Regions could use food waste for fuel

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Murdoch University researchers are touting biogas from small-scale food waste digesters as a source of renewable energy for rural and regional communities.

Dr Jaya Nair said the biogas could be used for heating, cooking or lighting.

"Small-scale anaerobic digesters could be particularly attractive to regions not connected to the electrical grid and would be less expensive than a household-level generator," she said.

"In rural communities, a typical family might produce two kilograms of food waste per day. Through anaerobic digestion, this could equate to one and a half to two hours of heating.

"We estimate that a domestic digester could provide approximately 20 per cent of the total gas requirements of a household, with the most efficient use being for cooking."

Dr Nair said Australia currently deposits an average of 2.1 million tonnes of food waste into landfills every year, which not only consumes valuable land but also results in emissions of greenhouse gases.

The study looked at various scales of food digester systems, including households, community and commercial scale and larger production.

Researchers considered biogas use in lifestyle villages, university residences, regional motels, restaurants, prison facilities, mine sites and grocery distributors.

While capital and operational costs currently make the technology generally prohibitive on a large scale, Dr Nair said household and small-scale systems could feature simple and inexpensive constructions.

"In smaller communities, the technology does not need to be complex and the system can be managed by the community or households," Dr Nair said.

"These digesters have been used successfully in many small communities in developing countries such as India, Vietnam and China. Given recent developments in waste management, climate change mitigation policies and renewable energy goals, the technology has great potential for Australia."

'Potential for energy generation from anaerobic digestion of food waste in Australia' by Xian Fang Lou, Dr Jaya Nair and Professor Goen Ho is in *Waste Management & Research*.

More information: wmr.sagepub.com/content/31/3/283

Provided by Murdoch University

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