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Productivity Commission Inquiry into waste generation and resource efficiency

Submission from the State of Tasmania

Introduction

Tasmania supports the terms of reference for the above Inquiry and is pleased that the Australian Government has referred this important matter to the Productivity Commission for detailed consideration.

Tasmania is of the view that the Inquiry should focus on resource flows and resource efficiency rather than on waste management. Waste generation and the ensuing management of wastes represents the final stages in the flow of materials and energy through the economy. In our view the fundamental question to be addressed by the Inquiry is whether microeconomic policy and regulation in this country discourages the most efficient utilisation of the nation's finite resources.

Resource efficiency

Resources can be classified as renewable or non-renewable. The supply of non-renewable resources is finite by definition and the supply of renewable resources is effectively finite due to the limited supply of land, energy, funds and other inputs required to produce them. Resources and energy embodied in the products and services that communities consume flow continually through the economy. If resource efficiency were measured as the dollar value of goods and services produced per tonne of raw materials consumed, then disposal to landfill would represent a negative impact on resource efficiency.

Materials deposited in a landfill, being thoroughly mixed, compacted and buried are not considered to be recoverable in the foreseeable future. A small fraction of the embodied energy of materials disposed in landfill can be recovered for energy production where infrastructure for the collection of landfill gas is installed. On the whole, material disposed to landfill makes no further contribution to the economy, other than as a cost item. Tasmania has no dedicated waste-to-energy facilities that can recover a greater proportion of this embodied energy, other than a number of boilers that are partially fuelled by wood waste.

If one accepts both that material disposed to landfill represents lost resources and that the available supply of resources is finite, then questions of intergenerational equity come to the fore. Unrestricted consumption of finite resources today deprives future generations of access to those resources. This presents particular challenges for Tasmania because there is no local manufacturing of a number of important material types such as plastics, glass, steel, rubber, etc. Continuity of supply of finite resources is therefore dependent on careful management by other parties.

The depletion of finite resources is in the long-term national interest. However there is no

Agency with statutory responsibility for resource conservation and resource efficiency. Under the COAG system of ministerial councils, waste management falls to the Environment Protection and Heritage Council. The traditional focus of environment protection agencies has been the mitigation of environmental impacts at the 'end-of-pipe' stage and in the ambient environment. In recent years there has been recognition of the need to move the environmental focus up the waste generation supply chain to tackle waste generation at the 'front end' (ie in the design and manufacture of products). These discussions are very much in their infancy, and the legislative basis or other mechanisms for front end action often do not yet exist to support the alternative focus.

Diversion of resources from landfill, known broadly as 'resource recovery', is an increasing feature of our society, however resource recovery activities are often reliant on some form of government assistance (eg ratepayers effectively pay for kerbside recycling schemes, and landfill levies are used to support grants schemes for resource recovery projects in some Australian states).

Market failures

It is understood that the Inquiry will consider whether market failures contribute to the poor showing of recovered resources when competing on the open market with virgin materials. While some examples of market failures are suggested below, it appears that there are far more fundamental aspects of the economy that affect this area.

Tasmania, and on a larger scale Australia, has inherent competitive advantages in the agriculture and resource sectors, which is partly due to the historically ample availability of land. From a global perspective, Australia's relatively high labour costs and small economies of scale put us at a relative disadvantage in the manufacturing sector. Resource recovery activities, being reliant on collection (the inverse of distribution), 'demanufacturing', and/or sorting processes, have more in common with manufacturing than with the resources sector.

In the Tasmanian context, the Bass Strait is an impediment to resource recovery that require reprocessing at mainland facilities. Most resource recovery activities are low margin, high volume businesses. Sorting of recycled materials may occur in Tasmania, however economies of scale dictate that most reprocessing of such materials occurs at interstate and international facilities. No other State faces the same burden of both terrestrial and marine shipping costs to transport its recovered resources to facilities for recycling.

The reality in Australia is that most manufactured goods can be replaced far more cheaply and easily than they can be upgraded or repaired. Recovery of components from manufactured goods may be very difficult because many products are not designed for disassembly and they are often constructed from composite or mixed materials. Nonetheless, studies continue to indicate that there is a strong community preference to reduce waste and to participate in resource recovery activities (Ecorecycle 2001).

The key market failure that needs to be addressed in relation to resource efficiency is the almost complete absence of a positive feedback mechanism to reward producers for making their products more readily recoverable. There are, however, powerful financial incentives to promote consumerism and to encourage replacement of old products with new.

