WASTE TO ENERGY

Many communities now consider waste materials as potential resources and they invest in systems and infrastructure to capture the benefits waste can bring. New technologies and management practices have been developed over the last 10 years to meet the demands of this modern regard for waste.

In order to recover resources and miminise waste, communities are investigating techonology-based resource recovery (instead of the traditional landfill-based waste disposal).

Three related issues have coincided to bring waste management into special focus: favourable economic conditions are driving consumption and disposal; numerous pressures surround the availability of future landfill capacity; and promising new options are emerging for treatment and beneficial use of some waste resources.
There is a lot of interest from the community in alternative technologies and practices. One example of these is solid waste to energy.

Thermal Technologies
Incineration – These mature technologies recover the calorific energy contained in residual wastes. Heat and steam for electricity generation is produced through mass combustion of the input waste. The products can be used for local heating and for energy input to the grid.

Pyrolisis/Gasification – in this group of technologies, waste materials are heated in the absence of oxygen to produce a liquid fuel (pyrolosis oil) which can then be separately gasified in the presence of oxygen to produce a fuel gas (syngas). This pyrolosis oil or syn-gas can in turn be used to power industrial engines producing energy for input to the grid, or as a chemical feedstock.

Waste melting – Theses technologies use high temperatures to oxidise or reduce waste, and melt the residual material. The output is heat and fuel gas which can be used to power industrial engines producing energy for input to the grid.

Reference:
Report of the Alternative Waste Management Technologies and Practices Inquiry, 2000, Tony Wright – find it at www.epa.nsw.gov.au/waste/inquiryexecsumm.pdf

MORE INFORMATION

- www.phys.murdoch.edu.au/acre/refiles/index.html – The Australian Co-operative Research Centre for Renewable Energy Ltd