Submission to the Productivity Commission
INQUIRY INTO WASTE GENERATION AND RESOURCE EFFICIENCY

Prepared by Compost Australia,
A Division of the Waste Management Association of Australia

Waste Type: Organic

In Summary

- Processors of organic waste are caught between two markets developing at different rates.
- The pressure to divert organic waste from landfill, being brought to bear largely by public policy, has caused a distortion in both market places.
- If the current market situation is allowed to continue without government intervention it is very likely that a number of Processors will either refuse to receive further organic waste or will go out of business (or both).
- The root causes of this situation are public policies and regulatory mechanisms that seek to achieve desirable environmental and social outcomes but fail to allocate the financial costs associated with these outcomes.
- The combination of minimum standards for disposal of organic wastes to the environment and a levy on the disposal of organic (or all) waste to landfill provides the basis for internalisation of the environmental and social costs relating to organic waste disposal.
- Investment in the waste, and more specifically organics, processing industry is highly problematic without certainty regarding the internalisation of environmental and social costs.
- Lack of readily available information for potential purchasers and the cultural change required in markets like intensive agriculture are key barriers to market penetration for recycled organic products.
- The simplest market based instrument for internalising (representing in financial terms) environmental and social benefits associated with recycled organic products is to introduce a rebate to purchasers.
- A more comprehensive approach would involve the use of a carbon or environmental trading scheme that valued the environmental and social benefits realised by the broader community to enable/support the transition to more sustainable agricultural practices.
- Independently audited data on the cost structures and associated return on investments is required to facilitate further development of the industry.

Background to the Australian Compost Industry

Organic wastes can be converted into useful resources through processes such as composting and anaerobic digestion. Industrial scale organics processing businesses exist throughout Australia.

Compost Australia is the peak national body for the organics processing and recycling industry. It is linked to working groups in five Australian states who deal with state specific issues. The goal of Compost Australia is to support a professional and sustainable industry by establishing and implementing an industry development plan. The Industry has just completed a major project, in conjunction with The Barton Group and AusIndustry, to prepare a Compost Supply Chain Roadmap.

The aim of the Roadmap project was to develop a viable and sustainable organics recycling industry across Australia. Ongoing industry development will involve new product and market identification and development of strategic plans that target both niche and wide-ranging markets for recycled organics. The Roadmap is to be Launched at Australian Parliament House on 13 February 2006. More information can be found at www.compostroadmap.com.au.

In addition Compost Australia conducts an annual industry survey that provides processing quantity and product market data and informs current priorities for the sector in each state.

An Optimal Approach

Maximising the diversion of organic waste from landfill (resource recovery) is accepted in Australia as an optimal waste management outcome. This acceptance is recognised in state and territory legislative targets and in many other statements of public policy throughout Australia.[1] In addition various technical studies have demonstrated that, within certain limitations and based on a triple bottom line analysis, recovery of organic waste for beneficial reuse is the optimal approach for organic waste.[2]

There are several broad alternatives to landfill for management of organic wastes, and an even greater number of resource recovery technologies. These alternatives can best be charactised by their outputs, which include:

- Stabilised, solid organic materials that can be made into a soil product or a filtration medium;
- Liquid fertilisers that can be sprayed on or injected into soil;
- Biogas that can be combusted to produce heat and electrical energy; and
- Solid fuels suitable for transport and burning in specific applications.

The optimal approach to recovery and beneficial reuse of organic waste is strongly debated within the industry (and in policy circles) and may, in part, be left to market forces to decide. However, direct regulatory and/or market based mechanisms are required to protect human health and the environment. In addition environmental and social benefits derived from resource recovery techniques such as composting need to be internalised (reflected in economic signals) and assigned in order to define who pays.

No one 'optimum' resource recovery technique can or should be used to deal with all organic wastes. Rather a suite of techniques should be used depending on factors like organic waste type; location; quantity; source and intended end use.

The remainder of this submission will focus on the recovery of stabilised solid organic materials (recycled organic products) rather than energy or fuels. Waste-to-energy is dealt with by a separate division of the WMAA and will therefore produce its own submission to the enquiry.

