



OUR REGION OUR FUTURE

**SECURING AN ECONOMIC FUTURE FOR
GIPPSLAND AND LATROBE VALLEY**

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FOREWORD

Sir John Monash became the inaugural Chairman of the State Electricity Commission in October 1920. It was Monash's ingenuity and leadership that saw the adaptation of international technology to build power stations on top of the very coal reserves they were to generate electricity from. Those Latrobe Valley coal reserves are still among the largest deposits of brown coal in the world, and they revolutionised Victoria's ability to build and sustain an efficient and competitive manufacturing industry. Nearly a century later, ingenuity and leadership in the spirit of Sir John Monash are needed again.

The Latrobe Valley energy sector is facing change and upheaval with the impending closure of at least one power station in the near future. This is despite Latrobe Valley electricity generators being among the most reliable and cheapest base load electricity sources in Australia. Ageing infrastructure and a national focus on the need to reduce carbon emissions will be the driving factors for this closure, as much as any financial imperative.

Beyond electricity generation, there remains (at current usage rates) around 500 years of brown coal resource that can be developed using smarter, more efficient, low emission processes. Right now, there are thousands of Gippslanders who rely on Latrobe Valley power stations for their living and livelihoods. Exploring these challenges and finding practical, fact-based and long-term solutions that will build a strong economic future for the region is the reason for this report. More broadly, there are tens of thousands of Victorians who rely on low cost, reliable electricity for their livelihoods in manufacturing and industry.

By the middle of this century, the coal-fired electricity sector will no longer be as we know it today. Many people have strong views on this but few have a holistic and realistic plan to work through what are complex and sensitive issues.

The Committee for Gippsland brought together regional leaders from across Gippsland to prepare a path forward. The results of over six months of time and effort are presented in this report. We are grateful for the work of the Reference Committee.

An ambition for this project was to create a fact-based body of work that through its results would encourage informed discussion and the development of a planned pathway forward, to ensure the future prosperity of our region.

Gippsland needs a plan for transition that will work because, without one, this region has a lot to lose and little to gain. The findings, recommendations and articulated path forward contained in this report seek to achieve the sustainable, resilient and prosperous economic future that Gippsland is capable of.

SIGNED BY



Harry Rijs
Chairman
Committee for Gippsland



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1. EXECUTIVE SUMMARY

1. EXECUTIVE SUMMARY

In December 2015, the Committee for Gippsland initiated a project to inform and drive a recommended approach to industry transitioning in the Latrobe Valley. The project established a number of methods of data gathering to inform this report's findings and recommendations. These included a business survey that went out to 2,000 small to medium businesses in the Latrobe City, Baw Baw Shire and Wellington Shire local government areas, acknowledging the relationship between Baw Baw Shire and Wellington Shire to the Latrobe Valley area.

Over 200 of these surveys were completed and returned, with a comprehensive set of questions resulting in in-depth data. Following this, a series of face-to-face and over-the-phone interviews were conducted with small to medium businesses from the same catchment area. These questions focused on eliciting more detailed and explanatory responses.

Economic modelling from GHD was provided, detailing a forecast of potential job losses upon the closure of up to two power stations. Data from South Gippsland Shire, Baw Baw Shire and Wellington Shire was also provided on the number of residents who travel to the Latrobe Valley for work each day.

KEY FINDINGS

There are several key findings that have emerged from the SME business survey, SME business interviews and GHD economic modelling.

IMPACT TO THE VICTORIAN ECONOMY

- Currently, nearly \$500 million is injected into the Victorian economy every year by the nearly 3,000 power station workers and over 1,000 contractors who also work on power stations. They represent nearly 10 per cent of the Latrobe Valley's employment. The impact that any major reduction of this spend would have on the Victorian economy as a result of loss of employment in the sector needs to be considered.
- Based on GHD modelling and analysis, a total closure impact across the Gippsland region resulting from the 1,400 jobs lost due to the forecasted closure is a further loss of 1,771 jobs. This would feed into a current unemployment rate of 9 per cent, which has increased nearly 4 per cent over the last 12 months in the Latrobe Valley.¹
- Job loss figures have an impact on population for the region. The report finds that there is the potential for a gross loss of over 3,000 people out of the Gippsland economy because of carbon transitioning. This in turn means an extrapolated figure of over 7,000 people potentially moving out of the Gippsland region as a result of job losses stemming from carbon transitioning in the Latrobe Valley.

¹ Latrobe Valley Express, 2 June 2016: <http://www.latrobevalleyexpress.com.au/story/3943301/where-are-the-jobs/?cs=1462>

1. EXECUTIVE SUMMARY

- There is a resounding view from business and community that Gippsland is an ideal region in which to live, work and invest, and that should be promoted.

There has been consistent feedback throughout this project about the damage done to the region's community and commercial reputation by a small number of vocal activist groups. The message residents and businesses in Gippsland surveyed by this project wanted represented is that the region is one of the best places in Australia to live, and is welcoming of new investment.

- The discussion of coal for electricity generation, and coal for derivatives should be informed and separated. There is the potential to create thousands of jobs for Victoria through the development of coal for low emission fertiliser, hydrogen, and a number of other products.

The potential job loss figures above give pause for serious thought about the structure, timing and planning of what the Committee for Gippsland considers, will be the likely closure of at least one Latrobe Valley power station in the near future. Gippsland has had its share of major structural change. A resounding theme from the survey phase of this report had businesses telling the Committee for Gippsland that government needed to send clear messages, backed by a sound, consistent policy setting.

The Committee for Gippsland is of the view that closure of one power station will be announced in the near future, and that State and Federal Governments need to be active participants in working with the Gippsland region through this period. New jobs, skills, technology, infrastructure investment and innovation should be the focus of any structured transition plan.

1. EXECUTIVE SUMMARY

Key feedback from the survey phase included:

- There needs to be a coordinated government-led response to an announced closure and subsequent transition plan – in particular, State and Federal Governments working together;
- There has to be an investment of infrastructure, higher education and community assets to offset the impact of transition in the community; and
- Local businesses are keen to be involved proactively in any transition, but are time and resource poor to coordinate activities. This has previously led to a vacuum that has been filled by activist protest groups who are not considered representative of the wider community or conducive to good outcomes for Gippsland.

There are a range of key findings and recommendations throughout this report that identify required government investment and introduce a proposed way through transition.

The Committee for Gippsland looks forward to working with all levels of government, stakeholders, communities and businesses to ensure this transition is successful.

2. BACKGROUND

2.1 INTRODUCTION

Brown coal has long been one of Australia's most significant energy resources. Around 80 per cent of Victoria's brown coal deposits are located in the Latrobe Valley and significant employment is provided by the mines and power stations.² With a public shift towards non-coal based electricity production, it is important that the economic relationship between small to medium businesses and Latrobe Valley coal-fired electricity generators is considered in order to best identify future opportunities and utilise resources.

Latrobe Valley power stations rely heavily on local SME businesses, including independent contractors, trades, local manufacturers, retailers and service providers. As at 2010, the Latrobe Valley was recorded as having 4,500 SME businesses across all industry sectors, with over 10 per cent of employment in the Latrobe Valley being directly connected to the power industry.³

Government actions to limit growth in the coal fired power sector and reduce carbon emissions over time will place a financial cost on SME businesses in the Latrobe Valley. Through this, it is important that these potential costs are understood in terms of any required adjustment. The SME business sector adjustment will be shaped by the strong reliance on, and interaction with, the community in which they operate.⁴ It is important to understand the position of SME businesses in the local community in order to assist in any adjustment that occurs as a reaction to a changing energy sector.

Gippsland is a unique and distinct region, although there are some important lessons and parallels that can be drawn from other regions undergoing industry transitioning. In its submission to the Federal Parliament's Economic Review of South Australia and Victoria, the Geelong Chamber of Commerce noted that the SME business sector in Geelong is suffering. As Geelong's traditional industries continue to experience challenging times, it is imperative that action is taken to stem the tide and provide long-term opportunities for economic growth.⁵

Any reduction or shift away from coal-fired electricity generation in the Latrobe Valley will have broader consequences to the region's economy. Carbon transitioning is necessary and inevitable, but it needs to be done in a structured way that prioritises the region's economy.

Large scale job losses, like those that occurred in the Latrobe Valley during the 1990s, cannot be absorbed again, and would likely lead to an exodus of skills and people. In an article in the Geelong Advertiser regarding the closing down of the Alcoa plant it was found that after the plant's closure, *few found employment at the Portland plant; while some were relocated to the Saudi Arabia plant, others have moved to driving trucks or heavy machinery, working in light manufacturing or have struggled.*⁶

² <http://www.energyandresources.vic.gov.au/earth-resources/victorias-earth-resources/coal>

³ Carbon Down: Resilient Regions and Small Business Futures in a Low Carbon Economy, VECCI October 2010

⁴ Carbon Down: Resilient Regions and Small Business Futures in a Low Carbon Economy, VECCI October 2010

⁵ Geelong Chamber of Commerce submission to Commonwealth Parliament's Economic Review of South Australia and Victoria, 24 January 2014

⁶ Alcoa Point Henry: Workers meet mix results one year after closures, Geelong Advertiser 1 August 2015

2.1 INTRODUCTION

There has been limited study into the SME business sector and its reliance on Latrobe Valley electricity generators. The Council of Small Business Australia is quoted as saying that more studies need to be undertaken in regional areas and micro-cities on urban fringes into the impact of the closure of big companies.⁷

It is important to understand the SME business sector's reliance on Latrobe Valley electricity generators in order to appreciate how they can respond to a transitioning energy sector.

There are a number of coal to fertiliser, fuel and liquids projects that have strong commercial potential in the Latrobe Valley and, while they present significant employment opportunities, they may also require a smaller quantum of jobs compared to power stations if they were developed.

The opportunity for coal as feedstock is also considered in the IBIS World Industry Report, which notes that:

If new technology that expands the applications of brown coal is developed, industry players would be the direct beneficiaries.⁸

The Committee for Gippsland also notes the Victorian Government's Future Industries: New Energy Technologies sector paper, in particular the willingness to continue to develop new and additional skills capacity for the sector:

We will work with Victoria's energy industry to develop policies and programs that address sector skill shortages and meet the demand for new and additional skills. Understanding the skill needs of the new energy technologies sector now and in the future is critical to ensuring that Victorian businesses have access to employees with the right skills in the right areas.⁹

Bringing together an understanding of the impact of a potential power station closure on local SME businesses and developing future low emission opportunities for coal products like fertiliser and hydrogen that create new jobs and economic benefit will be key ingredients of any successful transition.

7. Alcoa shut down a blow to surrounding small businesses, SmartCompany 19 February 2014

8. Slow and steady: Industry revenue is forecast to decline slowly in line with demand. IBIS World Industry Report B0602 Brown Coal Mining in Australia. By Spencer Little, June 2015 Page 9.

9. Victoria's Future Industries: New Energy Technologies Sector Strategy, March 2016: Page 14.

BUSINESS FEEDBACK

SME businesses told the Committee for Gippsland in the interview and survey phase that SME businesses in Gippsland needed the following to be successful:

- Skilled workforce;
- Connectivity through infrastructure and IT;
- Certainty of consumers and demand;
- Large scale projects; and
- Low unemployment.

The key threats to SME businesses in Gippsland are considered to be:

- Poor infrastructure;
- Pessimistic local attitude; and
- Uncertainty over local industry future.

SME businesses also said that *Latrobe Valley power stations are more likely than not to offer a benefit to Gippsland SME businesses.*

These benefits were identified as:

- *Employing customers of SME businesses;*
- *Paying higher wages meaning higher disposable income;*
- *Providing direct and indirect employment and spending in the region; and*
- *Creating flow on confidence throughout the Latrobe Valley.*

The interview and survey phase also found that SME businesses are on average neutral on preferred future uses for Gippsland's coal resource.

2.1 INTRODUCTION

Key Recommendations to note from SME business feedback

The survey and interview phase of the project with SME businesses provided the following feedback on recommendations:

- All levels of Government and business should play a role in managing a Latrobe Valley industry transition;
- State and Federal funding towards large-scale infrastructure projects is needed in the Latrobe Valley;
- Governments need to be helping drive investment into the Gippsland region, particularly within the Latrobe Valley;
- Support other sustainable energy production options in Gippsland should be provided;
- Invest in technology that maximizes the use of coal while minimising environmental impact; and
- Greater work needs to be undertaken to engage with local SME businesses on the various potential future uses of coal.

INDUSTRY PROFILE

Latrobe Valley power stations are significant employers in the region. There are nearly 3,000 direct employees in the Latrobe Valley and over 1,000 indirect employees via contractors and the like. A proportion of these contractors alternate between outage and maintenance work on the power stations and Australia Paper's Maryvale mill. The quantum base of stable, skilled and highly paid employment represented by these two sectors is major.

COMMUNITY CONTRIBUTION

The community contribution of Latrobe Valley power stations is significant and cannot be measured just in dollar terms. Two power stations provided a list of contractors with whom they individually spent \$50,000 or more a year. The list for both was over 50 organisations, as diverse as a local recruitment business to a local football club. From the Hazelwood wetlands project, to sponsorship of the Gippsland Emergency Relief Fund and the Gippsland Community Leadership Program, the community contribution from Latrobe Valley power stations is targeted and tangible. It is also harder to quantify, but important to note, the benefit that power station workers in the region provide through volunteering and community contributions to the region as well. Through job losses and subsequent migration out of the region, these community and volunteer contributions would be impacted also.

2.1 INTRODUCTION

CASE STUDIES

Case studies were undertaken in the form of phone interviews with various SME businesses across industries in the Latrobe Valley.

There were a number of common themes that emerged through the interview phase. These included:

QUESTION: HOW IMPORTANT ARE THE POWER STATIONS IN THE LATROBE VALLEY AND WHAT BENEFIT DO YOU SEE THEY PROVIDE, IF ANY, TO LOCAL BUSINESS AND THE COMMUNITY?

Small food retailer, Rosedale	<p>Workforce is needed regarding local spending.</p> <p>Rosedale would die without this customer base. Sponsorship of sporting teams indirectly would affect many clubs.</p>
SME car retailer, Warragul	<p>The people that work for stations have capacity to fund it, by leasing, novating cars and servicing. Much of our business is from employees of the mines.</p>
Small engineering firm, Leongatha	<p>Not directly, but indirectly they're great and consuming power is important.</p> <p>They're a valuable asset. Diversity in future is a good thing.</p>
SME electrical business, Morwell	<p>At this point in time the power industry is vital to our business. We are looking for new markets but when you have an industry that supplies 70 per cent – 80 per cent of your revenue it is difficult to replace.</p> <p>These generators have supported local community for many years by way of sponsorship, donations etc not to mention the number of industries that rely upon them. If they are closed, even one of them, it will cause significant issues for the region.</p>

2.1 INTRODUCTION

QUESTION: HOW IMPORTANT WOULD YOU DESCRIBE THE PRESENCE OF THE POWER STATIONS IN THE LATROBE VALLEY AND WHAT BENEFIT DO YOU SEE THEY PROVIDE, IF ANY, TO LOCAL BUSINESS AND THE COMMUNITY?

SME engineering business, Bairnsdale	Hugely important as they are a huge employer. They have also employed for generations, which is very important in creating generational longevity and long term economic and social improvements.
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QUESTION WHAT THINGS DO YOU SEE AS A THREAT TO THE SUCCESS OF YOUR BUSINESS IN GIPPSLAND?

Small beauty therapy business, Morwell	Closing the power stations down is a massive threat to my business.
SME agribusiness/ animal health business, Traralgon	The risk of NOT increasing diversity across our various sectors. Diversity and innovation attracts people and skills.

QUESTION: WHAT DO YOU THINK THE STATE AND FEDERAL GOVERNMENTS NEED TO DO TO ENSURE THE LATROBE VALLEY HAS A POSITIVE FUTURE?

SME electrical business, Morwell	Both state and federal governments need to genuinely drive investment in the Latrobe Valley. All too often we hear about the next big project and then nothing eventuates.
SME electrical business, Morwell	If power station goes it will pain the community. Enormous impact on local people and community. There's nothing that could replace it.

QUESTION: WHAT THINGS DO YOU SEE AS A THREAT TO THE SUCCESS OF YOUR BUSINESS IN GIPPSLAND?

