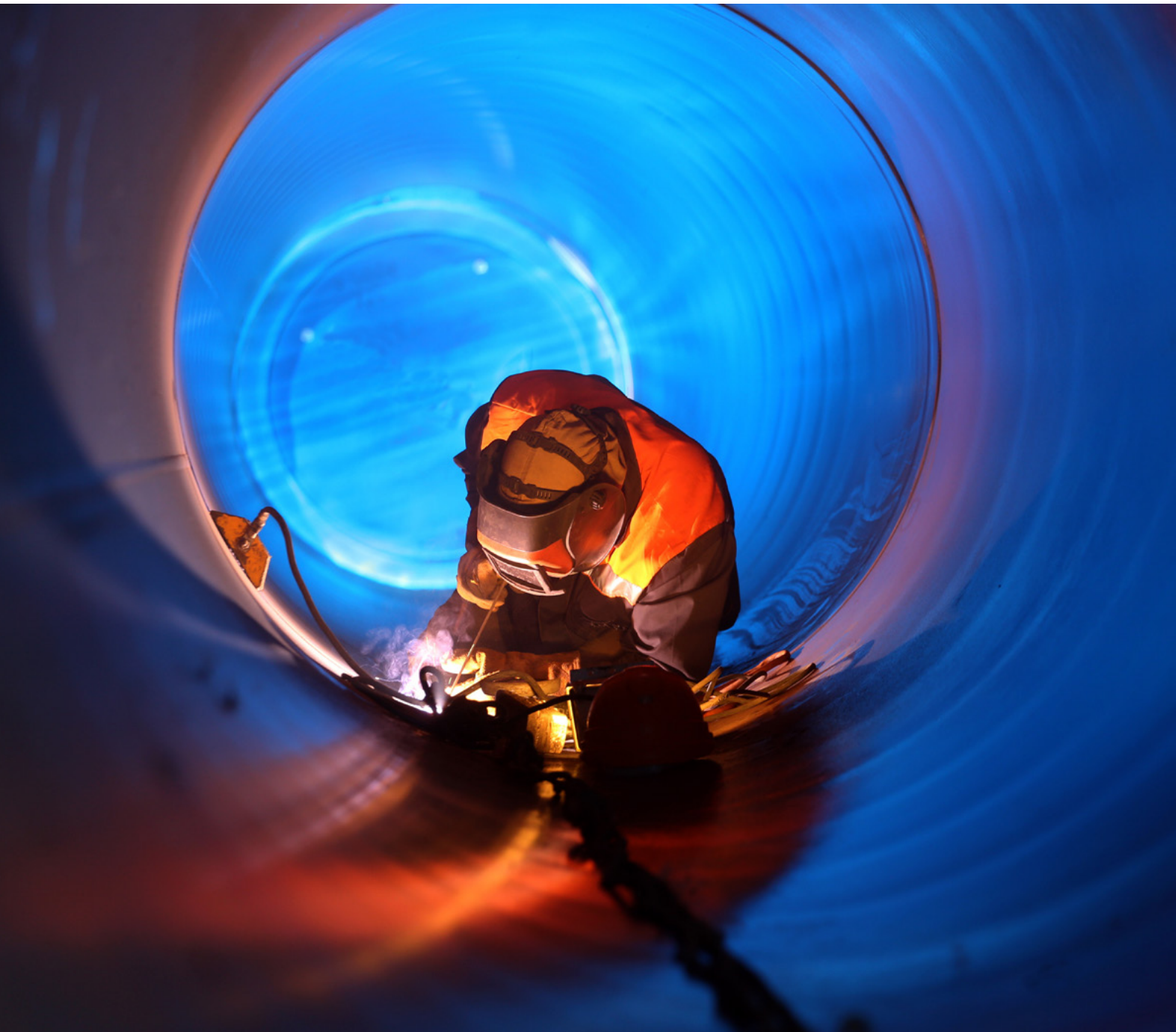




Fuelling Tasmanian jobs, energy security and growth.



