

# The Environmental business case for buying recycled mixed plastic products

## *Recycled mixed plastic products are durable and versatile with many environmental benefits.*

### **Benefit 1 – Keeps valuable materials out of landfill**

Some plastics, such as milk bottles, are well sorted in the recycling process and are able to be reused in similar applications as their original use. However, many end up as 'mixed plastics' with even more being sent to landfill.

Those products diverted from landfill are collected and baled as 'mixed plastics'. These products can include everything from film packaging, hard hats and play equipment, to toys and oil drums.

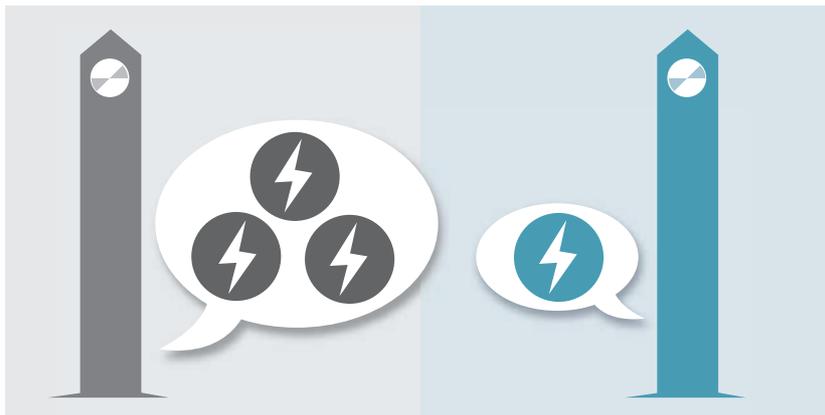
Transforming these products into recycled mixed plastic products saves valuable resources from landfill and gives them a new life.

Making and selling recycled plastic products reduces the need for landfill. It also reduces the costs and impacts associated with transporting waste landfill and landfill levy costs.

### **Benefit 2 – Saves virgin resources and energy**

Making products from recycled mixed plastics reduces our reliance on non-renewable resources.

For example, every kilogram of high density polyethylene (HDPE) plastic diverted from landfill represents 1.4 litres of petrol that does not require processing while a virgin plastic bollard uses more than three times as much oil to make compared with a recycled plastic one.



It takes **three times** as much embodied energy to make a **virgin plastic** bollard over one made from **recycled plastic**

### **Benefit 3 – Reduces the need to cut down trees**

If you buy durable hardwoods there is a risk that they are sourced from rainforests that are not sustainably managed. This may mean deforestation and loss of habitat for endangered species. When you use recycled plastics you can be confident your organisation is not contributing to these negative environmental impacts.

## Benefit 4 – Is less toxic than treated timber alternatives

Recycled mixed plastic products are an excellent substitute for copper chrome arsenate (CCA) treated pine products.

Since 2006, there have been concerns over the toxicity of CCA treated pine which have led to restrictions on its use. CCA treated timber cannot no longer be used in applications where there is “frequent or intimate contact”.

This includes playground equipment, picnic tables, handrails, decking boards, garden furniture and exterior seating.

Disposal of CCA treated timber is also problematic, being treated as toxic waste in many jurisdictions, and is also unsuitable for the recycling stream (chipped) or to be used as fuel.

Recycled plastic products contain no toxic substances making them a safe and practical alternative.

## Environmental benefits of recycled plastic compared to other materials

| Material                     | Durability     | Environmental positives...  | ...and negatives   |
|------------------------------|----------------|---|--|
| Recycled plastic             | <b>HIGH</b>    | Keeps material from landfill, saves virgin materials, saves trees | Non-structural, embodied energy                                |
| CCA Treated pine             | <b>HIGH</b>    | Source timber renewable   | Toxicity during production, use and disposal. Harmful to users |
| Aluminium                    | <b>HIGH</b>    | Durable   | Energy intensive   |
| Hardwood                     | <b>MED</b>     | Renewable, reasonable life  | Destructive forestry practices                                 |
| Reinforced concrete          | <b>MED</b>     | Tree free, durable  | Resource intensive to produce                                  |
| Steel                        | <b>LOW/MED</b> | Tree free, durable if galvanised                                  | Energy intensive   |
| Non- treated softwood (pine) | <b>LOW</b>     | Low embodied energy, renewable                                    | Low durability   |

## Recycled plastic and chemical additives

Recycled mixed plastic products are a low toxic alternative to other materials in their typical application.

Ultra violet (UV) stabilisers are the main chemicals added to recycled mixed plastic and are used to help them withstand the impact of the sun.

The most effective UV stabilisers are hindered amine light stabilisers (HALS). Unlike earlier UV stabilisers, their effectiveness does not diminish over time and HALS are less likely to leach from the product.

One HAL-based UV stabiliser, commonly used in recycled mixed plastic, has been classified as food safe by the United States Food and Drug Administration (FDA) in certain applications. This provides a good indication of the relative safety of the additive.

These resources have been developed by ECO-Buy with the support of the Australian Packaging Covenant, Zero-Waste South Australia, and Sustainability Victoria in consultation with users and suppliers of recycled mixed plastic products.

**For further information contact ECO-Buy <http://ecobuy.org.au/contact/>**