Other market failures almost certainly exist in the waste management area. Examples include:

- The full cost of landfill operations is not always passed on to waste generators. Local Government operates most landfills in Tasmania and there are strong suggestions of subsidisation by ratepayers in some circumstances. This may become even more apparent at the end of the life of a landfill site where ratepayers may bear substantial rehabilitation costs at or near the end of the revenue raising life of a landfill.
- It is our understanding that even where cost recovery is implemented, most Tasmanian landfills do not generate a profit on the capital employed, being more in the nature of a community service obligation. Almost half of all waste entering Tasmanian landfills derives from non-domestic, non-municipal sources (SWSA 2005) indicating that private enterprise is a major beneficiary of waste products. These factors are evidenced by the difficulty private operators experience in entering the waste disposal and incineration market. A substantial waste-to-energy proposal that was approved by the Tasmanian Government in 2001 subsequently failed because it was unable to compete with cheap landfills. Aside from private company landfills serving their own industrial facility, no privately operated landfills are in operation in Tasmania.
- Waste generators usually only accounts for the costs of their waste production on a post-generation basis. The landfill gate fee and transport cost of disposing waste is typically accounted for, however, the cost of the resources reporting to waste is often not taken into consideration. Every tonne of waste represents at least one tonne of materials purchased - acceptance of this fact lies behind the philosophy of 'cleaner production' or 'eco-efficiency', though it is not common accounting practice.
- Alienation of land and decreases in property value adjacent to waste disposal sites is generally not taken into account in landfill gate fees.
- While Tasmania is relatively well served for landfill space, in the next 2-3 decades this resource will have finite limits and finding new landfill sites will become increasingly difficult. Community opposition to landfill and incinerator proposals near Hobart have reached new levels of militancy and forethought. Failure to take into account the future cost of replacing lost landfill space may represent a negative externality.
- In response to sustained community pressure, the State Government recently completed a detailed site contamination and hydrogeological study of an urban landfill which closed more than two decades ago. Such costs represent a negative externality because they are born by the community long after the waste disposal activity has ceased.
- Landfill gas emissions, which contribute to the enhanced greenhouse effect, are unrestricted except at major landfills and therefore constitute a negative externality.
- Some areas of Tasmania receive high rainfalls, resulting in difficulties in managing landfill leachate. Occasional spillages to the environment do occur and may result in a number of environmentally deleterious substances being emitted. Costs of such intermittent (and possibly undetected) pollution are not passed on to waste generators.

Extended producer responsibility

Waste disposal costs are typically born by the consumer rather than the producer of any given product. This means that there is no price signal back to the parties that designed, manufactured, distributed and sold a given product. As such the parties that: exercise the greatest degree of control over the amount of waste generated and over the extent to which that waste is recoverable are not a party to waste management transactions.

By way of example, if governments were to declare TVs and computer monitors a controlled waste on the basis of the known high heavy metal (lead) content of Cathode Ray Tubes, the associated cost impact in dealing with the waste would not directly affect the manufacturers but would be born by consumers. This can be classed as a market failure and it forms the basis for the development of extended producer responsibility legislation. It remains to be seen whether EPR legislation can make a real difference in the design and manufacturing of products or whether it will continue to be dealt with largely as an end-of-life problem.

Wastes that are composed of a single material type are more conducive to resource recovery than mixed materials. Newsprint and beverage containers are examples of waste materials that are typically composed of a single material type and have been the subject of product stewardship initiatives. It is noted that levels of success to date have been highly variable both between material types and between States (*eg* Nolan ITU 2005, PNEB 2004).

Environmental aspects of landfill disposal:

The environmental impacts of landfill sites are not insignificant. At best landfills are concentrated sources of environmentally deleterious materials (contaminated sites) on the margins of cities that will be unsuitable for higher value land uses for many years to come. At worst, landfills may be sources of off-site impacts on public health and the environment well beyond their useful life. Some European studies (Dolk *et al* 1998, Elliot *et al* 2001) into people living in proximity to landfills have found a small increase in rates of congenital birth defects. It should be noted that these studies did not establish a causal relationship and the authors acknowledge that further study is required, suffice to say that the impact of landfill sites are not fully understood.

Tasmania's small and dispersed population has resulted in a historically large number of small landfills per capita although Government action reduced the number of landfill sites in the last decade. The number and size of Tasmania's landfill sites are comparatively small relative to landfill sites in other Australian States and Territories. Some mainland states have landfills serving a population equivalent to the whole of Tasmania. A market anomaly exists because those landfills that offer the cheapest gate fees in the market tend to offer the lowest level of environmental protection. Environmental regulation can only address this problem within the limits of the community's capacity to pay, which is an argument that has been maintained forcibly by local government.

Economies of scale are known to be a key factor for achieving Best Practice Environmental Management standards at landfill sites in Tasmania. For this reason Tasmanian landfills may never achieve similar levels of environmental protection compared to larger mainland landfills. The environmental risk associated with using

smaller, older landfills represents an externality, because the cost of remediating pollution that is not yet evident will be born by the general community or by future waste generators. Even if no major pollution incidents occur, there may be gradual and insidious environmental impacts that are not currently being costed into the supply of the service.

Strategies that could be adopted by government

In conclusion, there are a number of strategies government could undertake to improve economic, environmental and social outcomes in relation to waste management, including incentives to reduce waste to landfill (such as tax breaks). A grant structure could also be designed to assist in resource recovery process development in regions lacking such facilities, or assisting technological progress.

With respect to Tasmania, the high costs of terrestrial and marine freight of resources recovered to recycling facilities on the mainland could be reduced through specific subsidies. This will ensure resources and employment remain in Australia, as the returns may become more competitive against international markets.

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