The Tasmanian Gas Pipeline supports **over 4,200 direct jobs and over 8,550 jobs in total, is crucial to Tasmania's energy security and post-COVID economic recovery, and helps keep energy prices affordable for everyday Tasmanians.**

At a glance:

- The TGP is the **only mechanism** by which natural gas is transported in bulk to Tasmania
- The TGP is a **significant enabler of economic activity in Tasmania**, helping underpin the continued operation of numerous major industrial customers and the more than 4,200 direct Tasmanian jobs they support
- It is the only supplier of gas to the Tamar Valley Power Station – **an essential back-up power source for Tasmania** which played a crucial role during the 2016 energy crisis, helping keep the lights on in Tasmania
- Following COVID-19, the TGP provides an **affordable fuel source** to drive Tasmanian manufacturing growth and the state's **economic recovery**
- It also provides **affordable** gas supply for Tasmanian businesses and households
- Natural Gas provides the **cheapest and most-efficient source of heat** to Tasmanian Industry compared to diesel, fuel oil, LPG or coal, with low emissions
- **Ongoing connection** of the Tamar Valley Power Station to the TGP will underpin Tasmanian energy security and ensure affordable gas supply to Tasmanian customers
- The current four-year contract for the TGP to supply the Tamar Valley Power Station expires at the end of 2021
- An extension of this contract will provide **energy security for Tasmania** at least until other viable back-up power sources (such as Marinus Link) come online
- Once Marinus Link comes online, the Tamar Valley Power Station can continue to provide **grid and energy security** services to **support ongoing renewables**



About the Tasmanian Gas Pipeline

Commissioned in 2002, the Tasmanian Gas Pipeline (TGP) is the only pipeline supplying natural gas to Tasmania. It transports six petajoules of natural gas per year from Longford in Victoria, under Bass Strait, to Bell Bay in Tasmania.

The 740km TGP is a part of the national network of underground high-pressure gas pipes, which stretches over 20,000km and serves all of Australia's states and territories except WA.

The TGP brings jobs and economic growth to the communities it passes through and provides the opportunity for more than 500,000 Tasmanians to take advantage of the many benefits of natural gas.

A 2020 Deloitte Access Economics analysis found the TGP:

- **Directly supports 4,244 Tasmanian jobs (two per cent of state's total)**
- **Supports 8,550 jobs in total (3.4 per cent of state's total)**

- **Adds \$970m value (GSP) to the Tasmanian economy (three per cent of state's total)**
- **Unlocks multiple potential investment opportunities to rebuild Tasmania's economy post COVID-19**

Importantly, the TGP supplies the majority of the state's major energy users and around 1,000 commercial customers and 12,500 residential customers via Tas Gas Retail, Aurora Energy and Weston Energy.

It is also the only supplier of gas to the Tamar Valley Power Station, which is a crucial back-up power source for Hydro Tasmania and a critical asset for the state's energy security.



Supplies gas to both industry and townships in the state



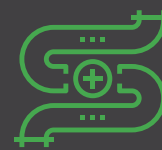
Supplies gas to the Tamar Valley Power Station



Critical asset for long-term Tasmanian energy security



Brings jobs and economic growth to the communities it passes through



Approximately 740km long



Transports gas accessed from the Gippsland Basin, with access to the Eastern Australian Gas Market and potential future LNG import terminals

TGP as an economic enabler in Tasmania

Fuelling jobs and growth



It is estimated the 20 main users of the TGP contribute more than \$970 million in gross state product to the Tasmanian economy each year*

The TGP is a significant enabler of economic activity in Tasmania, by supplying a reliable source of energy to many of the state's top economic contributors who are heavily reliant on natural gas.

It is estimated the 20 main users of the TGP contribute more than \$970 million in gross state product to the Tasmanian economy each year, supporting 4,244 jobs directly and 8,550 jobs in total.

Importantly, many industrial users rely on natural gas as a primary fuel for processes requiring heat. Natural gas is the cheapest and most efficient form of heat and has low emissions compared with other alternative energy sources.