SME drilling business, Morwell	Wouldn't be here without power stations. Business would close.
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2.1 INTRODUCTION

OVERVIEW

In December 2015, the Committee for Gippsland Board considered and approved the initiation of an in-house project that aimed to:

- Articulate what carbon transition means for the Latrobe Valley;
- Clarify and separate the discussion on coal: coal for electricity use and coal for fuel, fertiliser and other derivatives;
- Acknowledge that the use of coal for electricity generation is expected to continue for at least the next few decades, so any substantial changes to the majority of base-load generation in the National Electricity Market will not be immediate;
- Understand the value of the energy industry to the Gippsland region and the Victorian economy:
 - Small businesses and contractors engaged with Latrobe Valley electricity generators;
 - Local jobs – direct and indirect;
 - Quantum of industry base generated through Australian Paper's Maryvale paper mill and power stations provide work for outage contractors, and demand for skills and interaction with higher education providers;
 - Competitive advantage for the region; and
 - Generation of investment opportunities.
- Define the economic impact of the jobs that would need to be replaced in the event of power station and mine closure. The energy industry work force is more highly paid than alternative industries that may absorb the workforce if there were to be transition and that that lower average wage would result in a lower contribution back to the local economy;
- Compare opportunities in energy projects and the future job prospects in these emerging coal conversion industries;
- What currently exists because of the energy industry? What is at risk of being lost in transition? and
- Engage with small food outlets and similar businesses that cater to local power station workforce, from car dealerships to cafes such as the Shaky Spear in Traralgon selling take away breakfast to power station/mine workers/tradespeople through to sponsored football clubs.

2.1 INTRODUCTION

STAKEHOLDER ENGAGEMENT

Engaging with a representative snapshot of local businesses in the Latrobe Valley has been an important component of this project. There were two parts to this interaction – the first comprising a survey of over 200 businesses in the Latrobe Valley (according to an area previously defined through previous Federal Government initiated Latrobe Valley Transition processes – the local government areas of Latrobe City, Wellington Shire and Baw Baw Shire). The second component was a series of interactive surveys conducted over the phone with a smaller snapshot (20) of SME businesses from the same catchment.

It is important to acknowledge and build on the previous work and relevant projects undertaken by Latrobe City Council and State and Federal Government organisations in this report.

The project engaged with local government beyond Latrobe City Council - Baw Baw, Wellington and South Gippsland Shire Councils were also engaged as they are LGAs that have residents commuting to the Latrobe Valley for work in carbon related industries. Those LGAs provided statistics on the number of residents that travel to work in the Latrobe Valley energy sector or related business every day while living in towns like Drouin, Leongatha and Sale, again demonstrating the region-wide linkages.

REPORT STAGES

Stage One: This stage focused on establishing the current scenario. This included:

- Stated intentions of energy generators in the Latrobe Valley;
- Identification of opportunities for coal derivatives away from electricity generation;
- Quantum of workforce and contractors; and
- Survey of SME businesses in Latrobe City, Baw Baw Shire, and Wellington Shire.

Stage Two: Survey results and economic data:

- Collate results from SME business survey and interviews;
- Include economic and employment modelling from GHD;
- Include number of residents from South Gippsland Shire, Wellington Shire and Baw Baw Shire who travel to work in the Latrobe Valley every day; and
- Input from higher education providers about demand for skills, research and training in region.

Stage Three: Opportunities and future directions:

- Include job loss scenarios from phased closure;
- Note impact on National Electricity Market;
- Explore commercial opportunities for coal derivatives from the Latrobe Valley;
- Identify skills, research and higher education needs for the region; and
- Prepare package of recommendations, including the proposed Regional Adjustment Package.

2.2 RESEARCH AIMS

The overarching aim of the project is to have a greater understanding of the economic impact of electricity generators on SME businesses in the Latrobe Valley.

To date, there has been minimal research undertaken regarding the economic impact of electricity generators on the Latrobe Valley. It is anticipated that this study will extend and broaden knowledge in this area and inform its recommendations.

The ability of Latrobe Valley SME businesses to adapt to a range of changing market conditions will depend largely on how they are able to position themselves. This research project seeks to provide further insight into how the SME business sector can best position themselves for a prosperous future in a changing Latrobe Valley. It also analyses data that will inform the Committee for Gippsland's recommendations to State and Federal Governments on how best to respond and support the Latrobe Valley through this period of change.

2.3 RESEARCH PLAN

The proposed research project would take the form of the following:

2.3.1 GENERAL METHODOLOGY

This research project is focussed on identifying the reliance of the SME business sector on electricity generators in order to provide a concise overview of potential risks, opportunities and indicators for the Latrobe Valley.

Research has been directly obtained through a survey and phone interviews, as well as through individual areas of expertise provided through the reference committee's membership.

SME businesses have been extensively canvassed on their financial interaction with electricity generators, as well as their views and perceptions on the industry in Gippsland and what they believe to be the best way through transition. Federation University Australia Gippsland provided assistance with the formatting and preparation of the survey.

2.4 BACKGROUND

2.4.1 OVERVIEW OF COMMITTEE FOR GIPPSLAND

The Committee for Gippsland was established in 2011 and is an independent, not-for-profit organisation. It acts as a positive and influential advocate for the Gippsland region.

The Committee for Gippsland is governed by a Board of Directors, led by Chairman Harry Rijs. The Committee for Gippsland's CEO is Mary Aldred. With nearly 90 member organisations, the Committee for Gippsland is member driven and advocates on projects and priorities that are in the best interests of the Gippsland region. Sector neutral, the Committee for Gippsland's membership includes agribusiness, energy, manufacturing, small business, tourism, utilities, transport, not-for-profit and community groups, disability service providers and more.

The Committee for Gippsland's day to day activities include delivering specific projects such as the Gippsland Freight Infrastructure Master Plan, policy submissions to government discussion papers, advocacy for the region, and providing a fact-based and consistent voice on behalf of industry and community in Gippsland.

The Committee for Gippsland Board is:

- Chairman Harry Rijs – Patties Foods, Bairnsdale;
- Deputy Chairman Jon McNaught – GHD, Traralgon;
- Toni Wakefield – Safetech, Moe;
- Lynda Bertoli – Sage Technology, Morwell;
- Rohan Hubbard – Warren Graham Murphy, Bairnsdale;
- Robert Radford – Radfords Meats, Warragul;
- Dr Harry Ballis – Federation University Australia Gippsland, Churchill;
- Sean Dignum – SDA Strategic, Neerim South;
- David Mawer – Gippsland Water, Traralgon; and
- Rochelle Wrigglesworth – DMG Financial, Sale.

2.4 BACKGROUND

The Committee for Gippsland wishes to acknowledge and express its sincere gratitude for the significant time and expertise provided by the project's Reference Committee.

REFERENCE COMMITTEE MEMBERS ARE:

AREA OF EXPERTISE	NAME	POSITION & ORGANISATION
(Chair) Business and Industry	Jon McNaught	Deputy Chair, Committee for Gippsland Regional Manager Gippsland, GHD
Community	John Guy	Chair, Advance Morwell
Local Government	Gary Van Driel	CEO, Latrobe City Council
Regional Development	Richard Elkington	Chair, Regional Development Australia –Gippsland
Business/ Energy	Luc Dietvorst	Head of Generation, ENGIE Australia
Agriculture	Brian Davey	Board Member, Agribusiness Gippsland
Union	Val Prokopiv	President, Gippsland Trades and Labour Council
Government (Observer status)	Jane Burton	Director, Coal Resources Victoria
Business	Mark Answerth	Managing Director, Midstate CreditCollect Chair, VECCI Gippsland
Business/ Coal derivatives	Paul Batho	Commercial Manager, Latrobe Fertilisers
Small Business	Brendan Kingwill	Owner, BK's Takeaway, Trafalgar Vice President, Trafalgar Chamber of Commerce
Business/ Manufacturing	Ross Bertoli	General Manager, Hydro Australia
Vocational Training	Adam Wookey	Business Partnerships, Federation Training
Community	Sue Abbott	Secretary, Committee for Moe
Business/ Energy	David Spree	Government and External Affairs Manager, AGL
Business/ Energy	Jenny Odgers	Social Enterprise Leader, Energy Australia
Higher Education/ Research (Observer)	Dr Vaughan Reimers	Federation University Gippsland

2.5 ACKNOWLEDGEMENTS

This project was self-funded by the Committee for Gippsland's operational budget which is derived entirely through membership subscriptions. The Committee for Gippsland's full membership list is available on its website.

In addition to the contribution of individual Reference Committee members, the Committee for Gippsland wishes to thank the following organisations for their non-financial support and contributions of information and expertise to this project. They are:

- AGL and AGL Loy Yang Power Station;
- Baw Baw Shire Council;
- Energy Australia and Yallourn Power Station;
- ENGIE Australia and Hazelwood and Loy Yang B power stations;
- Federation University Australia Gippsland;
- GHD;
- Latrobe City Council;
- Regional Development Australia Gippsland Committee;
- South Gippsland Shire Council;
- VECCI Gippsland; and
- Wellington Shire Council.

Disclaimer: The views and information contained in this report do not necessarily represent the individual views of members of the Reference Committee or the organisations mentioned in the acknowledgements.

3. PURPOSE

3. PURPOSE

The purpose of this report is to present a fact-based body of evidence to the Victorian and Commonwealth Governments about the current value and future direction of the Latrobe Valley's energy sector and coal resource, based on the project's findings and recommendations. The Committee for Gippsland hopes that this will result in positively influencing future government policy outcomes towards Gippsland and the Latrobe Valley.

The Committee for Gippsland is of the strong view that, should a Latrobe Valley generator business commence planning to initiate a power station closure, this should occur through a staged closure. While a staged closure over a period of years will still impact the Latrobe Valley and broader Gippsland economy and community, the resulting impact will be better able to be absorbed by the region.

There are nearly 3,000 direct jobs tied to the four Latrobe Valley power stations, and more than 1,000 contractors. There is a quantum of industry base provided by the power stations, as well as the Maryvale paper mill, owned by Australian Paper, which manufactures a number of paper products, including the only copy paper brand manufactured in Australia, Reflex. Many of the contractors who provide outage work for the power stations alternate with work at the paper mill. Reliant on both industries a large number of small to medium businesses in the Latrobe Valley, and broader Gippsland. These include recruitment businesses, pump manufacturers, engineers and a variety of other businesses and contractors from a broad range of sectors.

Several examples of this are:

CASE STUDY ONE:

Sage Technology in Morwell is an example of the investment appeal of the Latrobe Valley. With its customer base mainly interstate and international, Sage Technology (which employs 20 people in the Latrobe Valley) could choose to operate anywhere in Australia, but is based in the Latrobe Valley because of the highly skilled workforce it is able to access in the local area. Sage has also been a proactive participant in helping to further develop that skill base through its engagement with local university mentoring and development.

3. PURPOSE

CASE STUDY TWO:

RTL, now doing work on the Princes Highway duplication between Traralgon and Sale, originally came to the region to provide work only as part of their contract with Yallourn mine, GHD and SMEC. RTL is a prime example of a business that was drawn to the region because of work with Latrobe Valley power stations but then broadened out, employing more people. There are several other businesses like RTL, which work in specialist welding, material testing, electrical work and more.

CASE STUDY THREE:

BK's Takeaway in Trafalgar is a local food outlet with a large number of its customers travelling through to the Latrobe Valley mines. There are also a large number of local trades, transport and industry workers commuting between the Latrobe Valley and Warragul, stopping on the way in Trafalgar. Brendan Kingwill of BK's says up to 75 per cent of his customer base is from the trades sector.

On average, BK's customers spend around \$8.50 each, multiplied by around 600 customers a day. The financial contribution by power station workers and local tradies to food outlets like BK's is significant. The financial contribution of these customers equates to around \$3,800 a day to BK's.

Tradies will typically drop into food outlets like BK's on a regular basis and purchase their breakfast, lunch or a snack. They are supporting local employment and businesses. In turn, these businesses employ a high number of young people, and often provide employees with their first opportunity to enter the workforce.

Trade at BKs is spread right across the day, but a high point is when trades and power station workers arrive early in the morning for a bacon and egg roll, and coffee and in the afternoon purchasing food like potato cakes and a coffee or soft drink.

4. ECONOMIC VALUE OF LATROBE VALLEY POWER STATIONS

4.1 INDUSTRY PROFILE

BACKGROUND ON THE NEED FOR NEW TECHNOLOGY

By the middle of this century, all four power stations in the Latrobe Valley will close. At present there are no plans to replace current generation in the Latrobe Valley with a new plant when the existing power stations reach the end of their life, either through the cessation of their operating license, or a commercial decision that brings forward that date.

Currently, the last unit at Loy Yang B is scheduled to shut in 2049. In the interim, there will be the progress closure of other power stations up to this time, and the loss of a critical mass of expertise in the Latrobe Valley because of it. Even though it is a small plant, the closure of the Energy Brix site provides a salient example, and has already seen adverse economic consequences since its closure.

It is likely that one of the oldest two plants will commence a phased closure in the near future. What is not known is whether such a closure will be the tipping point for the irretrievable loss of engineering and operating expertise that has characterised the Latrobe Valley for nearly 100 years.

Closure of a power station will likely trigger closure of the Morwell mine, and, subsequently, a need for large-scale mine rehabilitation. This leads to potentially stranding assets, and future utilisation of the coal resource will be difficult, of which should be avoided.

During this period, the uptake of renewable energy into the electricity mix will likely increase. Per capita, Australia has one of the highest numbers of rooftop solar panels and the introduction of storage batteries will present greater opportunities for its use.

As a base load energy level solution, this technology is still some way off - both practically and economically.

The need to transition from traditional electricity generation technology to new technology is critical, and this is likely to be mix of renewables and a far more efficient and low emission use of coal. A range of new technologies exist - one being the Direct Injection Coal Engine (DICE). While DICE is not the only one, it is a technology that has the capacity to integrate with renewable energy and have a significantly great impact on decarbonisation.

There is an opportunity for government, industry and community to work together and progress the development of technologies that will ensure that Victoria is not faced with the prospect of having one of its largest natural resource becoming a stranded asset.

4.1 INDUSTRY PROFILE

Further developing these technologies in a timely manner will also make use of significant existing infrastructure that is in place, the social license to operate power generation in the region, and the expertise and skill base that is required.

This opportunity has a finite window of only up to around 10 years, while the expertise is still in the Latrobe Valley, and there is time for technologies to mature and scale in preparation for a transition. Neither the Latrobe Valley, nor Victoria, can afford for this transition to occur after the skill base is lost.

CASE STUDY – AGL LOY YANG POWER STATION:

AGL Loy Yang A has a capacity of 2210 MW. Its first unit was commissioned in 1984, with its fourth unit in 1988. Although, it has a mining license to operate until 2050, Loy Yang's operator, AGL, recently stated that the Loy Yang Power Station would not operate beyond 2048. AGL has been exploring opportunities for renewable energy projects and technology in the Latrobe Valley.

4.1 INDUSTRY PROFILE

The Committee for Gippsland asked GHD to provide the following analysis of electricity generators in Gippsland and the impact of any changes in underlying investment in the region, especially on employment, and the distribution of the impact across key industries. GHD provided in-depth detail based on the following data:

- NIEIR Research Paper 'The Latrobe Valley LGA: Economic development indicator outcome and proximate drivers of growth – 2000 to 2014;
- REMPLAN Economic Modelling and Planning System;
- WISeR Economic Impact Analysis Tool – Adelaide University – model data based on 2011 ABS data – forecast analysis has assumed that industry mix in 2015 is similar to the 2011 assumption applied in the WISeR model; and
- Internal GHD economic impact analysis on Victorian projects.

In addition to the above documents, the Committee for Gippsland also acknowledges the following documents in preparation of this report:

- State of the Valley Report, Department of Education and Early Childhood Development, March 2012;
- Latrobe Valley Industry and Employment Roadmap, 2012;
- Latrobe City Council Economic Development Strategy, 2016;
- Economic Importance of Latrobe Coal and the Electricity Industry, Latrobe City, by REMPLAN, June 2014; and
- Transition Illawarra Report, Illawarra RDA Committee, by Deloitte Access Economics, December 2013.

Analysis in this report has taken into account the six local government areas of Gippsland, which are listed below and as per Table 1:

- Latrobe City;
- Baw Baw;
- East Gippsland;
- South Gippsland;
- Wellington; and
- Bass Coast.

