Zero Waste in 10 years
An Integrated and Comprehensive Waste Elimination Strategy

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Part I - Background

1. Strategy Development

Despite rhetoric to the contrary, Federal and State/Territory Government's have done little to curb either resource consumption or waste disposal. Both indicators remain well above sustainable levels. Largely to blame is a lack of initiative by successive Government's and their agencies, and leniency towards industry with respect to the setting and enforcement of waste reduction targets.

As a consequence, proposals abound to transport waste from city to rural areas in an attempt to maintain unsustainable lifestyles. In the face of this assault, rural communities and environmentalists remain adamant there should be 'no city dump for the bush'.

What is needed is a giant leap forward towards zero waste. The "Zero Waste in 10 years" waste elimination strategy, detailed below, represents an approach that is both integrated and comprehensive. Without such a strategy rural areas will increasingly bear the burden of the wastefulness of city life.

"Zero Waste in 10 years" aims to represent world's best waste policy and practice.

2. Aims

The primary aim of this strategy is to achieve 'Zero Waste' through:

- zero waste generation; and
- zero waste disposal.

Other important and complementary aims include:

- Reduce total consumption of material and energy resources.
- Move toward a waste-free society as an integral part of Ecological Sustainability.
- Maximise self-sufficiency at a local level.
- Promote greater community knowledge, appreciation, and understanding of waste and environmental issues.
- Promote greater community access to, and involvement in, decision-making at all levels of government.
- Encourage more environmentally and socially beneficial resource use.
- Ensure that the responsibility for waste is ultimately borne by those who produce that waste (i.e. polluter pays principle).
- Achieve a greater level of employment in-line with increased product re-use and material recycling at a local level.
- Avoid the pollution, waste of resources, and social impacts caused by the disposal of waste.
- Cease the generation and disposal of all types of hazardous waste - thereby avoiding the multitude of problems that would otherwise exist throughout their life-cycle.
- Avoid the need to establish new, or expand existing, waste disposal/reprocessing facilities.
- Ensure an integrated and comprehensive approach to waste elimination.
- Promote equity for present and future generations by ending the excessive consumption and the unjust distribution of material and energy resources.
- Promote a precautionary approach to the adoption of new technology.

3. Method

Achieving "Zero Waste in 10 years" requires a strategic approach that recognizes the source of the waste crisis as being the linear, excessive, and resource inefficient production-consumption process. By necessity, achievement of Zero Waste requires:

- clean production, and
- waste-free consumption.

In this context, the strategy sets out to:

- Identify the legislative framework necessary to support avoidance, re-use and recycling in that order of priority.
- Promote fiscal measures to minimize waste generation and resource use.
- Set waste elimination targets backed by legislation.
- Provide direct incentives for source reduction, source separation, and product longevity.
- Promote the establishment of municipal scale composting facilities.
- Establish systems that ensure physical and financial responsibility for waste is borne by those with whom that waste originated (i.e. cradle-to-grave producer responsibility).
- Seek legislation to allow 'point-of-sale return' of products and packaging by consumers (via retailers) to manufacturers.
- Advance a life-cycle approach to the provision of products and services.
- Seek to ensure the 'lowest impact' product alternatives have the lowest prices.
- Seek to internalize environmental impact costs so that the absolute and relative prices of products and services reflect their absolute and relative environmental impacts.
- Encourage a greater level of product re-use and material recycling in that order of priority.
- Seek to provide the public with the educative resources necessary to allow them to participate in the waste elimination process.
- Promote a greater level of responsibility from consumers by enhancing their appreciation and understanding of the waste and environmental impacts associated with their consumption through informative product labelling.
- Promote a waste disposal pricing policy that actively discourages waste disposal and hypothecates the revenue to help eliminate waste.

