

power up  
your  
waste



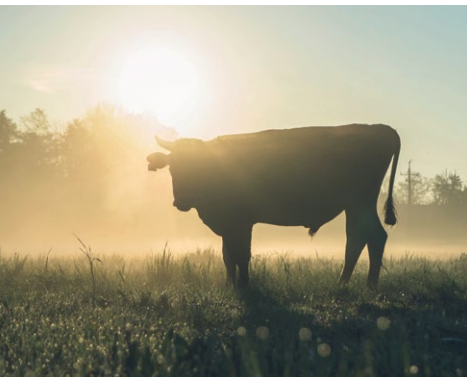
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# POWER UP YOUR WASTE

## PARTNER WITH US FOR ZERO WASTE LOWER UTILITY COSTS AND LOWER CO<sub>2</sub> EMISSIONS.

Bioenergy systems offered by Energy360, collect and utilise local food and other organic waste streams to reduce greenhouse gas emissions and produce valuable renewable energy for natural gas replacement.

Additional outputs include fertiliser and soil conditioner, which assists to improve local food security, carbon capture and reduce synthetic fertiliser run-off which can create blue-green algae. A system with additional capital investment can also capture carbon dioxide for horticultural use. A bioenergy system will also enable Local Councils to be at the forefront of the war on Climate Change through definitive engagement with the Circular Economy.



## REDUCE & IMPROVE

Food processing plants along with agricultural operations have high utility costs and low profit margins. Their waste streams have a high biological load and are often costly to dispose of. A bioenergy system will reduce the biological load in the final waste stream, generate biogas and provide your business with renewable energy and fertiliser.

The renewable energy will substantially offset natural gas or electricity requirements. Current clients are achieving energy savings of over 25% per annum with capital payback periods of less than 5 years using onsite generated bioenergy. Energy360 works with clients to design a quality, site specific system which will maximise each individual renewable energy opportunity.

For seamless delivery, Energy360 has partnered with industry leading companies to bring you the complete, turnkey solution. This is our point of difference in the marketplace. We will deliver the entire project enabling you to focus on your business.



## FINANCIAL BENEFITS

The financial benefits of your bioenergy system are quantifiable, peak use flexible and behind-the-meter.

Behind-the-meter generation gives you more control of your energy usage and provides a means to offset a portion of your grid demand for either gas or electricity. Control of the energy enables flexible power generation in peak demand periods, similar to capabilities offered by batteries, without the high price tag.

For example, the biogas can be buffered during low power demand times and released to generate electricity and heat in periods such as shoulder peak between 6pm and 10pm when solar power is limited or during hours of darkness to power irrigation pumps.

The fertiliser output can be used on arable land as a high quality soil conditioner utilising the full benefits of carbon sequestration providing supplementary earning and saving capabilities.

In addition to electrical generation, bioenergy can also be used directly in a boiler, replacing natural gas to generate heat or steam. This is the most capital cost effective method for using bioenergy. A current boiler needs a small modification and the ongoing boiler maintenance profile remains virtually the same.

## QUEENSLAND LOCAL COUNCIL INSTALL BIOENERGY

A south central Queensland Local Council is already backing the use of local horticultural waste by supporting an Energy360 small commercial scale bioenergy project. The project will create electricity for Council use enabling storage to power electric (EV) waste recovery vehicles. It will also produce 3,000t natural fertiliser to support new, lowimpact horticulture requirements and soil carbon sequestration for approximately 5,000ha per annum.

This type of bioenergy project has a foot print of approximately 40m x 50m and can be installed and operating within 6 to 9 months post planning permission. The bioenergy plant will create 3 new local jobs, has low odour and is visually pleasing. The organics waste collection is completed by an established local provider and brought to the facility where a gate fee can be charged.

## ANNUAL COST SAVINGS

EXAMPLE CAPEX	(+/-30%)
Tank & civil works	\$0.9M
Tank accesories and operational technology	\$0.4M
Biogas to generator	\$0.6M
Output Total	\$1.9M
Power generation (variable between waste streams)	100kW
Annual revenue from EV charging	
Annual revenue from fertiliser	
Simple payback	3/4 years
CO <sub>2</sub> e abated	2,660 t



## HOW DOES IT WORK?

Biogas is the by-product of a biological process called anaerobic digestion – the collection and decomposition of organic matter in an oxygen free environment. Biogas is captured throughout the anaerobic digestion process. Biogas is predominately methane and can be used as a replacement for natural gas in a boiler or a generator.

Bioenergy systems have been used around the world for decades and the process is well proven and understood. It is a simple and valuable method of capturing the carbon energy within the waste stream, allowing the separation of the energy from the essential nutrients, enabling the nutrients to be reinstated as fertiliser and the energy to be used for heat and power. For scale, Germany has over 10,000 bioenergy plants installed, Australia has 240, mostly landfill sites.

## BENEFITS OF A BIOENERGY SYSTEM

- › Food and agricultural waste a part of the circular economy
- › Organic (non-synthetic) fertiliser will enhance soil carbon capture
- › No phosphate run off from fertiliser which reduces blue-green algae
- › Renewable electricity
- › Naturally derived carbon dioxide for industry use
- › Prevents carbon dioxide emissions



## AFTER SALES SERVICE AND SUPPORT

Energy360 provides local after sales service and support for all elements of a bioenergy system. Remote monitoring for all elements is a recommended option to enable a timely response.

## NEXT STEPS

Contact us, Energy360, to take the first steps to increasing your profitability by decreasing your electricity or gas costs, waste disposal cost and improving your soil with an organic fertiliser.



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