



LATROBE VALLEY
AUTHORITY

LATROBE VALLEY NEW ENERGY JOBS AND INVESTMENT PROSPECTUS



Environment,
Land, Water
and Planning

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MINISTER'S FOREWORD



Victoria, along with the rest of the world, is in the midst of a major energy sector transition. The Victorian Government is working hard to capitalise on this transition and develop the new energy technologies sector in our state. Our Victorian Renewable Energy Targets (VRET) of 25 per cent by 2020 and 40 per cent by 2025 position the state to create new energy jobs and support business growth. This is complemented by our New Energy Technologies Sector Strategy, and our target to achieve a 50 per cent improvement in Victoria's energy productivity by 2030.

The Latrobe Valley, Victoria's energy powerhouse for the past 100 years, is at the heart of our strategic approach to this new energy transition. With its growing economy, the Latrobe Valley offers significant benefits to investors and technology developers who build and invest in the area, along with opportunities for local businesses to capitalise on the new energy supply chain.

The Latrobe Valley has extensive renewable energy resource potential and an unmatched history and knowledge of energy and engineering. It hosts a skilled workforce, relevant industry capabilities and extensive infrastructure at the cornerstone of the National Electricity Market. The Latrobe Valley's local governments and communities are committed to building on its reputation as the centre of Victoria's energy sector following the recent closure of Hazelwood Power Station.

This New Energy Jobs and Investment Prospectus highlights opportunities for international and local businesses to invest in Victoria's new energy transition in the Latrobe Valley. It is based on consultation with sector experts, local industry and the community to understand the next wave of technologies, innovations and solutions and how these relate to the Valley. It also provides information on skills and innovation, business competitiveness, new market development, supply chains and how local communities are being assisted in the transition.

Interested businesses will be supported by the government's comprehensive suite of renewable energy and energy efficiency policies and programs, including initiatives specific to the Latrobe Valley.

The new energy industry, including new and emerging businesses, is invited to take advantage of all that the Latrobe Valley has to offer.

The Hon. Lily D'Ambrosio MP

Minister for Energy,
Environment and Climate
Change

THE LATROBE VALLEY NEW ENERGY JOBS AND INVESTMENT

• Melbourne



• Pakenham

• Warr

New Energy
Jobs Fund
\$20 MILLION

Agriculture Energy
Investment Plan
\$30 MILLION

Latrobe Valley
Supply Chain
Transition Program
\$5 MILLION

Microgrid
Demonstration
Initiative
\$10 MILLION

Latrobe Valley
Economic Growth
Zone
\$50 MILLION

Latrobe Valley New
Energy Jobs Fund
matching grants up
to **\$50,000**

Victorian
Government
Property
Developments
\$750 MILLION

Latrobe Valley
Economic
Facilitation Fund
\$10 MILLION

HIGHEST
AVERAGE YEARLY
WIND SPEEDS
IN VICTORIA

WORLD-CLASS
MARINE ENERGY
RESOURCES

STRONG
OFFSHORE WIND
RESOURCES



• Bairnsdale

16.3 MW
Baw Baw Shire Council

4 MW
• Heyfield

16.5 MW
Wellington Shire Council

55.4 MW

• Moe

• Morwell

• Traralgon

• Sale

22 MW
Latrobe City Council

• Mirboo North

• Yarram

Bass Link

Transmission infrastructure

Total rooftop solar by LGA

Maryvale Bioenergy

Glenmaggie Hydro

Pilot Community Power Hubs

NEJF Projects that support the Latrobe Valley

Hi-Tech Precinct

Victorian Government Offices

Latrobe Valley Authority

Note: locations on the map are indicative only.

SECTION 1:

THE LATROBE VALLEY VICTORIA'S ENERGY POWERHOUSE

The Latrobe Valley is Victoria's energy powerhouse and set to remain at the centre of our new energy sector. Now is the time for businesses and technology developers to capitalise on the region's extensive new energy technology opportunities and draw on the Victorian Government's support to lead Victoria's new energy transition.

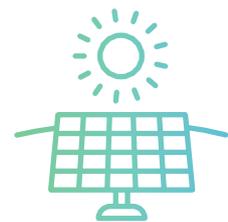
The Victorian Government has identified three key areas of investment for new energy technologies across the Latrobe Valley



CLEAN ENERGY
POTENTIAL



ENERGY
SUPPLY CHAIN
& WORKFORCE
CAPABILITIES



NEW ENERGY
PRODUCTS &
SERVICES

- > For an overview of the region, see **section 1**
- > To understand current areas of opportunity and see examples of work underway, see **sections 2-4**
- > To view a list of government support programs and contact points, go to **section 5**



SNAPSHOT OF THE LATROBE VALLEY

The Latrobe Valley, located in the heart of Gippsland, has a robust and growing economy, with internationally competitive opportunities for business and industry to invest in new energy technologies and the resulting energy supply chain.

Strong relationships with local governments have ensured a joined-up and supportive government presence. The Latrobe Valley encompasses the three Local Government Areas (LGAs) of Latrobe City, Baw Baw and Wellington. There is a network of growing towns and services available across these LGAs, with Traralgon having the largest population of 25,000 and Warragul and Drouin being the third fastest growing towns in regional Victoria.

Agribusiness is one of Gippsland's great economic advantages and a significant employer, with over a third of the region's businesses involved in agriculture and fishing. Food and fibre represents around half of the region's Gross

Regional Product, with the food manufacturing sector continuing to grow.

