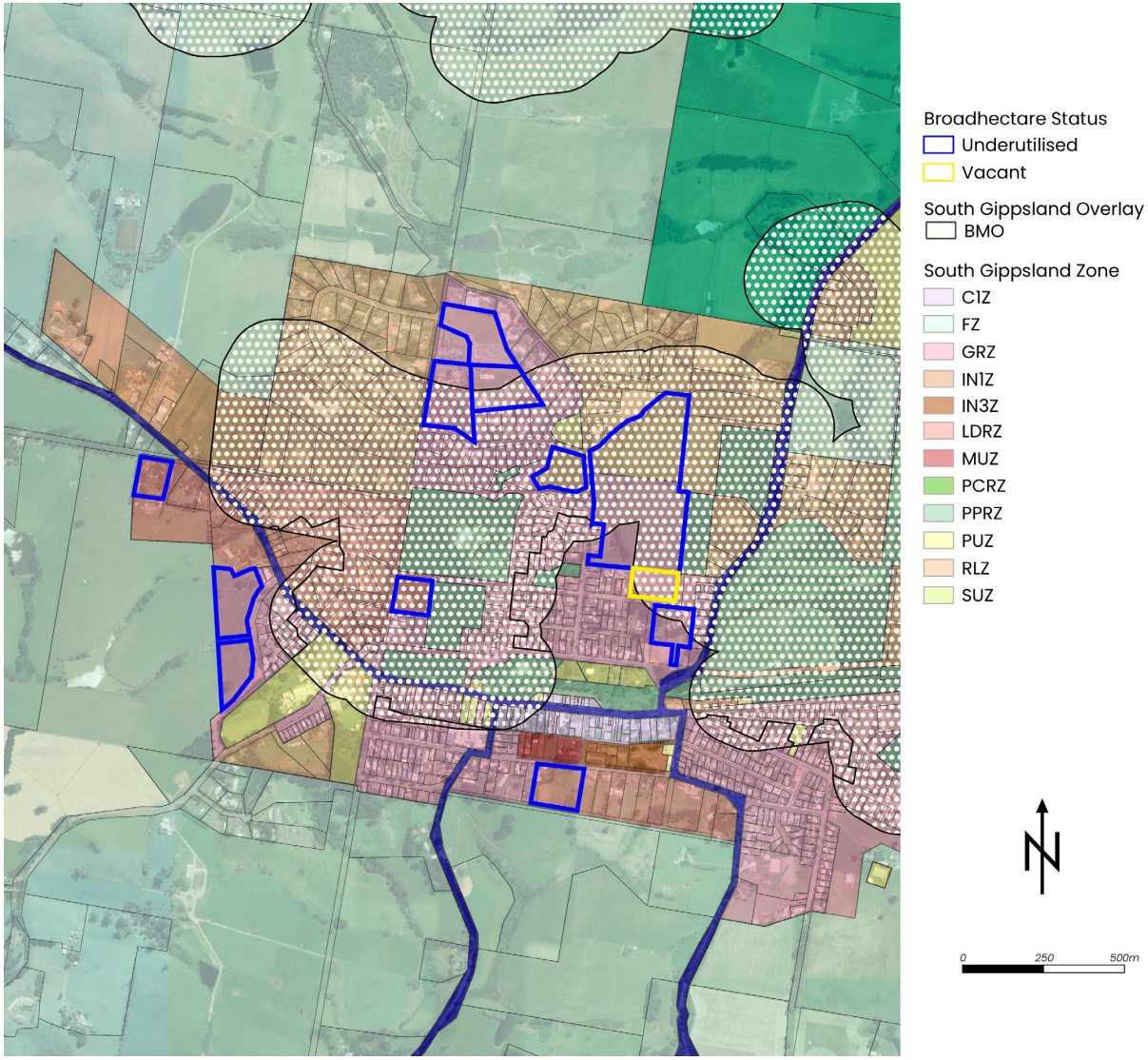
FOSTER

Site	Area (ha)	Vacancy	Zone	Status	Developability	Notes	Lot Yield Range	Timing
A	1.06	Vacant	LDRZ	Inactive	Undevelopable			Undevelopable
B	1.31	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Inactive. Will require boundary road for bushfire management.	13	Uncertain - Long Term (6+ Years)
C1	2.22	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Inactive. Waterways, BMO and need for boundary road.	22	Uncertain - Long Term (6+ Years)
C2	1.96	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Inactive.	20	Uncertain - Long Term (6+ Years)
D	1.04	Vacant	GRZ1		Undevelopable	Undevelopable due to BMO.		Undevelopable
E1	2.49	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Key development site, with some stormwater challenges, that aren't insurmountable.	25	Uncertain - Long Term (6+ Years)
E2	5.38	Vacant	GRZ1	Active	Developable	Approved with conditions. VCAT issued permit.	54	Medium Term (2-6 Years)
E3	5.85	Underutilised	GRZ1	Inactive	Developable (Uncertain)	Inactive. No developer interest in 20 years. Requires boundary road and flooding considerations.	59	Uncertain - Long Term (6+ Years)
F1	43.25	Underutilised	FZ	Inactive	Developable (Uncertain)	Proposed expansion area – urban residential, low density and rural living. Single ownership. No current rezoning application	433	Long Term (6+ Years)