Part II - Zero Waste / Waste Elimination Strategy

4. Actions Required

This strategy presents an action plan suggesting how to move towards a waste-free society. It lists the types of actions required and identifies those required to take such action. It has been developed to operate best with a co-operative approach from all spheres of government and requires each to take responsibility for the actions it can pursue itself.

Briefly, the strategy requires action by government at a National, State and Local level, industry, and the community to ensure:

- provision of efficient and effective **Collection Systems** for product re-use and material recycling (and disposal of 'waste' until zero waste is achieved);
- adoption and enforcement of **Targets** for reducing the waste from, and the environmental impact of, products, materials, and production processes;
- provision of **Educative Resources** to meet these targets; and
- use of **Fiscal Measures** which act to deter disposal.

4.1 Collection Systems

4.1.1 Point-of-Sale Return (for Products and Packaging)

Point-of-Sale Return is the most efficient and effective means of collecting products and packaging for re-use or recycling. Point-of-Sale Return ensures these valuable resources are returned to the

manufacturer (via the retailer) who then has the opportunity to re-use or recycle them. Point-of-Sale Return:

- applies to all non-consumable products and packaging;
- requires manufacturers (via retailers) to accept back the types of products and packaging they supply;
- should be supported by a sufficiently high refundable deposit, on appropriate items, to encourage a high rate of return;
- will significantly reduce litter and alleviate the need for public recycling/waste bins; and - would encourage the supply of, and demand for, bulk and unpackaged produce.

* Requires action by: State Government and Industry.

4.1.2 Kerbside Collection (for Materials)

Kerbside Collection services should be established or maintained, at least as an interim measure, for the remaining non-reusable but recyclable materials, namely:

- source separated office paper and newsprint (dependent upon the perceived appropriateness of point-of-sale return for the collection of such materials); and
- source separated food and garden material (to complement home composting and worm farming).

While ever the need remains (i.e. until the collection systems identified in this strategy are established) mixed waste should be collected on a user-pays by volume and weight basis. As the mixed waste-stream diminishes, disposal collection services can be progressively reduced until they ultimately cease.

* Requires action by: State and Local Governments, and Industry.

4.1.3 Other Collection Schemes

In addition to 'point-of-sale' for the return of products and packaging, and 'kerbside' for the collection of materials, no other regular collection service will be required in the long-term. Of course, industry groups, local government, small businesses, or community-based organizations, may choose to operate their own collection services (such as 'house-to-house' or 'drop-off centres') as a community service or for profit.

* Requires action by: Local Government, Industry, and the Community.

4.2 Targets

4.2.1 Waste Reduction Targets

Building on the momentum generated by previously set waste reduction targets, 'Zero Waste' is now a realistic goal. An appropriate future waste reduction target should therefore be:

> "**Zero Waste in 10 years - a 25% reduction in total waste disposal each year, based on the previous year, from year 0 to year 10, would result in a 95 per cent reduction in waste for disposal. Throughout the course of the strategy special attention should be paid to recalcitrant waste generators, resetting targets and penalties to achieve the commendable goal of Zero Waste in 10 years.**"

- Targets are to be met by each sector of the waste stream, such as; paper, packaging, organics, and building materials - and within each sector, such as (for paper); office paper, newsprint and cardboard.
- Targets are also to be met by each regional and industry sector.
- Targets are to be set, and met, annually.
- Significant and increasing penalties are to apply to each sector for each year of failure.
- Products and/or materials could be prohibited if they fail to meet the targets or pay the penalties.

* Requires action by: State and Local Governments, Industry, and the Community.

4.2.2 Environmental Impact Targets (based on Life-Cycle Analysis)

Each product for sale and material for use in Australia should be 'represented' by a life-cycle analysis. Such analysis should detail the environmental impact of a product or material over its entire life-cycle. Factors to consider include: the impact of resource extraction, resource consumption, energy use, and the pollution caused by solid, liquid, and gaseous waste generation.

National standards should be developed to support the introduction of Life-Cycle Analysis to assess, compare, and label products and materials according to their environmental impact.

