

BIOENERGY AUSTRALIA SUBMISSION

Draft Tasmanian Renewable Energy Action Plan 2020

Bioenergy Australia (BA) is the national industry association committed to accelerating Australia's bio economy. Our mission is to foster the bioenergy sector to generate jobs, secure investment, maximise the value of local resources, minimise waste and environmental impact, and develop and promote national bioenergy expertise into international markets. Bioenergy Australia thanks the Tasmanian Government for the opportunity to provide a submission on the Draft Tasmanian Renewable Energy Action Plan 2020.

Firstly, BA would like to congratulate the Tasmanian Government on its ambition to become Australia's renewable energy powerhouse. Tasmania is uniquely positioned to achieve this goal and to set an admirable example for the rest of the nation. BA is also pleased to note the Department of State Growth is currently preparing a range of options in relation to expanding the domestic processing and bioenergy sectors. We encourage the Department to continue on this path and invite them to contact our team if there is any support we can provide. There may be value in reviewing our submission to the Bioenergy Roadmap, which can be found [here](#).

Whilst we acknowledge the Tasmanian Government has set some ambitious targets around generation of renewables, BA argues that the Draft Tasmanian Renewable Energy Action Plan is not ambitious enough, focussing too heavily on electricity and missing the abundant opportunities provided in the areas of heat generation and transportation fuels. According to the Australian Energy Update 2019 which uses data from 2017-18, renewable energy represented 42% of Tasmania's primary energy consumption with oil comprising 34%, gas 12% and coal 10%*. This data shows that if Tasmania is to be leading in renewable energy, it needs to decarbonise its gas network through the use of biomethane and develop a renewable fuels industry that converts waste and residue into fuels such as biodiesel, renewable diesel and ethanol. Doing so will allow Tasmania to achieve its stated aim of becoming a world-leading provider of clean, reliable and affordable energy, whilst simultaneously supporting the creation of local jobs and exportable product.

Bioenergy Australia proposes the Tasmanian Government strengthen its Renewable Energy Action Plan by:

- Expanding the Action Plan to adequately address decarbonisation of the transport sector and gas networks in Tasmania
- Driving the development of biomethane capture through establishing state-based targets for renewable gas, green injection tariffs and an accreditation program for purchase of renewable gas
- Supporting the development of industry-based energy innovation and bio hubs
- Continuing to fund the Department of State Growth, and dedicate resources to specifically develop a 2030 Tasmania Bioenergy Action Plan that could attract significant investment and provide substantial regional job opportunities.

*https://www.energy.gov.au/sites/default/files/australian_energy_statistics_2019_energy_update_report_september.pdf

We also invite the Tasmanian Government to join government departments in NSW, SA, QLD and WA in becoming members of Bioenergy Australia and benefitting from the connections and resources that membership can enable.

Each of these items will be explored in depth within this submission, along with a detailed analysis of the unique benefits that will be afforded Tasmania through investment in bioenergy, including: abundant industry and job creation, achievement of significant waste and emissions reductions and increased Tasmanian self-sufficiency and resilience.

Again, thank you for the opportunity to provide this feedback.

A handwritten signature in black ink, reading "Shahana McKenzie". The signature is written in a cursive, flowing style.

Yours sincerely

Shahana McKenzie, CEO Bioenergy Australia

BIOENERGY: MAXIMISING TASMANIA'S NATURAL ASSETS

Suggested alterations and inclusions for the Draft Tasmanian Renewable Energy Action Plan 2020

Expand the Action Plan to adequately address decarbonisation of the transport sector and gas networks in Tasmania

As outlined in the Tasmanian Department of State Growth's [Energy Strategy Issues Paper](#), electricity represents just 40% of Tasmania's total energy usage; the remaining 60% is comprised of transport and gas. Despite this, the Renewable Energy Action Plan focuses almost exclusively on renewable electricity. This represents a missed opportunity and a significant deficit in the current plan.

Bioenergy Australia encourages the Tasmanian Government to achieve its stated aim of becoming a world leading provider of clean, reliable and affordable energy by decarbonising Tasmania's gas network through use of biomethane and developing a renewable fuels' industry that converts waste and residue into fuels such as biodiesel, renewable diesel and ethanol.