F2	19.74	Underutilised	FZ		Developable (Uncertain)	Environmental and waterway concerns. Extensive waterways and difficult access. Difficult topography.	197	Long Term (6+ Years)
G	72.75	Underutilised	FZ		Developable (Uncertain)	Proposed urban residential expansion area.. Bushfire risk management needs to be addressed. Servicing may present some challenges.	728	Long Term (6+ Years)
H	173.53	Underutilised	FZ		Developable		1,735	Long Term (6+ Years)

Mirboo North

	Vacant (Ha)	Underutilised (Ha)	Total (Ha)
GRZ1	1.22	23.58	24.80
LDRZ	-	2.97	2.97
Total	**1.22**	**26.55**	**27.77**

Figure A1 Vacant, underutilised & undevelopable sites



APPENDIX B

INDUSTRIAL LAND SUPPLY ANALYSIS

MOE

Vacant and underutilised industrial land supply and key sites in Moe is shown in Figure B1.

There is 18ha of vacant land identified. Although most of precinct A is vacant, it has already been subdivided and is no longer broadhectare land. It is expected that this precinct will continue to be consumed over time.

There is practically no vacant land that is available and suitable for industrial subdivision and development.

Precinct B and C appear be suited to a logical extension of Precinct A. However, there is no indication from landowners to subdivide or sell their land to a developer.

Constraints

D – Completely covered in native vegetation

E2 – Completely covered by dense vegetation

F – Prone to flooding, difficult to access, has LSIO overlay.