4.1 INDUSTRY PROFILE

Baw Baw Shire, Wellington Shire and South Gippsland Shire provided figures on the number of residents who are recorded as travelling to the local government area of Latrobe City for work. The figures are instructive, and demonstrate that the Latrobe Valley energy sector is not only a major employer for the Latrobe Valley, but sustains broader Gippsland as well.

The Committee for Gippsland is grateful to the chief executive officers and economic development teams of Gippsland local government organisations for their assistance in preparing this information.

Wellington Shire: Wellington Shire's draft Economic Development Strategy states that at the last Census (2011) 74 per cent of Wellington's working residents were employed in Wellington Shire. The Gippsland average was 73 per cent. Approximately 1,000 residents travelled to Latrobe City for work, which is about 7 per cent of the Wellington Shire workforce.

BAW BAW SHIRE:

Table: Employment location of residents, Baw Baw Shire

STATUS	2011	
	NUMBER	%
Live and work in the area	11,835	59.8 %
Live in the area, but work outside	5,419	27.4 %
Work location unknown	2,543	12.8 %
Total employed residents	19,797	100.00 %

(Source: Australian Bureau of Statistics, Census of Population and Housing, 2011. HYPERLINK "<http://profile.id.com.au/baw-baw/residents>" <http://profile.id.com.au/baw-baw/residents>)

Table: Employment location of Baw Baw residents within Latrobe City

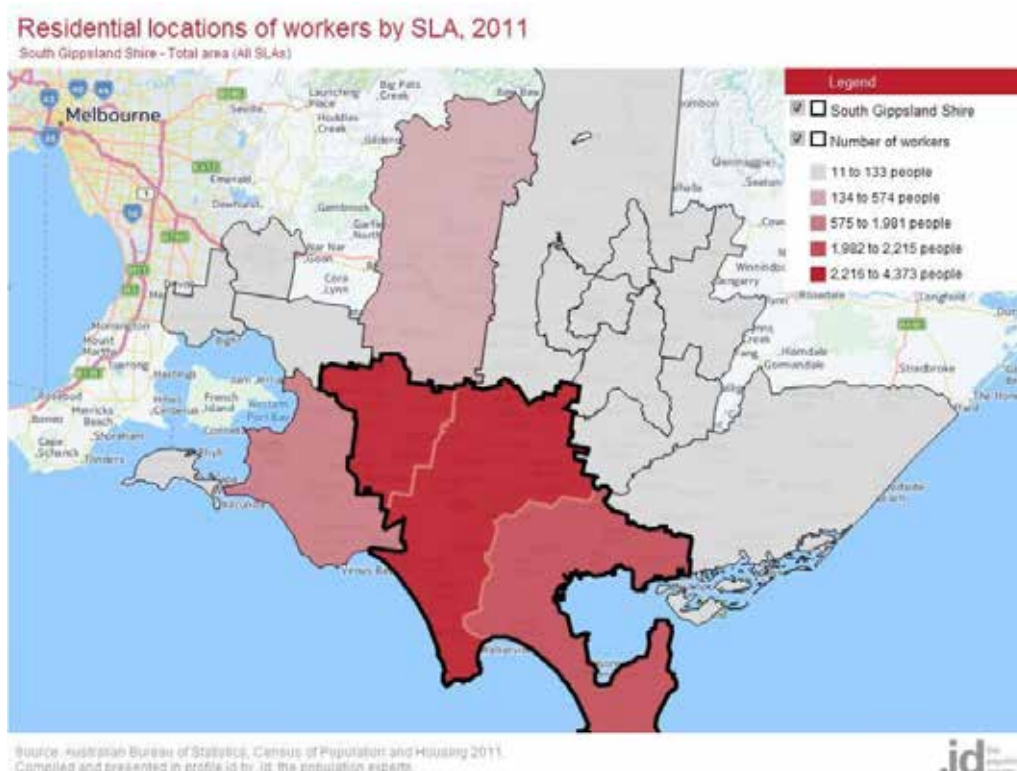
STATISTICAL LOCAL AREA	2011	
	NUMBER	%
Latrobe – Morwell	802	4.1 %
Latrobe – Moe	784	4.0 %
Latrobe – Traralgon	535	2.7 %
Total	2,121	10.8 %

(Source: Australian Bureau of Statistics, Census of Population and Housing, 2011. HYPERLINK "<http://profile.id.com.au/baw-baw/residents>" <http://profile.id.com.au/baw-baw/resident>)

In 2011, 27 per cent of Baw Baw residents worked outside of the Baw Baw LGA. Of this, 10.8 per cent (n=2,121) travel to Latrobe City for work.

4.1 INDUSTRY PROFILE

SOUTH GIPPSLAND SHIRE:



Residential location of workers by SLA 2011 (South Gippsland Shire - Total area)

SLA	NUMBER	PERCENTAGE
South Gippsland (S) - Central	4,373	43.3
South Gippsland (S) - West	2,216	21.9
South Gippsland (S) - East	1,982	19.6
Bass Coast (S) Bal	575	5.7
Baw Baw (S) - Pt B West	134	1.3
Latrobe (C) - Morwell	105	1.0
Wellington (S) - Alberton	69	0.7
Bass Coast (S) - Phillip Is.	49	0.5
Latrobe (C) Bal	40	0.4
Latrobe (C) - Moe	40	0.4
Baw Baw (S) - Pt B East	38	0.4
Latrobe (C) - Traralgon	32	0.3
Cardinia (S) - South	32	0.3
Cardinia (S) - Pakenham	31	0.3
Baw Baw (S) - Pt A	17	0.2
Casey (C) - South	11	0.1

(Source: Australian Bureau of Statistics, Census of Population and Housing 2011. Compiled and presented in profile.id by .id, the population experts.)

<http://www.id.com.au>

4.1 INDUSTRY PROFILE

TABLE 1: GIPPSLAND EMPLOYMENT BY INDUSTRY SECTOR – 2015

Agriculture, Forestry and Fishing	7,818
Mining	1,091
Manufacturing	7,823
Electricity, Gas, Water and Waste Services	2,562
Construction	8,136
Wholesale Trade	2,575
Retail Trade	10,902
Accommodation and Food Services	6,658
Transport, Postal and Warehousing	2,957
Information Media and Telecommunications	688
Financial and Insurance Services	1,542
Rental, Hiring and Real Estate Services	1,092
Professional, Scientific and Technical Services	3,290
Administrative and Support Services	1,859
Public Administration and Safety	5,799
Education and Training	8,035
Health Care and Social Assistance	11,926
Arts and Recreation Services	1,163
Other Services	3,470
	89,386

TABLE 2: GIPPSLAND EMPLOYMENT AND AVERAGE WAGE BY INDUSTRY SECTOR – 2015

	Nos.	\$m	Annual Avg
Health Care	11,926	784.126	\$65,749
Retail Trade	10,902	451.28	\$41,394
Construction	8,136	681.458	\$83,758
Education & Training	8,035	602.951	\$75,041
Manufacturing	7,823	591.822	\$75,652
Agriculture, Forestry	7,818	160.415	\$20,519
Accommodation & Food	6,658	224.82	\$33,767
Public Admin	5,799	569.367	\$98,184
Other Services	3,470	142.958	\$41,198
Professional	3,290	264.009	\$80,246
Transport, Postal, W/housing	2,957	178.854	\$60,485
Wholesale trade	2,575	268.213	\$104,160
Power/Water	2,562	244.95	\$95,609
Admin Support	1,859	170.888	\$91,925
Financial Services	1,542	197.945	\$128,369
Arts & Rec	1,163	38.498	\$33,102
Rental, Hiring, RE	1,092	86.804	\$79,491
Mining	1,091	154.502	\$141,615
Inform/Media	688	54.871	\$79,754
	89,386	5,868.731	\$65,656
Power Generation (Electricity)	875	70.927	\$81,059
Mining (Coal)	246	35.594	\$144,691
Maintenance (general)	462	60.985	\$132,002
Manufacturing (Paper)	850	63.455	\$74,653
	2433	230.961	\$94,928

Note: Published input/output analysis data reports employment data at two levels: by work location or by residential location. This analysis assumes that the employment data provided by REMPLAN is based on work location.

4.1 INDUSTRY PROFILE

The employment multipliers have been calculated for the Gippsland region based on the multipliers for each LGA and then applied on an average basis for any change in economic activity on that basis. This approach could over/understate the employment if the economic activity under consideration was unique to one LGA.

One of the proposed coal upgrading projects has indicated a \$640 million Capex over 3 years. This has been modelled for the first year spend to understand the likely impacts of this on the region, as well as total spend. It has also been advised the Opex would be approximately \$105 million per year – the modelling shows the per year impact of this spend.

TABLE 3: EMPLOYMENT IMPACT BY LGA – \$300M CAPEX PROJECT

[illegible]

There are a number of important conclusions to note from this material. They are:

- The employment forecast has been calculated for the first year of a three year Capex program for each LGA (\$300 million + \$200 million + \$140 million). Multipliers remain the same across the three years within each LGA
- The capital investment assumption is based on a construction program over a three-year period.
- Employment multipliers have been calculated for the region (average).
- Construction multiplier is forecasted at 2.47. That is for every direct job created in construction a further 2.47 jobs are created across the regional economy at the ratio that is indicated in the last column. REMPLAN calculated a multiplier of 3.0 for economic impact analysis work that they completed for Latrobe Council in 2015.
- Analysis has only taken into account the regional impact. For construction CAPEX the 'leakage' to other parts of Victoria would be greater than would apply to regional OPEX expenditure.

4.1 INDUSTRY PROFILE

TABLE 4: GIPPSLAND REGION EMPLOYMENT IMPACT – \$640M TOTAL CAPEX PROJECT

	Employment	Average Annual Increase during Construction period	Percentage Impact
Agriculture, Forestry and Fishing	7,818	33	0.42%
Mining	1,091	5	0.45%
Manufacturing	7,823	149	1.90%
Electricity, Gas, Water and Waste Services	2,562	17	0.66%
Construction	8,136	850	10.45%
Wholesale Trade	2,575	40	1.54%
Retail Trade	10,902	113	1.03%
Accommodation and Food Services	6,658	53	0.80%
Transport, Postal and Warehousing	2,957	39	1.33%
Information Media and Telecommunications	688	8	1.12%
Financial and Insurance Services	1,542	27	1.75%
Rental, Hiring and Real Estate Services	1,092	15	1.42%
Professional, Scientific and Technical Services	3,290	62	1.87%
Administrative and Support Services	1,859	30	1.60%
Public Administration and Safety	5,799	10	0.17%
Education and Training	8,035	31	0.39%
Health Care and Social Assistance	11,926	40	0.34%
Arts and Recreation Services	1,163	8	0.73%
Other Services	3,470	48	1.39%
	89,386	1,578	1.77%

4.1 INDUSTRY PROFILE

**TABLE 5: ANNUAL EMPLOYMENT IMPACT – \$105M OPEX
(ELECTRICITY SECTOR)**

	Gippsland Employment	Average Annual Increase due to \$105m OPEX	Percentage Impact
Agriculture, Forestry and Fishing	7,818	5	0.07%
Mining	1,091	10	0.94%
Manufacturing	7,823	38	0.49%
Electricity, Gas, Water and Waste Services	2,562	267	10.40%
Construction	8,136	38	0.46%
Wholesale Trade	2,575	10	0.39%
Retail Trade	10,902	45	0.42%
Accommodation and Food Services	6,658	24	0.36%
Transport, Postal and Warehousing	2,957	14	0.47%
Information Media and Telecommunications	688	4	0.61%
Financial and Insurance Services	1,542	17	1.13%
Rental, Hiring and Real Estate Services	1,092	6	0.51%
Professional, Scientific and Technical Services	3,290	19	0.59%
Administrative and Support Services	1,859	8	0.44%
Public Administration and Safety	5,799	5	0.09%
Education and Training	8,035	16	0.20%
Health Care and Social Assistance	11,926	19	0.16%
Arts and Recreation Services	1,163	3	0.25%
Other Services	3,470	20	0.58%
	89,386	569	0.64%

It should be noted that:

- The analysis has assumed that the \$105 million Opex is in the Latrobe LGA; and
- The employment impact is ongoing.

It is understood the annual spend by one of the existing mine/power station complexes is in the order of \$148 million per year.

This has been modelled to understand the likely impact if this was withdrawn from the mix.

4.2 IMPACT ON SMALL TO MEDIUM SIZED ENTERPRISES

TABLE 6: EMPLOYMENT IMPACT – \$148M OPEX REDUCTION

	Gippsland Employment	Year 1 employment reduction due to \$148 Opex withdrawal	Percentage Impact
Agriculture, Forestry and Fishing	7,818	7	0.09%
Mining	1,091	14	1.33%
Manufacturing	7,823	54	0.69%
Electricity, Gas, Water and Waste Services	2,562	376	14.66%
Construction	8,136	53	0.65%
Wholesale Trade	2,575	14	0.56%
Retail Trade	10,902	64	0.59%
Accommodation and Food Services	6,658	33	0.50%
Transport, Postal and Warehousing	2,957	20	0.66%
Information Media and Telecommunications	688	6	0.86%
Financial and Insurance Services	1,542	24	1.59%
Rental, Hiring and Real Estate Services	1,092	8	0.72%
Professional, Scientific and Technical Services	3,290	27	0.83%
Administrative and Support Services	1,859	12	0.62%
Public Administration and Safety	5,799	7	0.12%
Education and Training	8,035	23	0.28%
Health Care and Social Assistance	11,926	27	0.22%
Arts and Recreation Services	1,163	4	0.36%
Other Services	3,470	28	0.82%
	89,386	802	0.90%

It should be noted that:

- OPEX reduction occurs in Latrobe City LGA; and
- Given that the reduction is in OPEX, the decrease would be expected to be a long-term reduction in employment.

4.2 IMPACT ON SMALL TO MEDIUM SIZED ENTERPRISES

The Australian Bureau of Statistics (ABS) defines SME businesses as those businesses that employ less than 200 employees. Business size statistics are available in database 81650 (Counts of Australian Businesses). This database identifies 2.1 million businesses in Australia (defined as holders of an Australian Business Number) of which 1.2 million are inactive.

Business unit data is collected by region/location, with 2,172 region/locations across Australia, and 26 region/locations making up the Gippsland Region.

Data for each region/location is gathered at the industry sector level, the same 19 sectors used for employment data collection. (Refer Table 1)

TABLE 7: INDUSTRY SECTORS/BUSINESS SIZE - GIPPSLAND REGION

							% of Employment with businesses with less than 20 employees	
		Non employing	1-4	5-19	20-199	200+		
1	Drouin	792	337	96	15	0	50.4%	
2	Mount Baw Baw Region	552	169	51	6	0	56.9%	
3	Trafalgar (Vic.)	536	188	78	3	0	78.3%	
4	Warragul	1327	548	209	40	0	42.9%	
5	Bairnsdale	756	398	171	29	0	45.0%	
6	Bruthen - Omeo	629	222	81	3	0	79.7%	
7	Lakes Entrance	528	234	85	28	0	30.7%	
8	Orbost	494	202	68	9	0	53.0%	
9	Paynesville	263	101	34	0	0	100.0%	
10	Foster	829	332	75	12	0	52.1%	
11	French Island	20	6	0	0	0	100.0%	
12	Korumburra	783	220	58	0	3	100.0%	
13	Leongatha	991	313	107	20	0	44.3%	
14	Phillip Island	538	262	77	18	0	40.1%	
15	Wonthaggi - Inverloch	1155	469	141	24	0	47.7%	
16	Churchill	485	164	35	6	0	51.0%	
17	Moe - Newborough	410	227	79	9	0	56.5%	
18	Morwell	425	227	132	46	0	27.0%	
19	Traralgon	991	468	251	54	3	37.9%	
20	Yallourn North - Glengarry	18	7	0	0	0	100.0%	
21	Alps - West	9	0	0	0	0		
22	Longford - Loch Sport	232	89	20	0	0	100.0%	
23	Maffra	787	338	99	22	0	41.4%	
24	Rosedale	377	116	26	3	0	60.2%	
25	Sale	612	318	155	38	0	35.4%	
1	26	Yarram	403	145	66	9	0	50.0%
		14,942	6,095	2,194	394	6	44.9%	
2	Average number FTE	0	2	12	120	500		
3	Total FTEs	0	12,190	26,328	47,280	3,000		
4	Forecasted total for region					88,798		

4.2 IMPACT ON SMALL TO MEDIUM SIZED ENTERPRISES

It should be noted that:

1. For each region/location the breakdown of employment by business size is as follows (using Yarram as an example):

Register business - no employees	403
Register business - with 1-4 employees	145
Register business – with 5-19 employees	66
Register business - with 20-199 employees	9
Register business – with plus 200 employees	0

Percentage of employees employed in 'small' business 51.1 per cent.

