

DECOMPOSITION



Decomposition involves the breaking down of matter, with rates of decomposition varying depending on the material's chemical make up. For example, while a banana peel can take up to 2 years to breakdown, leather will take fifty years and a plastic bag can take anywhere from 20-1000 years (Clean Up Australia). Large-scale decomposition of wastes (such as at landfill sites) produces the hazardous mixture of methane and carbon dioxide, creating greenhouse gases. These gases are also highly flammable and may explode if not properly managed.

The main components of landfill gas are by-products of the decomposition of organic matter, mostly from domestic waste, by the action of naturally occurring bacteria. 40% of Australia's total waste stream is food wastes, creating nearly one tonne of greenhouse gas emissions at our landfill sites each year (Australian Greenhouse Office).

The collection of methane at landfill sites can be harnessed and used as an energy source. This helps to combat greenhouse gas emissions by preventing their release into the atmosphere, as well as providing an alternative to coal powered electricity. Issues affecting landfill gas collection are the waste composition (for example, organic matter and moisture content and pH); landfill size, age and the method of daily cover of the waste.

Households can reduce their level of waste going to landfill, in particular greenhouse gases emitted, by reducing waste levels in the first place and by effectively composting or worm farming food and garden wastes at home. In doing so, greenhouse gas emissions can be significantly lowered and the lifetime of your local landfill can be lengthened due to less waste needing to be buried.

Reference:
Clean Up Australia, available at www.cleanup.com.au/

WHAT CAN I DO?

- Reduce your rubbish, guided by the principles of *'avoid, reduce, reuse, recycle'*.
- With food waste making up a significant proportion of landfill, ask your local council whether they have initiatives that deal with organic waste. Most councils also offer information on home composting techniques.
- Visit your landfill site – ask your local council how it is managed.

MORE INFORMATION

- www.earthpower.com.au has developed Australia's first 'Food waste to Energy' facility in Sydney.
- www.greenhouse.gov.au/gwci/food.html- The Australian Greenhouse Office information on effective and efficient composting
- www.ssn.flinders.edu.au/geog/geos/treloar.htm- harnessing landfill gas in Adelaide