[1] For example see the various state and territory strategies, including: South Australia's Waste Strategy 2005-2010, Zero Waste SA; NSW Waste Avoidance and Resource Recovery Strategy 2003, Department of Environment and Conservation (NSW); and No Waste by 2010 – A Waste Management Strategy for Canberra, ACT NOWaste.

[2] For example see: Recycled Organics Unit (2003) *Life Cycle Inventory and Life Cycle Assessment for Windrow Composting Systems*, Department of Environment and Conservation (NSW), Parramatta; and Grant T, James K L, Partl H (2003) *Life Cycle Assessment of Waste and Resource Recovery Options (including energy from waste)*, EcoRecycle Victoria, Melbourne.

Two Markets

Processors of organic waste sell products and services to two markets. The first market is for services relating to organic 'waste disposal' where buyers are mainly Local Government but increasingly include private generators of organic or even mixed wastes. The second market, for recycled organic products, has a number of market segments but is dominated by the urban amenities market.[3] Recycled organics products are usually an additive to various purpose designed soil products but can also be used in a limited range of other applications.

The pressure to divert organic waste from landfill, being brought to bear largely by public policy, has caused a distortion in both market places. Current information held by the organics processing industry indicates that the supply of organic waste intended for resource recovery has overtaken the demand for recycled organic products.[4] For many processors the stockpiles of finished product are large and growing.[5] The problem is exacerbated by the fact that both markets are in relatively early stages of development and are therefore more sensitive to problems with supply and demand.

The logical solution to this market imbalance is for Processors to limit supply of feedstock (organic waste) to the required demand for recycled organic products. For a number of reasons market conditions make this solution difficult to achieve in practice. These reasons include:

- Demand for recycled organics fluctuates over seasons and depending on weather conditions;
- Processing of organic feedstock takes three to nine months;
- Supply of organic feedstock to processors (essentially waste disposal services) is usually contracted over several years and can rarely be varied without penalty;
- Supply is growing rapidly due to increased diversion of organic waste from landfill promoted by government policy and levies on disposal of mixed waste to landfill; and
- Processors often make most of their income by providing waste disposal services and are therefore motivated to compete for supply of organic feedstock.

[3] A series of market studies have been undertaken in NSW, see: GHD Pty Ltd (2004) *Analysis of Markets for Recycled Organic Products, Update Report 2004*, Department of Environment and Conservation (NSW), Parramatta.

[4] In 2004/05 the urban amenities market segment absorbed 57% of the total recycled organics products sold (by volume) in NSW, Recycled Organics Unit (2006) Organics Industry Survey Results, UNSW, Sydney.

[5] Stock levels held by processors in NSW rose from 280,400 m3 on 30 June 2004 to 421,777 m3 as of 30 June 2005.

Market Interactions

Processors of organic waste are caught between two markets developing at different speeds. In practice organics processing businesses tend to focus on one market or the other. The majority (Type A) compete to win large contracts for 'disposal' of organic waste, with the distribution of processed recycled organics being an important but secondary consideration. Income is derived mainly from gate fees paid mainly by Local Government. A smaller number of Processors (Type B) focus on producing very high quality 'fit-for-purpose' organic soil products for established customers or markets and only secure sufficient supply of organic waste to meet that need. For these Processors income is gained partially from gate fees but is also strongly supported by sale of recycled organic products.

Applications and markets for recycled organic products are developing only gradually. Markets near urban areas with capacity to pay have largely been exploited. Many undeveloped markets are believed to have limited capacity to pay, even if the value of recycled organics products were to be completely understood by the purchaser. Type B Processors have the capacity to pass limitations relating to markets for recycled organic products through the supply chain. In contrast Type A Processors will continue to compete and push down the price paid for organic waste disposal until some are forced out of the market. In some cases Type A processors will be forced out of business earlier due to breach of environmental protection licenses caused by excessive stockpiles of organic waste and product.