The provision of a life-cycle analysis should be required with all products for sale and materials for use in Australia. Severe penalties should apply for incorrect and/or misleading information.

Product-based, nation-wide **Environmental Impact Targets** should be established.
- Environmental Impact Targets should be based on product alternatives with the lowest environmental impact within each sector.
- Non-essential products that do not achieve the 'lowest impact' criteria could be prohibited.
- As well as achieving their waste reduction targets, sectors must minimize their overall environmental impact.

* Requires action by: National and State Governments, and industry.

4.3 Educative Resources

'Waste Elimination Committees' should be established at all levels of government. Such committees should be made up of community and environment representatives, providing continual input to the development of policies to reduce waste and environmental impact, and continual output to the community who need guidance in the form of educative resources to put waste and environmental impact reduction into practice.

Equipment and financial resources, including support for research and development projects, should be provided to these committees and the community as necessary.

* Requires action by: National, State, and Local Governments.

4.4 Fiscal Measures

4.4.1 Revenue-Neutral Rebate Scheme

Ultimately, a revenue-neutral rebate scheme is required to ensure the cost of a product to a consumer reflects that product's environmental impact in relation to alternative products that may serve the same, or similar, purpose. Prompt inception of the scheme, and its progressive development, will ensure the necessary transition to environmentally sensitive production.

The scheme should:

- Be based on the life-cycle analysis of the product.
- Apply tax (on a range of 'life-cycle' criteria) to the more damaging and grant rebates to the less damaging products. In this way, taxes fund rebates so the system is 'revenue-neutral'.

* Requires action by: National and State Governments.

4.4.2 New-Material Tax

In preparation for a wider revenue-neutral rebate scheme, which depends on the further development of life-cycle analysis, a new-material tax is proposed as an interim measure.

A new-material tax would discourage the use of new materials in favour of pre-used products and 'post-consumer' recycled materials.

- The tax should be proportional to the new-material content of the product.
- Revenue from the tax should be used to improve the collection of closed-loop recyclable materials and promote the use of closed-loop recycled products (in preference to new-material products) within the sector that generated the tax revenue.

Subsidization of collection systems for recycled/recyclable products is not desirable in the long-term but may be necessary as an interim measure until such time as they are viable in their own right.

Subsidization of one product or material by new-material tax revenue raised from another product or material sector (i.e. cross-subsidization) is to be avoided.

* Requires action by: National and State Governments.

4.4.3 Used-Material Tax Exemption

As an immediate measure, tax exemptions must be more broadly applied. For example, tax exemptions should apply to a wider range of products by granting varying degrees of tax exemption to pre-used products and products containing 'post-consumer' recycled materials.

* Requires action by: National and State Governments.

4.4.4 Purchasing Policy Targets

The purchase of products and materials by industry and all levels of government must be consistent with the targets outlined in 6.2 above. Such purchasing policies need to be mandatory to ensure the targets are met and to assist the markets for environmentally sensitive products that reduce waste. Progress reports, produced annually, should be subject to public scrutiny.

* Requires action by: National, State, and Local Governments, and Industry.

4.4.5 Waste Disposal Policy

Since the late 1980s community and environment organizations have been unwavering in their opposition to disposal facilities. Future opposition should be founded on the policy that:

" **- no new landfill or incineration disposal facilities, or expansion proposals, should be approved, at least until the waste elimination measures presented in this strategy are fully implemented.**"

In keeping with the pursuit of Zero Waste, a waste disposal pricing policy should reflect the finite nature of landfill and the environmental and social problems caused by both landfill and incineration as a means of disposing of otherwise valuable resources. To achieve this:

"- **a 'half-life' approach should be adopted whereby the cost of disposal is inversely proportional to the remaining landfill capacity. Thus, each halving of capacity would double the price of disposal.**"

Upon landfill charges rising to the level of an alternative form of disposal, the two should be linked, and continue to rise together, according to the above-mentioned formula - thus discouraging all forms of disposal and promoting an ever increasing commitment to waste elimination.

