

# Develop your biomass project in an ideal environment

As part of Tasmania's transition to a more sustainable and diversified forest industry, opportunities exist for project developers and investors within the biomass and bioenergy industries.

Tasmania's abundant biomass resources, comprising forest biomass and agricultural residues, make the state an ideal location to develop opportunities, including:

- » biomass to heat projects
- » pellet production projects
- » biochar production
- » liquid biofuels.

## Key reasons for investing in Tasmania's biomass and bioenergy future

There is an abundance of suitable resources for biomass projects in Tasmania. A study by Rothe<sup>1</sup> has suggested that up to 3.3 million tonnes of biomass could be sourced, with the bulk coming from private plantation estates. In addition to this, there are substantial amounts of agricultural, aquaculture and municipal waste products that can be utilised for biomass and energy production.

The Tasmanian forest sector operates under well-established environmental standards, with native forest resources only harvested outside of extensive reserves systems designed to maintain environmental values. The sector produces high quality hardwood products including specialty timbers held in high regard by architects, craftspeople and artists.



Tasmania has a long-established legacy in forestry, agriculture, and resource processing. Community groups in the south (Huon region) and the north east (Dorset region) have been specifically established for the commercialisation of wood residue opportunities that can benefit regional communities.

There is a skilled workforce characterised by high quality and diverse capabilities, with an excellent industrial relations record. Tasmania has the second lowest total cost of employing labour in Australia and Tasmanian training providers work with local industry to ensure their training needs are met.

Tasmania has well developed road, rail, port, communications and energy infrastructure, which can be easily linked to any biomass or bioenergy development. There are frequent freight shipping services from Tasmania's major ports, and efficient services for bulk cargo. The Tasmanian Freight Equalisation Scheme provides financial assistance to shippers of eligible freight destined for Australian markets.

A well-established engineering sector is able to provide prospective biomass and bioenergy project developers with a range of services in the manufacture, installation, and maintenance of plant and equipment.

Tasmania is world recognised for its 'clean and green' status with the lowest per capita greenhouse gas emissions of any Australian state. Over 90 per cent of Tasmania's electricity is derived on-island from clean, renewable sources such as hydro and wind energy.





### Sustainable forest practices

Tasmania's forest industry has entered a new era with industry and conservation groups agreeing on natural resource management and the establishment of the Tasmanian Forests Agreement (TFA). The TFA aims to protect high conservation value forests and ensure sustainable wood supply to support the state's forest industry.

Tasmania's forests are appreciated for their environmental, social and economic values. In order to protect these values, a rigorous forest practices system regulates all operations in native forest, plantations, and threatened non-forest vegetation communities.

Tasmania's state forests are managed by Forestry Tasmania under a sustainable forest management system that meets the Australian Forestry Standard (AFS), which is recognised by the Program for Endorsement of Forest Certification Schemes (PEFC). Forestry Tasmania is also working towards Forest Stewardship Council (FSC) Certification.

The environmental standards applied to forest harvesting operation and processing in Tasmania are higher than those required by best management standards for bioenergy production in Europe, and fulfil the requirements of many European certification systems.

With the implementation of the TFA, more than 50 per cent of Tasmania's forests are now reserved and are unavailable for harvesting. Nevertheless Tasmania's potential future harvest of biomass for value-adding opportunities is still very high on a worldwide scale (see Figure 1, right).

### Tasmania's forest biomass potential

Tasmania has a well-established commercial forest estate and a strong history in investing in value-adding opportunities. About 70 per cent of this resource comes from private owned forest estates and 30 per cent from state owned forests. The forest biomass from wood processing is currently 0.4 million tonnes (green) per annum and it has been estimated that as much as 3.3 million tonnes (green) of biomass could be available for bioenergy projects.

Table 1: Potential annual supply of forest biomass for energy in Tasmania.

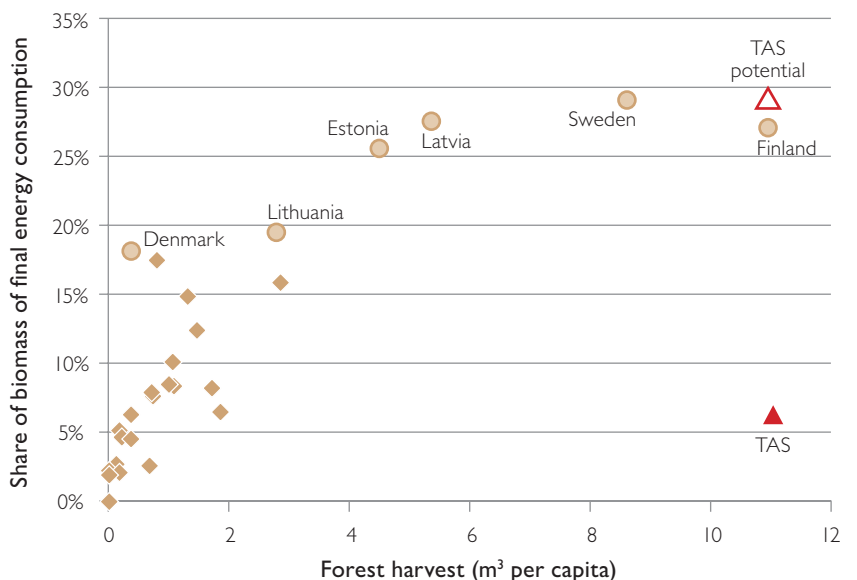
	Pulp grade total	Pulp grade for energy*	Residues for energy	Total energy wood		Energy equivalent
	M t (green)	M t (green)	M t (green)	M t (green)	M t (bone dry)	PJ
Native forests	1.1	0.5	0.5	1.0	0.5	9
Plantation hardwood	3.1	1.5	0.4	1.9	1.0	18
Plantation softwood	0.7	0.0	0.1	0.1	0.1	1
Wood processing			0.4	0.4	0.2	4
<b>Total</b>	<b>4.8</b>	<b>2.0</b>	<b>1.3</b>	<b>3.3</b>	<b>1.8</b>	<b>33</b>