If public policy continues to divert more organic waste from landfill, supply will quickly outstrip industry's processing capacity (demand). Couple increased supply with a collapse in processing capacity, and the price of organic waste disposal will rise dramatically. A large and sudden rise is very likely to discourage diversion of organics from landfill, particularly by Local Government, contrary to the desired optimal public policy outcome. Resource recovery alternatives for organic waste, essentially energy or fuel production are unlikely to fill the gap in the short term. They are generally higher cost[6], take longer to establish and do not deliver the benefits to soils associated with quality recycled organic products.

If the current market situation is allowed to continue without government intervention it is very likely that a number of Processors will either refuse to receive further organic waste or will go out of business (or both). In an established but growing market the failure or consolidation of businesses might simply reflect healthy competitive pressures. In the markets described here it is the result of a market failure caused by public policies and regulatory mechanisms that seek to achieve desirable environmental and social outcomes but fail to allocate the financial costs associated with these outcomes.

[6] Due to the larger capital investments and additional environmental controls required.

Strategies for Optimal Resource Efficiency - Cost Allocation

There are essentially two points in the organics supply chain where the environmental and social benefits (or services) provided by Processors and distributors of recycled organics can be paid for: when organic waste is disposed; and when recycled organics products are sold.

At Disposal

As the waste generator, those who dispose (organic) waste have a greater capacity and a higher moral responsibility to pay. Environmental and social costs that are passed on to the waste generator also provide an incentive to avoid producing waste in the first place. In many Australian states this responsibility is reflected in levies on waste disposal. However, where untreated source separated organic wastes are not legally classified as waste, levies do not apply thus removing the incentive to pay for resource recovery services and their associated environmental and social benefits.

The combination of minimum standards for disposal of organic wastes to the environment and a levy on the disposal of organic (or all) waste to landfill provides the basis for internalisation of the environmental and social costs relating to organic waste disposal. This combination (and particularly the necessary regulatory standards) is yet to be fully developed in any state or territory within Australia. The situation is at least partially due to the difficultly of agreeing on standards (associated with competing interests) and a lack of conclusive Australian scientific evidence (data) to support one position or the other.

Investment in the waste, and more specifically organics, processing industry is highly problematic without certainty regarding the internalisation of environmental and social costs. Bolder businesses are looking to invest and move forward on the assumption that they will convince regulators by demonstration and create a reluctance to undermine established solutions. As time passes it will get increasingly more difficult for government to facilitate the optimal triple bottom line outcome.

At Point of Purchase

Recycled organic products have established environmental and social benefits depending on their application and the land where they are applied.[7] Many of these benefits are intangible or are realised over the mid to long term. Lack of readily available information for potential purchasers and the cultural change required in markets like intensive agriculture are also barriers to market penetration. While there is insufficient publicly available market research on the matter, it appears

[7] Refer to ROU fact sheets at: http://www.recycledorganics.com/infosheets/lca/facts/ , including *Organics recycling offers major environmental benefits* and *Conserving water using compost materials.*

unlikely that new markets will have the capacity or inclination to pay for long term financial, environmental and social benefits.

The simplest market based instrument for internalising (representing in financial terms) environmental and social benefits associated with recycled organic products is to introduce a rebate to purchasers in key markets where environmental and social benefits are well understood. The rebate would most likely be paid for using funds from government imposed landfill levies or even a levy on the disposal of source separated organic waste.[8] Such a rebate would remove the financial barriers to agricultural markets without favouring one Processor or technology over another.

A similar levy/rebate scheme could direct financial benefits towards generators of organic waste, such as local government, who ensure their material is diverted to beneficial uses. The end uses with the highest social and environmental benefits would attract the largest rebate. Directing benefits towards the organic waste generator encourages the generator to consider both the processing technique and the end use of their organic waste when purchasing waste management services.

A more comprehensive approach would involve the use of a carbon or environmental trading scheme that valued the environmental and social benefits realised by the broader community to enable/support the transition to more sustainable agricultural practices. Purchasers would earn carbon or environmental credits which would then be purchased by businesses (for example landfillers) to offset greenhouse gas emissions or a range of environmental impacts associated with their daily operations. The concept behind both carbon and environmental trading schemes is not new and a wide variety of literature is available on their potential operation.