Biogas can be stored locally and dispatched as peak power. Also, biogas can be upgraded to natural gas quality and injected into the gas grid to provide net zero carbon energy for gas consumers, industry, transport and electricity generation. This technology is well-established in Europe with over 1000 operational plants. Biomethane has the potential to rapidly decarbonise a number of otherwise hard-to-decarbonise sectors, simply because those sectors are already connected to existing gas infrastructure, including:

1. Industry – natural gas is widely used for industrial processes and biomethane is lowest cost option for most applications
2. Heavy transport – CNG is an established fuel used for many heavy vehicles across Australia. Batteries are not viable for heavy vehicles due to their range and recharging time. BioCNG from biomethane is available now, proven and well-established in Europe.
3. Dispatchable energy – gas is increasingly important to create a stable and affordable electricity system. Biomethane through existing gas connections to peaking plants can provide dispatchable renewable electricity when the sun isn't shining or wind isn't blowing.

Tas Gas are a BA member, as a local Tasmanian business with significant energy infrastructure investment in the state. Tas Gas's natural gas networks provide existing energy infrastructure which complement the electricity networks. These networks provide ample opportunity for decarbonisation to contribute further to the state's renewable energy targets via renewable gas, without the need to fully electrify which is not as efficient in both energy and financial terms for many industrial customers and the heavy transport sector.

Tasmania currently imports the vast majority of its transport fuel, which not only presents a security risk in times of crisis, but also results in a loss of potential economic activity. A strong biofuel industry can help diversify the sources of transportation fuels and decrease dependence on petroleum imports, which will reduce the risk of supply constraints during times of international or regional geopolitical upheaval. According to the QUT report ["Biofuels to bioproducts: a growth industry for Australia"](#), the implementation of a nation-wide mandate for 10% ethanol blending in petrol alone could replace about 18% of automotive gasoline imports annually and contribute to Australia's sovereign domestic fuel security.

Government policies are instrumental in supporting the biofuel industry by securing feedstock supply, infrastructure and logistics, promoting access to technology and early stage investment support and improving demand. Government procurement policies in particular are powerful levers in directing the energy and transport industry towards the country's sustainable resources. We note the intention to convert government fleet vehicles to electric but we encourage consideration of conversion to

Tasmanian produced clean fuels as a viable alternative. International programs supporting biofuels have proven to be particularly successful in reducing GHG emissions. As a reference:

- in 2010 California adopted a 10% reduction in carbon intensity by 2020 under the Low Carbon Fuel Standard (LCFS). Since it was adopted, the LCFS has reduced carbon pollution emissions in California by more than 30 million metric tons, equivalent to removing 6.4 million gasoline-powered cars from the state's roads in one year. The success of this policy has led to a new target of 20% reduction by 2030.
- The Renewable Energy Directive (RED II) sets rules for the EU for the years 2021-2030. Member States must require fuel providers to supply a minimum of 14% of the energy consumed in road and rail transport by 2030 as renewable energy with many member states currently deciding to significantly exceed the minimum target. Under the European Green Deal the EU will likely significantly strengthen its emission reduction targets, revising individual policy ambitions accordingly.

Bioenergy Australia is calling on the Tasmanian Government to implement a Clean Fuels Target for the State. This would drive the development of a new industry and attract significant investment in the State.

Drive the development of biomethane capture through establishing state-based targets for renewable gas, green injection tariffs and an accreditation program for purchase of renewable gas

The Tasmanian Government has an ambitious goal to increase the annual value of the agricultural sector to \$10 billion by 2050. To reach \$10 billion, the sector will need to grow at more than double the growth rate experienced over the past 20 years. Turning waste into a commodity and reducing waste management costs will help. In particular, the utilisation of organic waste to produce energy can play a central role in the national transition to a circular economy.

Natural gas can be replaced by biogas, which is a renewable, reliable and local source of energy. As described in the report "[Biogas opportunities for Australia](#)", prepared by ENEA for Bioenergy Australia, biogas represents a significant decarbonisation opportunity for the Australian gas and transport sectors. The report estimated that the biogas potential in Australia is 103 TWh (371 PJ), which is comparable with current biogas production in Germany. Australia's biogas potential is equivalent to almost 9 per cent of Australia's total energy consumption of 4,247 PJ in 2016-2017. Considering the current average size of biogas units in Australia, this could represent up to 90,000 biogas units.

