

Submission

No 3

## INQUIRY INTO MUNICIPAL WASTE MANAGEMENT IN NSW

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## **Ausasia Link Pty Limited**

### **NSW Standing Committee on Public Works Inquiry into Waste Management Practices**

14<sup>th</sup> February 2006

#### **Summary.**

Ausasia Link Pty Ltd (“Ausasia”), which trades under the name BioFilm in Australia and New Zealand, is a partner of BioBag International AS (“BioBag”) of Norway. BioBag is the world’s largest producer devoted entirely to production of biodegradable and compostable films and a pioneering world leader in the use of bioplastic in efficient recovery of organic wastes. The major use of the products is collection of organic wastes. Ausasia and BioBag intend to build a film production plant in Australia within the next 12 months.

Ausasia has made submissions to the Productivity Commission but as a NSW based company wishes to make similar submissions to this Inquiry. Our submissions are confined to the issue of the development of new technology and industries.

#### **Bioplastics.**

MaterBi from Novamont SpA, the bioplastic used by Ausasia Link, is made principally from renewable resources, chiefly corn (maize) and/or potato starch. As use of MaterBi rises in Australia Novamont hopes to produce the polymer in Australia using Australian raw materials. Novamont has commissioned a LCA, which shows significant benefits of MaterBi over its life cycle.

Thus use of MaterBi films has significant potential benefits in reducing greenhouse emissions, in supporting Australian agriculture and import substitution.

#### Organic waste collection

BioBag and its partners worldwide are leaders in the use of bioplastics in recovery of

kitchen organics at source. This is done by using the characteristics of MaterBi to obtain effective collection rates. **In some communities over 90% of available household organics is collected with very low contamination.** By using ventilated bins and highly breathable MaterBi bags to collect the waste the organic waste breathes, avoiding anaerobic conditions and mould formation and losing weight through water evaporation. This has the following beneficial effects:

- Householder co-operation
- Better hygiene in the home and for collectors
- Fewer odours and flies
- Reduction in weight of waste matter to be transported with consequent energy savings
- Low contamination rates
- Easier processing to compost

The same principles can be used in commercial kitchens.

There are substantial benefits from use of this method of collecting organics:

- Considerable reduction in waste to landfill leading to much lower generation of greenhouse gases.
- Lower transport costs
- Compost produces excellent results as a soil conditioner and fertilizer
- Compost improves soil structure and conserves water
- Composts reduce the need for pesticide use

Currently in NSW, Port Macquarie-Hastings Council is intending to introduce collection of kitchen organics using composting bags system in mid 2006 and Burnside Council in S Australia, with support, from ZeroWaste SA is conducting a very carefully monitored trial on the use of ventilated bins and composting bags. Results to date have been excellent. At least one group of councils in the Sydney region is considering running a trial of collection of household organics using ventilated bins and biodegradable bags.

The same principles are applicable to organic waste from commercial kitchens

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. Some bioplastics are specifically designed to be biodegradable and compostable. A bioplastic product which has been tested and certified to the requirements of the EN13432 standard, 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 used for the collection, transport and disposal of food and yard waste to commercial composting, will biodegrade at the same rate and to the same extent as other organic components. The products of organic recycling through composting are returned to the soil and absorbed in growing more crops thus completing the growth cycle.

#### Agricultural films

Agricultural weed suppressing PE mulch films create major waste problems:

- a) through disposal of dirty plastic which often has to be transported many kilometers for disposal and
- b) because as the films are lifted small pieces of film break off and enter the soil. Over time this can render the soil sterile. This has happened in parts of Southern Spain. We understand there are concerns over this effect in parts of Australia. Italy has now banned the use of PE mulch sheets.

By contrast a biodegradable film can be ploughed into the soil at the end of the season. It will biodegrade in the soil leaving only residual carbon biomass and avoiding all problems of disposing dirty plastic. Use of breathable plastics such as MaterBi is preferable as they better preserve the health of the soil.

#### Barriers to adoption of ventilated system of collecting organics

## **Recycled organics.**

### Landfill costs

Relatively low costs of landfill compared with Europe make composting (and other solutions) relatively expensive. It's cheaper to bury the organics despite the problems created by landfill which include:

- Birds
- Vermin
- Methane production (10 times more global warming potential than CO<sub>2</sub>)
- Leachate issues

Added to that, the advantages of using food organics together with green organics to produce high value compost are lost. The advantages include

- Compost improves soil structure
- Compost considerably reduces water usage as moisture is kept in the upper layers of the soil.
- Ends contamination of ground water by fertilizer
- Reduced pesticide use and less groundwater contamination

The above lists illustrate that the costs of failing to recover organics are not fully accounted for, as many of the costs do not fall upon the polluter. The above factors need a policy shift to ensure that the polluter pays.

### Compost Market place

Traditionally, because most organics are produced in the cities, compost products have been sold to the urban markets as mulches and soil conditioners. Increased supply of organics means that new markets must be developed with products suitable for farmers, horticulturalists and wine growers. Given the huge area covered by Greater Sydney the issue of distance from market is more acute than in other states. These issues were addressed in detail by the Compost Supply Chain Road Map produced by Compost

Australia. <http://www.wmaa.asn.au/roadmap/CSCR.pdf> which I will not reproduce here.

### Infrastructure

Many composters use open windrow composting as their feedstock is generally 'green organics' – yard trimmings etc. This limits the ability to process food organics. This is because open windrow composting is generally considered a risk by EPAs and unwelcome in urban areas for fear of attracting birds and vermin. In practice a well controlled process will not create these problems but there is unlikely to be a change in policy given the difficulties of regulation and likely opposition from neighbours. In some regions the risks of fruit fly would rule out open windrow composting of organics without a stabilisation process.

There are solutions. One is the use of in-vessel composting to stabilize the food organics, a process that may take 7 days before the material is transferred to open windrow. This requires investment which may not be forthcoming without compost market development. Another solution is to build an in-vessel composting plant as at Coffs Harbour.

Quality is the key to developing agricultural markets. This requires good processing and a clean stream of feedstock. Contamination is a major issue in collection of organics – and what our system is designed to achieve. Removing contaminants, such as plastic bags is an expensive process.

It is our belief that there is a market for quality compost. Our soils are among the poorest in the world. We live in the driest continent. A realization of the benefits of compost can be generated. At least one composter, Jeffries in SA, is using innovative ideas such as producing fertilizer compost mixes as a means of weaning farmers from dependence on chemical fertilisers.

Big-ticket treatment processes such as AWT plants appear to offer the solution by dealing

with all the waste in one plant. Unfortunately the process does not produce good compost as contaminants enter the end product. This is inevitable unless organics are separated at source. Contamination in recycled organics from AWT has been the experience in the US and Europe and is being repeated in Australia.

### **Conclusion**

Collection of organics at source is feasible with simple tools. Very high recovery rates and low contamination is achievable. Further the loss of water through the 'breathable' bags saves transport costs. In our submission a process based on the principles outlined should be incorporated in a strategy for collection of municipal wastes in NSW

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