\* 50% of hardwood pulpgade was assumed to be available for energy use, softwood pulpgade was assumed to be used for procession only. 1 petajoule = 1 000 000 gigajoules.

Rothe, A. 2013

Figure 1: Share of biomass energy of final energy consumption in the 27 countries of the European Union (EU27).

Red triangles show the current situation in Tasmania and the potential supply as estimated in this study. Data is sourced from the 2012 annual statistical report by the European Biomass Association.



Rothe, A. 2013



Photo: University of Tasmania



### **Biomass resource audit**

Tasmania has a wide range of organic wastes suitable for biomass and bioenergy developments including animal, agriculture and horticulture biomass, sewerage treatment waste, green waste, and other organic wastes.

A biomass audit of Tasmania has been undertaken to support developers wishing to explore opportunities based on these resources. A complete audit of the state's organic wastes, conducted by Dulverton Waste Authority, detailing sources, stockpiles, production per annum, and estimated future production has been compiled.

The project, being completed by the Tasmanian company Esk Mapping Pty Ltd, will identify locations, quantities, specifications and ownership of the full range of biomass materials with bioenergy potential.

### **The current biomass sector in Tasmania**

At present there are no operating biomass plants in Tasmania for the production of electricity using forest biomass. While Tasmania does make use of wood pellets for domestic heating at a small scale, these pellets are currently imported from Queensland or New Zealand. However, a small pellet plant using residues from a southern Tasmanian sawmill is being commissioned in order to supply the local market. Sawmill residues are typically used to provide steam and heat for kiln drying sawn lumber.

Additionally, Tasmania currently has a number of bioenergy projects which are under evaluation. Two current projects are based on anaerobic digestion of effluent and waste from food-processing facilities to produce methane gas for generating electricity and heat.

### **Research capabilities**

Tasmania has access to a range of national and global research and development organisations, through the presence of international corporations with operations in the state and links to national research facilities.

The National Centre for Future Forest Industries (NCFFI) has its head office in Tasmania, conducting research, development, innovation, extension and training for future forest products and industries. Its research activities range from plantation management systems and productivity through to sustainable forestry, cleaner technology and new forest economies including carbon and environmental services.

### **Tasmanian Government support for biomass developments**

On 2 May 2013, the Tasmanian and Australian Governments signed the TFA to support the forest industry to progressively transition to a more sustainable and diversified footing and to build regional economic diversity and community resilience.

This agreement supports the agreed position that key industry, union, community and environmental groups developed on a shared future for Tasmania's forest industry and environment.

As part of the implementation of the TFA, the Tasmanian Government has initiated a process to identify economically viable and environmentally sustainable solutions that address utilisation of both native forest and plantation residues arising from harvesting and processing operations. The Tasmanian Government will seek to assist parties that wish to develop and put these solutions in place.



Photo: Rob Burnett



## Useful contacts

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### Sources

I. Rothe, A. (2013). Forest biomass for energy: Current and potential use in Tasmania and a comparison with European experience. Report on the Sabbatical project. Weihenstephan University of Applied Sciences, Freising, Germany.

### An ideal investment environment

Tasmania's size, natural resources and environment deliver a business opportunity and lifestyle that other locations aspire to. Tasmania's industries are supported with well-developed transport systems, secure and reliable energy options, modern telecommunications and industrial land developments.

Tasmania has:

- » five major deep water ports
- » a railway network connecting all major ports, cities and some major resource areas
- » four major regional airports
- » renewable energy and natural gas networks
- » new industrial land developments
- » large-scale water projects.

### Investing in Tasmania

Invest Tasmania is the Tasmanian Government's investment promotion and facilitation arm, which provides free confidential services and professional advice to investors, including:

- » dedicated project teams and case management
- » planning pre-audits to support approval processes
- » connections with local industry and government departments
- » information on business opportunities, investment regulations and government assistance
- » insights on business costs, skills availability, taxation and research opportunities
- » expert advice in Tasmania's industry capabilities and strengths
- » site visits to identify suitable locations for your business
- » links with potential partners
- » connections with infrastructure and service providers
- » information on industry strategies.

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