“Small” in this case is defined as less than 20 employees.

2. Average number of full time equivalent – assumption is made as to the number on average that is employed in the business, as opposed to the category range.

3. Forecasted to FTE across each the business size groups.

4. Forecasted total – 88,798 aligned to the Gippsland regional employment of 89,000 (refer Table 2)

4.2 IMPACT ON SMALL TO MEDIUM SIZED ENTERPRISES

With any downturn in the regional economy due to significant plant closure, the largest impact will be felt by those who are currently employed in the business that is closed. But it is also likely that the impact will be further felt by smaller operations, as any loss of business could have a significant impact on the long-term financial viability of the business.

Those industry sectors with a high 'small employer' percentage (+50 per cent) are likely to be impacted more by changes in the investment and operational activity, in both directions.

TABLE 8: BUSINESS SIZE BY INDUSTRY SECTOR (GIPPSLAND)

		Non employing	1-4	5-19	20-199	200+	% of Employment with businesses with less than 20 employees
1	Agriculture, Forestry and Fishing	5010	1078	292	33	0	58.8%
2	Mining	18	28	21	3	0	46.1%
3	Manufacturing	379	225	181	47	3	31.7%
4	Electricity, Gas, Water and Waste Services	28	17	12	6	0	19.8%
5	Construction	2452	1339	269	35	0	58.4%
6	Wholesale Trade	251	141	93	24	0	32.7%
7	Retail Trade	614	643	304	59	0	41.1%
8	Accommodation and Food Services	308	382	326	47	0	45.3%
9	Transport, Postal and Warehousing	639	439	105	15	0	54.3%
10	Information Media and Telecommunicatio	59	25	9	0	0	100.0%
11	Financial and Insurance Services	1104	160	31	3	0	65.8%
12	Rental, Hiring and Real Estate Services	1672	175	68	12	0	44.7%
13	Professional, Scientific and Technical Serv	841	457	134	23	0	47.7%
14	Administrative and Support Services	324	172	65	31	3	23.2%
15	Public Administration and Safety	24	18	6	3	0	23.1%
16	Education and Training	117	52	23	15	0	17.4%
17	Health Care and Social Assistance	413	246	108	20	0	42.7%
18	Arts and Recreation Services	140	64	24	3	0	53.6%
19	Other Services	335	377	111	6	0	74.3%
20	Unknown	214	57	12	9	0	19.3%
		14,942	6,095	2,194	394	6	44.9%
	Average number FTE	0	2	12	115	500	
	Total FTEs	0	12,190	26,328	45,310	3,000	
	Total FTEs for Gippsland				86,828		

Note: Manufacturing includes power generation.

5. CLOSURE SCENARIO IMPACTS

5. CLOSURE SCENARIO IMPACTS

Currently, Yallourn is due for closure in 2032, Hazelwood in 2033 and Loy Yang A in 2048 although the Committee for Gippsland is of the view that one power station will close earlier than these dates.

Based on analysis undertaken and information provided by industry, the following closure scenarios have been developed. It is noted that this has not been endorsed by Latrobe Valley power stations, and is a scenario being used for modelling purposes only.

- Closure across:
 - Power station 1 = 500 employees: 250 from mining and 250 from the power station, with an additional 250 from external maintenance contractors.
 - Power station 2 = 400 employees: 200 from mining and 200 from the power station, with an additional 250 from external maintenance contractors.
- A closure sequence was established for each site.
- It was assumed that the staged closure will be followed by a 2-3 year decommissioning phase.

5.1 ECONOMIC IMPACT OF CLOSURE

Closure of the operations will have a three-fold economic impact on the Gippsland region:

- Direct employment – the number of employees made redundant from the operations that are closing;
 - Industrial impact – the closed operation will reduce its demand for input of material and services, leading to a reduction in the firms that currently supply the operations; and
 - Consumption impact – the loss of both direct and indirect employment will flow through the economy to impact on the supply of goods and services on a broader scale.
- For example, the operation may not be significant users of education and training, but the loss of employment and population will have a broader impact on employment in that area due to the multiplier effect).

The reduced direct employment data was analysed through REMPLAN Economic modelling to calculate the flow on impacts. To assess the full impact, the total redundancy forecasts were entered as if they occurred in a single year, leading to:

Direct Effect Multiplier	1.00
Industrial Multiplier	0.732
Consumption Multiplier	0.533

The total impact across the Gippsland region resulting from the 1,400 jobs lost due to the forecasted closure is a further loss of 1,771 jobs (i.e. over 3,000 jobs lost in economy).

It should be noted that the assumption in the modelling is that the economic framework of Gippsland remains the same across the 20 year analysis period. As these redundancies occur progressively over a 20 year period, the multipliers may change slightly on annual basis compared to those that are implied in the 20 year analysis.

It should be noted that population impact has been based on household size of 2.26 (as per ABS data) and that there is a 1:1 relationship between employment number and households. The total population decline forecasted for Gippsland on this basis at 7,167 would be at the upper limit of the population decline forecast.

5.2 IMPACT ON OUTPUT

As a result of the loss of 1,400 direct jobs, output is forecasted to decrease by \$156 million and it is estimated that the demand for intermediate goods and services would fall by \$403 million. This represents a Type 1 Output multiplier of 1.348. These industrial effects include multiple rounds of flow-on effects, as servicing sectors decrease their own output and demand for local goods and services in response to the direct change to the economy.

The decreases in direct and indirect output would typically correspond to the loss of jobs in the economy. Corresponding to this change in employment would be a decrease in the total wages and salaries paid to employees. A proportion of these wages and salaries are typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are estimated at \$183 million.

Total output, including all direct, industrial and consumption effects is estimated to decrease by up to \$1,742 million. This represents a Type 2 Output multiplier of 1.507.

5.3 IMPACT ON WAGES AND SALARIES

From a direct decrease in output of \$156 million, it is estimated that direct wages and salaries would decrease by \$138 million. From this direct contraction in the economy, flow-on industrial effects in terms of local purchases of goods and services are anticipated, and it is estimated that these indirect impacts would result in the loss of a further 1,025 jobs and a further decrease in wages and salaries of \$81 million. This represents a Type 1 Wages and Salaries multiplier of 1.587.

The decrease in direct and indirect output, and the corresponding loss of jobs in the economy is expected to result in a decrease in the wages and salaries paid to employees. A proportion of these wages and salaries is typically spent on consumption and a proportion of this expenditure is captured in the local economy. The consumption effects under this scenario are expected to further reduce employment in sectors such as retail therefore further decreasing wages and salaries by \$42 million.

Total wages and salaries, including all direct, industrial and consumption effects is estimated to decrease by up to \$260 million. This represents a Type 2 Wages and Salaries multiplier of 1.888.

5.3 IMPACT ON WAGES AND SALARIES

TABLE 9: EMPLOYMENT IMPACT BY INDUSTRY SECTOR

	Direct Effect	Industrial Effect	Consumption Effect	Total Impact
Agriculture, Forestry & Fishing		-36	-13	-49
Mining	-281	-7	-1	-289
Mining Support Services	-313	-16	0	-329
Food product Manufacturing		-5	-21	-26
Beverage product Manufacturing		-1	-2	-3
Apparel Manufacturing		-1	-2	-3
Saw Mill/Paper production	-525	-32	-1	-558
Printing		-16	-1	-17
Petroleum & Coal Product Manufacture		-3	-1	-3
Pharmaceutics Production		0	0	0
Basic Chemical Manufacture		-5	-2	-7
Non Metallic Mineral Production		-4	-1	-4
Metal Manufacture		-23	-2	-24
Transport Equipment/Appliance		-2	-3	-4
Technical Equipment		-9	-1	-11
Furniture Manufacture		-1	-2	-3
Other Manufacturing		-1	-1	-2
Electricity Generation	-281	-88	-4	-374
Gas, Water & Waste Services		-21	-6	-27
Construction		-87	-10	-97
Wholesale Trade		-44	-22	-66
Retail Trade		-74	-193	-268
Accommodation/Food		-56	-106	-162
Transport, Postal & Tel		-93	-23	-116
Information/media		-8	-8	-16
Financial & Insurance Services		-59	-19	-78
Rental, Hiring, Real Estate		-39	-9	-49
Professional Services		-116	-16	-133
Admin Support		-49	-14	-63
Public Admin & Safety		-31	-6	-36
Education & Training		-9	-77	-86
Health Care & Social Assistance		-3	-112	-115
Arts & Recreation		-8	-16	-24
Other Services		-82	-51	-133
	-1,400	-1,025	-746	-3,171

5.3 IMPACT ON WAGES AND SALARIES

TABLE 10: IMPACT SUMMARY

	Direct	Industrial Effect	Consumption Effect	Total Effect	Type 1 Multiplier	Type 2 Multiplier
Output (\$m)	-\$1,156.4	-\$402.9	-\$183.0	-\$1,742.3	1.348	1.507
Employment (jobs)	-1,400.0	-1,025.0	-746.3	-3,171.3	1.732	2.265
Wages & Salaries (\$m)	-\$137.9	-\$81.0	-\$41.5	-\$260.4	1.587	1.888
Value Added (\$m)	-\$469.4	-\$169.6	-\$105.6	-\$744.6	1.361	1.586

The analysis provided by GHD on the economic value of power stations in the Latrobe Valley to the SME business sector is further substantiated by figures provided to the Committee for Gippsland from local power station operators.

Two power stations, operated by different parent companies, provided the Committee for Gippsland with a list of organisations from 2015 that the power stations contracted or provided over \$50,000 per year to in work or philanthropy. Each list extended to over 50 organisations, and included a recruitment business in Gippsland, a small business in Gippsland that provided welding services, another small business in Gippsland that sold pumps, through to the Gippsland Power Football Club.

6. ECONOMIC RELATIONSHIP WITH SME SECTOR

6. ECONOMIC RELATIONSHIP WITH SME SECTOR

To help understand the expenditure contribution from the energy sector, a power station worker agreed to compile a spend diary for this project. The below table demonstrates the value that power station employee wages contribute not only to the local Gippsland economy, but to broader Victoria.

EXPENDITURE DIARY

DATE	VENUE	ITEM/S	COST
11/02/2016	Cranbourne Hyundai	New Car Hyundai i30	\$25,000
11/02/2016	Kelly's Pub Cranbourne	Lunch	\$86.00
11/02/2016	Yinnar General Store	Newspapers	\$1.50
12/02/2016	Coles Supermarket Morwell	Groceries	\$116.33
12/02/2016	Harris Scarfe Traralgon	Manchester and toaster	\$311.69
12/02/2016	Kmart Traralgon	Cushions, kettle, earphones, bear, chocolates, wrapping paper	\$122.99
13/02/2016	Coles Supermarket Morwell	Groceries	\$140.06
14/02/2016	Bunnings Wauru Ponds Geelong	Key cutting	\$10.80
14/02/2016	Bev Marks Beds Wauru Ponds Geelong	Bed	\$915.00
14/02/2016	Amart Sports Wauru Ponds Geelong	Cricket gloves	\$50.00
14/02/2016	Grilled Wauru Ponds Geelong	Lunch	\$62.00
14/02/2016	Kmart Wauru Ponds Geelong	Lamps x 2, floor mat, towels, clock radio	\$118.00
14/02/2016	JB Hi Fi Wauru Ponds	Game Cards	\$45.00
14/02/2016	Coles Wauru Ponds	Groceries	\$11.62
15/02/2016	Traralgon Guardian Pharmacy	Make up	\$36.00
15/02/2016	Cheap as Chips Traralgon	Air freshener	\$14.50
15/02/2016	Webster's Butcher Yinnar	Chicken schnitzels	\$16.00
16/02/2016	Woolworths Traralgon	Groceries	\$67.00
17/02/2016	Coles Morwell	Groceries	\$52.91
17/02/2016	Mirboo North IGA	Groceries	\$13.01
18/02/2016	Webster's Butcher Yinnar	Chicken schnitzels	\$27.25
18/02/2016	Woolworths Morwell	Diesel	\$54.21
19/02/2016	Pumpkin Patch Mid Valley Morwell	Boys clothing	\$106.97

6. ECONOMIC RELATIONSHIP WITH SME SECTOR

DATE	VENUE	ITEM/S	COST
19/02/2016	Coles Morwell	Groceries	\$61.52
19/02/2016	Card Alley Mid Valley Morwell	Cards and wrapping paper	\$9.49
19/02/2016	Yinnar General Store	Newspapers	\$1.50
19/02/2016	Pizza HQ Churchill	Pizza	\$26.00
20/02/2016	Bunnings Morwell	Power boards, light globes, house numbers	\$122.48
20/02/2016	Coles Morwell	Groceries	\$153.79
20/02/2016	Yinnar Tigers / Morwell Raiders Cricket Club	2015/16 Cricket Subs	\$350.00
21/02/2016	Catch of the Day	New mobile phone (online purchase)	\$550.00
22/02/2016	Discount Electrical Direct to the Public	New Washing Machine	\$690.00
22/02/2016	McDonalds Waurin Ponds	Toastie and Coffee	\$6.10
22/02/2016	Webster's Butchers Yinnar	Sausages	\$12.00
23/02/2016	Coles Morwell	Groceries	\$83.51
24/02/2016	Ritchies IGA Churchill	Groceries	\$26.03
24/02/2016	AGL Loy Yang Canteen	Lunch	\$8.00
24/02/2016	Woolworths Traralgon	Groceries	\$32.29
24/02/2016	Woolworths Traralgon	Groceries	\$32.39
25/02/2016	Valley Headway International Morwell	Cut and Colour	\$115.50
27/02/2016	Coles Morwell	Groceries	\$196.47
25/02/2016	Deakin Uni	Car Parking	\$292.40
27/02/2016	Deakin Uni	School books	\$440.00
27/02/2016	Coles Morwell	Groceries	\$196.47
29/02/2016	ALDI Stores	Groceries	\$33.20
29/02/2016	Coles Morwell	Groceries	\$36.20
01/03/2016	Gippsland Physio	Massage	\$57.00
02/03/2016	Mirboo North IGA	Groceries	\$59.70
02/03/2016	BWS	Wine	\$30.00
02/03/2016	Woolworths, Mid Valley	Groceries	\$115.71
03/03/2016	Ritchies IGA Churchill	Groceries	\$18.44
04/03/2016	Dan Murphy's Traralgon	Beer	\$44.00
04/03/2016	Coles Morwell	Groceries	\$35.19
04/03/2016	Marino Deli, Morwell	Ham and Cheese	\$11.10
04/03/2016	Woolworths Morwell	Petrol	\$52.25
05/03/2016	Aldi Morwell	Gardening	\$136.55

6. ECONOMIC RELATIONSHIP WITH SME SECTOR

DATE	VENUE	ITEM/S	COST
05/03/2016	Coles Morwell	Groceries	\$266.39
06/03/2016	Woolworths Churchill	Groceries	\$35.32
07/03/2016	Woolworths Traralgon	Groceries	\$42.58
08/03/2016	Woolworths Traralgon	Groceries	\$18.27
09/03/2016	Mirboo North IGA	Groceries	\$40.90
10/03/2016	Woolworths Traralgon	Groceries	\$43.04
11/03/2016	Momo Traralgon	Meal	\$85.00
11/03/2016	Green Olive Traralgon	Meal	\$27.00
12/03/2016	Chemist Warehouse	Drugs, aftershave	\$36.49
12/03/2016	Coles Morwell	Groceries	\$198.63
15/03/2016	Chemist Warehouse	Waxsol	\$12.00
15/03/2016	Woolworths, Churchill	Groceries	\$33.61
16/03/2016	Woolworths Traralgon	Groceries	\$62.01
17/03/2016	Sportsco Morwell	Mouth guards	\$60.00
17/03/2016	Gippsland Physio	Massage	\$59.00
17/03/2016	Coles Mid Valley	Groceries	\$80.09
18/03/2016	Sportsco Morwell	Football boots, socks and shorts	\$292.00
18/03/2016	Factorie Mid Valley	Clothes	\$174.80
19/03/2016	Coles Morwell	Groceries	\$295.24
19/03/2016	Mirboo North BP	Diesel	\$52.07

Once the purchase of a new car (not a monthly expense) is taken out, the total monthly spend of this power station worker adds up to \$2,599.83, although a number of these expenses would not be average monthly spend items. This figure is significant, because it represents not just a potential loss of expenditure in Gippsland (in the event of job losses), but Victoria as well, which can be demonstrated by the geographic diversity of the expenditure. While a multiplier on this figure may not be able to account for variations and averaging, the economic modelling undertaken by GHD does achieve this and the expenditure benefit for broader Victoria is evident.

