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31 Lady Penrhyn Drive Beacon Hill 2100
(PO Box 326, Willoughby, 2068)

Telephone: (02) 9453 3348
Fax: (02) 9453 5928
Mobile: 0407 238 258
Email: aebn@aebn.com.au
Melbourne: (03) 9397 2511
Website: www.aebn.com.au

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Productivity Commission
Locked Bag 2 Collins Street East
Melbourne VIC 8003

Dear Sir

The Australian Environment Business Network (AEBN) welcomes the opportunity to comment on the Productivity Commissions' *Draft Waste Management Report.*

AEBN is an industry and business representative body specializing in environmental issues, which affect our members. Our membership collectively has a turnover in excess of $50 billion and employs well over 50,000 employees. Further information about AEBN can be found on our website at www.aebn.com.au.

Overall AEBN is supportive of the findings and recommendations in the Productivity Commissions' Draft Waste Management Report (WMR). In many cases the findings echo many of the positions and recommendations made by AEBN. In addition, AEBN has examples of what we consider poor waste and policy resulting in perverse outcomes for the government and the community.

While supportive of most of the findings in the WMR, AEBN is concerned that like past reports by the Commission's predecessor the Industry Commission, much of the findings will be ignored by governments who have invested too much in their current policy directions.

1. POLICY MOMENTUM

AEBN believes it will be difficult for governments to turnaround from their current waste policy directions. Such policy directions have their roots dating back to the late 1980s and early 1990s. The Federal Government in 1993 introduced a policy to reduce waste to landfill by 50% by 2000 using 1990 as the base year. The NSW Government upped this approach in 1995 in the *Waste Minimisation and Management Act 1995*, to 60%, quote

3 Principles and objects of Act

> *(1) The underlying principles of this Act are:*
> *(a) to achieve by the end of 2000 a 60% reduction in the amount of waste disposed of in New South Wales (being a per capita reduction based on 1990 disposal rates),*

Naturally these targets were not met and essentially ignored or buried.

Given, the underlying momentum on the current policies on waste, AEBN considers the findings and recommendations of the WMR are likely to be ignored unless examples of the additional costs to Australian communities can be identified. While such research is outside the context of the WMR it could be a useful recommendation.

2. ECONOMICS OF RECYCLING

AEBN agrees with the WMRs statement that '*Recycling can be good up to a point, but there are diminishing returns from recycling and there will be cost to the community where it is pushed too far—recycling consumes resources*.'

AEBN consider that recycling of material can be defined by 2 types:

Type 1) Separation and purification of the collected material to a material similar or of lower grade[1] to the original material (lowering of entropy)
Type 2) Blending, mixing or reacting the material for recovery of energy (waste-to-energy) (increasing entropy)

The second option is less preferred by governments , for example, there is considerable political opposition to incineration. However, blending and mixing to make a lower grade (more highly mixed materials) is also an option, which is discussed later.

Generally speaking the more contaminated a collected material for recycling is the higher the costs there is to separate them for type 1 recycling. A cost to contamination curve would tend to be exponential in shape rising in costs as contamination levels increase. Type 2 recycling would have a similar curve, but it would be much flatter and may have an upper limit even if the contamination levels approach 10 times that for type 1 recycling. AEBN considers not enough emphasis it placed on the type 2 recycling.

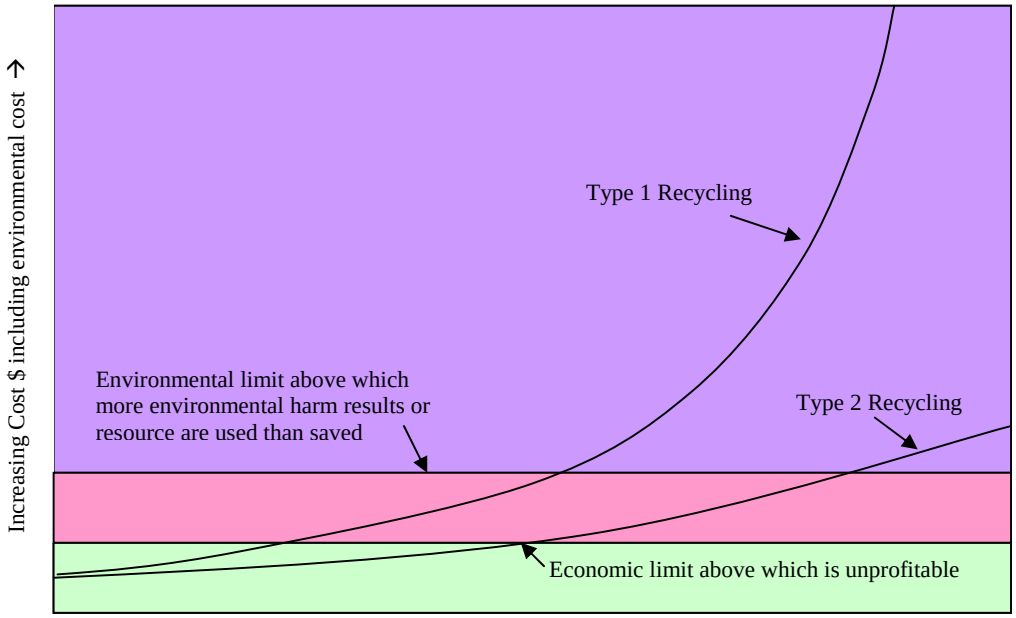
AEBN also considers that recycling has 2 thresholds:

