



Utilitas Def. Utility, Usefulness

AIG Environmental Solutions Seminar

Minimising Waste: Reducing your waste levy exposure

Thursday 6th October 2011, Brisbane, QLD

The Emerging Opportunities for Organic Waste to Energy

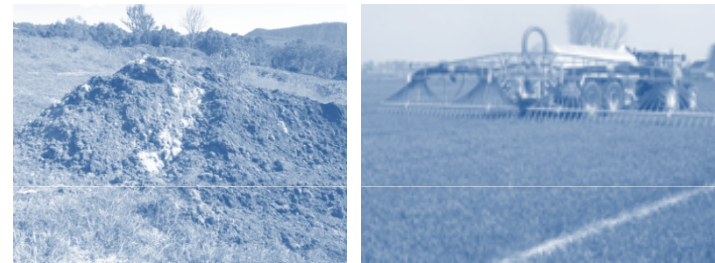
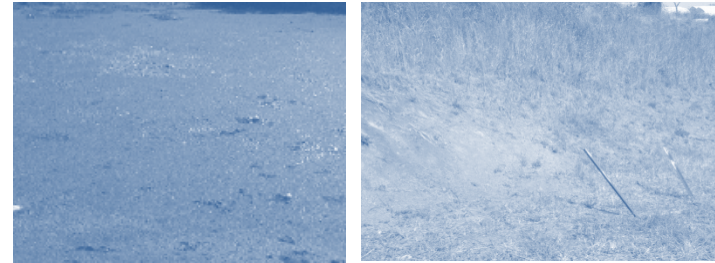
Fiona Waterhouse, CEO, Utilitas Pty Ltd





The Opportunity

- Every day humans generate in the order of 1kg of organic waste from the food we eat ourselves and the processes involved in growing, harvesting, processing, producing food.
- At the same time energy prices are escalating
- Environmental expectations increasing



METERING & OTHER CHARGES				
	Quantity	Units	Unit price \$	Amount \$
Retail Service Fee	35	days	110.0000	40.00
Meter Charge	30	days	295.0000	88.50
Total				\$129.00
			new charges	\$5,478.46
			GST	\$547.84
			total new charges	\$6,026.30





Anaerobic Digestion (AD)

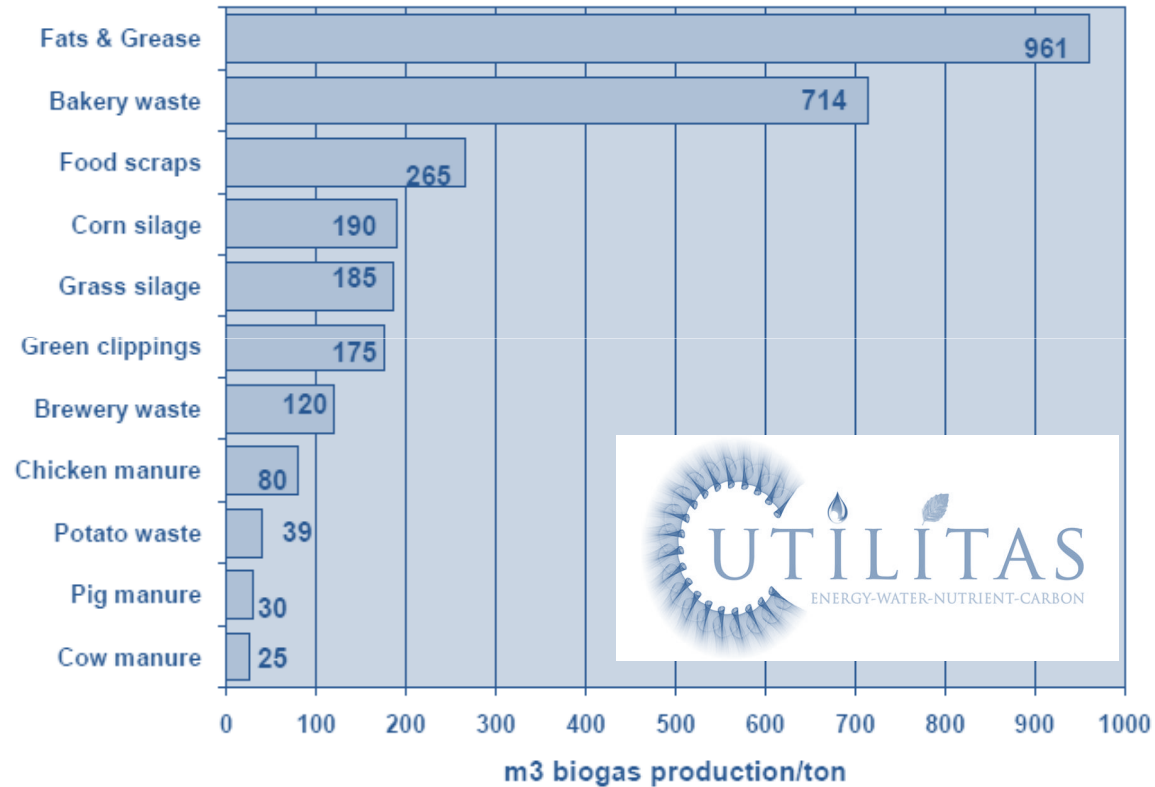
- Energy and nutrient rich fertiliser can be affordably, reliably and safely recovered from organic waste streams
- Using well proven Anaerobic Digestion (AD) Processes (also called “**biogas**” plants)
- Used widely in other parts of the world
- Reduce costs and risks e.g. exposure to waste levy



