Its time we made use of our gas

Dr. Peter Wylie 22/12/07

Natural gas or methane, is now used in more than 7 million vehicles around the world. Australia sells cheap gas to reduce air pollution and the cost of fuel in cities like Bangkok, at the same time as importing expensive petrol.

An increasing amount of methane is now being produced as 'biogas' in cities around the world. It is produced naturally from the decomposition of organic materials in landfills, and from the processing of sewage and animal waste. In Denmark for example, a large amount of fuel is now produced from pig manure.

A U.S. Department of Energy study on biomethane production from wastes indicates the potential to replace the equivalent of 40 billion litres of petrol in the USA, which would reduce greenhouse gases by 580 million metric tons of CO2 per year.

As well it would reduce the amount of emissions of methane which are now occurring naturally from landfills, sewage plants and intensive animal production. Because methane has a greenhouse gas warming potential some 21 times that of carbon dioxide, this is an important step in preventing global warming.

There are now many landfill gas electrification projects around the world, but using the fuel for transport is more efficient than using it for electricity. There is a trend towards and building plants to produce biomethane to run buses and other vehicles. A biogas plant using organic wastes is now operating in Madrid, while in Malmo, Sweden, the city buses run on biomethane produced at its local sewage treatment plant.

In Australia it has been estimated there are 23 million tonnes of waste put into landfill each year, and 8 million tonnes of this has potential as fuel. This has the energy equivalent of 4 m. tonnes of coal and savings of 9 m. tonnes of greenhouse gases. However, natural gas is cheap in Australia and the cost of sorting waste and setting up biomethane production makes it expensive compared to the non-renewable natural gas. A significant carbon tax or government subsidy is needed to encourage more biogas production.

Methane or natural gas is one of the cleanest and cheapest fuels available. It is used to power buses in Brisbane and increasing numbers of vehicles around the world to reduce air pollution in big cities. Natural gas also reduces greenhouse gas emissions by 25%, equivalent to making a V6 car as miserly as a hybrid. As more gas is produced from renewable sources, the greenhouse gas savings will increase.

Methane is a high octane fuel which can be used in both petrol and diesel engines. It is stored in cylinders at higher pressures than liquid petroleum gas (LPG) currently used in motor vehicles in Australia. People are concerned about the safety of compressed gas, but in fact is less likely to explode than petrol, because it is lighter than air.

Other hurdles to the introduction of gas are the cost of converting cars to gas and a loss of boot space. Vehicle manufacturers are developing clever solutions which do not take up boot space with a big gas tank, but instead fit several small cylinders in unused spaces. More and more vehicles are being sold in other countries with factory fitted natural gas fuel systems.

Australia is running out of oil and the cost of imports is likely to reach $2 billion a month by 2018. It does not make sense to export cheap gas while we are importing expensive oil and we have a much cleaner and more environmentally friendly fuel in our own backyard.
In the future there is the potential for biomethane, made from organic waste, sewage sludge and animal manures to supplement the use of natural gas and make a contribution to reducing greenhouse gas emissions.