7. SURVEY OF BUSINESSES IN GIPPSLAND

7. SURVEY OF BUSINESSES IN GIPPSLAND

As part of this project, an online survey was circulated to SME businesses located throughout Latrobe City, Baw Baw Shire and Wellington Shire Councils.

Consultation with the SME business sector included engagement both through the survey and an over-the-phone interview.

The survey sought information on the relationship between the SME business sector and the Latrobe Valley power stations, while seeking to gain a further understanding on what SME business considered to be essential to their success, as well as their perceived threats.

7.1 SURVEY FEEDBACK

Responses to the survey were consistently supportive and encouraging of the project, and demonstrated concern about an uncertain industry future in the Latrobe Valley.

7.1.1 OPTIMISM ABOUT THE FUTURE FOR OF THE LATROBE VALLEY

On average, survey respondents were neutral as to whether they strongly agreed or disagreed with the statement: “As things currently stand, I am very optimistic about the future of my business/organisation”.

7.1.2 BENEFIT OF POWER STATIONS IN THE LATROBE VALLEY

The majority of respondents surveyed within Latrobe City said that the presence of power stations in the Latrobe Valley were of economic benefit to the region. When respondents were geographically further away from the power stations, they tended to say that the presence of power stations in the Latrobe Valley were less likely to offer benefits to SME businesses.

Examples of the benefits put forward by respondents included the steady stream of work, local expenditure, local hiring and employment and, with the employment, a larger customer base for other businesses.

Some respondents noted that even though they did not directly service the power stations, there was a clear flow on benefit to their customers and clients from the power stations.

The power stations were also identified as providing stability for the region’s economy and employment, the local population and housing markets.

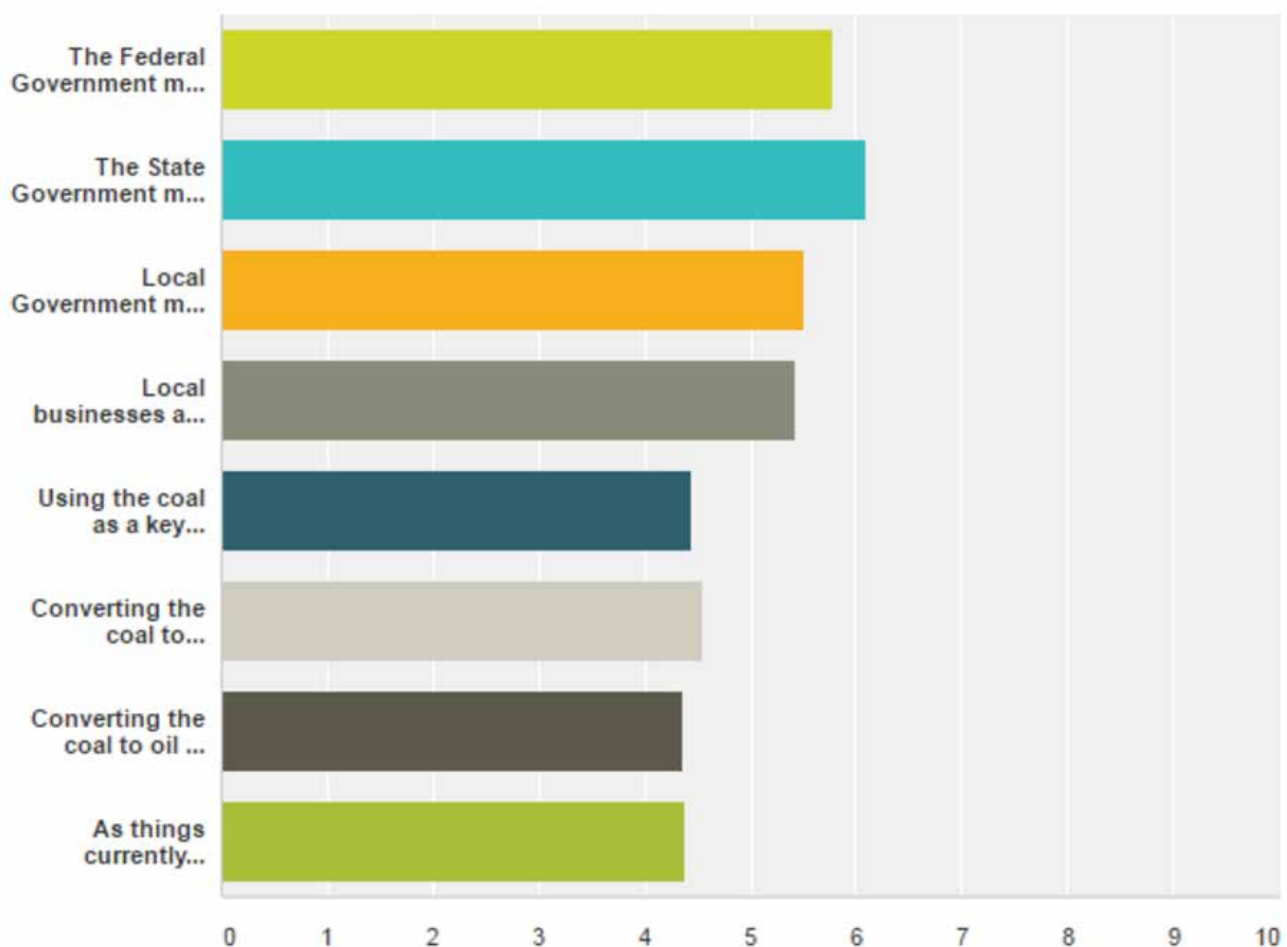
High value wages provided by the power stations were also identified as a benefit in providing workers with a greater disposable income, the majority of which would be spent in the region.

7.1 SURVEY FEEDBACK

7.1.3 WHO SHOULD LEAD THE TRANSITION?

The survey results show that respondents viewed all levels of government as needing to provide a similar leading and guiding role in any future transition in the Latrobe Valley. On average, the State Government was identified as leading this transition, however this was only marginally ahead of local and federal governments and business.

The following table outlines the position of respondents in relation to the role of governments and the business sector in transition, future uses of coal, and the impact that closure of a power station would have on local business.



7.1.4 COAL: FUTURE USES

Responses about future uses of coal have been, on average neutral, with many respondents either not responding or being uncommitted on their preference for future uses. This may indicate a lack of understanding of alternative uses for coal, or indifference as to how coal is used in the future. Regardless of the reasoning for responses or lack of responses to future uses, industry and government have an opportunity to further inform and include the community on these developing industries.

7.1 SURVEY FEEDBACK

7.1.5 ESSENTIAL FOR BUSINESS SUCCESS

Respondents were asked to identify three things that are essential to the success of their business in Gippsland.

A snapshot of responses are provided below:

Responses
council support government support tourism support
1.Regional Growth and Development 2.Intensives that attract larger businesses to the region 3.Greater networking opportunities
The Power Industry Stable workforce and union Reliable transport
good reputation good service understanding our clients needs
employees, community, innovation
Buy Local, wherever possible Hire local people support our local community
Money in the community Excellent staff Demand for our services
Internet access
Cost effective operation. Certainty of customer / base - demand. Viable business community to offset rural / regional operations.
1. local projects/work 2. local employees/labour 3. export opportunities (outside the region)
1. Good transport infrastructure - road and rail - I commute a great deal 2. High quality telecommunications infrastructure e.g. NBN - I use ICT for my business operations including Skype/Goto meeting technology 3. Information on government programs to support business
Good customer relations High quality products Skilled work force
Low unemployment Residential property development Government infrastructure spending
Ongoing economic confidence Employment opportunities Efficient use of public funds - local and state
Long history of business and relationships/trust that has developed with key clients Skilled staff in local area Govt investment in region (through for example VicRoads, DELWP etc)
relationships understanding of business environment (what is going on - up/down etc) having skilled staff/workers to support company
projects requiring funding and equipment, confidence of industry to update equipment due to ongoing work, and people to have confidence.
- Collaborative relationships that promote innovation through flexibility in responding to dynamic markets - Innovation to support stagnating industry sectors - Shift in consumer and hence business confidence across region to create an investment platform
Local relationships Timely and relevant information Strong local economic growth and stability
Being competitive Having confidence Staying focused
High employment in the area, Consumer Confidence,Job stability

7.1.6 BIGGEST THREAT TO BUSINESS SUCCESS

Threats to the success of SME businesses in the Latrobe Valley identified by respondents included government policy changes and an uncertain policy environment; unemployment and a shortage of experienced and skilled employees; lack of local confidence; economic uncertainty and the closure of medium to large businesses in the region.

The table below provides a brief snapshot of some of the identified threats to respondents' business success.

Responses
lack of local government support
1.Deteriorating regional growth and development 2.Small Businesses are reluctant to invest in their future growth whilst there is economic uncertainty in the region 3.Small business networks do not exist in the region and business owners are very insular. This causes a threat to Business to Business transactions as apposed to what is on offer to B2Bs in metropolitan areas
The demise of the power industry would force us to relocate
over supply of same service providers poor organisational/business skills
population, industry, over comption
Centralized procurement from CBD locations Recruiting appropriately skilled and motivated people into our business and lack of infrastructure and understanding by local govt to support the local business community
Skills shortage Slow down in economy Lack of projects in community
unlicensed contractors
Shutting down of power generation (transport rubber conveyor reels both locally manufactured in Australia and imported from overseas). Also carry these throughout the rest of Australia as well as service this industry nationally. Government policy / decisions (interference and unintended consequences of that) which confuse things or artificially create problems in the process. Lack of cost effectiveness with our competitors with shifting customer base.
1. local projects/work 2. local employees/labour 3. export opportunities (outside the region)
1. Gippslanders are often loathe to pay for quality service - scarcity mentality 2. Poor quality transport recently e.g. Vline
Increasing costs of running a business Reliable skilled workforce availability Pressure to keep costs low from big business
Unemployment Lack of government spending developing the area
Closure of major employers Inability or unwillingness of major investment Closure of Princes Freeway if road repairs near Morwell open cut fail
Govt chopping and changing regulatory environment lack of engineering graduates in region increasing cost of regulation (internally and on clients)
Govt imposed changes at 'whim of Govt' - seems each new Govt brings in new regulations which make uncertainty in longer term business environment Lack of large investments/large projects occurring in region - partly due to above point loss of key staff/skills
lack of confidence and govts wasting money and not building infer-structure
Stagnation in economic development, uncertainty that causes development to be put on hold.
Centralisation of company functions to national offices Employment and Economic downturn in regional areas International ownership without focus on local service providers
Having a lack of confedence in the general public Overheads becoming to high Not enough positivity in the communit
Doubt about the future of power stations and the APM which provide most of our clients
Focus on developing region as a single industry region, ignoring other opportunities
poor internet connection less affluent clients less successful small businesses
Lack of appropriate internet. Taxation Laws

8. INDUSTRY DIVERSIFICATION

8. INDUSTRY DIVERSIFICATION

Regions around Australia that have undergone, or are currently undergoing, industry transitioning can offer the Latrobe Valley some useful lessons in what works, or on how things could have been done better.

The Committee for Gippsland is an active member of the Committees for Cities and Regions network, which includes '*Committee for*' organisations from New Zealand, Perth, Sydney, Wagga Wagga, Cairns, Shepparton, Echuca-Moama, Ballarat, Geelong with more '*committee for*' organisations to be established. Through this network, the Committee for Gippsland has been able to learn how industry transitioning in regions such as Geelong is being undertaken. Newcastle and Wollongong in New South Wales also offer further case studies.

GIPPSLAND

A unique industry profile, diverse natural resource base and dynamic community are just some of the attributes that make Gippsland a distinct region. Gippsland as a region is not one central, CBD regional city - it is made up of a number of large towns. Even Latrobe City, which is recognised as one of Victoria's official regional cities, comprises major towns of Moe, Morwell and Traralgon. Around 40 per cent of the Gippsland region comprises towns under 1,000 people in population.

The Gippsland region also has a broad industry base. While sectors like power generation are major employers and contributors to the gross regional product, there is also strength in agribusiness, manufacturing, retail, transport, tourism and more. Around Australia, some regions have successfully transitioned towards industries like professional services, information technology and tourism.

Gippsland already has strong representation in these sectors. Analysis of income compared to power generation though reveals that these industries pay less. For example, a call centre operator may be on an annual yearly wage of around \$60,000, compared to a unit controller at a power station on an annual wage of over \$150,000. Income is directly linked to local expenditure in the region, as well as skills, higher education and other areas. It is important that in any industry transition, highly paid wages are not completely replaced by industries with only lower paid wages.

A Gippsland Food Plan was recently launched in the region, articulating a number of directions for growth and development of the food and agribusiness sectors. According to Agribusiness Gippsland, agribusiness is worth up to \$7 billion to the region, and sectors like dairy at around \$3 billion and timber at \$1.5 billion are key areas for expansion and development. There is strong international investor interest in the Gippsland region, which will require capital from outside of the region to fully realise its business potential. There are a number of examples in meat, dairy, horticulture, fishing and forestry that present attractive investment opportunities. A further emphasis is on proliferating a 'brand Gippsland' marketing effort towards the region's agricultural produce, in a similar way that regions such as King Island in Tasmania have successfully achieved.

8. INDUSTRY DIVERSIFICATION

Examples of food processing companies in the region using highly skilled people and increasingly advanced technology to manufacture their products include Patties Foods in Bairnsdale, Burra Foods in Korumburra, Murray Goulburn in Leongatha, Radfords Meats in Warragul, LION in Morwell, ViPlus Dairy in Toora, Fonterra in Darnum and a number of others.

Tourism is a strong and growing industry sector for Gippsland. With wineries in the Latrobe Valley, the largest inland lakes system in the southern hemisphere in East Gippsland, food and agri-tourism flourishing in South Gippsland, Mount Baw Baw in West Gippsland, and Phillip Island Nature Park in Bass Coast, the region has plenty of options for tourism and travel. The region still needs a quantum of large industry and highly skilled jobs in the mix of the economy though to maintain a balance and diversity of income stream.

Taking into account experiences and initiatives from other regions undergoing industry transitioning can be helpful in preparing future directions for the Latrobe Valley.

Other regions to learn from include:

WOLLONGONG

In December 2013, the Illawarra Regional Development Australia Committee released a report it had commissioned via Deloitte Access Economics called Transition Illawarra Initiative: Stage One. There were seven distinct elements to the report:

- a review of existing research, initiatives and strategies;
- a review of the Illawarra economy, including the industry structure;
- a competitive analysis to consider how the Illawarra economy fits in a national and global perspective;
- an analysis of the region's future workforce profile;
- a supply chain analysis of the top two emerging and developing sectors;
- analysis of infrastructure requirements based on evidence-based growth opportunities; and
- recommendations and strategies.

The report notes a number of natural advantages to the Illawarra region that are similar to Gippsland. The presence of Port Kembla can be compared to the significant opportunities represented by the Port of Hastings to Gippsland for example. Similarly, the University of Wollongong in the Illawarra can be compared to the presence of Federation University Australia in Gippsland with the similar higher education opportunities they bring. The report also notes the Illawarra region's proximity to Sydney and its opportunities to engage with Asia.

They are comparable with Gippsland's proximity to Melbourne and the Gippsland region's eagerness to engage investment opportunities with Asia.