Investors can now take advantage of the Valley's broad offerings, including:

- > diverse clean energy resources, incorporating renewable energy and accessible transmission infrastructure connected to the National Electricity Market (NEM);
- > an established energy supply chain and skilled energy sector workforce with capabilities that are in demand across Victoria;
- > demand for new energy products and services for households, businesses and the Valley's thriving agriculture sector;
- > ready road and rail access to Melbourne's national and international transport hubs, business centre and education and research institutions; and

- > unprecedented Victorian Government support for new and expanding businesses in the region through Victoria's only formal Economic Growth Zone.

Businesses and industry can leverage from sustained economic growth in the region. The population is expected to increase steadily until 2051 and the building sector continues to grow, with total building spend increasing each year.

Victorian Government initiatives designed specifically to develop the new energy sector and diversify the economy in the Latrobe Valley will enable business and investors to prosper along with the region. These initiatives are summarised at the end of the Prospectus.

VICTORIAN GOVERNMENT PRESENCE IN THE LATROBE VALLEY

Department of Environment, Land, Water and Planning

Department of Environment, Land, Water and Planning (DELWP) programs and services are delivered throughout six Victorian regions: Hume, Gippsland, Port Phillip, Grampians, Loddon Mallee and Barwon South West. The Gippsland region covers the Latrobe Valley, supporting people, communities and growth at the regional and local level. DELWP delivers the New Energy Technologies Sector Strategy, and has a dedicated planning unit working with Latrobe Valley councils to streamline planning systems and approvals. DELWP has a significant new energy program, led by the Energy Commercial Projects and Programs, and Energy Sector Reform divisions.

Regional Development Victoria

Regional Development Victoria (RDV) is the Victorian Government's lead agency in developing rural and regional Victoria. RDV focuses on building stronger economies and communities through employment, investment and infrastructure. RDV has a dedicated unit in the Latrobe Valley to actively identify and facilitate business growth and new jobs through the Latrobe Valley Economic Facilitation Fund. The team will work with proponents to fast track and realise investment opportunities.

Latrobe Valley Authority

The Latrobe Valley Authority (LVA) has been established to bring together local people, councils, industry, education providers and governments to secure the economic future of the Latrobe Valley.

The LVA is responsible for overseeing the Government's \$266 million investment package in the region to create jobs and grow local businesses, including the establishment of the \$50 million Latrobe Valley Economic Growth Zone. This is on top of \$40 million provided for the Latrobe Valley Economic Development Program, designed to support economic diversification, growth and resilience in the region.

New Energy Technologies Sector Strategy

The Victorian Government has identified the new energy technology sector as one of the growth sectors vital to the future economic prosperity of Victoria, one of six priority sectors where Victoria is uniquely placed to become a global leader. In 2016, the government released the New Energy Technologies Sector Strategy. The strategy outlines priorities across four key areas of focus:

- > Investing in clean energy generation technology
- > Strengthening sector skills, collaboration and innovation
- > Encouraging the development of new consumer-driven markets
- > Building statewide capabilities

The Latrobe Valley New Energy Jobs and Investment Prospectus and the New Energy Technologies Sector Strategy are part of a suite of initiatives informing the government's comprehensive approach to transforming the energy sector, and driving investment in new energy technologies.

About the Gippsland Hi-Tech Precinct

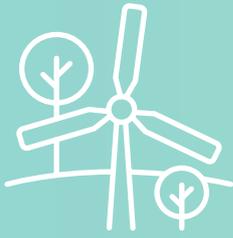
The Victorian Government is supporting development of the \$17 million Gippsland Hi-Tech Precinct to create collaborative relationships between research and academic institutions, and international and local businesses. To attract and build the necessary sector skills, the Gippsland Hi-Tech Precinct houses a new set of facilities and relationships that use the 'Smart Specialisation' approach to create deep partnerships between secondary, vocational and tertiary education providers, industry, government and the community. These partnerships provide pathways to develop skills and services for industry growth.

Businesses are encouraged to participate in the precinct by either locating some of their operations on the site (through the Industry Innovation Centre) or through a virtual partnership that uses the facilities and provides connections to students and workers looking to gain the skills most in demand by industry.

The precinct includes a technical school for secondary students, a campus of Federation Training (TAFE provider) and collaboration with Federation University. It is coupled with a purpose-built Industry Innovation Centre.

The precinct is situated in Morwell and connected virtually throughout the region and beyond. It will be operational in 2020.





SECTION 2:

CLEAN ENERGY POTENTIAL

The Latrobe Valley has significant advantages in renewable energy generation, with commercial renewable resource potential for utility-scale clean energy generators. This includes onshore and offshore wind, solar and bio-energy, and emerging technologies such as hydrogen, geothermal and solar thermal capability.

Supported by a skilled energy sector workforce, an innovative manufacturing and knowledge base, and unconstrained transmission capacity connected directly to the NEM, the Latrobe Valley is a desirable place to invest in clean and reliable energy generation to meet national and local demand.

STRONG ELECTRICITY NETWORK WITH SIGNIFICANT CAPACITY

The Latrobe Valley is the traditional centre of Victoria's energy production, with its extensive electricity infrastructure and transmission network readily accessible to utility-scale renewable energy generation investors. The capacity of transmission and distribution assets in the Latrobe Valley is a feature to be optimised.