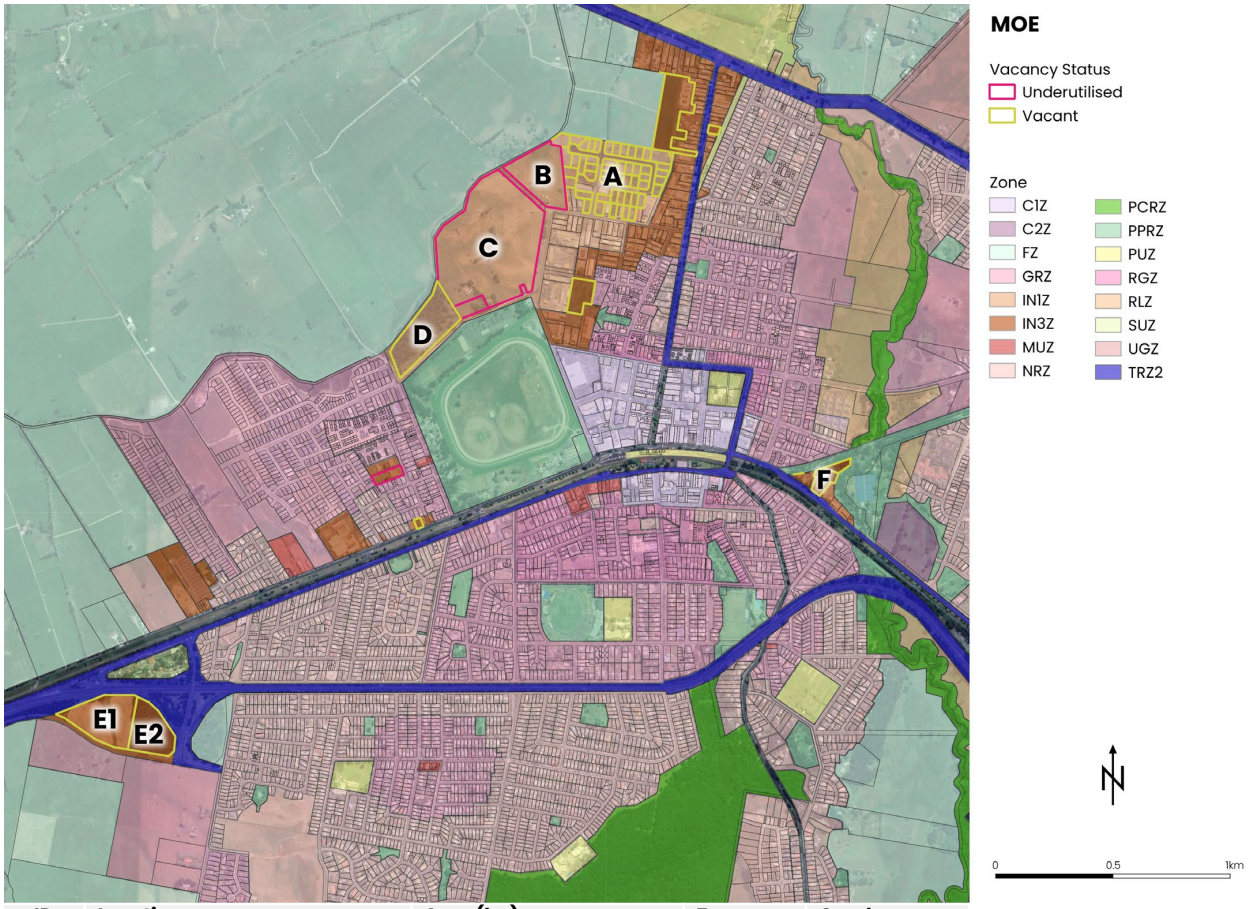
Planning and Development Status

B, C – No indication from landowners to sell or subdivide

E1, E2 –Highly unlikely to ever be developed.

F – Partially crown land – potential to rezone as it is part of rail trail creek.

Figure B1 Industrial land supply, Moe



ID	Location	Area (ha)	Zone	Overlays
A	Rooney Drive	Area undetermined (included in total)	IN1Z	
B	52-60 Della Toree Road, Moe	5ha underutilised	IN1Z	
C	Saviges Road, Moe	19ha underutilised	IN1Z	
D	Saviges Road, Moe	5ha vacant	IN1Z	
E1	Mountain Glen Drive, Moe	5ha vacant	IN3Z	
E2	Mountain Glen Drive, Moe	3ha vacant	IN3Z	
F	14-16 Narracan Drive, Moe	1ha vacant	IN3Z	LSIO

Source: Urban Enterprise, 2024

TRARALGON

There is an estimated 20ha of vacant industrial zoned land in Traralgon.

Vacant and underutilised industrial land supply, including key sites are shown in Figure B2.

Precinct A has an approved subdivision plan (37 lots), which will serve the next period of industrial demand in Traralgon.

Beyond Precinct A, there is practically no zoned industrial land left in Traralgon.