In addition, Differential Tipping Fees are required to further discourage the generation of mixed waste and encourage source separation.

- Source-separated materials, that can be re-used or recycled, should attract fees that are sufficiently less than the mixed waste disposal fee.
- Revenue from mixed waste disposal should be used to help fund waste elimination in accordance with the hierarchy for 'Waste Elimination'.

Adoption of such a policy would demonstrate a responsible approach to the finite and ever-decreasing nature of landfill capacity. Without such a policy, what landfill capacity does remain will be squandered quickly and allow even less time for the necessary transition to a waste free society.

* Requires action by: State and Local Governments.

4.4.6 Funding Priorities and Allocation

Until zero waste is achieved, revenue from waste disposal should be fully hypothecated and used to fund waste elimination. In so doing:

- 'Avoidance' should receive the highest priority and greatest proportion of funds.
- 'Re-use' should receive the next highest priority and next greatest proportion of funds after avoidance.
- 'Recycling' should receive the next highest priority and next greatest proportion of funds after re-use.
- 'Reprocessing' and 'Disposal' should receive the lowest priority and smallest portion of funds.
- 'Hazardous Waste', being a special case, needs to be addressed under all headings of the hierarchy with an adequate portion of the funds for each.

* Requires action by: State Government.

4.5 Hazardous and Intractable Waste Elimination

Extended Producer Responsibility, both physical and financial, must be required of all hazardous and intractable waste generators. Additionally:

4.5.1 Hazardous Waste - Collection and Treatment

- Hazardous waste generation should cease as soon as possible.
- Until hazardous waste has been eliminated, hazardous waste collection and treatment should be co-ordinated by government authorities and funded fully by those industries with which such waste originated.

* Requires action by: National, State, and Local Governments, and Industry.

4.5.2 Intractable Waste - Storage

- Intractable waste generation should cease immediately.
- For that intractable waste that does already exist, guaranteed safe storage is the only appropriate means of ensuring the long-term protection of the wider environment.

* Requires action by: National and State Governments, and Industry.

Appendix I: Definitions

Terms used in this strategy are defined as follows:

1. **Waste Elimination:** not creating waste for disposal by adhering to the following hierarchy; consumption avoidance, product and packaging re-use, and. organic and non-organic material recycling (in that order of priority).

2. **Avoiding:** not consuming material and energy resources (eg. choosing not to acquire unnecessary products or packaging).

3. **Re-using:** using products or packaging again for the same purpose without further manufacturing (eg. purchasing second-hand furniture; returning refillable containers, such as glass milk bottles, so they can be used again).

4. **Recycling:** a closed-loop system using used material to re-manufacture the same product (eg. the re-pulping and re-manufacture of new office paper from used office paper; smashing and melting old glass bottles to make new ones). As opposed to.....

5. **Reprocessing:** an open-loop system using used material to manufacture a different 'new' product (eg. manufacturing other products from plastic soft drink bottles; insulation from waste paper).

   Note: Waste reprocessing schemes consume additional material and energy resources attempting to turn waste into 'new' products, rather than recycling them back into the same product. Such open-loop activities typically have a net impact on the environment, fail to avoid the need for ultimate disposal, and must therefore be recognized as a pre-curser to "disposal".

6. **Waste:** discarded products and materials as well as airborne and water-borne pollutants. From a broader environmental perspective, waste could include such things as energy used inefficiently and sewage for disposal.

7. **Disposal:** attempting to isolate waste from daily human activities by landfilling, river or sea dumping, or incineration - including waste to energy schemes such as biomass and landfill gas collection, Solid Waste to Energy Recovery Facility (SWERF), etc. which do not achieve the objectives established by the waste elimination hierarchy.