



# Organics recycling offers major environmental benefits

## FACT SHEET

Over 1.4 million<sup>1</sup> tonnes of organic materials are diverted from landfill and processed into a range of valuable materials in NSW every year. Most of this material is sold into a range of domestic, horticultural and agricultural markets for use as mulch and soil conditioners.

Councils play an important role in the source-separated kerbside collection of organic material. This material is processed by the commercial composting industry, playing an important role in processing the recovered organic material into compost. The industry contributes to the development of end-markets for compost, without which organic materials would be disposed of as waste. As a result, significant savings in limited landfill space are achieved, and reduces the impacts that landfills have on the environment.

### Life cycle study

A full life cycle study was conducted in NSW in 2003.<sup>2</sup> The study — an international first — assessed the total environmental impacts of windrow composting systems throughout their life cycle and quantified the benefit to the environment of applying compost to agricultural soils.

The life cycle assessment covered the environmental impact of:

- manufacturing of composted products;
- transport of composted products to end-markets and users; and
- application of composted products in agriculture.

A wide range of environmental indicators was used, including energy consumption, greenhouse effect, photochemical oxidant formation, human and eco-toxicity, resource depletion, eutrophication, and land use.

The study represents a significant advance on previous life cycle studies that have generally considered only one impact category, such as greenhouse gas emissions.

As a consequence, previous studies have under-estimated the full environmental benefits of composting and organics recycling.



Councils play an important role in collecting and recycling organic materials in NSW



## Key findings

The results of the study show that the management of organics through source-separated collection systems, commercial composting and the application of compost to agriculture, offers significant benefits to the environment, including substantial reduction in greenhouse gas emissions, for example:

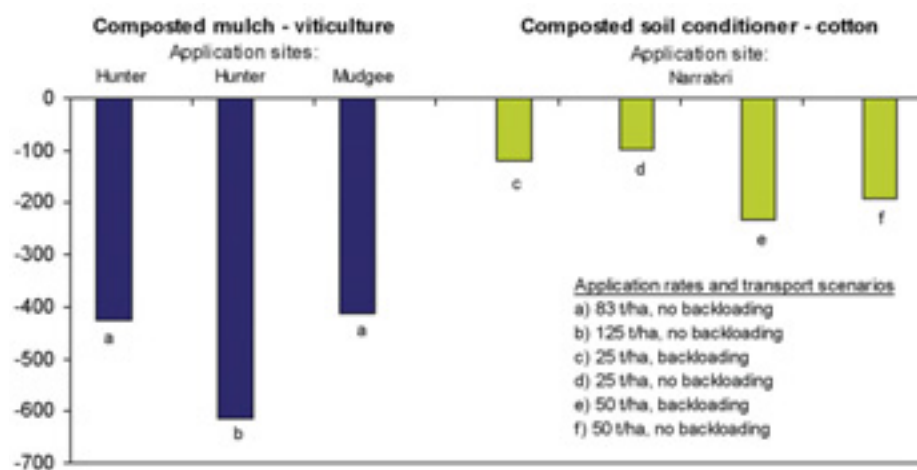
- Commercial composting of organic waste and application of compost materials to agricultural soils results in net greenhouse gas reduction, even if the recycled materials have to be transported up to 600km for agricultural applications (Figure 1).

- Positive benefits were found under all the other environmental indicators, including reduced potential for human toxicity, eco toxicity and eutrophication.
- Small negative environmental impacts related to photochemical oxidation potential and abiotic resource depletion. This arose largely from the production and use of diesel fuel consumed while applying the compost material to agricultural soils.

## Conclusions

- The findings of the study support the development and implementation of strategies for source-separated collection and recycling of organic materials.
- Service providers, such as Councils, can justify the introduction of source-separated collection services for organics.
- Communities can achieve major environmental benefits by separating and recycling organic materials.

**Figure 1.** Greenhouse benefits of producing and using compost (negative values = reduction in greenhouse gases or global warming potential).



## References

- Compost Australia (2007). *Survey of the Organics Processing Industry in NSW for the 2005/06 financial year.*
- Department of Environment and Conservation (NSW) (2003). *Life cycle inventory and life cycle assessment of windrow composting systems.* Report prepared by Recycled Organics Unit, The University of New South Wales.

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