8. INDUSTRY DIVERSIFICATION

Further, the report makes note of what is referred to as 'soft infrastructure' and the benefits that presents to regional transitioning. 'Soft infrastructure' includes health and higher education, and the Committee for Gippsland has taken this emphasis on board in this report by incorporating a set of recommendations around investing in the further development of Federation University Australia Gippsland, health infrastructure at Latrobe Regional Hospital and a new West Gippsland Hospital. Business infrastructure also relates to technology and, within Gippsland, the need for timely rollout of the National Broadband Network across the region is a major area of feedback from SME businesses.

Prioritisation was also made of transport infrastructure in the Illawarra report, with an emphasis on rail upgrades, road bypasses and freeway upgrades, as well as workforce development, business development and tourism.

Major trends in the Illawarra report are also comparable to Gippsland in many ways. For the Illawarra they are:

- the rise of Asia;
- an ageing population;
- technological change;
- business / industrial development; and
- implications from future growth in Sydney.

For Gippsland, the rise of Asia is particularly pertinent to the region's agribusiness sector while an ageing population presents opportunities in areas like East Gippsland and the retirement living economy, as well as innovative health projects like the Latrobe Valley dental prosthetics clinic. Business and industrial opportunities include areas such as intensive agriculture, and in the update of Plan Melbourne and Infrastructure Victoria's 30 year strategy, population and growth opportunities for the region including a third major airport for Victoria to be based in the southeast.

Of note, the report states that Port Kembla's two biggest exports are coal and grain. It says that the latest forecasts from the Bureau of Resources and Energy Economics have metallurgical coal exports growing at an average rate of 5% a year between 2013 and 2018.¹⁰

HUNTER VALLEY

The Hunter Energy Transition Alliance was formed with a number of stakeholders from the region focusing on new energy technologies. Already a major provider of coal fired electricity, in 2014 the Hunter Valley became home to the first NSW Energy and Resources Knowledge Hub. This was funded through the NSW Government, and the funding was used to develop several initiatives.

10. Transition Illawarra report December 2013, Deloitte Access Economics and RDA Illawarra, page 35.

8. INDUSTRY DIVERSIFICATION

One of those, developed by AGL Energy, brought together imperatives for the region like workforce and skills upgrades to prepare for new energy markets and services. The initiative can also be viewed in the current context of AGL's announcement that the Liddell and Bayswater power stations in the Hunter Valley will close by 2022 and 2035 respectively. The focus on developing workforce capacity and additional skills for new energy projects coming online in the Latrobe Valley, whether in the renewables area or coal derivatives, would be a useful example to apply in Gippsland.

GEELONG

Geelong has traditionally had a strong background in manufacturing, most notably with Ford and a number of other well-known brands. The broader region has also benefited from the Alcoa aluminum smelter at Geelong and, more indirectly, also at its Portland smelter.

The Alcoa aluminum smelter at Portland has a direct contract for its energy intensive electricity needs with nearly an entire unit of Loy Yang (around 500 MW) in demand. If the smelter were to close, the sudden and significant drop in demand within the electricity network would have an impact on retail prices. Of further complexity is the fact that, because the power is base load, it is not only a matter of reduced overall demand. If the base load demand suddenly drops, there is an impact to the coal-fired power station, because the power station cannot increase and decrease supply very quickly.

Geelong has had to adapt to a number of significant changes, including Target and Cotton On recently announcing they would be moving their headquarters from Geelong. Avalon Airport has been of major benefit to the Geelong region; in 2012 it was declared international status, and has since attracted more than \$54 million in State and Federal Government grants to the Geelong region. It is a good observation to note in assessing the benefits of basing a third major airport for Victoria in the southeast, within Cardinia Shire.

The Committee for Geelong initiated an important piece of work titled Transforming Geelong, which was released in February 2015.¹¹ With an emphasis on jobs and investment attraction, the project included a dedicated website highlighting topics including growing skills, expertise, population, residential options, employment opportunities and tourism advantages. It is not dissimilar to the Invest Gippsland website that the Committee for Gippsland developed as part of the Gippsland Investment Prospectus, prior to handing the project back to Regional Development Victoria. The Geelong example highlights that a one-stop-shop website showing up-to-date information of a region's best attributes, including what's currently happening, is a powerful tool in investment attraction.

11. Transforming Geelong: <http://www.committeeforgeelong.com.au/key-initiatives/transforming-geelong/>

8. INDUSTRY DIVERSIFICATION

CASE STUDY FOR THE NATIONAL BROADBAND NETWORK

The Committee for Gippsland received the following feedback from a small business in Morwell:

There are four main benefits for businesses with NBN:

- 1. It brings speed - improving performance for any transaction or task that uses the internet;*
- 2. It opens up the opportunity for businesses to use cost-effective software as a service, and opens up opportunity for flexible licensing plans;*
- 3. It delivers software from the Cloud, which means that you no longer have to invest in fixed infrastructure such as network servers and the associated software and backup hardware; and*
- 4. It significantly improves planning for business continuity (with essential systems) – reducing the reliance on physical location and equipment.*

In our case, we are facing a costly fixed infrastructure replacement project at the end of 2016 – currently estimated at a minimum of \$150,000. If the NBN was available, we would avoid this expense and be free of the three-year capital investment cycle of upgrading and replacing fixed infrastructure. We would plan immediately to source all of our business applications from the Cloud and operationalise the subscription costs. This frees up a significant amount of funds that could be used for R&D or for new employees. Right now, we are paying \$1,200 per month just for our Internet service at 10 MBps, 200 GB monthly limit. With the NBN we would invest in faster speed, bigger data limit and we would move our infrastructure into the Cloud.

In 2014, our business was affected by the Morwell mine fire. Fortunately, we were able to work outside of the Morwell office, however, if the business premises had been inaccessible or affected we would have been significantly at risk and affected. The Gippsland community, is one of the most disaster prone in Australia. Moving critical business applications into the Cloud will mitigate significant environmental risks as well as save capital that can be used to grow or sustain the business.

9. NEW USES FOR LATROBE VALLEY COAL

9.1 BACKGROUND

The existing open pit coal mines of the Latrobe Valley have substantial reserves that will last beyond the generally expected operating lives of the power stations they service.

Each of the three coal mines also have extensions of the coal reserves immediately adjacent to the mines they operate, which are controlled by the State Government, thus potentially extending the contained energy content very substantially and the economic life of each mine.

The existing three mines are amongst the lowest cost operating coal mines in the world, and deliver amongst the lowest cost unit of energy in the world. This provides a very real economic advantage to downstream industrial users or derivative users of the coal which, in turn, adds to economic competitiveness, job creation and therein social benefit to the direct and indirect community. These mines can provide economic and beneficial social outcomes beyond electricity generation.

There is significant sunk capital in the mine infrastructure and support services, as well as billions of dollars in avoided capital expenditure based on the existing mines not needing to be replicated to transition into other economic uses. In light of this, there is a discussion to be had around the potential to maintain the existing mines and infrastructure to enable a transition to a lower carbon system of equal or greater economic generation and social outcomes.

9.2 ALTERNATE ECONOMIC USES

Increasingly, there is interest in whether products that can be made from natural gas or oil can be made from coal. Each are hydro-carbons and each are made up of different ratios of hydrogen (H), carbon (C) and oxygen (O). By the re-arrangement of these three molecules into different ratios, all that can be made from natural gas (CH_4) can be made from coal or oil and vice versa.

An example of this is the ability to convert both coal and natural gas into equal quality or higher quality transport fuel products that would normally be derived from oil.

9.3 SPECIFIC USES – LONG TERM PRACTICAL OUTCOMES

Regardless of what is technically possible, any coal-derived product must be able to satisfy criteria for community acceptance, which may include:

- Long-term sustainable job creation;
- Social benefits for the community;
- Market acceptance of the product;
- Market economic and practical need of the product;
- Economic returns to project owner;
- Government support;
- Community support;
- Long-term markets for the product; and
- Acceptable environmental outcomes.

Some of the products that have a local domestic market need with an associated economic benefit are those derived from the production of ammonia/urea and hydrogen, which are complimentary because of the common process thread of the coal gasification process to produce synthesis gas. As a brief explanation, synthesis gas is a fuel gas usually produced from coal or natural gas, comprising mainly hydrogen and CO, and is used for industrial heating and or energy or as a feed-stock into further processing.

9.3.1 AMMONIA/UREA

Ammonia derived products and urea (nitrogenous fertilisers) incur a significant economic advantage if produced from Latrobe Valley brown coal.

The most commonly known product is urea, which is an essential fertiliser in the Australian agricultural sector, but is largely imported. According to the Australian Bureau of Statistics, Urea is applied to around 11.2 million hectares in Australia. ¹² Australia's only production facility of urea is based at Brisbane where the capacity is for 280,000 tonnes of urea. The balance of Australia's urea consumption is imported. ¹³

Victoria is now the largest consuming state in Australia for urea, via its dairy sector, in addition to broad acre farming and other agricultural sectors.

The dairy sector is a leading industry for Gippsland. The economic cost advantages of Latrobe Valley brown coal, coupled with its technical benefits, give a major boost to a urea fertiliser project being located in the Latrobe Valley. Latrobe Valley brown coal is technically superior to most other coals in the world for conversion into gas. Coal gasification process, which precedes the ammonia/ urea production, can also direct a stream of synthesis gas to traditional gas turbines to make on-site electricity.

12. <http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4630.0Main%20Features102011-12?opendocument&tabname=Summary&prodno=4630.0&issue=2011-12&num=&view=>

13. <http://www.incitecpivot.com.au/about-us/our-businesses/global-manufacturing-capabilities>

9.3 SPECIFIC USES – LONG TERM PRACTICAL OUTCOMES

The process to produce ammonia /urea and gas for electricity, plus hydrogen is a well-defined process:

- The coal is mined and then crushed into fine particles prior to drying to remove the high (up to 65 per cent) potable moisture content;
- The water from the drying is not wasted as it forms the majority of the process water used in the manufacturing of the products;
- The dried fine particle coal is injected into the coal gasification vessel along with a stream of pure oxygen;
- The oxygen is extracted from atmospheric air (20 per cent) along with nitrogen (78 per cent) via equipment called an “air separation unit”;
- The pure oxygen and dried coal particles are subjected to high temperature and pressure and the result of this reaction is the production of carbon monoxide (CO) gas;
- The gas is then reacted with steam in the reaction $\text{CO} + \text{H}_2\text{O} \rightarrow \text{H}_2 + \text{CO}_2$;
- The H_2 (hydrogen) then can be used for many purposes including as a separate export industry to Japan and China, plus other industrial applications;
- In the specific case of ammonia/urea production, the hydrogen (H) component is reacted with the nitrogen (N) that is originally extracted with the pure oxygen. This forms ammonia (NH_3); and
- In the case of the Latrobe Urea Project, the ammonia (NH_3) is then reacted with certain amount of the CO_2 by product from the hydrogen (H_2) production, forming urea.

As stated above, ammonia is produced prior to the urea. It is also very easy to take a stream of this ammonia to produce a variety of ammonia derivative products.

They could range from ammonium nitrate, the industrial explosive for the Australian and the global mining industry, ammonia fertiliser, ammonia derived detergents, various cooking ingredients and other uses.

Moving back up the process flow sheet, a combination of $\text{H}_2 + \text{CO}$ can be used as a gas for electricity production.

Also, another combination of the $\text{H}_2 + \text{CO}$ can be used for all transport fuel such as diesel and petrol and lubricant production.

Another combination can provide the feedstock for the plastics industry and for many chemical products.

9.4 MARKET AND COMMUNITY ACCEPTANCE

Community acceptance and commercial potential are the two key requirements for the further development of these projects.

The products above could be produced economically with the possible exception at the moment of transport fuels because of the low oil prices. If developed to commercialisation, these products have the potential and investor interest to provide long-term jobs with high skill demands.

CASE STUDY ON FREIGHT INFRASTRUCTURE

A strong infrastructure network and capability provides businesses looking to develop a base in the region with confidence they can transport their goods efficiently and competitively. This report recommends new infrastructure investment from government as a major component of its response to industry transitioning in Gippsland.

The Committee for Gippsland received the following submission from a new energy technology company looking to develop brown coal into a decarbonized derivative and export it through the privately owned bulk port at Port Anthony (Barry Beach), South Gippsland. It provides a good case study on illustrating the important role of infrastructure:

The initial construction phase of the project will involve the transportation by road of large equipment items and prefabricated modules to site. Transport from Melbourne Port will involve significant height and width limitations with larger items possibly arriving from Port Anthony (Barry Beach) to be transported typically via South Gippsland Highway, Rosedale to Longford Road, Princes Highway to Traralgon and then to site.

During operation, the major inputs to the plant will be raw lignite from the Yallourn mine, which will need to cross the Princes Highway and rail line to get to the site. Water and electricity infrastructure will be required as well sewerage and town water.

Overall transport and regional distribution and storage infrastructure will be in demand from the Latrobe Project and similar projects wanting inward and outward good facilities from major metropolitan centres and ports and principle regional centres.

9.4 MARKET AND COMMUNITY ACCEPTANCE

CASE STUDIES ON FUTURE USES OF LATROBE VALLEY BROWN COAL

i) Torftech Capital Australia Pty Ltd (TTCA) was established to explore the potential to develop and manufacture niche products from the Latrobe Valley lignite reserve using the patented TORBED® technology. Torftech Ltd UK, the patent holder and a partner in TTCA's parent company Torftech Capital Ltd, was founded in the 1980s and has its technology operating in more the 150 applications around the world.

The Latrobe Valley reserve was chosen for its unique characteristics including very low ash and low mining costs, which help to offset its high moisture content. Development work initially focussed on a pulverised coal injection (PCI) coal substitute for the steel industry including BlueScope Steel's operation at Port Kembla. More recently TTCA's development activity has been focussed on activated carbon. The activated carbon market is expanding rapidly, particularly in South East Asia. It is used in many applications, notably drinking water treatment, contaminated soil remediation, air purification including mercury removal and agriculture.

TTCA has an agreement with EnergyAustralia to build a demonstration plant on the Yallourn power station site. The plant will cost approximately \$15 million to construct using local engineering and manufacturing companies. It is estimated this first plant will employ 20 full time staff and has the potential to expand significantly as export markets are established.

ii) Coal Energy Australia (CEA) was successful in the Government Advanced Lignite Demonstration Program and has been progressing the implementation of the project over the past 3 years. The CEA Project uses a proprietary pyrolysis process to convert brown coal into a high energy (>7000 kCal/kg), low moisture, low volatile solid fuel (a semi-coke product), pyrolysis oil, coal gas and ammonium sulphate. It is a low pressure and low energy process with very low carbon emissions. The nominal \$190 million capital expenditure project is planned to be constructed at Yallourn mine during 2017, and operate as a demonstration project during 2018-19. There is significant commercial interest in the products, which is expected to see commercial operations commence following a demonstration period, including additional plants constructed. The project will see around 100 people employed full time during operations, and over 300 during construction.

10. RECOMMENDATIONS: REGIONAL ADJUSTMENT PACKAGE

10. REGIONAL ADJUSTMENT PACKAGE

To offset the employment and economic impact of a likely power station closure, the Committee for Gippsland has put forward the following set of recommendations, which form a proposed Regional Adjustment Package. The recommendations set out in the Regional Adjustment Package include a proposed way forward in managing transition, through to required investment in infrastructure, road, rail, healthcare, education and innovation.

10.1 EDUCATION, SKILLS, TRAINING AND RESEARCH

Federation University Australia Gippsland has been a positive and transformational influence on Gippsland. The 2011 Gippsland Tertiary Education Review reported on the established gap in higher education attainment levels between students in Melbourne, and students in regional Victoria. In addition, the student university deferral rate in Gippsland is recorded at 17.1 per cent, which is the second highest deferral rate of any region in Victoria, while the state average is recorded at 9.8 per cent. The Committee for Gippsland was also concerned by data in 2011 that revealed only 26.4 per cent of Gippsland students were opting for higher education, compared with a Victorian average of 41.3 per cent.¹⁴ The region also has high rates of early school leavers (people who did not complete year 12 or equivalent) of 61.4 per cent compared to a national average of 46.1 per cent. Since the establishment of Federation University Australia at Churchill in the Latrobe Valley, the University has been able to nearly double its direct enrolment of local students from the Gippsland region, at the same time as engaging with international students through sister city arrangements in China and Japan. More recently, Federation University Australia has also strengthened its engineering presence and capability, especially around mechatronics. There is the potential for Federation University Australia to develop a number of concepts closely aligned with the region's ambition to strengthen collaboration between industry and higher education providers, and lift Gippsland's skills and research capacity. These concepts include:

AGRICULTURAL EDUCATION FACILITY (AEF)

This is centred around the concept of a centre for agricultural development, which brings together industries essential to Gippsland, including dairy, food and fibre. The University would be seeking inter-government support for construction of a purpose-built Agricultural Education Facility (AEF) at the Gippsland Campus to the value of approximately \$16 million. Such a facility will include all necessary student resources, teaching and learning spaces, laboratories, IT, administrative support, and a 100-bed accommodation facility to the value of \$14 million to meet the student accommodation needs associated with the AEF.