The Opportunity

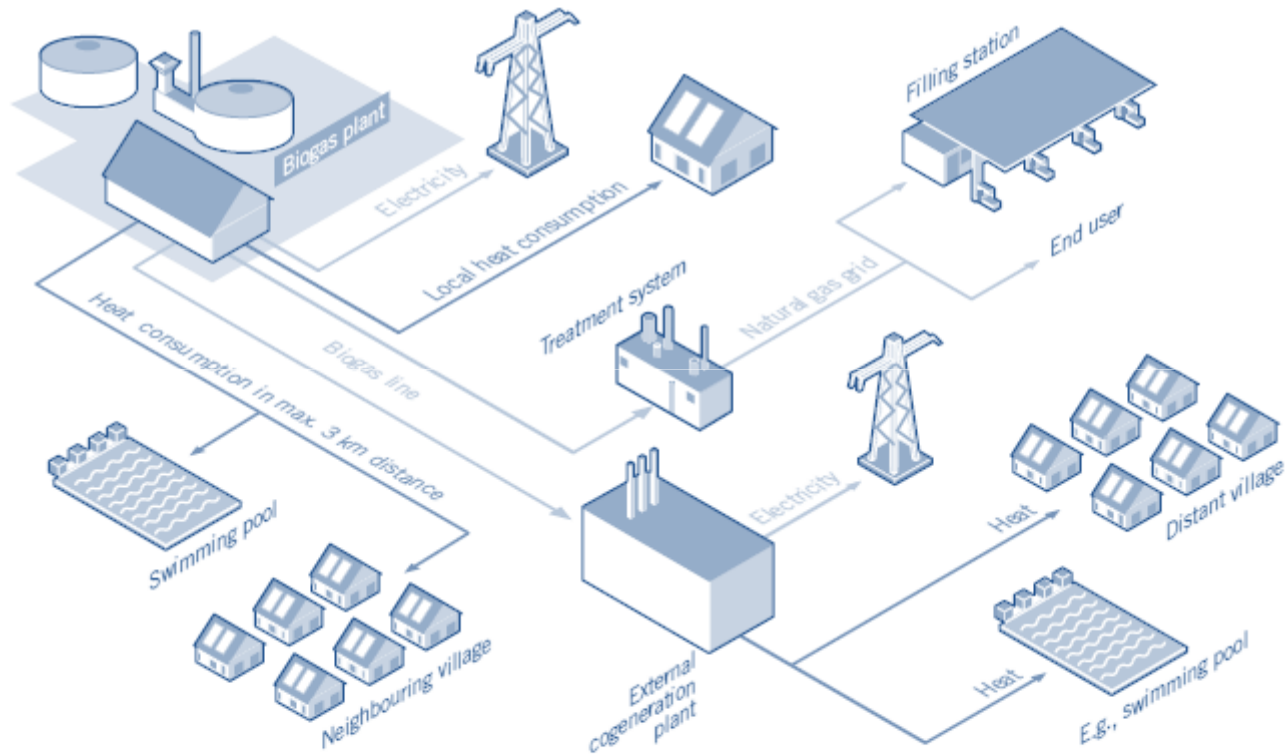
- With a capital investment in the order of \$3 million, 70 tonnes of organic waste can be safely and efficiently used to:
 - Replace about 700 kilowatts (kW) per hour of coal fired electricity,
 - Replace approximately 15tonnes per day of imported chemical fertiliser
 - Recover about 60kl per day of reclaimed water and
 - Reduce greenhouse gas emissions by 77 tonnes CO₂-e per day, equivalent to removing 6,622 cars of the road each year.