Moreover, in 2015 the [CEFC report "The Australian bioenergy and energy from waste market"](#) estimated that the Australian bioenergy and energy from waste investment opportunity to 2020 was between \$3.5 billion and \$5 billion, with the potential to avoid up to 9 million tonnes of CO₂e emissions each year.

International demand for gas exports from Eastern Australia is continuing to put pressure on local gas supply and prices. Locally produced biomethane injected into the local distribution network can improve domestic supply whilst providing net zero carbon energy for gas consumers.

According to the Deloitte report "[Decarbonising Australia's gas distribution networks](#)", biogas is currently the cheapest option for decarbonisation of energy provided by gas networks. Current policies such as the Renewable Energy Target (RET) favour the use of biogas for electricity generation rather than injection into the gas network. However, enough biogas potential exists to meet all residential and commercial gas demand on the East Coast. The cheapest form of biogas feedstock (urban waste, livestock residue and food waste) is currently sufficient to meet around 14% of energy used from gas.

In addition, there are opportunities to look to invest in the decarbonisation of this sector. For example AGIG have recently undertaken a study with Deloitte on [Decarbonising Victoria's Gas consumption](#) and it was found that using renewable gas to decarbonise natural gas consumption in Victoria is 40% less expensive than full electrification.

Bioenergy Australia urges the Tasmanian Government to review what other regions are doing around the world. For instance, Copenhagen aims to become the world's first CO₂-neutral capital by 2025 through Green Gas (Biogas). Biogas is a proven technology which is widely adopted internationally. Global production of biogas accumulated to 352 TWh (1.27 EJ) in 2014, representing about 1.5 per cent of the global renewable energy supply. The biogas market in Europe, the leader in terms of production, has experienced a strong growth: between 2009 and 2015, the number of installations almost tripling. Out of the 17,662 biogas plants in Europe, Germany is home to 10,431 plants, accounting for more than 50 per cent of the biogas production in the region. The United States (US) is another major biogas producer. The US biogas market saw 2,200 biogas units in 2017. According to the American Biogas Council, the construction and operation of biogas plants in 2016 may have supported around 7,000 jobs.

In Australia, various organic feedstocks are used for biogas production. These come mainly from domestic and industrial food and garden waste, sewage sludge and agricultural waste, which includes piggery manure and food processing products (red meat processing, dairy, cheese whey, breweries and food waste).

A few Australian successful biogas projects are presented below:

- Jandakot Bioenergy Plant in Western Australia: the plant was commissioned in 2015 by Biogas Renewables for Richgro. With an installed capacity of 2MW for electricity and 2.2 MW for heat generation, Richgro benefits from more than A\$400,000 of annual electricity bill. By diverting waste from landfill, Richgro also earns additional income for its treatment. The bio-fertiliser product of biogas plant is blended with existing Richgro products, improving nutritional characteristics and value of their products. The facility has the potential to help save 142,772 tonnes of CO₂e over its lifespan of 20 years.
- ReWaste facility at Yarra Valley Water: the plant, located next to the existing Aurora sewage treatment plant, was built by Yarra Valley Water and came into commercial operation in 2017. With 1MW of installed electric capacity, the plant can supply the total electricity demand of the Aurora sewage treatment plant using only 30 per cent of the overall electricity generation. The remaining electricity production is exported to the grid. The plant can potentially produce digestate for agricultural use.

Copping (Tasmania) Bioenergy Facility: The Copping Waste Management Centre Bioenergy Facility was commissioned by LMS Energy and Southern Waste Solutions in 2019. The facility converts contaminated organic waste deposited at the Waste Management Centre into a source of reliable green energy. A 1MW Biogas generator utilises the captured biogas (over 5million m³ a year) to produce 8,500MW hours of base-load renewable electricity per annum. This is enough energy to provide power to 1,500 homes or 3,900 electricity users in the local community 24 hours a day, 7 days a week. From bioenergy activities alone, the facility also reduces over 40,000 tonnes of carbon (CO₂-e) from being emitted each year.

As recommended by Energetics in the report "[Renewable gas for the future](#)" for Energy Networks Australia, a target for the generation of renewable gas should be established and the ERF mechanism should be extended to a wider market such as biomethane produced from renewable sources.