Other energy sources can sometimes be substituted for thermal purposes, but this often requires significant investment in capital expenditure, so the marginal cost must be meaningfully lower than gas to be viable.

By adding competition to Tasmania's energy market via the TGP, local businesses have been enabled to be more competitive in Australian markets, as well as further abroad in Asia.

Small businesses and households have also been granted access to an alternative energy source, allowing them to better meet individual needs and requirements.

Ending the Tasmanian Gas Pipeline's contract to supply the Tamar Valley Power Station would significantly affect cost recovery, and is likely to have flow on effects for the Tasmanian businesses and communities it serves.

In order to assist with planning and contracting requirements, it is also important to give all gas market participants market certainty at least nine months before the current contract for the Tasmanian Gas Pipeline to supply the Tamar Valley Power Station expires at the end of 2021.

* Tasmanian Gas Pipeline Economic Analysis, Deloitte Access Economics, September 2020

The main users of the TGP and their economic contribution

Customer	Description	Direct employees	Value added (m)
Grange Resources	Major iron ore miner in the north-west	562	\$255
Simplot (Ulverstone and Devonport)	Vegetable processor with three factories	700	\$107
Bell Bay smelter	Aluminium smelter near George Town in the north	480	\$89
BOC Westbury	LNG plant in the northern part of the state	9	\$4
Fonterra (Spreyton, Wynyard and Tamar)	Dairy product processor with three major facilities	180	\$10
Tas Dairy Products	Dairy product processor with facility in Smithton	50	\$23
Tas Advanced Minerals	Produces silica flour for glass production	35	\$1
Cadbury	Chocolate factory outside of Hobart	360	\$152
Tas Alkaloids	Produces agricultural products such as opiates and cannabis	165	\$34
Nyrstar Hobart Pty Ltd	Smelter in the south producing zinc and sulphuric acid	430	\$57
Cascade Brewery	Brewery near Hobart that produces beer as well as soft drinks	106	\$45
Lion Burnie (Lactose)	Manufactures specialty cheeses	250	\$36
J Boags and Son Brewing Ltd	Brewery located in Launceston	65	\$45
Temco	Manganese plant	250	\$26
JBS Abattoir Australia	A multi-species processing facility	331	\$38
Impact Fertilisers	Fertiliser producer	50	\$10
Ecka Granules	Aluminium powder and aluminium granules producer	41	\$19
Top Centre Laundry	Commercial laundry provider	50	\$7
Austral Bricks	Producer of bricks and other similar products	30	\$3
Venarchie Asphalt	Pavement and asphalt manufacturer	100	\$8
TOTAL		4,244	\$969

Source: Tasmanian Gas Pipeline Economic Analysis, Deloitte Access Economics, September 2020

Energy security

Helping keep the lights on in Tasmania

2015/16 Energy Crisis

Gas is a crucial component of the multi-faceted energy supply structure Tasmania relies on to ensure the electricity system is constantly able to meet state demand and avoid blackouts.

Recent history has shown Tasmania's primary sources of energy (Hydro and Basslink) not to be failsafe.

In fact, in 2015/16 a combination of an extended drought affecting dam levels and a break in the Basslink interconnector to Victoria resulted in the "Tasmanian Energy Crisis".

During the seven-month crisis Tasmania's hydro dam levels fell to just 12 per cent and the state was literally only weeks away from rolling blackouts before the drought broke.

Through the period the gas-fired Tamar Valley Power Station operated at full capacity which conserved remaining water storages and prevented widespread, extended black outs. Without this, Tasmania's lights would have gone off.

Current situation

It is important to note, since the 2015 Basslink cable outage, its operations have been limited to 500MW capacity as a precautionary measure. With no conclusive outcome of investigations into the outage's cause, there is ongoing uncertainty as to whether another serious outage could occur, with data suggesting on average an outage is expected every 10 years for high-voltage direct current off-shore transmission systems.

Subsequent to the Energy Crisis, the Tasmanian Energy Security Taskforce recommended as a Priority Action in its final report that the TVPS be retained.

