# Renewable Energy


## Bioenergy

### Factsheet | Renewable gas

March 2023

Bioenergy is energy produced from organic matter. It can be produced from organic waste and residues of agricultural, industrial, municipal and forestry origin.

For example, crop wastes and remains, anures and sludges, rendered animal fats, used oils, food and garden waste, timber harvesting and processing residues, construction and demolition woody waste and residual municipal solid waste.

**ReCFIT (Renewable energy, climate and future industries Tasmania) is responsible for advising the government on the state's strategic direction on climate change, renewable energy growth and emissions reduction to help shape Tasmania's future while maintaining a secure, sustainable, and affordable energy system.**

Renewables, Climate and Future Industries Tasmania
**Department of State Growth**

Tasmanian Government

# Biogas - The Renewable Gas

Biogas is a methane-rich gas produced when organic matter is broken down by bacteria in the absence of oxygen. Biogas is made from organic materials such as agricultural and food processing waste, sewage and green waste such as food and garden organics.

Anaerobic digestors are enclosed structures where anaerobic break-down of organic matter takes place. They receive the organic waste and produce biogas. Biogas can be cleaned to meet natural gas standards, replacing natural gas in pipelines, vehicle engines or used behind the meter to produce heat, cooling, electricity for industrial processes, space heating and cooking using gas appliances.

## CASE STUDY

### About TasWater

TasWater, an incorporated business providing water and sewerage services to Tasmanian homes and businesses, sources, treats and delivers water, and collects, transports, and treats sewage and safely returns wastewater to the environment.

At 30 June 2022, TasWater employed 942 full-time equivalent employees and treated 53 gigalitres of sewage per year.

Prince of Wales Bay STP Biogas System

### Quick facts

- TasWater has 11 anaerobic digester sewer treatment plants that produce approximately 3 gigaliters of biogas per year.
- Biogas is combusted in boilers to heat the anaerobic digesters, which is necessary for optimum process conditions. In some cases, the biogas is utilised in cogeneration unit to produce both heat and electricity.
- The use of biogas prevents around 1 giga liters of fossil fuels being consumed, saving TasWater around $2 million in fuel costs per year and preventing up to 2000 tonnes $CO_2$ eqivalents from being emitted to the atmosphere.
- At Macquarie Point sewage treatment plant, biogas produced by sludge digestion is fuels a gas engine that generates up to 425 megawatt hours of electricity per year. The electricity is used onsite, providing approximately 50% of the sites electricity requirements.

Photo credits: Peter Mathew

## How can we help?

If you would like more information on bioenergy, including being linked to relevant expertise to explore a bioenergy opportunity, please contact ReCFIT Manager Bioenergy on bioenergy@recfit.tas.gov.au

More information is also available from:
https://www.stategrowth.tas.gov.au/recfit/future_industries/bioenergy