

CASE STUDYBOB; he shreds, he blends,
he turns waste into a resource

Sustainable waste transformation company Geocycle has developed Australia's first hybrid 'superblender' to shred solid hazardous wastes contained in small containers, metal drums or small skips.

The process captures and cleans the scrap metal from the containers and drums for recycling, and blends the hazardous solids with waste solvent and oils for use as a liquid alternative fuel in cement kilns.

The superblender which uses an auger to shred a wide variety of solid wastes including hardened paint, inks, resins, greases, filter cakes and powders, is expected to divert 6,000-7,000 tonnes per annum of hazardous waste from landfill by 2012.

The project received \$600,000 from the Victorian government's HazWaste Fund as well as \$1.8 million in Federal funding through the Australia-Pacific Partnership on Clean Development and Climate.

According to Tim Sheldon-Collins, Geocycle's Marketing and Sales Manager, 'where our process differs from others is that it has the capability to handle a wide variety of waste types received in anything from little bottles and tins to 1.2 m³ skips. It also has the unique ability to separate scrap container metal for cleaning and recycling by means of magnetic conveyors.'

Before developing the new superblender, Geocycle tested the processes on site for two years with a smaller 2.5 cubic metre unit.





CASE STUDY

Alternative fuels cut fossil fuel use

Geocycle is owned by Cement Australia, and for 15 years its primary business was making alternative fuel from waste materials which were previously emptied out of drums. This fuel reduces the amount of fossil fuels used by Cement Australia in its kilns and provides a safe, sustainable disposal solution for the waste material.

But changing market dynamics, including a drive to reduce waste to landfill and an increase in Victorian landfill levies, meant that far more waste material was becoming available for processing. Geocycle undertook market research which convinced the company that developing a 'superblender' was both possible and economically viable.

'While making the fuel is still our primary objective, producing the scrap steel is a real environmental bonus,' Mr Sheldon-Collins says.

The superblender will realise significant sustainability benefits by 2012, including:

- About 16,000 tonnes of CO₂ saved.
- Between 6000 and 7000 tonnes of high hazard waste diverted from landfill annually.
- Net annual energy savings of around 198,000 GJ.
- More than 1000 tonnes of steel recovered.

The superblender, nicknamed 'Bob' (Big Oversize Blender) by Geocycle staff, has also solved OHS issues of potential exposure to chemicals through the manual emptying of waste materials from drums.



Future plans for BOB

Since completion of commissioning in June 2009, more than 14,000 drums and 880 pallets of smaller containers have been processed by BOB, representing over 3,000 tonnes of hazardous waste diverted from landfill over the first 10 months of operation. This has resulted in a 30% increase in the production of high viscosity fuel, taking expected kiln usage in 2010 to around 15,000 tonne, which will provide energy equivalent to a similar quantity of coal. The project's success was recently recognised with receipt of the 2010 Victorian Premier's Sustainability Award in the Products or Services category. The future looks promising with fine tuning of the process expected to ramp-up waste throughput to around 25 tonnes per day by the end of 2010, positioning BOB for early achievement of the 6,000-7,000 tonne target.