Research, Development and Extension

The organics processing industry is still emerging and requires considerable additional research and development coupled with extension into new and currently undeveloped recycled organic product markets. In particular there is a need to quantify water and fertiliser efficiency benefits from recycled organic product applications, and to successfully integrate carbon based agricultural approaches into farm management systems, in order to maximise agricultural and environmental benefits.

Research, development and extension are currently restricted by the market failure already described and by the resulting lack of surplus funds for anything other than the daily requirements of doing business. A stable, preferably nationally consistent regulatory framework would facilitate the necessary conditions for an increase in industry funded R&D.

[8] Such a levy would have to be supported by regulation requiring minimum processing standards for all organic waste.

COMPOST
NEW SOUTH WALES
A Working Group of the WASTE MANAGEMENT ASSOCIATION OF AUSTRALIA

WASTE MANAGEMENT
ASSOCIATION OF AUSTRALIA
PO Box 994
ROCKDALE NSW 2216

T: (02) 9599 7511
F: (02) 9599 6032
E: compost@wmaa.asn.au
www.compostaustralia.com

14 February 2006

Mr Phillip Weickhardt
Presiding Commissioner
Waste Generation & Resource Recovery Inquiry
Productivity Commission
LB2 Collins Street East
MELBOURNE Victoria 8003

Dear Sir

Inquiry into Waste Generation and Resource Efficiency in Australia

COMMPOST NSW is a working group of the NSW Branch of the Waste Management Association of Australia.

We have contributed to the submission made by Compost Australia through WMAA to the above inquiry and endorse that submission.

The viability of the compost industry and the ability of the industry to contribute to the achievement of economic, environmental and social benefits and optimal resource recovery depends on sound and supportive policies by governments, at all levels. These policies must address the market failures at the end user point in the supply chain.

Thank you for the opportunity to contribute to the inquiry, which we believe will be of major influence on our industry.

Yours faithfully

Tony Emery

Tony Emery
Chair
COMMPOST NSW

Compost Queensland

Mr Phillip Weickhardt
Presiding Commissioner
Waste Generation & Resource Recovery Inquiry
Productivity Commission
LB2 Collins Street East
MELBOURNE Victoria 8003

Dear Mr Weickhardt,

RE: Inquiry into Waste Generation and Resource Efficiency in Australia

Compost Queensland is a working group of the Qld Branch of the Waste Management Association of Australia.

We have contributed to the submission made by Compost Australia through WMAA to the above inquiry and endorse that submission.

The viability of the compost industry and the ability of the industry to contribute to the achievement of economic, environmental and social benefits and optimal resource recovery depends upon sound and supportive policies by governments, at all levels. These policies must address the market failures at the end user point in the supply chain.

Thank you for the opportunity to contribute to the inquiry; which we believe will be of major influence on our industry.

Yours faithfully

Bob Ferguson

Bob Ferguson
Chair
Compost Queensland

Waste Management Association of Australia (WA Branch)
PO Box 7157 Cloisters Square
PERTH WA 6850

ROWA

(Recycled Organics WA)

21 December 2005

Mr Phillip Weickhardt
Presiding Commissioner
Waste Generation & Resource Recovery Inquiry
Productivity Commission
LB2 Collins Street East
MELBOURNE Victoria 8003

Dear Sir

Inquiry into Waste Generation and Resource Efficiency in Australia

Recycled Organics (ROWA) is a working group of the WA Branch of the Waste Management Association of Australia.

We have contributed to the submission made by Compost Australia through WMAA to the above inquiry and we endorse that submission.

Organics as a major component of the waste stream and in line with the 'Strategic Directions for Waste Management in WA that was released in August 2003, recycling of these materials back to land particularly for agricultural use is strongly supported.

The viability of the compost industry and its ability to maximise the economic, environmental and social benefits from organic resource recovery depends on sound and supportive policies by governments, at all levels. These policies must address the market failures at the end user point in the supply chain.

Thank you for the opportunity to contribute to the inquiry that has the potential to be of major benefit to our industry.

Yours faithfully

Andy Gulliver

Chair
ROWA
Sub Group. Waste Management Association, WA Branch