

## Biogas bonus – NZ is slow to get the message

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**New Zealand is slow to grasp the potential to cut greenhouse gas emissions and other pollution by turning waste into biogas, says a company providing the technology all over the world.**



The Sydney plant processes 80,000 tonnes of food waste a year

### Canadian-owned ADI Systems specialises in managing waste water and organic material.

And the best thing, says the company's Dunedin-based electrical design and commissioning engineer Steve Brewster, is to turn the waste into something useful.

In Sydney, for example, the company designed and built a plant that turns 80,000 tonnes of food waste a year into 3 megawatts of electricity and a mountain of dried fertiliser pellets.

And in Brisbane, it built a plant that turns dairy waste into enough biogas to almost replace the natural gas used in the company's boilers.

There have been projects in New Zealand, too, going back 30 years to a biogas plant at AgResearch's Invermay research station, which is still producing gas to run the farm's utes.



Steve Brewster

### Uptake slow

But, says Brewster, New Zealand has been slow on the uptake when it comes to biogas.

"I do think biogas, or anaerobic digestion, is vastly under-utilised in New Zealand, and that it offers so much that we could use," he told Carbon News.

"Not just energy, but also greenhouse gas reductions, renewable energy, landfill-use reduction, fertiliser, and odour and vermin reduction."

Brewster says there are three ways to use organic waste. The first is as a heat supply.



**Invermay research station in Otago has been running farm vehicles on its own biogas for 30 years**

“Most industrial sites need heat, so using organic waste to produce heat, and replace other fuels like natural gas or coal, makes sense,” he said.

The second option is to use gas given off by the anaerobic breakdown of the organic waste to drive turbines to generate electricity.

“This requires more capital, but it’s definitely worth it,” Brewster said. “For example, we built a plant that produces four mega-tonnes of electricity from cassava waste.”

### **Costly option**

And the third option is to purify the biogas to produce methane.

“This is the most capital-intensive option, but it’s also the one that gives you the best return,” Brewster said.

He believes this is the area in which New Zealand should be looking to invest.

“I think that eventually we will see our cars running on electricity, and many of our heavy vehicles – buses, milk tankers, rubbish trucks – on methane from biogas,” he said.



**The Fortex meatworks' biogas plant in Mosgiel was ADI's first industrial-sized digester**

"It's the most economic way to use it, and it makes a lot of sense for councils, for example, to be looking at it."

Not many are, however, possibly because many smaller authorities they think they can't afford the capital cost. But with co-operation, says Brewster, communities could establish and operate efficient and effective biogas plants.

## Collecting stations

"Forty per cent of waste in New Zealand is putrescible and could be converted to biogas," he said.

Brewster envisages community collecting stations – possibly based at local sites like an abattoir, dairy factory or landfill – which organic matter can be delivered to and turned into biogas and fuel.

Most of the international interest, he says, is coming from countries like Thailand, Indonesia, India and Papua New Guinea, which can see the potential to lower energy costs by converting waste to biogas.

There is also some interest from the agricultural sector, as it starts coming under pressure to limit its environmental impact.

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