

Glass

- The manufacture of glass uses large amounts of energy in the extraction and transportation of the raw materials needed to make glass and - because these materials have to be heated together to a very high temperature – during processing.
- The combustion of these fossil fuels produces carbon dioxide - a greenhouse gas.
- Glass makes up about 3% of the average household rubbish bag in Canterbury.

Reuse

- Returning bottles to the retailer and receiving the deposit in return used to be common practice. However, as manufacturing plants became larger and decreased in number, bottles had to be carried further for refilling. This removed much of the financial and environmental advantages associated with returnable bottles.
- In addition to this, consumer preference turned to the convenience of non-returnable bottles.
- To be reusable and withstand wear and tear bottles have to be much thick and heavy. Bottles using modern closure methods are produced with relatively thin glass and do not cope well with the processes required for reuse.
- There are also significant costs associated with cleaning bottles to standards required for safe reuse.

Recycling

- Old glass is easily made into new glass jars and bottles or into other glass products like fibreglass insulation. Glass jars and bottles can be recycled over and over again.
- Broken glass ('cullet') is mixed with raw materials. These are fired at temperatures of 1100 – 1590°C.
- The glass is 'conditioned' before entering a bottle forming machine.
- The glass is annealed (toughened by heating) to allow even cooling of the whole bottle or jar. After cooling the bottles pass through electronic quality control inspection machines, which automatically detect faults. Containers are packed in pallets and distributed.
- Using recycled glass to make new glass products requires 40 percent less energy than making it from all new materials. It saves energy because crushed glass, called cullet, melts at a lower temperature than the raw materials used to make glass.
- After accounting for the transport and processing needed, 315kg of CO₂ is saved per tonne of glass melted.
- Recycling two bottles saves enough energy to boil water for five cups of tea

BUT

- Glass in NZ is very hard to recycle, and cheaper to make it new. A huge amount threatens to be put into landfill (**not** in Christchurch or Waimakariri District).
- Some glass is sent to the only recycling plant in New Zealand, based in Auckland. Because so much glass is imported into New Zealand there are quotas on how much can be sent for recycling.
- This, and the very high cost of transport of glass to Auckland from the South Island, make glass recycling a very difficult prospect.
- In addition, glass ends up broken into small pieces so it is difficult to sort out the wrong types of glass; a whole container of glass can be rejected if it contains 5% of the wrong type of glass. That is why it is so important to put out only food and beverage containers for kerbside recycling. No drinking glasses, window glass, crockery, light bulbs or any other sort of glass.
- TerraNova is developing alternative uses including using crushed glass in pool filtration and sand blasting (already both commercially available products), and undertaking research into uses in glass as a ripening agent in vineyards and as a sport turf dressing.

Information from:

<http://www.recycleglass.co.nz/recycling.htm>

<http://www.recycle-more.co.uk/nav/page524.aspx>

www.wasteonline.org.uk