

Waste to Profits

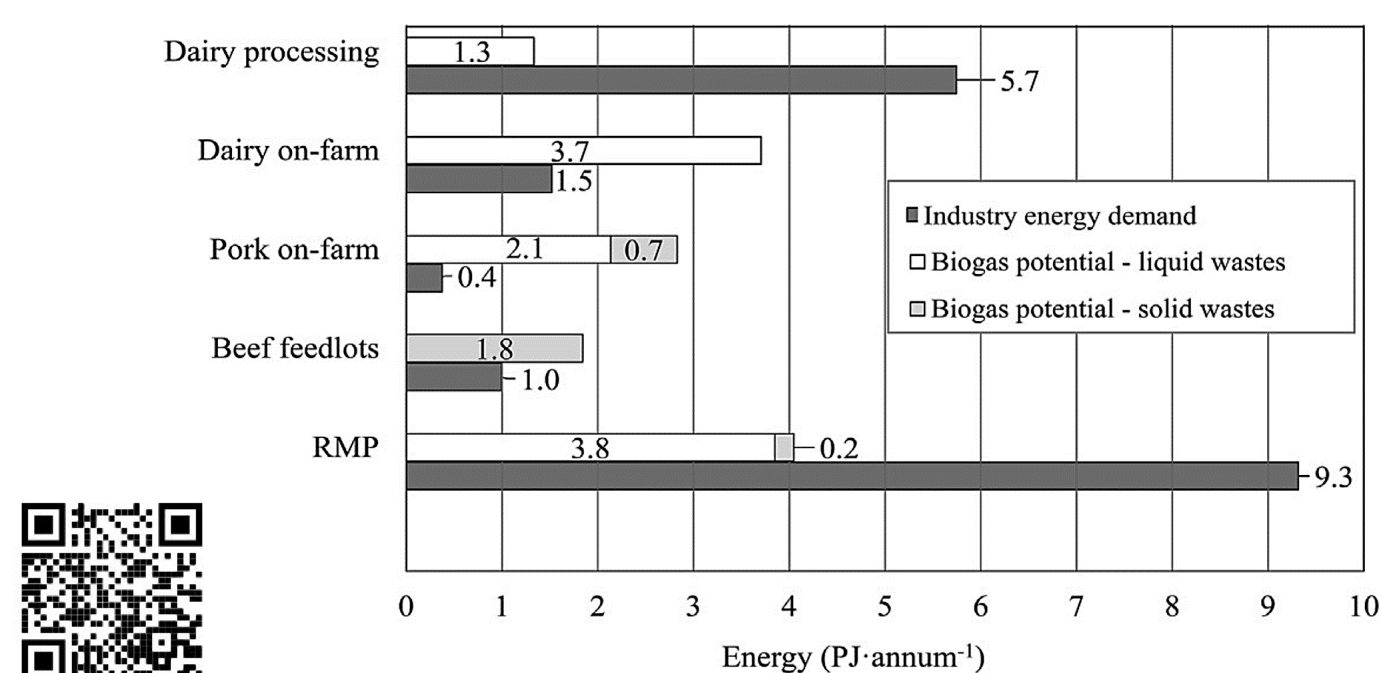


Background

- On-farm and intensive red meat, dairy and pork production and their associated processing sectors produce significant quantities of waste.
- Understanding waste amounts and composition is important to fully realise revenue opportunities for bioenergy and bioproducts from wastes.
- Agricultural recycling of wastes as biofertilisers is often a preferred environmental option, logistical and practical difficulties can limit its on-farm beneficial reuse.

Waste identification, analysis and assessment

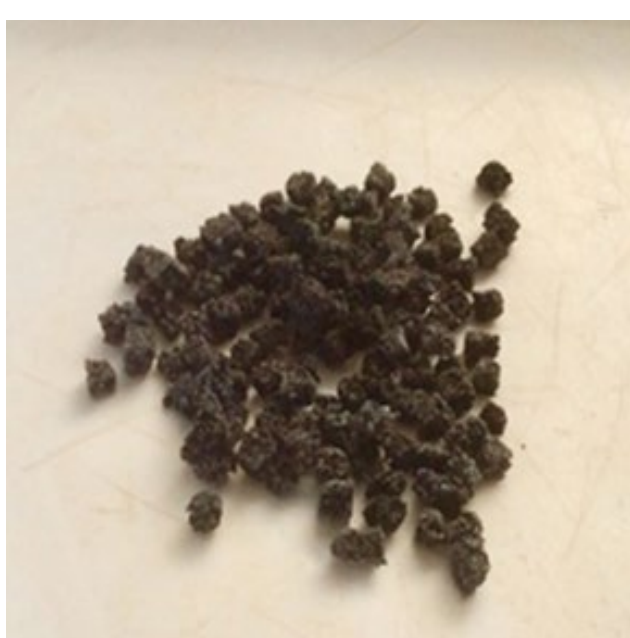
- Research collated information on waste types, amounts and bioenergy potential.
- Techno-economic opportunities were assessed.
- Milk processing wastes were characterised.
- A user-friendly online techno-economics assessment tool called ADAdvisor was developed, and collaboratively shared with industry partners.



Business: Economics & Returns on Investment	
This is based on a discount rate of 5% and purchased equipment (i.e. Anaerobic Digester) being replaced every 20 years.	
Economic return on investment	
Simple Payback Period	3.74
Discounted Payback Period	4.24
Net Present Value (NPV)	\$2,234,859
Benefit/Cost	2.39
Internal Rate Of Return	26%

Biosolids-derived organomineral fertilisers

- Research reviewed regulatory and product requirements for biosolids-derived fertilisers and novel organomineral fertilisers (OMF) were formulated.
- A range of OMF products were tested in the glasshouse using grass established in pots and in field conditions using wheat.



Outcomes

- Industry partners have begun using the ADAdvisor tool to assess business opportunities for bioenergy recovery from wastes.
- Soil application of OMF over 3 consecutive years showed dry matter production (grass) and yield (wheat) can be matched or increased with biosolids or OMF compared to mineral or synthetic fertilisers. Heavy metals in soil did not increase, with low risk of transfer to the food chain.