14. Minister's Media Release, 19 April: <http://premier.vic.gov.au/wp-content/uploads/2011/04/110419-Hall-Submissions-invited-for-Gippsland-tertiary-education-review-PDF-58KB.pdf>

10.1 EDUCATION, SKILLS, TRAINING AND RESEARCH

DEVELOPMENT AND DEPLOYMENT OF CARBON CAPTURE AND STORAGE TECHNOLOGY:

Carbon capture and storage has to feature as part of a suite of lower emissions technology, as it is currently the only technology capable of providing the deep reduction in emissions from the use of fossil fuels.

Commercialisation of CCS still requires further technical work and the attraction of additional investment worldwide. With an abundance of coal reserves, the Latrobe Valley is a natural fit for the future development and deployment of CCS technology. The Committee for Gippsland is strongly encouraging of collaboration between industry and research sectors in the Latrobe Valley. The Committee for Gippsland is enthusiastic about the potential for Federation University to play a facilitating and hosting role with industry and providers on CCS in the Latrobe Valley.

A hub facilitating a network of industry, research, development and deployment which enables CCS commercialisation would be ideally located in the Latrobe Valley.

Recommendation: The Committee for Gippsland recommends funding of \$7.5 million to advance these opportunities.

THE GIPPSLAND CENTRE FOR INDUSTRY SKILLS DEVELOPMENT (GCISD):

The Gippsland Campus of Federation University Australia is seeking to pioneer a series of programs for those working in the aircraft, industrial automation, food and fibre processing, transport and telecommunication fields, particularly within Gippsland. These programs will provide the enhanced skills necessary to plan, design and operate complex systems that integrate mechanical, electronic and computational elements of engineering. The purpose of the Centre will be to promote project-based learning in real world situations in Gippsland to ensure that those being trained and retrained will have the experience to be work-ready. Major manufacturers and engineering-based companies are already collaborating with the University's academic expertise to develop this comprehensive industry-supported program.

Recommendation: The Centre would require \$2.5 million to continue its industry skills-based development initiatives.

10.2 RESEARCH, INNOVATION AND INDUSTRY COLLABORATION

To be able to compete in a high tech, connected world economy, Gippsland needs to continue its creation of boutique ideas and high value products. Within the region, this requires the development of a unique innovation environment, with strong collaboration between industry and the university sector.

Joint academic-industrial research can drive this within Gippsland, and skills development will flow from it.

Recommendation: That support be provided for a Facility for Innovation and Research, using some of the funding provided by the Victorian Government's \$40 million Renewable Energy Fund. This would include:

- Incubator: shared with staff and innovation visitors from AGL, students and researchers from Monash and Federation universities;
- Business Workspace: meeting room, offices and advanced video/ teleconferencing;
- R&D Power Lab: for simulation and testing (e.g battery technology);
- Training Facility: for tech innovation and skill development;
- Advanced workshop: for rapid prototyping and testing; and
- Collaboration Space: for innovation discussion and engagement with SMEs and multinationals.

10.2 RESEARCH, INNOVATION AND INDUSTRY COLLABORATION

There are a number of activities that could be undertaken on the site. They include:

Research

- A more flexible research environment will interest a wider range of participants.
- New equipment can be sought through various funding channels as the Centre develops.
- Battery repurposing and testing still remains of particular interest to AGL and stakeholders.

New Energy Prototyping

- The Universities have shown a strong interest in researching micro-grids.
- Existing and new buildings to be equipped with distributed renewable energy, batteries, virtual power plant and demand side management.
- Can be scaled as NETC grows, including to future off-site facilities.

Training

- Site can be used for workshops and collaboration meetings.
- Innovation and Business training – community/ business/ AGL staff.
- Education program developed between Monash and Federation Universities.

Incubation and Research

- Co-location space for Start-ups and Subject Matter Experts from industry.
- Access to facilities, mentorship and seed funding schemes.
- Partnership model for first right to invest.
- The first incubator to come from acceleration programs focusing on 2ns life batteries.

Technology Centre Design

- Roof to be designed to maximise the opportunity for solar panel installation.
- Laboratory and offices to be designed for maximum environmental efficiency.
- Incorporate elements of a microgrid for research purposes.

10.3 TRANSFORMATIONAL PROJECTS FOR GIPPSLAND

Transformational projects for Gippsland include:

- **Princes Highway east duplication - funding for the remaining duplication works for the Princes Highway from Traralgon to Sale.** One business alone sends 12 trucks a day from East Gippsland to Melbourne with its products. Extensive duplication works have already been funded, and completing the stretch from Traralgon to Sale provides a major safety and efficiency benefit.
- **Business case and construction of Traralgon Bypass.** Traralgon is the largest remaining Gippsland town without a bypass. There is a significant amount of trucks travelling through the town each day. During school pick-up and drop-off times, and business peak hour, congestion is heavy through the town and is a safety risk as well as being inefficient.
- **Rollout of NBN to businesses in the Latrobe Valley and broader Gippsland.** The National Broadband Network presents major opportunities for Gippsland businesses. Among feedback to the Committee for Gippsland from SME businesses, rollout of the NBN rates a high, if not top mention of business infrastructure needs.
- **A third major airport in Melbourne's southeast.** Victorian Government planning support and investment facilitation for a third major airport to be built in Cardinia Shire, representing the opportunity for jobs, economic diversification, skills and training, freight and exports.
- **A new hospital for West Gippsland.** Baw Baw Shire is one of the fastest growing regional municipalities in Victoria. The current hospital is already struggling to meet new demand. On top of a greenfields site already bequeathed to the West Gippsland Healthcare Group, a new hospital would provide the opportunity for new jobs and infrastructure for the region.
- **Direct rail access for regional trains to Port of Melbourne and Southern Cross (express).** There is an opportunity to greatly enhance the use of rail freight and passenger services to and from Gippsland, but it needs to be flexible and cost effective.
- **Direct access to the Port of Hastings when rail line is constructed.** The Port of Hastings presents major export opportunities for Gippsland, and the region needs to have the most cost effective and efficient access to the Port.
- **Gippsland Dairy Innovation and Experience.** Gippsland is a major producer of dairy, from fresh milk for the domestic market to fresh and processed dairy products for the international market. It is also home to iconic cheese brands including Jindi, Maffra, Prom Country and many more. This provides the opportunity for the development of both a commercial, and tourist centre to showcase local produce, sales, new technology, education and training. The opportunity to base this initiative at the Ellinbank Research Centre should be explored.

10.4 INVESTMENT ATTRACTION AND RETENTION

Recommendation: A one-stop-shop website be developed, or the current Invest Gippsland website be re-developed to showcase an up-to-date version of the investment benefits of Gippsland, what is happening in the region and how to easily contact RDV, local government or Committee for Gippsland for information on why the region is a premier destination to base and develop industry and jobs.

Recommendation: That, where possible, State and Federal Governments procure Australian made paper. Australian Paper's retail brand 'Reflex' is the only copy paper manufactured in Australia, and is produced in the Latrobe Valley.

Recommendation: That further consideration is given to the blanket moratorium on all onshore gas exploration in Victoria, and the adverse impact experienced by energy intensive manufacturing businesses like Australian Paper's Maryvale mill, which is now having difficulty sourcing a secure and affordable long-term gas contract.

Recommendation: That port and export opportunities for Gippsland are invested in and developed. Port Anthony at Barry Beach in South Gippsland provides bulk commodity access to goods coming in and out of the region, including the Latrobe Valley. The Port of Hastings is a critical export terminal for Gippsland and its development is a major enabler of productivity for the region. Its eventual development as both a bulk and container port will have a major positive impact on Gippsland's ability to develop as an export orientated region.

Recommendation: That the Victorian Government identify opportunities to decentralise government agencies that are relevant to the Gippsland region, through basing a department or agency office in the Latrobe Valley.

10.5 MARKETING BRAND GIPPSLAND

Gippsland has a broad based range of tourism opportunities, from Phillip Island Nature Park in the Bass Coast Shire, to Mount Baw Baw Alpine Resort in West Gippsland, and the Gippsland Lakes district in East Gippsland. With further investment in infrastructure, the region has the opportunity to enhance its clean and green food producing reputation, eco-tourism draw cards like adventure sports in East Gippsland and offer a whole of region approach to visitors. The sealing of South Face Road leading up to Mt Baw Baw offers a transformational benefit to the whole region, because it will connect the potential for a food and wine trail starting in Noojee and leading up to Mt Baw Baw. Currently coaches cannot travel down the unsealed South Face Road leading to Walhalla and the Latrobe Valley.

Recommendation: That a food and wine trail for Gippsland be initiated, incorporating Phillip Island Nature Park and Mount Baw Baw Alpine Resort. Funding of \$60,000 for Gippsland local government organisations will be required to commence with strategic and business planning.

Recommendation: That the South Face Road leading up to Mount Baw Baw be sealed, allowing tourist coaches to travel up or down from the mountain via that route, as well as the road from Noojee, thereby assisting in expanding tourism opportunities for the region.

Recommendation: There is an opportunity for Lakes Entrance to host the 2021 National Surf Life Saving Championships, representing the first time the event would have been staged in Victoria. With a major focus on regional tourism and sporting events, there is an ideal opportunity to bring a major national event to Victoria. The event brings over 10,000 competitors and spectators, has televised coverage, and brings in an economic return of up to \$23 million to the local economy. Lakes Entrance Surf Life Saving Club has proven its ability to successfully host state life saving events, and the beach has ideal conditions. The investment in required infrastructure would provide the permanent ability for Lakes Entrance to host similar other events at a national level, such as open water swimming and kayaking. This would complement the success of the region which already hosts a successful Australian Adventure Festival and similar events that have been embraced by the local community. It is recommended that funding be provided for required local infrastructure and funding for a bid to Life Saving Australia.

10.5 MARKETING BRAND GIPPSLAND

Recommendation: \$150,000 in funding towards the PowerWorks Energy Education Centre.

PowerWorks Energy Education Centre was gifted to the community by the Latrobe Valley Power Generators in 2015. PowerWorks Holdings Ltd acts as custodians of the facility on behalf of the community. The facility is now run entirely by volunteers.

PowerWorks:

- Is a major tourist attraction; a unique place where visitors can gain an accurate, balanced understanding of energy, electricity, brown coal history, development and future uses of this state asset;
- Provides innovative, quality, responsive and cost-effective tourism and industrial heritage information; and
- Is a sustainable social enterprise with broad community and industry membership.

The most significant trend that has impacted on PowerWorks is the current attitude to coal and its environs. It has, on a global scale, faced challenges to its social licence while there is a transformation in the nature of the energy industry. There is also a high degree of energy illiteracy among young people and there is a gap in community understanding of what utilisation of the brown coal resource means. These trends present both a challenge and an opportunity for PowerWorks to:

- Highlight the value of the resource to the State both past and present;
- Showcase the research into new technologies;
- Capitalise on the interest in renewable energy technologies and opportunities; and
- Increase the level of energy literacy by becoming a 'knowledge based' organization.

PowerWorks has the potential to begin to address the issue of negative perception of the Latrobe Valley. Significant investment is needed to update and upgrade the facility so that it may reach its full potential.

10.6 MANAGING TRANSITION

The Committee for Gippsland understands it is highly likely that one Latrobe Valley power station will close in the near future, and this is being discussed within the Gippsland community. It is not the role of this project to identify a particular power station for closure. However, it is the strong conclusion of this project's findings that a phased closure, several units at a time, spread over time, is the far preferred option to an immediate and complete shutdown of an entire generator.

Where a power station commences the process for closure, the Committee for Gippsland recommends that, if negotiations are entered into with the Commonwealth Government's Emissions Reduction Fund, funding is made contingent on a phased, rather than immediate closure.

There is a strong likelihood that, with the closure of one power station, retail electricity prices will increase. This is because the market will narrow and more pressure will be concentrated on fewer power generators. Governments should be mindful of the potential impact of increased retail energy bills for households across the National Electricity Market, particularly customers experiencing hardship.

With one power station closing and retail electricity prices increasing because of a more constrained market, other power stations stand to increase their currently more marginal profitability. Similarly, with increased prices, remaining power stations may be more inclined to continue to operate than may have been the case in a more marginal pricing environment.

On this issue, Danny Price, Managing Director, Frontier Economics, said that the closure of a large power station in South Australia in recent months would provide an indication of the impact on electricity prices. Mr Price said the closure of the Northern power station pushed prices up more than 30 per cent. Removing Hazelwood would bump prices by between 25 and 30 per cent, depending on the year and where you live. Even when there is excess capacity, if you take out a big brown coal player the price effects are quite huge.¹⁵

Clearly, this project has been able to establish a strong relationship between electricity generators in the Latrobe Valley and an economy of SME and contractor businesses either directly or indirectly reliant on their presence in Gippsland. Any closure, even a phased closure over a period of time, will impact on this economy. SME businesses are the largest employer in Australia, and a major employer in Gippsland. There needs to be serious consideration given to this sector as part of a planned transition.

15. Hazelwood Closure Could Force Prices Up, The Sydney Morning Herald by Adam Morton and Brian Robins (28 May 2016): <http://www.smh.com.au/business/energy/hazelwood-closure-to-force-power-prices-up-20160527-gp583e.html>

10.6 MANAGING TRANSITION

Coal fired electricity, particularly when produced by power stations like Hazelwood Power Station, provide among the cheapest electricity available in Australia. On this basis, they could continue operating. It should be noted that any closure will not be done on the basis that a Latrobe Valley power station is not efficient and cost effective to operate, but that such a decision would be based on considerations such as a motivation to reduce carbon emissions and for future business planning and policy certainty.

This is a sensitive period of time for industry transitioning in the Latrobe Valley. One example of an unforeseen policy change was the Victorian Government's coal royalties increase to power stations, which were announced and managed in a way that presented surprise and sudden policy change to industry. As a 300 per cent increase on the existing tax, the coal royalties increase represents half the annual wages bill for one power station, saddling generating companies with a sudden and substantial increase in an already vulnerable business and policy climate. To put this into perspective, the increase to operating costs is in the order of 10-12 per cent. For a business that is already marginal, and operating at profitability often under 10 per cent, this means the businesses will be potentially operating with negative profits. This policy change occurred without almost any consultation, and highlights the significant issues the industry faces from government regulation and the implementation processes undertaken.

As part of managing a transition, the message about the Latrobe Valley to the rest of Victoria and Australia needs to be changed. Great damage has been done to the region by a small but vocal group campaigning about the Latrobe Valley being a dangerous and unsightly place to live because of the power stations. This hurts the region's reputation and is inaccurate. Latrobe City Council should be commended for its survey of 2,000 residents in Morwell that were able to describe why they loved living in the Latrobe Valley community. All government efforts in a transition phase should focus on the region's great livability, natural assets, and dynamic community spirit.

Of greatest concern to emerge from the economic modelling provided by GHD, is the potential for a loss of over 3,000 people out of the Gippsland economy because of carbon transitioning. With a multiplier figure incorporating partners and families, this figure could extend to over 7,000 people moving out of Gippsland as a result of job losses from carbon transitioning.

The region, and in particular SME businesses, cannot absorb further large-scale job losses without a robust and realistic transition plan. Already, the region has a high long-term unemployment rate of 5.7 per cent compared to a national average of 4 per cent (that is people receiving unemployment benefits over 6 months), and high levels of welfare support at 32.9 per cent of the population, compared to a national average of 23.1 per cent. The Morwell Tech School, one of 10 centres to be built throughout Victoria towards developing an integrated approach to improving educational pathways, will improve aspiration and industry skills in the Latrobe Valley. The Committee for Gippsland is supportive of this project.