Energy Factors for Wastes



Source: [Basisdaten Biogas Deutschland](#), März 2005: Fachagentur Nachwachsende Rohstoffe e.V.

Biogas Plants as Infrastructure



All-rounder biogas: Depending on the users of heat or the type of use, biogas can serve a number of purposes.

Source: RENI Renewables Insight - Energy Industry Guides (2011) Biogas and all-rounder, New opportunities for farming, industry and the environment 2nd fully revised edition

Scale of the Opportunity

Australia currently has 27 biogas projects 47MWe



Anaerobic Digestion is a standard part of the WWTP treatment train. Biogas is captured to use to help heat the process balance typically flared. 24 of the

24 Sewage Biogas Plants Connected to the grid



Gympie, Biomass Combustion

Earthpower Camellia, Sydney
300t/day 3.9MWe food waste
(Decommissioned for 6-12mths)

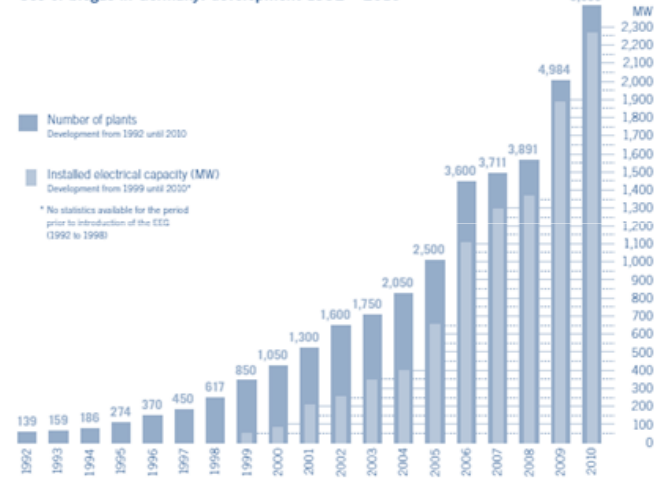
Murray Goulburn Co-op Leongatha Milk
Solids Processing (UASB) 0.76MWe

Berrybank Piggery, Ballarat
(15000 pigs) 0.23MWe

3 Food & Ag Biogas Plants Connected to the grid

Germany has 6000 biogas projects 2200MWe

Use of biogas in Germany: development 1992 – 2010



Source: RENI Renewables Insight - Energy Industry Guides (2011) Biogas and all-rounder, v opportunities for farming, industry and the environment 2nd fully revised edition

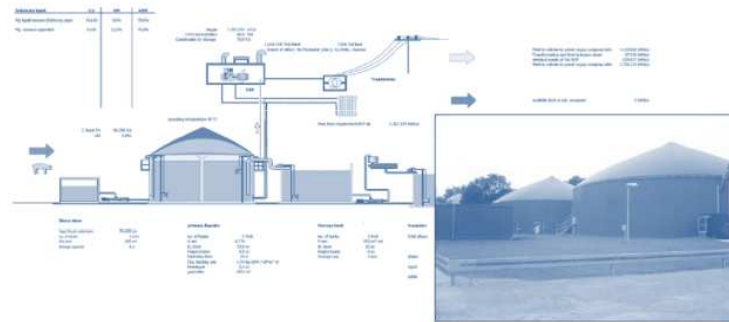
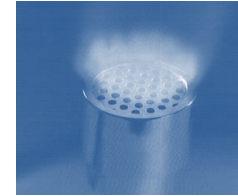
Germany has a target of 12,000 project by 2020
They are building on average 130 plants per month

Source: <http://www.cleanenergycouncil.org.au/cec/resourcecentre/plantregistemap>



Specialist Biogas Asset Developer

Liquid fertiliser/recycled water



Direct biogas use



Bedding/Soil Conditioner/Fertiliser Combined Heat Power (CHP)



Biogas Upgrade for Transport Fuel

Current Projects

1. "Pig Power"

Utilitas is working with Australia's second largest piggery, carrying out the detailed design of a 800kWe biogas project to convert their effluent into electricity for on-site use and export, producing a high quality soil conditioner for sale to the local fertiliser market and recovering wastewater for reuse within their existing system. The project will generate Australian Carbon Credit Units (ACCUs) under the Australian Government's Carbon Farming Initiative, Large Generation Certificates (LGC's) under the Renewable Energy Target and will be a registered Greenpower project.



