

Renewable Energy



Bioenergy Factsheet | Landfill biogas

March 2023

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

For example, crop wastes and remains, manures 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.

Landfill biogas

Landfill biogas is one form of bioenergy. Landfilled organic waste is decomposed by micro-organisms in the absence of oxygen, producing biogas.

Biogas is approximately 50 per cent methane, the same molecule as the fossil fuel, natural gas. Biogas can be upgraded to increase the concentration of methane by removing other gasses to leave biomethane.

Biogas and biomethane can be burned to renewably generate heat or electricity, replacing natural gas or Liquid Petroleum Gas, reducing fossil fuel use and greenhouse gas emissions.

When biogas or biomethane is used as a fuel to generate renewable electricity, methane is converted into carbon dioxide (CO₂). Methane's atmospheric warming potential is more than 28 times that of CO₂. Hence converting methane to CO₂ reduces greenhouse gas emission CO₂ equivalents by more than 95 per cent.



Landfill biogas can also be upgraded into biofuels to replace current transport fuels and further reduce Tasmania's greenhouse gas emissions.

CASE STUDY

About LMS

LMS Energy (LMS) is an Australian company experienced in bioenergy from waste. LMS owns and operates more than 60 biogas projects, including five in Tasmania. LMS works with councils and waste authorities who operate landfills to capture and use landfill biogas.

LMS designs, installs, and operates biogas capture systems and manages the renewable electricity and carbon product processes and sales.



Quick facts

- LMS captured nearly 21 million cubic metres of landfill biogas during 2021-22 in Tasmania. This reduced Tasmania's greenhouse gas emissions by approximately 200,000 tonnes of CO₂ equivalent per year, equivalent to taking 81,000 cars off the road.
- LMS estimates its Tasmanian biogas reserves to be 12 petajoules (PJ) for 2022-2040. This equates to an average of over 10% of Tasmania's gas pipeline network delivery across that period.
- LMS currently uses its harvested biogas to generate renewable electricity in Tasmania. It provided 27GWh in 2021-22, enough to power 3,600 average households.
- LMS' biogas operations directly employ five full-time positions in Tasmania.

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