10.7 REGIONAL INFRASTRUCTURE

RAIL INFRASTRUCTURE

In a transitioning region, the role of transport infrastructure, particularly passenger rail becomes significantly more important, as people move to jobs that may be in different towns. As jobs in the stationary energy sector decline in the Latrobe Valley, employees may secure jobs in other industry sectors in areas like West Gippsland or Dandenong. They will need regular and reliable rail services as part of this transition. The Victorian Government is urged to increase investment in passenger rail in anticipation of even greater patronage on Gippsland V/Line as a result of carbon transitioning in the region.

WATER INFRASTRUCTURE

Almost all commentators regard agriculture as one of a handful of major growth opportunities for Australia in the 21st Century. Irrigated agriculture is the driver of the nation's agricultural sector, providing 37 per cent of production with less than 1 per cent of the land mass. However, no new significant irrigated agriculture schemes have been established in the last 50 years.

New investment in irrigated agriculture requires many planning considerations, stakeholder engagements and approvals. The complexity, uncertainty and delay with this preliminary stage is often a barrier to new developments. Further, commercially unviable schemes can draw-in resources excessively as there is no assessment framework or body clearly responsible to make assessments. An example of this is the Bunyip Food Bowl area, which presents significant job opportunities to the region.

No single body currently exists with the mandate to explore the establishment of new irrigation districts or significant developments in irrigated agriculture using available resources. Rural water corporations, Department of Economic Development, Jobs, Transport and Resources or Regional Development Victoria/Regional Development Australia do not have the funding or mandate to drive new irrigation developments or to resolve planning issues. There is potential to drive significant expansion of agricultural investment and productivity, as is happening in Tasmania, which can be seen as a national benchmark. Tasmania has set a national benchmark on its innovative work and investment in irrigation, which like Gippsland has an internationally renowned dairy sector. Tasmania's work in irrigation can provide many positive examples for the rest of Australia.

Gippsland's Macalister Irrigation District is managed by Southern Rural Water and is the largest irrigation system in southern Victoria.

The Gippsland food industry is a key pillar of the regional economy, producing fresh products and processed goods for domestic and international markets. The farm gate value of Gippsland's food is estimated at \$1.5 billion per annum with the industry generating more than 16,000 jobs. Gippsland also has significant surface and groundwater resources already utilised in the Macalister Irrigation District and by irrigators on unregulated streams and extracting from aquifers.

10.7 REGIONAL INFRASTRUCTURE

There are extensive surface water resources in Gippsland, with extensive river systems fed from rainfall on the Great Dividing Range and in the strong rainfall belt west of Melbourne.

The Latrobe, Thomson and Macalister systems already provide significant water for irrigation and have some unallocated water, which could support an expansion of irrigation within the region. Additionally, water saved through the Irrigation Modernisation Projects in Gippsland could also potentially be used in conjunction.

In the past, several areas contiguous to the Latrobe, Thomson and Macalister systems have been identified as having the potential for irrigation.

Several agricultural industries have the potential for growth; in particular dairy, more intensive vegetable production opportunities, integration of intensive grazing of beef and sheep in conjunction with strategic irrigated cropping, and other potential new industries such as poppies are also under development.

Development in this area of Gippsland would provide a considerable boost in employment in an area expected to see a decline in employment in the region's major employer – the power industry – as power station employment numbers in the Latrobe Valley start to decline.

A comprehensive analysis of the opportunity to expand irrigated agriculture is required and will involve engaging with farmers, local government and the Victorian Farmers Federation on the demand side, coupled with analysis of soils data and water availability from a supply perspective.

Analysis of this data would guide feasibility work on the opportunities with the strongest potential.

Those areas showing promise would then proceed to the detailed feasibility stage, with the more prospective being subjected to detailed business cases, with a view to being fast tracked to construction within five years.

As an example, a number of areas have been identified over the years in proximity to the Macalister Irrigation District and/or the Thomson, Macalister, Latrobe and Avon rivers which could be converted from dry land supply to irrigated supply. These potential areas include the Bushy Park, Little Plains, Clydebank, Toongabbie, Glengarry or Pearsondale areas.

10.7 REGIONAL INFRASTRUCTURE



There are a range of potential sources of water including unallocated water in the Latrobe system or water savings from future Macalister Irrigation District modernisation projects. The vast Stratford Groundwater Management Area may also provide a potential source in some locations as the additional volume of water that would be sought in a localised area would not be significant in terms of the current extractions or resource capacity. A review of technical information and impact would be required for all water sources.

The first phase of work will be a strategic assessment of land capability and irrigation water sources to identify up to four areas proximate to the Latrobe, Thomson, Macalister and Avon systems to assess in further detail. Two previous studies undertaken in 1998 on the potential use of unallocated water in Blue Rock will be assessed during this phase, however their relevance is limited due to the time elapsed since their completion.

The second phase would then assess each area identified initially as a good prospect in more detail. This would include assessing potential irrigation demand, environmental risks or issues, developing a concept scheme and undertaking an economic pre-feasibility assessment.

The final product would be a report summarising the findings and recommending schemes for feasibility studies and business case development.

This work would take 12 months assuming approval in June 2016, with the final report completed by July 2017.

Recommendation: A total amount of \$752,000 is being sought for this project, which the Committee for Gippsland strongly supports.

There are two health projects recommended for funding:

A NEW HOSPITAL FOR WEST GIPPSLAND

Baw Baw Shire is Victoria's fastest growing regional municipality. A greenfields site that has been bequeathed to the hospital means there is no outlay required for new land. The current site is small and cannot keep pace with increasing demand. Construction of a new hospital would cost around \$400 million. The existing 7.86ha hospital site is small and was originally built in 1908. West Gippsland is forecast to reach 100,000 people by 2030 and there is no way the current hospital will be able to service this number of people. A new hospital will include direct access to ambulance bays and the emergency department; a multi-level designed facility that will be energy and material efficient; improved clinical facilities and patient amenities; easy pedestrian access, plus multi-level car park facilities; a new 60 bed high care residential aged care facility; provision of a dedicated EMS helipad, with direct access to the emergency department and greater employment opportunities – a bigger hospital with more beds will need additional staff. This is a major priority for West Gippsland and the construction of a new hospital site will present a skills and labour demand that could be drawn from the Latrobe Valley during a period of transition that would be significantly needed.

Recommendation: A funding amount of \$400 million is recommended for this project.

10.8 COMMUNITY

LATROBE REGIONAL HOSPITAL

In June 2015, the Department of Health and Human Services (DHHS) announced it would fund LRH's 'Stage 2A' project, which would create an entirely new main entry, extend the emergency department, deliver a cardiac catheterisation laboratory and a new 32 bed ward at a cost of \$73 million. LRH will also be investing \$6 million of their own funds to fit out another 32 bed ward that will only be built as a shell in the \$73 million contract. At the time, the funding was announced; DHHS also requested the Masterplan be reviewed due to the appointment of a new design team and the five year time-lapse since completion of the original Masterplan.

The 2010 Masterplanning process had put accurate costs to each stage of construction and an overall cost of \$230 million was put on the project. The new Masterplan was not required to be costed out, however a similar overall figure of \$230-\$250 million would be considered appropriate for the full project.

The reviewed Masterplan did not vary the northern expansion of the hospital; however the overall layout has changed from a predominately single storey design with some two storey areas to a predominantly three storey design for the renewed Masterplan.

With the re-visit of the Masterplan in 2015 there was no scope to accurately cost the future stages of development. The scope of the review as requested by Department of Health and Human Services was to:

- Review the site development to retain as much site as possible for future growth and not negatively impact travel distances;
- Provide expansion space for the Emergency Department, once completed as part of Stage 2A;
- Review height limitations imposed by helicopter flight overlays; and
- Make medical imaging more central to the new and existing buildings.

It is assumed that the next stage of development would be the delivery of ten theatres and new Central Sterilisation and Sterile Storage Unit; a 10 bed Intensive Care and 20 bed High Dependency Unit; medical imaging; additional ward beds focussing on maternity services and will require the construction of the full 'L shaped' shell for all 6 new wards. Some consideration will also need to be given to support services such as the supply department, pharmacy and kitchen that do not see any increase in capacity or size despite the active clinical construction.

Recommendation: Funding of \$150 million is recommended for this project.

10.9 MINE REHABILITATION

As one example, the estimated cost to rehabilitate the Hazelwood mine is around \$73 million. Through this project it has been suggested that figure will need to be substantially more than \$73 million to adequately rehabilitate the mine.

Recommendation: Where possible, it is recommended that potential pathways be explored for mine employees to contribute to mine rehabilitation, which would require a period of years to undertake.

10.10 LOOKING AHEAD – BEYOND TRANSITION

Recommendation: It is recommended that a government funded transition body be established to work with industry in managing transition in the Latrobe Valley electricity generators. Jobs, economic development and diversification, infrastructure investment and investment attraction should be incorporated into its scope of work, with its primary focus being a structured and planned transition, along with the long-term best interests of Gippsland.

11. CONCLUSION

11. CONCLUSION

This report concludes that carbon transitioning in the Latrobe Valley will occur, and that the impacts will be felt sooner than common consensus currently appreciates. A potential phased closure of an existing power station is likely to occur in the near term.

Out of this closure, there will be job losses. Without immediate planning and action, there will be major economic impact and upheaval to the region. There will be people that move out of the region to find new work.

This report provides direct evidence of the economic relationship between power stations in the Latrobe Valley and the economy of the rest of the region and state. They do not exist in isolation to one another.

Gippsland is a resource rich region – from its coal deposits to rich agricultural soil. The region's strength lies in its diverse economy, although its reliance on the Latrobe Valley power stations as a major quantum of industry cannot be underestimated. Agribusiness is emerging as an industry champion, and needs new skills, research and technology to support its development.

Continued investment and development of the region's skills capacity is vitally important. So too is university research, especially in the innovation and development of commercially viable, low emission coal based technologies.

This report has clearly illustrated the need to separate coal from carbon, and a future for coal products separate to a decline of coal-fired electricity. Carbon, not coal, needs to be the focus for elimination in a low emission economy. Decarbonisation of coal in developing a range of products from fertilizer to fuel must occur and can be done with technology, innovation and with it the opportunity for new jobs.

Coal will not disappear from the electricity mix. It will remain a dominant baseload source for at least the next few decades, but is unlikely to dominate far beyond that. Despite this, the over 500 years of valuable resource cannot be left stranded in the Latrobe Valley.

Other regions across Australia provide valuable lessons, but not a cookie cutter approach for the Latrobe Valley. The Hunter, Geelong and other regions are all different. Gippsland is a small region by population but large in size and resource rich.

New international investment and capital will be required if the region is to have the means to develop its full potential. Agribusiness and energy are two areas of international interest, but technology across areas like value adding and decarbonisation needs to be able to take innovation through to investment.

11. CONCLUSION

Finally, both State and Federal Governments must act as a partner to the region through this transition. Policy settings must be clear and consistent. The constant changing of goal posts and the impact this has on business planning and investment decisions has to end. Large scale funding to offset job losses and economic impact needs to be forthcoming. The proposed Regional Adjustment Package lays out these priorities.

Gippsland has a strong, sustainable and industry driven future ahead of it. From its outstanding human talent and ingenuity, to rich soil, abundant water and industry champions, Gippsland will continue to provide its power, food and technology to the rest of the world. Victoria and Australia are relying on Gippsland to keep doing that.

12. ACKNOWLEDGMENTS

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DR VAUGHAN REIMERS, FEDERATION UNIVERSITY AUSTRALIA GIPPSLAND

WENNIE VAN LINT, GHD

13. REFERENCE COMMITTEE TERMS OF REFERENCE

13. REFERENCE COMMITTEE TERMS OF REFERENCE

The Committee met regularly between February and May and worked to the following Terms of Reference:

The Committee for Gippsland is committed to delivering the report

Our Region Our Future: Securing an industry future for the Latrobe Valley (Our Region Our Future). **Our Region Our Future** will focus on understanding the connection between electricity generators and industry in the Latrobe Valley.

1. Committee for Gippsland's plan:

That a reference committee (**Reference Committee**) as part Our Region Our Future be established to inquire into and report on the economic impact of electricity generators on small and medium enterprises (**SME**) in the Latrobe Valley with reference to:

- a) The financial contribution made to the SME business sector in the Latrobe Valley by power stations;
- b) The interaction between Latrobe Valley power stations and industry in the Latrobe Valley;
- c) The impact of shifting away from power stations and the consequences for SME in the Latrobe Valley;
- d) The opportunity for better integration and communication of future plans for the Latrobe Valley and its brown coal resource; and
- e) Any other related matters.

2. Reference Committee composition:

To maximise the value of the contribution of the Reference Committee, the Committee for Gippsland invites interest from businesses, community groups and other interested stakeholders who have:

- a) An interest and experience relating to the SME and Latrobe Valley power stations with an understanding of the issues and challenges contained within the scope of *Our Region Our Future*;
- b) The ability to appreciate a range of interests and factors impacting on the matters under discussion; and
- c) A demonstrated commitment to engage in a participative and consultative process.

In selecting members of the Reference Committee, the Committee for Gippsland will seek to:

- a) Achieve a mix of skills relevant to the purpose of the Reference Committee;
- b) Ensure a broad representation of the Latrobe Valley and wider Gippsland region; and
- c) Create a forum for full discussion of relevant matters.

3. Purpose

The purpose of the Reference Committee is to provide strategic advice and feedback in relation to the development of the *Our Region Our Future* report including shaping the vision, principles and long-term development of future plans for industry in the Latrobe Valley.

The Reference Committee is not a board of government project control group, but will play a consultative and guiding role in the development of the *Our Region Our Future* report.

13. REFERENCE COMMITTEE TERMS OF REFERENCE

4. Reference Committee Structure

The Committee for Gippsland will establish and maintain the Reference Committee for a period of 6 months, the expected time frame for the Reference Committee to complete its work.

The estimated completion date for the Reference Committee is July 2016.

The Reference Committee will comprise an appropriate membership to facilitate its functioning and the achievement of its purpose.

Appointment to the Reference Committee will be made by the Board of the Committee for Gippsland.

5. Functions and Responsibilities

The Reference Committee is accountable for:

- Fostering collaboration;
- Maintaining at all times the focus of the Reference Committee on the agreed scope, outcomes and benefits of the Our Region Our Future report;
- Providing strategic leadership in the development, implementation and sustainability of the project;
- Providing advice, support and assistance in the implementation of conducting research and producing the Our Region Our Future report; and
- Monitoring identified and emerging issues throughout the project and advise on their prevention, mitigation and management.

The membership of the Reference Committee will commit to:

- Attending all scheduled Reference Committee meetings;
- Share all communications and information across all Reference Committee members;
- Make timely decisions and take action so as to not hold up the project; and
- Notifying members of the Reference Committee, as soon as practical, if any matter arises which may be deemed to affect the development of the project.

Members of the Reference Committee will expect:

- That each member will be provided with complete, accurate and meaningful information in a timely manner;
- To be alerted to potential risks and issues that could impact the project, as they arise; and
- Open and honest discussions.

13. REFERENCE COMMITTEE TERMS OF REFERENCE

6. Operational Matters

Meetings

The Chairperson of the Reference Committee will be appointed by the Board of Committee for Gippsland with the first meeting of the Reference Committee to be convened by the Chairperson at the earliest opportunity.

A deputy chairperson will be selected from the Reference Committee.

Meetings will be scheduled in advance and preferably recorded in a forward meeting program to give each member the best possible opportunity to participate.

It is anticipated that the Reference Committee will meet 4-5 times over the 6 month period.

The quorum for a meeting will be half the number of members plus one.

7. Conduct Principles

Reference Committee members are expected to:

- Actively participate in Reference Committee discussions and offer their opinions and views;
- Treat all persons with respect and have consideration for the opinions, rights and responsibilities of others;
- Act with integrity;
- Attend each meeting where practical; and
- Avoid conflicts of interest and the releasing of confidential information.

8. Communication

The Committee for Gippsland is responsible for ensuring that Reference Committee members are advised of:

- Progress or outcomes of any feedback provided by the Reference Committee; and
- Dates of meetings considering matters relevant to the work of the Reference Committee.

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