2. "Urban Sustainability"

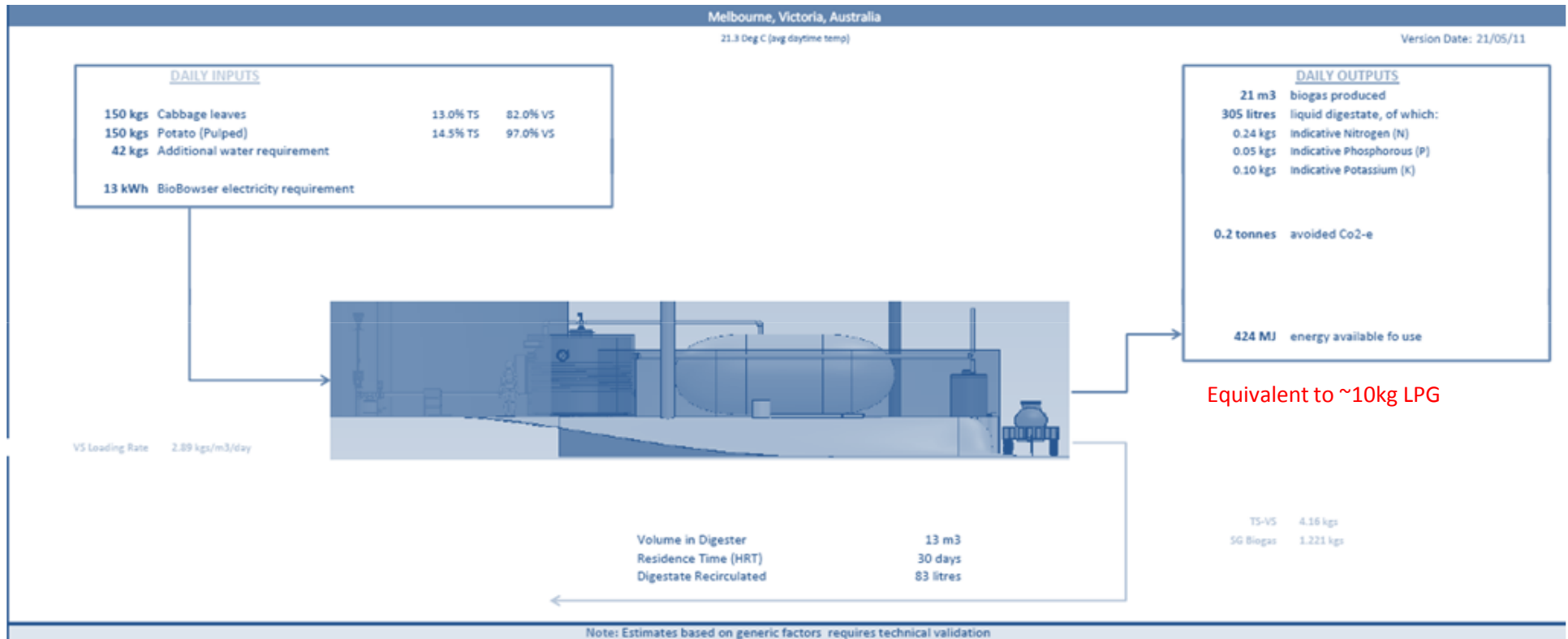
Utilitas has also partnered with CERES to develop a biogas digester at its suburban Melbourne site, with the aim of demonstrating the recycling of food waste into fertiliser and harvesting of methane for energy generation.



Plus a pipeline of other projects under development

- Diaries
- Piggeries
- Poultries
- Wastewater Treatment Plants
- Food waste Facilities
- Source Segregated Organic Waste

Case Example: Melbourne 300kg of food waste per day



Equivalent to ~10kg LPG

Turning this



into this



plus this



saving this





Contact Us

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Thank you for your time
Any questions?