Following the retirement of Hazelwood Power Station there is significant electricity network capacity available for utility-scale renewable energy projects. The volume of surplus capacity will ensure that congestion constraints are maintained at a minimum into the future. Existing transmission lines between the Latrobe Valley and Melbourne can connect up to 1.6 gigawatts of renewable energy generation without major shared network augmentation. New renewable energy generation will be encouraged to connect to existing connection points.

Between 2018 and 2022, AusNet Services, the network operator for the Latrobe Valley, will be undertaking several network upgrades in the Latrobe Valley and surrounding areas to improve the strength and reliability of the local network. These upgrades include:

- > Moe zone substation re-build;
- > Maffra zone substation re-build; and
- > Leongatha zone substation 66kV switch-gear replacement.

Figure 1: Transmission system capacity in Latrobe Valley



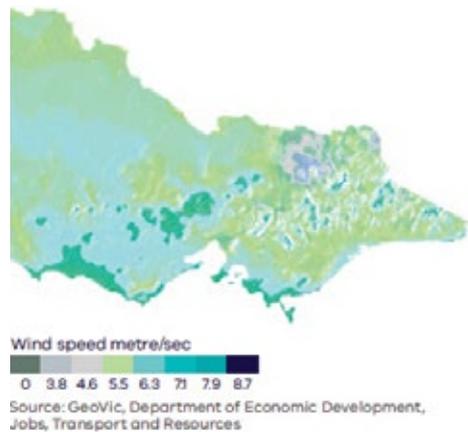
■ Max generation capacity from Latrobe Valley to Melbourne
■ Transmission System capacity from Latrobe Valley to Melbourne
Source: AusNet Services, 2018

SNAPSHOT OF CLEAN ENERGY GENERATION CAPACITY IN THE LATROBE VALLEY

There is strong growth potential for international and local companies looking to invest in clean energy generation in the Latrobe Valley and surrounding areas, with the Gippsland coastline recognised as having some of the best offshore energy resources in the world. The Latrobe Valley currently has renewable energy generation capacity of 113.6 megawatts (MW), including solar, hydro, and biomass.

Onshore and offshore wind resources offer the most significant growth opportunities in the region, as indicated in the wind map in Figure 2.

Figure 2: Victoria's average yearly wind speed



Capturing offshore wind energy

The Victorian Government is encouraging businesses to tap into Gippsland's offshore energy resources, with Australia's first proposal for a large offshore wind farm project being pursued in the region.

Victorian-based Star of the South has been working with the Victorian and Commonwealth governments to progress the proposal for up to 250 wind turbines within 574 km², which would deliver around 8,000 GWh of electricity per year.

The system would connect to existing energy distribution infrastructure in the Latrobe Valley via undersea and underground transmission cables and provide opportunities for businesses to supply services or components.

If successful, the project would generate investment of around \$8 billion, create 12,000 jobs during the construction phase and deliver 300 ongoing operational and maintenance jobs.

There are also opportunities to capitalise on the median annual wave power of up to 20 kW/m in central Bass Strait. This is highest along the section of coastline to the south of the Valley, between Phillip Island and Wilson's Promontory¹.

¹Sustainable Energy Authority, Wave and Tidal Power Assessment for the Victorian Coastline, Report No. J121/R01, 2004.

Exceptional solar opportunities

The region offers potential to invest in solar farms, with solar performance in the Latrobe Valley equal to, or greater than, anywhere in Germany². Equally, private household investment in solar photovoltaic (PV) in the Valley is strong, and well above the Victorian average of 14.75 per cent deployment.

Solar developers are actively considering

locating solar farm projects in the Latrobe Valley due to the unique combination of land availability, transmission network capacity and a skilled workforce.

The LVA is already working with three solar developers to explore projects from 10-100 MW using a variety of technologies, including floating solar and conventional fixed and single axis trackers.

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There is also potential to harness bioenergy opportunities with significant biomass produced particularly through Gippsland's agriculture industries. An estimated 793,720 tonnes of organic waste was generated in the region in 2014-15³.

Network strength attracting energy investors and creating jobs

The strength of the electricity network continues to underpin local job creation and offer commercial advantage. In December 2017, Aggreko Australia installed temporary diesel generators at the Energy Brix Power Station site in Morwell as part of the Australian Energy Market Operator's Reliability and Emergency Reserve Trader scheme.

Aggreko worked with AusNet Services, looking across the country for the best connection to the electricity network. Energy Brix was found to have the best infrastructure. The strength of the network enabled the diesel generators to deploy 100 MW of additional power incrementally as required. Aggreko used local and Victorian businesses to provide services, taking advantage of the region's energy sector skills base.

High levels of electricity interconnection across the NEM, including to New South Wales, South Australia and Tasmania, help to protect Victoria from severe electricity disruptions or catastrophic system events.

The Latrobe Valley has unmatched skills and expertise in electricity network safety and

stability to support this. Opportunities for the Latrobe Valley to be a centre for manufacture, research and training on installation and maintenance of network infrastructure and safety equipment are currently being considered in the design of the Gippsland Hi-Tech Precinct.

² 3.73 kWh/kWp (source: <http://pv-map.apvi.org.au/>) versus 3.26 kWh/kWp in southern Germany (Fraunhofer ISE (2015): Current and Future Cost of Photovoltaics. Long-term Scenarios for Market Development, System Prices and LCOE of Utility-Scale PV Systems. Study on behalf of Agora Energiewende).

