Australasian Bioplastics Association

Inquiry into Waste Generation and Resource Efficiency
Productivity Commission

13th February 2006

Summary.
The Australasian Bioplastics Association (ABA) submission is brief, describing in general terms the contributions bioplastics can make towards reducing the amount of waste deposited to landfill and the resource efficiencies possible by making plastic products from bioplastic materials based on renewable resources.

The Australasian Bioplastics Association (ABA) has been established to represent the interests of suppliers, converters and users of bioplastics in Australia and New Zealand. Current members include those supplying, converting and selling bioplastics and products made from bioplastics. As defined by ABA, a bioplastic is a material which has properties similar to conventional plastics, is produced using renewable resources including starch, vegetable oils and cellulose derivatives to as great an extent as possible and is biodegradable and compostable to the toughest world standards, for example EN13432.

Bioplastics.
The key characteristics of bioplastics and their potential contribution to reduced waste generation and increased resource efficiency can be summarized as follows.

1. Lower greenhouse gas contribution.
Generally speaking, the production of bioplastic resin and finished products produces less greenhouse gases than if the same product was made from conventional petrochemical plastics.

2. Renewable resources.
Petrochemical plastics are produced from oil and gas feedstock, both of which are finite resources. As a percentage of overall oil and gas consumption, plastics consume a small component, but nonetheless they do consume this valuable and irreplaceable resource. Some current bioplastic materials are almost completely made from renewable resource, whereas others still include a nonrenewable resource component. As the technologies develop, increasing levels of renewable resources are being utilized.

3. Agricultural products.
Bioplastics are based on agricultural products which can be grown in many climates. Opportunities exist for the agricultural industry to benefit from producing the feedstock for bioplastics, whether corn wheat or potatoes starch, vegetable oils or timber industry byproducts.

4. Organic recycling and waste disposal.
A large component of household and commercial waste is biodegradable. Only when that biodegradable fraction is diverted from landfill to composting or anaerobic digestion can we hope to approach zero waste to landfill targets. Bioplastics are specifically designed to be biodegradable and compostable. A bioplastic product which has been tested and certified to the requirements of the EN13432 protocol or similar, will break down to carbon dioxide and water within a commercial composting cycle, leaving no residue other than carbon biomass. The products of biodegradation are carbon dioxide, water and residual carbon biomass, the same as for other vegetable or organic matter. There is no toxic or polymeric residue. Bioplastic bags are used for the collection, transport and disposal of food and yard waste to commercial composting, with the bioplastic material biodegrading at the same rate and to the same extent as other organic components. Bioplastic items can be disposed of into the same collection and organic recycling stream. The products of organic recycling through composting are returned to the soil and absorbed in growing more crops.

5. Litter.
There is no single solution to the problems of litter. Bioplastics should no more be discarded carelessly into the litter stream than should conventional plastics but it is difficult to imagine we will ever completely eliminate accidental and deliberate littering. If an item is likely to find its way into the litter stream, production of that item using a biodegradable bioplastic can help to reduce visible pollution as well as injury and death to marine and terrestrial wildlife.

Production and use of bioplastics is more advanced in some other parts of the world than in Australia. Factors like population density, limited waste disposal options and concern about using finite resources have led to a wider use of bioplastics in Europe particularly, but they are increasingly being adopted in many developed and developing nations.