Mount Alexander Bioenergy from Waste

What is the Project?
Mount Alexander Sustainability Group (MASG) is involved in a project that seeks to develop a *Bioenergy from Waste* facility in the shire to process local and regional organic waste streams.

In 2018, MASG completed a Feasibility Study to establish a business case for a bioenergy from waste facility which confirmed viability and identified a number of potential locations, the DON Smallgoods site in Castlemaine being the standout. MASG's resulting commercial agreement with DON Smallgoods has secured the company as the purchaser of energy generated from the plant, as well as a source of some (20 per cent) of the waste to process. In total, the plant is expected to drive an emissions reduction of 88,000 tonne of CO2 e per annum.

Other local and regional businesses will also be able to benefit from the plant through sustainable and environmentally friendly means of disposing organic waste.

What will the Facility do?
The facility will embrace a circular economy approach with closed loop and zero waste design principles. As such, the facility will accept wet organic waste and use bacteria to break it down into biogas (principally methane).

This gas will be on sold to DON Smallgoods, displacing gas they currently take from the gas grid. The proposed biodigester system (Anaerobic Digester) follows very common design principles adopted by regions across Europe and the UK.



Example of a typical bioenergy site

What are the benefits?
A bioenergy from waste plant offers a number of compelling benefits over traditional means of disposal of organic waste. Currently in Castlemaine, local organic waste goes to landfill and then leaks methane (a potent greenhouse gas) into the atmosphere over time. A bioenergy plant diverts this waste away from landfill, captures the biogas emissions to generate clean renewable energy, thereby reducing reliance on traditional fossil fuel derived emission producing energy sources.

In summary, benefits include:

- Reduced risk of organic waste disposal environmental impact (odour, noise, waste to landfill, greenhouse emissions, biosecurity), contributing to the circular economy and Mt Alexander Shire's ZNET goal of achieving Zero Net Waste by 2030
- Creates clean renewable energy which displaces a significant amount of fossil fuel energy
- Cost avoidance to the general community from waste disposal, which are likely to only increase over the coming decade
- Reduces DON Smallgoods' environmental footprint and helps to ensure the future viability of the region's largest employer
- Creates local jobs, with the site to generate 22-30 jobs including construction in its initial phases alone
- Opportunity for by-product streams to assist agriculture productivity. For instance, a carbon neutral soil product can be manufactured locally using waste streams from the plant, replacing emission intensive synthetic fertilisers that are currently used.

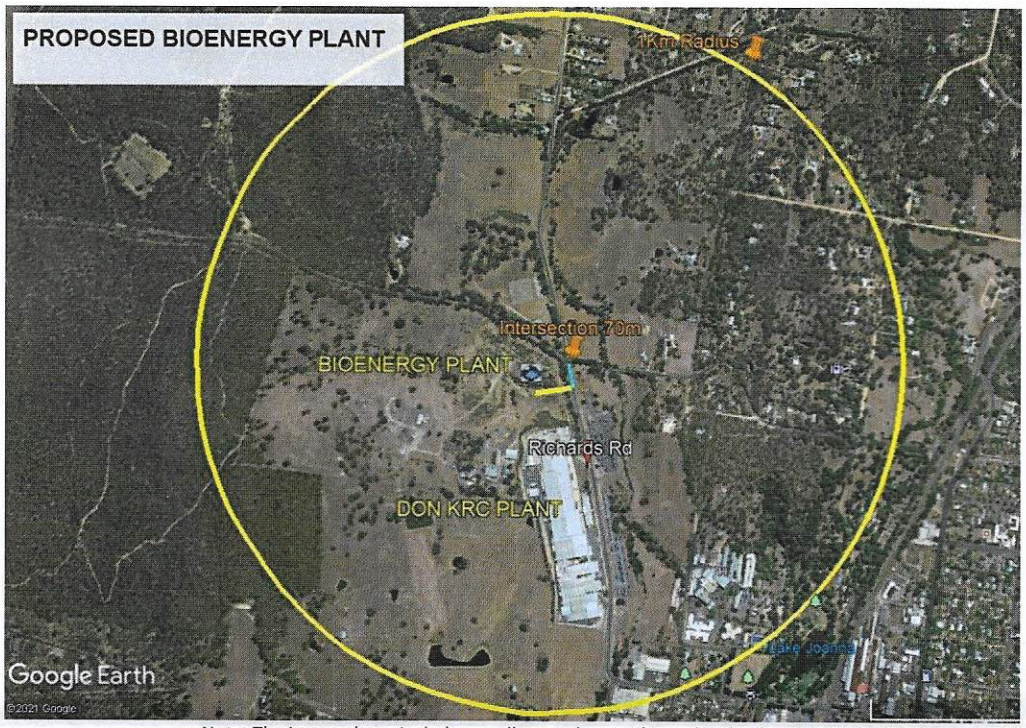
Mount Alexander Bioenergy from Waste

What are the operational considerations for the community?
An analysis of the planned development's operations will include potential impacts to air, noise, water and land.

The proposed facility will operate in an enclosed negative pressure building that prevents release of emissions and odours. The movement of waste to and from the plant will be consistent with stringent environmental regulations for moving organic materials.

There will be a slight net increase in truck traffic with 2-3 trucks per day delivering waste to the facility, however, it is estimated there will be a counter reduction in current truck traffic from the DON Smallgoods plant due to a decrease in waste being trucked from the site to landfill.

What would we see?
It is proposed to establish the facility North of the DON Smallgoods plant, adjacent to Richards Road and set back from the roadway by a screen of trees.



Note: The image above includes a yellow circle at a 1km radius to illustrate the scale.

What will MASG get out of this?
MASG will continue to receive a dividend from the ongoing operation of this facility, which will enable the engagement of other sustainability projects in the community while contributing to a cleaner local environment with reduced environmental risk.

What's next?
The pre-construction phase is currently underway, which will ensure the design of the bioenergy facility meets regulatory and environmental requirements as well as community expectations. As part of the pre-construction phase, significant contributions have been received and committed. However, MASG is seeking further funding from investors, for the planned facility to reach construction phase.

MASG is conducting a community briefing for the neighbourhood at **5:30pm on Thursday 3rd June 2021, - Join Zoom Meeting**
https://us06web.zoom.us/j/87329772657?pwd=VWVCRDVIL1pobWxseWdVVmNNWVo4UT09

Meeting ID: 873 2977 2657
Passcode: 462278

We welcome your attendance to learn more about the planned project and to discuss any questions.

Engagement with the community and stakeholders will be ongoing. For more information, please visit https://www.bioenergy.net.au/ or contact MASG directly via info@masg.org.au.