ADDRESSING THE ISSUES

General Issues

There is always a trade-off between re-using material that has been previously manufactured or harvested and preparing the material from scratch. Recycling can be readily seen in activities ranging from building materials used as filler for new buildings through re-used bottles to second hand clothing.

Market forces and not government should determine whether or not recycling takes place. In order for the market forces to make that decision efficiently, there should be clearly defined property rights and obligations, and an absence of monopolistic market power.

Specific Issues

1. Unpriced Values

- Both virgin and recycled material make use of public assets like the atmosphere, waterways and road systems without, in many cases, having that usage fully accounted for. In other cases, use of facilities may be inadequately priced because the risk to the community is unknown.
- As well as the costs incurred through inadequate specification of property rights, some of the incidental effects of failure to recycle like unsightly litter need to be accounted for;
- In addition, many people obtain "psychic" benefit from the satisfaction of knowing that their refuse is being re-used directly and not imposing a cost on nature or a possible imposition on future generations that is not properly understood.

2. Resource Constraints

Resource availability needs to be examined to determine whether there are looming resource shortages in specific products or raw materials that are not being fully factored in by producers and consumers

3. Monopoly and Outsourcing Issues

- The payments to the states under the National Competition Policy Agreements are contingent upon the removal of monopoly in the provision of a wide range of government services, including those of the local governments. The outsourcing of waste disposal and recycling activities is important to ensure that the governments are not artificially raising prices through the exercise of their market power.
- Outsourcing needs to be carefully managed to avoid tenders being let to those with inadequate appreciation of the tasks required of them if a strong degree of public confidence in the nature and merits of recycling is to be engendered and sustained.

These matters will be examined for the target recyclable products to determine whether there are impediments to achieving efficient outcomes.

Materials and Locations Analysed

Recycling covers a vast field. Two dimensions are:

- the materials to be examined - these range from paper, glass, metals, PET, building materials and even water;
- the areas for which recycling might be reviewed - these range from highly concentrated locations like factories through less concentrated areas like commercial premises to households in different density settings.

As well as reviewing the extensive literature on the issue of recycling, we would envisage undertaking some primary research into the costs involved. This would entail seeking information in Victoria on:

- the costs of recycling to local authorities, including the apportionment of different materials' costs of collection, so that a better evaluation of the merits of recycling can be undertaken;
- the costs of "storage" of waste material in tips, including the risks of leakage and the likelihood that liability for these will be difficult to determine (or a party who is liable difficult to identify) many years in the future;
- net benefits of using recycled products or avoiding the use of virgin materials where the market and regulatory arrangements mask some of the means of quantifying these.

Any analysis must be placed within a framework of the need to ensure a more competitive economy and the particular arrangements agreed to by Australian jurisdictions to ensure that government business enterprises operate on a similar basis to those in the private sector. This entails outsourcing unless governments are demonstrably cheaper than the private sector. It also entail ensuring the outsourcing does not result in monopolies and that the outsourcing is managed adequately to ensure that its goals are being met.

THE BENEFITS OF RECYCLING

The Environmental Defense Fund puts the benefits of recycling as follows:

"Recycling cuts pollution and conserves natural resources. The greatest environmental benefits of recycling are related not to landfills, but to the conservation of energy and natural resources and the prevention of pollution in manufacturing that result from the use of recycled rather than virgin raw materials. Recovered materials have already been refined and processed once, so manufacturing the second time around is usually much cleaner and less energy-intensive than the first. Detailed analysis shows that these environmental benefits of recycling far outweigh any additional environmental burdens resulting from the collection, processing and transport of recyclable materials in curbside recycling programs.

"Recycling conserves energy. Much less energy is needed to make recycled materials into new products compared to beginning the process again with new, "virgin" raw materials. By recycling a ton of materials in a typical curbside recycling program, at least $187 worth of electricity, petroleum, natural gas and coal are conserved, even after accounting for the energy used to collect and transport the materials. In other words, the energy conserved through recycling is about five times as valuable as the average cost of disposing of trash in landfills in the U.S.

"Recycling avoids the costs of disposing of waste in landfills or solid waste incinerators. The costs of recycling are partially offset by avoided disposal fees and by revenues earned through the sales of materials. Disposal fees vary greatly between different regions, and markets for recyclable materials are now booming. Of the roughly 40% of the U.S. population served by curbside recycling programs in 1993, almost two-thirds live in the Northeast, where disposal costs are high, or on the West Coast, which has moderate disposal costs and especially high prices for recyclable materials. Curbside recycling in these areas is a rational response to economic costs and opportunities.

"Recycling programs that are sensibly designed and fully implemented can be cost-competitive with solid waste landfilling and incineration. We do not expect landfills or incinerators to "pay for themselves," nor should we expect this of recycling. Many of the curbside recycling collection programs that have been quickly implemented in the last six years are more expensive than they need to be. Numerous techniques are now available to make curbside recycling more efficient, and are now being tested and implemented in communities across the country.

"Recycling creates jobs and makes manufacturing industries more competitive. Recycling provides manufacturing industries with less expensive sources of raw materials, a long-term economic advantage that translates into value for consumers who spend less on products and packaging. The industrial development effects of recycling are significant. For example, one recent study found that in ten northeastern states alone, recycling adds $7.2 billion in value to recovered materials through processing and manufacturing activities. Approximately 103,000 people were employed in recycling processing and manufacturing jobs in this region in 1991, 2.7% of the region's total employment.[1]

THE COSTS OF RECYCLING

In addressing the above benefits, a comparable basis of costs allocations must be developed. Some of the issues are addressed below.

Local collection costs.

The readily identifiable costs include the costs of containers, collection, sorting and sale. Other costs include environmental costs associated with the process.

[1] Advantage Recycle: Assessing the Full Costs and Benefits of Curbside Recycling, by John F. Ruston and Richard A. Denison, EDF 1996.

It would be our intention to conduct a survey encompassing a sample of municipalities. Most municipalities appear to let contracts on a gross basis, leaving the contractor to defray costs from the revenues gained from the sale of the collected material.

One initial contact has been made with the City of Brimbank in Melbourne's west. The city presently collects about 3,600 tonnes of bottles per annum at a cost to the ratepayer of $430,000. This amounts to $120 per tonne. A new system for bottles is to be implemented which is estimated to cost the ratepayer $630,000 per annum and yield 7,000 tonnes, giving a cost of $90 per tonne.

In addition about 1200 tonnes of paper are collected at about $25 per tonne.

Regular garbage collected amounts to 48,000 tonnes and costs $2.6 million, or $54 per tonne.

One interpretation of this data is that for bottle collections the net cost is between two thirds and twice the cost of regular garbage, even without factoring in savings that would accrue if all the waste were to be collected by the same truck.

In the case of paper, even at low prices that presently prevail, it appears to make economic sense to have recycling services. Some of this is due to recycled paper commanding a price premium because people and government departments want to be seen to be assisting in saving resources. But even in the case of paper, at $25 per tonne, what should be examined is the *incremental* costs of collections which would be perhaps only half the overall $54 per tonne for regular garbage.

Excluding paper, the 41,000 tenements of Brimbank are paying between $6 and $11 each in extra rates for the recycling services.

- costs saved and other benefits stemming from recycling activity;
- the conditions under which recycling provides the greatest net benefit to the community;
- technologies and organisational reforms that can improve recycling outcomes;
- how the underperformance of recycling can be combated.

THE INTERACTION OF TECHNOLOGY AND MANAGEMENT CHANGES ON THE ECONOMICS OF RECYCLING

In this final point, EDF has been highly critical of the plastics industry's US recycling performance. It has claimed results are poor.