A key support for the growth in Biomethane injection is a 'Green Gas' certification scheme currently being considered by other Australian States and Territories. These schemes have been established in a number of countries around the world including the [Green Gas Certification Scheme](#) in the UK. A

Biomethane producer is credited with a Green Gas certificate for biogas produced that can be sold on the open market. If injected into the gas network, it offsets traditional natural gas supply, and a consumer or business that is connected to the gas network can purchase these certificates to decarbonise its gas supply. This can be purchased either as required or as a 'Green Gas PPA' that can provide long term certainty while also underpinning investments in new projects. This allows the purchaser to meet their decarbonisation objectives by providing them with an alternative to electrifying and purchasing renewable energy which would often be significantly more expensive or unavailable due to electricity grid constraints. We would welcome collaboration on the creation of such a scheme.

Bioenergy Australia is calling on the Tasmania Government to consider state-based targets for renewable gas, green injection tariffs and an accreditation program for purchase of renewable gas

Support the development of industry-based energy innovation and bio hubs

Bioenergy is produced from waste materials such as agricultural and animal residues, as well as municipal and industrial waste. Therefore, bioenergy production delivers economic benefit from otherwise unusable resources and actively reduces landfill and other demands for waste storage or remediation. The 2018 National Waste Report shows that Australia produces 67MT of waste annually, with 13.8 MT being Municipal Solid Waste (MSW). The bulk of MSW currently goes to landfill, which can create poor environmental outcomes and greenhouse gas emissions.

A bio hub is a facility where councils and private business cooperate to recover the highest value from regional waste streams, offering opportunities for revenue generation and bioenergy creation.

Inputs can come from waste-water treatment plants, agribusiness, organic and municipal waste. Bio hubs support recycling waste into higher value uses and facilitate:

- A diversion of waste from landfill
- Generation of reliable and dispatchable renewable energy
- Production of non-fossil based fuels, bio-products such as chemicals, plastics and fertilisers
- Regional economic development and job creation.

In accordance with the waste hierarchy, waste should be recovered for its highest order use wherever it is economically feasible to do so. Bio hubs provide an opportunity for the scale required to be reached to ensure projects can be financially sustainable into the future. Policy interventions, such as an increase in the waste disposal levy to align with most other states at \$150/t, would encourage diversion of materials to bio hubs. Similarly, expanding waste collection to a minimum of three bins (organics, recyclables, residual waste) will support highest order use of waste and reduce the amount of waste that ends up in landfill.

Bioenergy Australia is calling on the Tasmania Government to implement a grants program to support the development of feasibility studies for the development of biohubs. The South Australian Government has led the way on these types of grants that have proven to be highly successful.

Continue to fund the Department of State Growth and dedicate resources to specifically develop a 2030 Tasmania Bioenergy Action Plan

Tasmania is proactively looking for ways to strengthen its future. Alongside the Draft Renewable Energy Action Plan, Tasmania has recently released white papers on [Growing Tasmanian Agriculture](#) and [Growing Tasmania's Forest Industry](#), and has released a [Tasmanian Wood Encouragement Policy](#) and a [Draft Waste Action Plan](#) and in the wake of COVID-19, has established a [Premier's Economic](#)

[and Social Recovery Advisory Council](#). Investment in a Tasmanian bioeconomy provides an unparalleled opportunity to support achievement of outcomes aspired to in each of these initiatives.

In addition to our suggested inclusions for the Tasmanian Renewable Energy Action Plan, we encourage the Tasmanian Government to continue funding the Department of State Growth to develop a team of staff driving the development of the industry in Tasmania. We also call on the Tasmanian Government to fund the development of a Tasmanian specific 2030 Bioenergy Action Plan to maximise the opportunities and drive investment and innovation in Tasmania's bioeconomy.

Specific to Tasmania, abundant feedstock exists in wood-based biomass residues which can be generated from both forest harvesting operations and wood processing at mills. The vast majority of woody harvesting residues from forestry operations are left on the ground to be burnt and/or left to decay over time. It is through the development of a State specific action plan that Tasmania can drive a new industry deriving value and developing jobs from these feedstocks.

Development of a Tasmanian bioeconomy will contribute substantial employment opportunities. As widely demonstrated by the results achieved internationally, the development of a strong bioeconomy can provide skilled employment opportunities to regional areas and stimulate economic development through the delivery of revenue streams outside of traditional agriculture, forestry and waste industries. The International Renewable Energy Agency (IRENA) reviews renewable energy and associated jobs on an annual basis: a [2019 review](#) shows the global employment in the bioenergy sector has substantially grown in the last few years, achieving 3.18 million jobs in 2018.