Constraints

A – Multiple water basins present, with largest basin covering western side

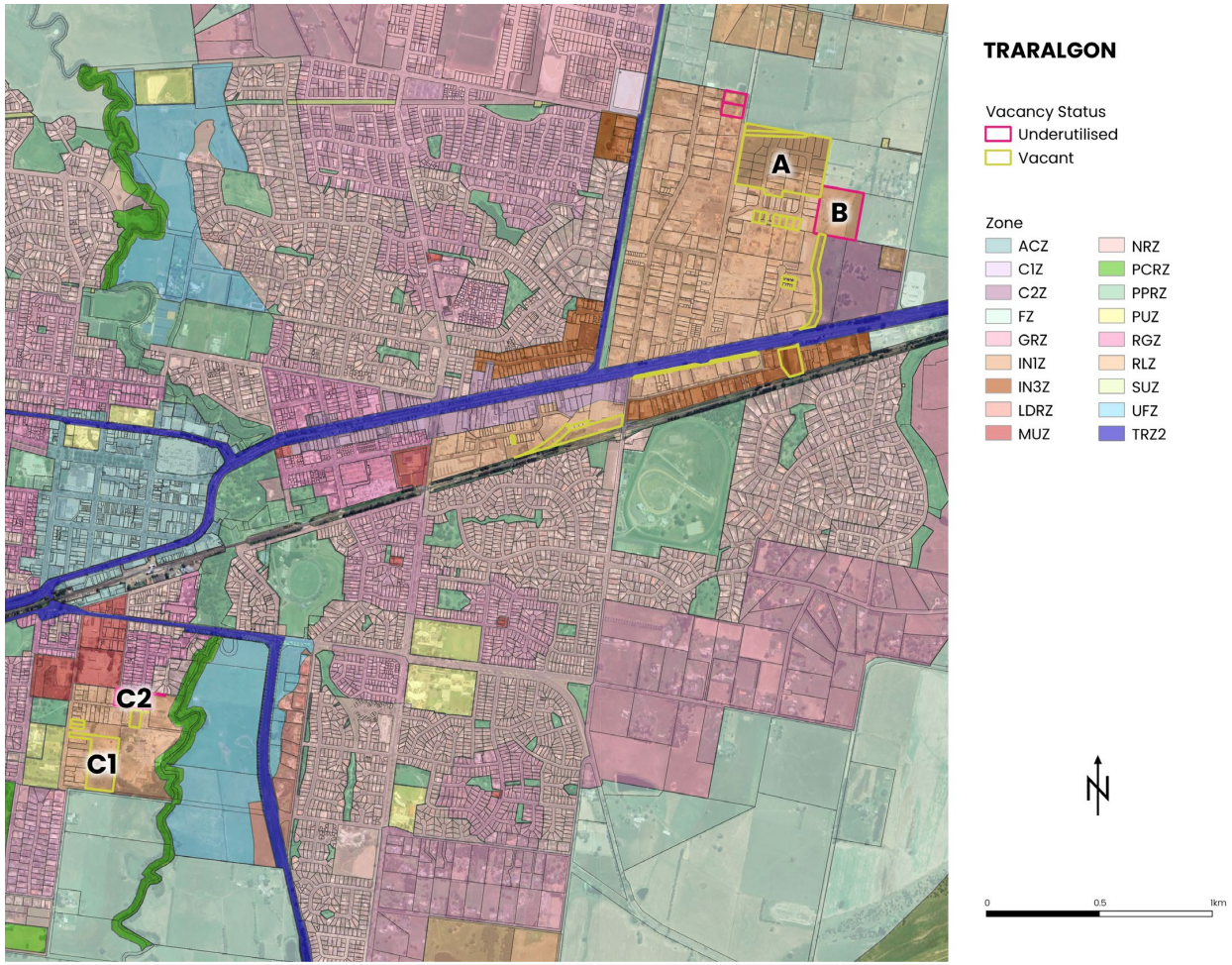
Planning and Development Status

A – Subdivision approved for 37 lots

B – Planning permit received for carpark

C1, C2 – Owned by adjacent Graymont site. Amending permit for an extension of adjacent site.

Figure B2 Industrial land supply, Traralgon



ID	Location	Area (ha)	Zone
A	Stirloch Circuit, Traralgon East, 3844	9ha vacant	IN1Z
B	35 Stammers Road, Traralgon East, 3844	4ha underutilised	IN1Z
C1	Dunbar Road, Traralgon, 3844	3ha vacant	IN1Z
C2	Janette Street, Traralgon, 3844	1ha underutilised	IN1Z

Source: Urban Enterprise, 2024

CHURCHILL

Churchill has a single 1N3Z zone that is approximately 17ha; 6.1ha is vacant and 0.2ha is underutilised

The recent approval of a childcare facility in the Precinct is likely to affect the type of future industrial activities that could establish in the precinct.

This precinct is more likely to operate as a light industrial and commercial precinct.

Figure B3 Industrial land supply, Churchill

Source: Urban Enterprise, 2024

APPENDIX C

LITERATURE & CONSULTATION SUMMARY

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- Clean Energy at Work, Clean Energy Council, 2020
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STAKEHOLDER CONSULTEES

- Strategic Planning and Economic Development, South Gippsland
- Strategic Planning and Economic Development, Latrobe City
- Gippsland Water
- South Gippsland Water
- Energy Australia
- QUBE
- South Gippsland businesses (2)
- Star of the South

APPENDIX D

ACRONYMS

ACRONYMS

ABS – Australian Bureau of Statistics
AEMO – Australian Energy Market Operator
BBMT – Barry Beach Marine Terminal
CASA – Civil Aviation Safety Authority
C1Z – Commercial 1 Zone
C2Z – Commercial 2 Zone
FIFO – Fly in Fly Out
FO – Flood Overlay
GRZ – General Residential Zone
GW – Gigawatt
IN1Z – Industrial 1 Zone
IN2Z – Industrial 2 Zone
IN3Z – Industrial 3 Zone
IVS – International Visitor Survey
LDRZ – Low Density Residential Zone
LQ – Location Quotient
LSIO – Land Subject to Inundation Overlay
LVA – Latrobe Valley Authority
MTSC – Morwell Trade and Skills Centre
MW – Megawatt
O&M – Operations and Maintenance
OEI – Offshore Electricity Infrastructure
POW – Place of Work
REZ – Renewable Energy Zone
RLZ – Rural Living Zone
VRET – Victorian Renewable Energy Targets
VTIF – Victorian Transmission Infrastructure Framework

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