"The TVPS, particularly the combined cycle gas turbine (CCGT), should be retained at least until there is a reliable alternative in place to mitigate against hydrological and Basslink failure risk," the Taskforce said.

The Taskforce found that "If the situation arose whereby the TVPS was permanently unavailable and energy storage levels were not adjusted to reflect this loss of generation potential, then [Tasmania's] electricity energy security situation would be assessed as Susceptible".

The report also noted:

"While retaining the TVPS on standby and increasing energy in storage does have a financial cost, the cost is very low for the energy security it provides when compared to other states."

For example, in Western Australia, AEMO pays up to \$140,000 per MW of reserve capacity in order to maintain energy security. The TVPS provides approximately 380MW of reserve capacity, which would cost over \$50 million per year using this model which is considerably more than what it currently costs Tasmanians to maintain TVPS in a state of readiness.

Most recently, the Tamar Valley Power Station CCGT operated at full capacity in early 2019 in order to support Tasmania's hydro system and keep dams above Prudent Storage Levels.

With climate extremes and uncertainty regarding long-term trends increasing, if low rainfall does again occur, it is critical Tasmania is not left to rely on a demonstrably fallible single piece of infrastructure in order to ensure energy supply security. The state needs the support of the reliable gas supply provided by the Tasmanian Gas Pipeline.

With climate extremes and uncertainty... it is critical Tasmania is not left to rely on a demonstrably fallible single piece of infrastructure in order to ensure energy supply security. The state needs the support of the reliable gas supply provided by the Tasmanian Gas Pipeline.

Current and future Tasmanian Government Policy

Following the report of the Tasmanian Energy Taskforce, the Tasmanian Government committed to retain the Tamar Valley Power Station for energy security purposes.

Over recent years the Government has also proactively moved to further improve Tasmania's energy security with a target of making Tasmania 100 per cent self-sufficient in renewable energy by 2022; and the pursuit of a "second Basslink" electricity connector across Bass Strait (the Marinus Link).

Most recently, the Government announced a new target of doubling Tasmania's renewable energy capacity by 2040, as part of the "Battery of the Nation" concept.

Notwithstanding, the role of natural gas remains notable in the Government's plan:

“While Tasmania’s energy generation is dominated by renewable energy, other energy sources play an important part of the state’s energy mix. We recognise that gas supply and security is important for both industrial and domestic users in Tasmania.”

(Draft Tasmanian Renewable Energy Action Plan 2020, page 16).



The Marinus Link

The proposed Marinus Link currently pencilled in for commissioning in 2028 will considerably alter the Tasmanian energy landscape.

Not only will the link act as a back-up for providing energy into Tasmania should energy supply be placed in doubt by low dam levels or Basslink cable failure, it is also expected to catalyse a significant amount of on-island renewable energy development

However, at this stage, no final decision has been taken to proceed with the Marinus Link.

It is vital for Tasmania's energy security and growth of renewables that the TVPS continues to operate as a back-up energy source. Once Marinus Link comes online, TVPS can continue to provide grid and energy security services to support ongoing renewables operations especially during periods of low water inflows and low wind.

Powering Tasmania's post COVID revival

As Tasmania moves to recover from the economic impacts of COVID-19, the need to diversify the state's economy has been highlighted.

The pandemic has also brought issues of domestic capability and self-sufficiency to the forefront of people's minds.

In order to reduce public anxiety surrounding future potential interruptions to supply chains, there will be a greater need for governments around the world to guarantee domestic security for a number of essential products and services.

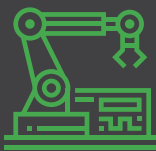
The supply of gas to enable on-island manufacturing is critical to ensuring self-sufficiency in Tasmania.

In addition to manufacturing, the Tasmanian Government's focus areas for the state's COVID-19 recovery include bringing forward infrastructure projects for construction, as well as agriculture, the visitor economy, aquaculture, renewable energy, skills and education, and trade.

A study conducted by Deloitte identified a number of industries heavily reliant on gas offer significant opportunities for export growth in the coming years, many of which align with the Government's focus areas.