³ Australian Biomass for Bioenergy Assessment (ABBA) Factsheet Gippsland, published by Sustainability Victoria, November 2017.



SECTION 3:

ENERGY SUPPLY CHAIN AND WORKFORCE CAPABILITIES

The Latrobe Valley's competitive industries, talented and skilled workforce, and vibrant education and research sectors, combined with abundant renewable resources and state-wide smart meter data, provide investors with a strong foundation for the development of smart technology infrastructure for Victoria. There are clear opportunities for the manufacture of high-value wind and solar infrastructure components, maintenance and repair, and development of new manufacturing capacity linked with flagship projects.

The Latrobe Valley is already building on its expertise in advanced manufacturing – including high-end specialised components, products and services – and research and development to participate in energy supply chain projects. Local businesses will continue to be supported by government funding to purchase equipment and train staff to diversify into the supply chain. For example, the Latrobe Valley Supply Chain Transition Program is assisting supply chain firms affected by company closures in the region to plan and implement transition strategies that will minimise job losses.

CASE STUDY

Advanced manufacturing in the Latrobe Valley

Earthworker Cooperative is a community-led, non-government initiative working to provide local, sustainable, wealth-creating jobs that will contribute to a healthy planet and safe climate. Earthworker has established Australia's first worker-owned factory, making renewable energy appliances and components in the Latrobe Valley. This includes premium solar hot water and energy storage

technology, such as unique storage tanks for household and commercial heat pump and solar hot water applications, and household battery storage products. Earthworker uses innovative partnerships and a business model incorporating employment agreements negotiated by unions and employers across Australia. More information is available at earthworkercooperative.com.au.

Significant scope remains for international and national investors to augment this local capability to service the full supply chain needs of the region and across Victoria. In particular, the VRET will sustain a pipeline of international and local investment in renewable energy generation and new energy technologies, and support growth and development of the energy supply chain.

Potential supply chain opportunities include design, construction, component manufacturing and maintenance skills to support successful offshore wind and solar farm projects. There is currently no supply chain in Australia with the expertise needed to support development and operation of offshore wind farms. If the

floating solar farm proposals currently being explored in the Valley go ahead, for example, there would be an opportunity for a local plastics manufacturer to make the floats to hold up the solar panels.

Similar supply chain opportunities may become available with the potential development by Australian Paper of a Energy from Waste (EfW) facility at its Maryvale Mill in the Latrobe Valley. Australian Paper is currently undertaking a \$7.5 million feasibility study, to which the Australian Government, Victorian Government and Australian Paper have each contributed \$2.5 million.

Development of the EfW facility could create a foundation for new energy skills and expertise in the Latrobe Valley.

Technology advances, such as electricity storage, improvements in the energy efficiency of products and appliances, new forms of renewable energy generation and the digitisation of the energy sector through smart meters, also open up the region to national and international companies that may not have traditionally been involved in the local energy sector.

ENERGY SECTOR WORKFORCE AND CAPABILITY

The Latrobe Valley is positioned to lead innovation and business growth for a new energy future, with industry, business and other investors able to capitalise on the jobs, skills and local economic development resulting from VRET and the state's ongoing transition to a new energy economy. 17.8 per cent of Latrobe Valley's population are technicians and trade workers - higher than the state average of 13 per cent⁴.

Many of the region's technicians, trade workers and labourers are highly skilled and experienced in the energy sector. The Latrobe Valley contains a broad workforce to apply skills and experience to design and manufacture of new energy technologies, in addition to assembly or deployment. This workforce is available to new investors in the region.

The Gippsland Hi-Tech Precinct plays a key role in ensuring that local universities, TAFEs, other educational and training institutions align their energy-related vocational courses and degrees with new energy technologies workforce requirements. The government is also working with the energy industry to develop policies and programs that address sector skills shortages and meet the demand for new and additional skills in the region.

CASE STUDY

New solar installation career for former Hazelwood worker

Geoff is a former Hazelwood worker who, at the age of 52, is enjoying a surprising new career in renewable energy with Gippsland Solar.

After 20 years as a boiler cleaning technician at Hazelwood Power Station, Geoff was left wondering where to go after the sudden announcement of the power station closure in 2017. He came to Gippsland Solar looking for a chance to prove himself within the installation team.

He very quickly raised the team's work standard and gave the younger team members a run for their money with his tireless work rate. He is very popular among his workmates and has added great value to the business.

Gippsland Solar continues to create employment opportunities for former Hazelwood workers, helping to lead the way through this transition in the Latrobe Valley.



⁴ Australian Bureau of Statistics, 2016

CASE STUDY

Training in design and installation of solar PV

The Victorian Government has initiated a partnership between Federation Training and Holmesglen TAFE to offer training in the design and installation of solar PV for local workers. The program began in December 2017 in response to the boom in demand for solar PV in the Latrobe Valley.

Further rounds of training to be offered in early 2018 will add dozens of qualified installers to the local workforce.

The government is also assessing the need for new battery storage training resources to be available in the Latrobe Valley.



PARTICIPATING IN THE ENERGY SUPPLY CHAIN

New energy technology businesses will be supported to innovate, secure international investment and build new markets to ensure a strong and integrated local and global energy supply chain.

