

APPENDIX 1



OPTIONS PAPER – ALUMINIUM CANS

1. ALUMINIUM CAN PROPERTIES

Aluminium cans are one material in the waste stream where recycling is clearly viable. Recycling of aluminium cans produces significant savings in energy and resource costs. Cans are simple to crush and bale, making transport of this material affordable. For these reasons, aluminium cans generally have high return rates in places with established recycling systems, as well as in places where the recycling sector is informal.

The recycling process requires the material to be heated to 700 degrees celcius in order to change the form into liquid. This material is then cast into ingots and delivered to rolling mills.

The energy savings are significant when compared with producing aluminium cans from virgin resources. Making 20 new cans from recycled cans uses the same energy it takes to produce 1 can from raw materials. In other words, it requires less than 5% of the energy required in using raw materials. This in turn saves millions of tonnes of greenhouse gas emissions. To illustrate the energy saved, Visy Recycling estimate that by recycling 1 can, you save enough energy to run your television for 3 hours.

Recycling one kilogram of aluminium can save up to 8 kilograms of bauxite, four kilograms of chemical products and 14 kilowatt hours of electricity.

The purchase price of recycled aluminium beverage cans is based on the monthly average price of aluminium at the London Metal Exchange less the cost of reprocessing into new aluminium beverage cans.

Along with aluminium cans, aluminium foil can also be recycled in the same process.

2. QUANTITIES

It is estimated that approximately 108 tonnes per annum of aluminium cans is in the waste stream. This estimation is based on an average between 4 data sources. These were the import statistics data for aerated sweetened waters and beer, recycler interview data, the Nuku'alofa 2004 household waste audit (TSWMP, 2004), and the 1999 waste audit (Sinclair Knight Merz, 1999).

There is no data available on aluminium foil, although this product is commonly used here in Tonga, particularly in umus.

3. ALUMINIUM CAN RECYCLING DEVELOPMENTS IN TONGA TO DATE

Recycling of aluminium cans is well established in Tonga, with a number of companies involved in the crushing and export of this material for sale.

GIO Scrap Steel Recyclers collect aluminium cans and crush them for export to New Zealand. They purchase the cans at 60 seniti per kilogram and have placed recycling bins at a number of public places including schools.

Atenisi Institute have been involved in recycling for a number of years as a means to raise additional funds for their university (which receives no core funding from the Government or religious institutions). Some years ago they purchased a can crusher using loan funds, which they then repaid through sale of materials. Aluminium cans have been a core component of their business, along with other non ferrous scrap metals. Currently, almost all of the cans are sourced through purchase from the salvage workers at the Popua Landfill Site. As the

closure of this site is imminent, it is important that Atenisi now plan and re-focus their business direction.

Waste Management Limited collect recyclable materials from the waste stream, but currently do no processing or exporting of aluminium cans. They are on sold to GIO Scrap Steel Recyclers for 60 seniti per kilogram.

Crystal recycling do not have any processing infrastructure, but export aluminium cans to New Zealand as a part of mixed container loads of ferrous and non ferrous scrap metals.



GIO Crushing machine used for baling cans as well as other materials



Atenisi Institute's materials prepared for export, including crushed aluminium cans

4. REDUCE

A reduction in aluminium cans is not advisable in preference to other packaging materials. The more imports packaged in aluminium cans as opposed to PET plastic, the better, as the material is easily recycled.

As for the cans, foil is also to be recommended as an easily recycled commodity, particularly in comparison to polystyrene take-away food containers. Rather than reducing use of foil, it should be encouraged as a preferred packaging option.

5. REUSE

Aluminium cans are not reusable, as there is no ability to reseal the container once open. Foil has a limited ability to be reused.

6. RECYCLING OPTIONS

6.1. OPTION 1: EXPORT

Currently, all aluminium cans are exported to various scrap metal recycling companies in New Zealand. The price is high enough that export is viable, and although there are always market fluctuations, generally the commodity will always remain sought after, and therefore the market price adequate.

Alternative export destinations such as Asia have not been investigated at this stage. One market option is exporting to Samoa, to Tuigamala Sua, who is a scrap metal buyer based in Samoa exporting to various markets in Asia. Whilst in Tonga recently, meetings were set up with each of the recyclers to discuss opportunities. However, his price for aluminium cans was not competitive. It is worth keeping in regular touch with this buyer, and checking his buying price as an alternative option for the recyclers.

6.2. OPTION 2: OTHER USES

With the export of aluminium cans such a stable market, there is not the imperative to develop local solutions to recycling aluminium.

7. PROPOSED APPROACH

There is little that needs to be done in this market, as the recycling activities are well established. In the proposed public recycling depots, the aluminium cans will provide the saleable commodity that will supply community groups with a financial incentive to convince their communities to utilise the depots.

8. BIBLIOGRAPHY

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