This presents opportunities for the TGP to further support economic recovery in the state, particularly with a focus on advanced manufacturing, mining, hydrogen opportunities and dairy export.

Potential growth industries identified by Deloitte



Advanced manufacturing

The Tasmanian government has historically as well as recently identified advanced manufacturing as a focus area for the state. Many industries in this category are gas-intensive and represent an opportunity to support economic recovery post-COVID-19.

The massive disruptions caused by the pandemic to global and national supply chains have also led to many companies and organisations re-assessing supply chain risks. This opens increased opportunities for more 'on-shoring' of manufacturing activities.

Natural gas is commonly used in manufacturing for industrial process heating. This process is used in the manufacture of most goods and is particularly important to Tasmania for manufacturing including dairy, food processing, aluminium, zinc and fertiliser.



Resources/mining

In addition to ongoing competitive gas supply keeping existing resource and mining projects viable, several development opportunities which will require significant future energy use in the sector have the potential to be supported by gas from the TGP. These include:

- Alcore aluminium fluoride plant
- Heemskirk tin mine
- Rogetta iron ore project
- Mount Lindsay tin/tungsten mine
- Renison expansion project
- Dolphin tungsten mine



Hydrogen

In March 2020, the Tasmanian Government announced its renewable hydrogen action plan outlining their vision for having a renewable hydrogen generation facility operational by 2024 and commercially viable by 2030.

Locations in close proximity to large users of the TGP, such as Burnie and Bell Bay, have been earmarked as potential hydrogen industry hubs, meaning that these hubs could be directly integrated with the TGP.

There are significant opportunities for the TGP to facilitate this hydrogen vision, either by blending with natural gas in the gas network, through export of high-hydrogen blend gas to the mainland via backhaul services on the TGP or through the supply of gas to produce a blue hydrogen blend via steam reformation.

Steam reformation is the cheapest, most efficient and most common method currently available, accounting for the majority of hydrogen produced in the United States annually.

The production of SynGas or synthetic gas, which consists of hydrogen produced from electrolysis combined with CO/CO₂ emissions produced by industrial facilities offers another viable hydrogen opportunity for Tasmania which could be readily transported to Tasmanian users by the TGP.



Dairy export

Tasmania has a strong reputation and comparative advantage in producing high quality dairy products, with gas the primary energy source used for processing.

There is growing demand for the export of these products, particularly in Asian markets.

While COVID-19 has impacted short-term demand, the forecast for Australian dairy exports was strong at the start of 2020, representing an opportunity for Tasmania to ramp up future production to capitalise on increased long-term international demand and the state's comparative advantage.



Spirit of Tasmania

While the planned replacement of the Spirit of Tasmania vessels has been delayed, initial design specifications confirmed the new vessels will run on a combination of Liquefied Natural Gas (LNG) and diesel.

An opportunity exists for the BOC Westbury plant to become the LNG refuelling station in Tasmania for the new Spirits, increasing utilisation of the TGP and creating ongoing local jobs.

In order to meet the LNG fuel requirements of the new Spirits, it is estimated the BOC Westbury plant capacity would need to be tripled, creating an expected output value increase of \$22m per annum once the vessels begin operation.

Tasmanian-based logistics company SeaRoad have successfully used LNG powered cargo ships for Bass Strait shipping since 2019.

Significant opportunities for export growth in the coming years... present opportunities for the TGP to further support economic recovery in the state, particularly with a focus on advanced manufacturing, mining, hydrogen opportunities and dairy export.





Supporting the community



The Tasmanian Gas Pipeline is proud to support a range of local community events and initiatives.

Launceston Junior Soccer Tournament

Devonport Cup Junior Soccer Tournament

Hobart Soccer Tournament

Lobster Ponds Haven in Flowerdale

Bushwatch in Northern Tasmania

Regional Womens Scholarship program at Australian Maritime College in Launceston and University of Tasmania in Hobart

Northern Tasmanian Junior Soccer Association junior girls' representative teams



Tasmanian
Gas Pipeline

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