Record government investment in energy efficiency upgrades and solar PV in the Latrobe Valley, coupled with significant private investment, has stimulated many business opportunities and jobs growth in the region. These opportunities continue to be available to new and expanding businesses looking to participate in the local energy supply chain.

Department of Environment, Land, Water and Planning

DELWP's energy portfolio has a strong focus on supply chain activation, facilitating engagement and development. The Supply Chain Activation team supports investment in renewable energy infrastructure to implement the Victorian Renewable Energy Target. The team leads local industry development of energy manufacturing and production opportunities to support delivery of VRET, engagement with industry and delivery of key outputs of the New Energy Technologies Sector Strategy.

See www.energy.vic.gov.au for more information.

Victorian Renewable Energy Advocate

The Victorian Renewable Energy Advocate helps industry and communities navigate regulatory requirements and access available support services and subsidies. The Advocate also promotes Victoria as an attractive investment location for renewable energy projects, and provides advice to government to improve renewable energy development in Victoria. For more information see www.energy.vic.gov.au/vrega

Invest Victoria

Invest Victoria provides an effective, single entry point and a range of investment facilitation services for international companies wanting to establish or expand their business in metropolitan or regional Victoria. Invest Victoria has a key role to play in the new energy technologies sector, introducing international companies to local suppliers, service providers and potential partners to fast track their entry into the market.

Further information is available at www.invest.vic.gov.au

Export-focused agencies

Internationally-focused agencies such as Business Victoria, Trade Victoria's Access Program and the Trade Mission Program of the Department of Economic Development, Jobs, Transport and Resources in collaboration with DELWP promote opportunities for new energy technologies businesses to grow their export capabilities. Located around 150 km east of Melbourne, the Latrobe Valley is within easy reach of national and international transport hubs.

Victorian Government Business Offices

The Victorian Government Business Offices (VGBOs) around the world will support new energy technology businesses and help them navigate government services, programs and regulations. VGBOs will also guide businesses looking to access government grants and seeking other assistance and information. This work will contribute to strengthening Victoria's existing, local and regional supply chain and building and integrating global connections.

Further information is available at www.business.vic.gov.au/victorian-government-trade-investment-offices-vgti



CASE STUDY

Utilitas Group developing bioHubs in the Latrobe Valley

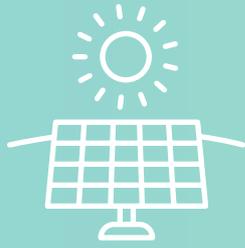
BioHub developer Utilitas Group is establishing its Victorian office in Morwell and advancing the development of four regional bioHubs in Gippsland. Utilitas is working closely with Australian Paper at Maryvale, actively engaging with the local community and seeking support from LVA to firm up three further 'anchor tenants' for bioHub projects to progress to construction over the next 12 to 18 months.

Utilitas uses an 'infrastructure as a service' business model where it scopes, designs, finances, builds, owns and operates bioHubs co-located with anchor tenants that have an organic waste/wastewater management requirement and onsite energy demand. They enter into land arrangements and a multi-utility service agreement with the anchor tenant to provide energy and waste/wastewater management services at locked-in, long-term prices indexed to the consumer price index (CPI). These prices are at a discount to the current market rate.

The model is particularly attractive to farmers, pack houses, and food, fibre and beverage producers who are experiencing energy pricing pressures and supply risks. It is also advantageous for operations upgrading their waste/wastewater management systems as a result of expansion or compliance issues, and for municipal wastewater treatment plants seeking to upgrade where capital works budgets are constrained. In addition, the bioHubs can provide organics processing options for waste haulers who may be able to reduce transport costs and offer higher value, source segregated waste contracts to clients who are committed to more sustainable disposal options and waste provenance.

The design process optimises integration with the anchor tenants' operations. Utilitas uses proven technology that is commercially available off the shelf and trusted suppliers who have delivered thousands of projects in other countries to meet equipment requirements.





SECTION 4:

NEW ENERGY PRODUCTS AND SERVICES

New energy technology is one of the fastest growing sectors globally and a priority for the Victorian Government. The 2016 New Energy Technologies Sector Strategy outlines our approach to modernising the energy sector, while capturing the economic and environmental benefits of the transformation.

Industry and the education sector in the Latrobe Valley is well placed to support the Government's plan to develop and provide access to the world's most efficient and low-cost new energy technologies. Building knowledge and capability in these technologies will, in turn, support growth in advanced manufacturing, installation services and export markets. It will also provide opportunities to capitalise on the global demand for energy, which is set to grow by nearly one third by 2040⁴.

⁴World Energy Outlook 2015, International Energy Agency, Executive Summary

NEW ENERGY SECTOR OPPORTUNITIES THROUGH A SMART SPECIALISATION STRATEGY

Based on the concept of Smart Specialisation pioneered in Europe, the Victorian Government is helping to create innovation partnerships between industry, research and education providers, the community, and state and local government in the Latrobe Valley.

The energy sector is a priority for developing Smart Sector Strategy (S3) networks, with its high level of expertise and strong potential for growth in specialist segments.

A number of S3 opportunities are already being considered in the Valley in the agribusiness sector and in relation to embedded generation and demand management control systems. These opportunities have been identified through consultation with the community and industry, and it is expected that others will emerge over time.

FOOD AND FIBRE SECTOR POWER SOLUTIONS

Energy is a major input cost for the Valley's food and fibre industries, and the rising price of power is putting a strain on many businesses.

New energy technology developers can deliver reliable and affordable energy solutions for individual businesses and clusters of commercial energy consumers in the Latrobe Valley, particularly

in the dairy, horticulture, protected cropping, intensive animal husbandry and food processing and manufacturing industries. Development of new energy-efficient delivery models will support expansion of agriculture and provide jobs for local energy solution providers.

The Victorian Government is looking to support trials

and investigations of further technology solutions for the sector, with a particular emphasis on the dairy industry. Farmers also have the opportunity to work with companies such as AgVet Energy to develop smart and innovative ways to reduce energy consumption and improve energy efficiency.

CASE STUDY

Jindivick dairy farm

Victorian dairy farmers Chris and Charmaine Bagot wanted to minimise the energy consumption of their farm of 500 milking cows, and future-proof the business against energy cost increases. The Bagots worked with local Gippsland suppliers (AgVet Energy, Cutting Edge Electrics and Gippsland Solar) to design and install energy efficiency measures, energy generation capacity and energy monitoring capability.

A 'smart integration' approach to reduce demand and increase energy efficiency included introduction of an energy and water efficient dairy-cleaning system

with capacity for 60-80 per cent energy savings. This approach reduced energy consumption from the electricity network by 90 per cent. The farm is considering energy storage as a future improvement.

As the food and fibre industry seeks to reduce energy consumption and consider new technologies and approaches, there will also be increasing opportunities in this sector for companies to develop energy solutions for application.



EMBEDDED GENERATION AND DEMAND MANAGEMENT CONTROL SYSTEMS

Victoria is the only Australian state to have completed a full rollout of electricity smart meters. This technology has the potential to allow for a range of new software and hardware options for trading electricity use and managing demand at the residential and small commercial scale. There is also growing interest in the use of new energy technology to better manage the standby power needs of mid-sized businesses and other entities, such as hospitals and aged-care facilities.

Victoria has significant standby electricity capacity, through lead acid batteries and/or diesel generators. However, as lithium-ion and other battery technologies become more reliable and affordable, there will be a switch to bespoke standby power solutions.

The design and testing of integrated energy generation and storage systems is done either overseas or through ad hoc facilities within individual companies, with limited access to expertise from education providers and without access to world's best practice equipment. Recent improvements in battery technologies, and growing demand for commercial-scale embedded generation and uninterruptable power supply systems, has created the need for facilities to test equipment and train teams involved in its

design, installation, operations and maintenance.

The Latrobe Valley, with its concentration of electrical engineering skills, is well placed to lead industry development in this area. The Victorian Government is working with industry to explore the commercial viability of establishing a specialist test laboratory and training centre for electricity grid-connected technologies as part of the Gippsland Hi-Tech Precinct.

Construction of a test lab may provide an important opportunity for a range of companies to accelerate commercialisation of new energy services. The LVA is coordinating investigation of this option and looking for businesses interested in making use of such a resource.



ENERGY EFFICIENCY AND PRODUCTIVITY POTENTIAL

Global investment in energy efficiency is worth hundreds of millions of dollars and is growing rapidly with the potential to generate thousands of jobs for Victorians. Energy efficiency and energy productivity builds on the Latrobe Valley's significant advantages in areas such as information technology, advanced manufacturing, material engineering, research and technological capabilities.

The Valley has a high value energy efficiency sector, with communities and businesses that are demonstrating real innovation and leadership in new ways to generate energy and manage its use. This will contribute to the transition to flexible and decentralised energy grids and consumer and community-driven energy services. Emerging energy efficiency and new energy business models are also enabling industry to better

manage its energy use, install alternative technologies and bring forward new revenue sources. There is a growing market to support Victorian households, businesses and industry in this transition.

CASE STUDY

Prom Country Cheese

Prom Country Cheese received a \$5,000 energy assessment grant from Sustainability Victoria's Boosting Business Productivity program in 2017.

With energy use and sustainability already central considerations, the grant was used to complement and optimise the facility's existing 12 kWp solar PV array and passive low-energy design. The energy assessment identified potential electricity savings of more than 20,000 kWh per annum through improved monitoring and business operation.

It also provided valuable information to further optimise and expand the existing PV array.

In addition, the grant has given the business a high level of transparency of its energy costs, allowing access to the most advantageous tariff available and enabling operations to be tailored to minimise energy expenses and maximise energy productivity.



Victoria's smart meter infrastructure, data and strong information and communications technology (ICT) sector offer many benefits to energy efficiency entrepreneurs and start-ups in the region. The Government will work with regulators and the industry to ensure that regulatory systems and settings enable these benefits to be realised.

Industry is invited to capitalise on these advantages through investment and innovation to develop innovative energy-related consumer products and services. This will also generate business opportunities for service providers offering advice, retrofitting buildings and replacing appliances.

LVA is currently working with manufacturers of energy efficiency products, such as LED lights and lithium battery packs, enabling them to take advantage of the Valley's affordable commercial facilities, skilled workforce and potential government funding to establish local manufacturing operations.

Residential solar PV and energy efficiency investment opportunities

The Home Energy Upgrade Program provides up to \$4,500 worth of energy upgrades for up to 1,000 low-income households in the Latrobe Valley. Eligible households will be provided with access to a package of upgrades that could include solar PV, solar hot water, insulation, efficient space heating, and other improvements such as efficient lighting.

Warragul-based company Hills Energy Solutions will deliver the work by managing home visits (including energy efficiency assessments and specification of upgrade works) and installation of upgrades. The family business currently employs 10

people and will deliver energy efficiency assessments and retrofits on behalf of Sustainability Victoria and the Latrobe Valley Authority.

Hills Energy Solutions were appointed through a formal Request for Tender process. A weighted criterion was included to support a preference for proposals that offer local economic and social development in the region, for example through creation of training and employment opportunities, local economic development and growth, and industry development.



ENERGY SOLUTIONS FOR OFF-GRID TOWNS AND COMMUNITIES

The Latrobe Valley has a number of localities that operate partly or entirely off the electricity grid through use of expensive diesel or gas generators. There are range of opportunities for businesses to provide cheaper, cleaner solutions for these communities.

Examples of off-grid townships in the Latrobe Valley and broader Gippsland include:

- > Mt Baw Baw, which is Victoria's most accessible ski destination, with a wide range of accommodation types and services. It currently uses a gas turbine generator for power generation.
- > Historic Walhalla, which is a significant tourist attraction. Areas of the town on road level use reticulated power, while areas in the hills and surrounding small hamlets are off-grid.
- > Licola, which uses a large diesel generator to power the popular Lions Youth Camp, a fast-growing tourist accommodation service, and a retail business. The area is located close to the Macalister River and may be suitable for small-scale hydro generation, or a solar and battery installation;
- > Hollands Landing, which is a well-known fishing spot on the Gippsland Lakes, at the western end of Lake Victoria. Its caravan park, boat ramp and general store attract locals and tourists.



SECTION 5:

VICTORIAN GOVERNMENT PROGRAMS

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Victorian Industry Participation Policy

Local suppliers will be supported to create new jobs and boost economic activity along the new energy supply chain through the Government's Victorian Industry Participation Policy (VIPP).

The VIPP applies to government procurement activities in metropolitan and regional Victoria to raise awareness of local industry capabilities and encourage participation by local small and medium size enterprises (SMEs) in public sector purchasing. It ensures that SMEs are given a full and fair opportunity to compete for government contracts, including major strategic projects.

New Energy Jobs Fund

The \$20 million New Energy Jobs Fund is facilitating Victorian-based projects that create long-term sustainable jobs, increase uptake of renewable energy generation, reduce greenhouse gas emissions and drive innovation in new energy technologies such as storage and manufacturing. The fund is administered by the Department of Environment, Land, Water and Planning (DELWP).

The fund has supported new energy technology projects across three primary categories of manufacturing, technology, community and skills.

Further information is available at www.business.vic.gov.au/support-for-your-business/future-industries

Latrobe Valley Community Power Hub

The Victorian Government has provided funding for the creation of three Community Power Hubs across Victoria, including one in the Latrobe Valley to be hosted by the Gippsland Climate Change Network (GCCN). The hubs aim to support Victorian communities to access the skills and expertise required to develop and deliver community-based renewable energy projects, characterised by local ownership, participation and benefit sharing.

GCCN is currently developing the operational model and seeking investment partners and opportunities to establish the Latrobe Valley hub. Further information is available at www.communitypowerhub.com.au or email cbarfoot@netspace.net.au

Victorian Government Property Developments

The Government has committed \$750 million to infrastructure projects with potential for embedded generation technologies for the Latrobe Valley. This includes the construction of the Gippsland Hi-Tech Precinct, the upgrade of Moe, Morwell and Traralgon Train Stations, a new sports and aquatic centre, and the custom-built 'GovHub' office complex in Morwell that is in its early design phase.

Businesses with an interest in the design and development of embedded generation technologies for future infrastructure projects in the region should contact the LVA. Visit lva.vic.gov.au for further information.

Latrobe Valley New Energy Jobs Fund

The Latrobe Valley New Energy Jobs Fund will be available to businesses to develop workforce skills or purchase equipment necessary to build new energy technology expertise. The fund is administered by the LVA.

Matching grants of up to \$50,000 will be available for businesses looking to purchase equipment to improve their current product or service offering related to renewable energy or energy efficiency, or for companies looking to diversify into the new energy industry. Support is also available to co-fund early stage feasibility or business case studies for new energy projects, such as storage, smart grids and manufacturing.

Scholarships will also be available for training related to the design and/or installation of renewable energy or energy efficiency systems, or for general skills to be applied in the development of new energy systems. Only businesses that are ineligible for further funding through public or private worker transition support or state or federal training subsidies will be able to access the scholarships. In addition, funding may also be used by the LVA to coordinate region-wide training programs, such as the recent Solar PV Design and Install Course opportunity.

Contact the LVA for further information on the Latrobe Valley New Energy Jobs Fund.

Microgrid Demonstration Initiative

The Victorian Government has provided up to \$10 million in grant funding over four years to develop and implement state-wide demonstration projects using microgrid models. The program supports innovative, market-driven commercial microgrid demonstration projects in Victoria across various locations, building types, scales and business models to capture learning for future applications.

More information is available at www.energy.vic.gov.au/microgrids

Smart Specialisation Cluster Manager

The development of Latrobe Valley S3 for new energy will involve active coordination of industry, education, community and government partners, and a targeted approach to investment attraction that seeks out specific businesses to fill critical gaps in knowledge bases or supply chains.

The LVA will establish a dedicated New Energy Cluster Manager to oversee the disbursement of the Latrobe Valley New Energy Jobs Fund and be a single point of contact for potential investors and partners, coordinating the design of a long-term strategy for establishing specific commercially competitive niche specialisations. The Cluster Manager will be appointed in the first half of 2018.

Latrobe Valley Economic Growth Zone

The \$50 million Latrobe Valley Economic Growth Zone offers financial support for businesses in the Latrobe Valley.

Financial incentives include reimbursement of state and local government fees and charges associated with starting a new business, or expanding an existing one. These fees and charges include:

- > planning application fees, licencing application fees, permit charges and environmental approval fees; and
- > stamp duties for commercial property transactions associated with new business starts or expansion of existing activity.

In addition, energy efficiency entrepreneurs and start-ups can access support and opportunities through the Gippsland Hi-Tech Precinct. Contact the LVA for further information.



Latrobe Valley Economic Facilitation Fund

A \$10 million Latrobe Valley Economic Facilitation Fund (LVEFF) has been established within the Latrobe Valley Economic Development Program. The primary focus of the LVEFF is on business growth and job creation. The key objectives are to fast-track projects that help existing companies grow to their full potential, and to attract new investment into the Latrobe Valley.

The fund is supported by an experienced and dedicated Latrobe Valley Investment and Trade team. The program has generated upward of \$54.6 million of new investment and creating large numbers of jobs in the Valley.

Latrobe Valley Supply Chain Transition Program

The \$5 million Latrobe Valley Supply Chain Transition Program provides intensive tailored support to businesses that are part of the supply chain of significant Latrobe Valley companies facing closure. Business specialists are actively guiding businesses through this transition, helping them to keep industry jobs in the Latrobe Valley and access new sectors and markets.

Further details are available from Regional Development Victoria – Gippsland at www.rdv.vic.gov.au or email information.traralgon@rdv.vic.gov.au.

Government funded upgrades to community buildings and businesses

The LVA's Community Facilities Fund offers co-funding for community groups to invest in energy efficiency upgrades for their community buildings. The fund has supported around 30 clubs and community groups operating from publicly owned premises to reduce their operating costs. Funding for infrastructure upgrades is still available and interested groups should contact the LVA for details.

DELWP is also managing a \$2 million fund to install solar panels and other solar facilities on public buildings located on Crown land that are managed by volunteer committees of management. An application process has been completed and 30 buildings will be selected for assessment and installation of solar facilities. Companies wishing to undertake the work will be called to tender during 2018.

The Victorian Energy Upgrades program also helps businesses with their energy costs, providing discounts on a wide range of energy-saving products supplied through accredited providers. Business opportunities exist for providers and installers of energy efficient products and services. For more information visit www.victorianenergysaver.vic.gov.au/victorian-energy-upgrades.

The Boosting Business Productivity program supports businesses to cut energy and materials costs, reduce greenhouse emissions and improve energy productivity. The program includes grants for businesses, a sustainable finance service and various training, events and information resources.

Grants are available for businesses seeking advice on energy efficiency improvements (Energy Assessment Grants), capital support to reduce gas costs (Gas Efficiency Grants), and for manufacturers to reduce waste (Materials Efficiency Grants). For more information, visit www.sustainability.vic.gov.au/business/efficientbusiness-operations/boosting-businessproductivity.

In addition, the Better Commercial Buildings grants program supports owners of commercial buildings and tenancies (including offices, hotels, retail and data centres) to identify and implement energy efficiency upgrades that lead to improved building performance. Further details are available at www.sustainability.vic.gov.au/betterbuildings.

Commercial building upgrades through Environmental Upgrade Finance

Council-based Environmental Upgrade Finance (EUF) help businesses access funding to upgrade buildings to improve energy efficiency, reduce waste and cut water use. Councils collect the repayments from participating businesses through their rates system, enabling lenders to offer more competitive loan terms.

EUFs are currently offered by South Gippsland Shire, and the Government is working to expand their availability in Latrobe City and the Baw Baw and Wellington Shires. Around 85 per cent of businesses in the Latrobe Valley are classified as SMEs, and the level of deployment of solar PV and other energy efficiency measures is below the Victorian average, which presents an attractive investment opportunity.

Businesses interested in accessing EUFs should contact their local council.

Residential solar PV and energy efficiency investment opportunities

The Home Energy Upgrade Program provides up to \$4,500 worth of energy upgrades for as many as 1,000 low-income households, making it one of the largest comprehensive household retrofit programs in Australia. The Government has also committed to energy upgrades for 250 social housing units in the Latrobe Valley.

Businesses with an interest in taking advantage of residential solar PV and energy efficiency upgrade opportunities in the Latrobe Valley should contact the LVA.

Agriculture Energy Investment Plan

Farmers and the agribusiness sector now have the opportunity to manage their energy costs through the Government's \$30 million Agriculture Energy Investment Plan.

As part of the Agriculture Infrastructure and Jobs Fund, the plan supports investment in on-farm energy efficiency and renewable energy systems. It also links farmers and businesses to information, education resources and industry research through a partnership between Victorian primary producers, agricultural groups, educational groups and government.

Latrobe Valley farmers and agribusinesses interested in the Agriculture Energy Investment Plan can access information at www.agriculture.vic.gov.au/agenergy.



For more information

Latrobe Valley Authority
131 Princes Drive
Morwell, Victoria 3840

Phone: 1800 136 762

Email: contact@lva.vic.gov.au

www.lva.vic.gov.au