1) An economic limit where recycling increasingly contaminated material becomes uneconomic (i.e. marginal rate of return approaches zero)
2) An environmental limit where the use of other resources, generally water and energy, cause a larger environmental cost than the final recycled material saves.

The concepts of type 1 & 2 recycling and their economic and environmental limits are displayed in figure 1.

[1] Is also called Downcycling which is the recycling of a material into a material of lesser quality. This is different to type 2 recycling where the final entropy of the material is higher than the starting material.

Figure 1 Costs vs Contamination rate for recycling



In some instances the economic and the environmental costs are similar. Paper recycling appears to have these two limits fairly close. Glass recycling has the economic costs lower than the current recycling costs as the raw materials for glass manufacturing are lower than recycling the old product.

3. WASTE LEVYS

NSW now leads Australia with the highest waste levy. The levy has been in place for many years commencing in the late 1970's at around 56 cents per tonne. In 1996 there was a *Regulatory Impact Statement (RIS) on the Waste Minimisation Regulation 1996*. This RIS set the ground work for the increase in the landfill levy claiming that for a well managed landfill with some form of landfill gas extraction and burning systems 50% of the external costs were attributed to methane emissions as a greenhouse gas. A price of $25 per tonne of $CO_{2\text{-}e}$ was used in these calculations. The total externalities including transport impacts and other amenity losses was estimated to be no more than $27 per tonne. As a consequence, the greenhouse emissions represented a maximum $13.50 per tonne. At the time the Government also pledged 50% hypothecation to a newly created Waste Management and Planning Fund. The collection of revenue is rigorously enforced and until the start of 2006 the penalty for late payment was 5% per fortnight.

The NSW levy just rose to $30.40 per tonne and represents achieving the Government's 1996 maximum of $27 per tonne in 1996 dollars. It is expected that the levy will raise about $109 million dollars in 200506. Since 2003 the Waste Fund has received only $1.4 million, and its funds, about $80 million in funds, were then raided on late 2005 to pay for the establishment of the Brigalow and Nandewar conservation areas—essentially converting forestry land to national parkland of some degree. At the same time the government announced an additional annual increase in landfill levy of $6 per annum.

AEBN has estimated the revenue from the full levy post 2010:

Table 1 NSW Waste Levy – Estimated Levy and Revenue

Year	Sydney	Illawarra & Hunter	Revenue $ millions
2005	$22.70	$14.70	$108
2006	$30.59	$22.87	$148
2007	$38.72	$31.28	$190
2008	$47.09	$39.94	$233
2009	$55.71	$48.86	$277
2010	$64.59	$58.05	$323
2011*	$73.74	$67.52	$370
2012*	$83.16	$70.58	$412

* assumes the additional $6 per tonne annual increase continues
Levy est @ 3%CPI

The government in its 2006-07 budget made provisions for the expenditure of $439 million on environmental projects[2] derived from the waste levy and the special levy from 2006 to 2010. However, about $1.279 billion will be raised from the levy, less the contribution to environmental projects the net gain to internal revenue is about $866 million over the next 4 years.

Whilst the government has the right to control over what it does with taxes collected, the process of collecting revenue indirectly through the waste levy as a major revenue source is of concern. As it is an indirect tax consumers are distant from knowing when the increase in the levy is showing up as increased costs. Local Government is the most immediately affected with pressure to be placed on rates. Industry is concerned as it, according to the government, pays 65% of the levy. The levy has been placed on waste to reduce waste to landfill and encourage new technologies to pre-treat and remove for recycling wastes to reduce the quantities to landfill according to the NSW government.

However, little of the $439 million is earmarked for any assistance to reduce waste to landfill. A new grant section under the Environment Trusts has been created and will receive about $10 million in its first year[3]. This is a long way from the $80 million that was held by the now abolished Waste Fund.

As a consequence, there is government policy to reduce waste to landfill, of which the levy is the main means to achieve this. However, there is disproportionately small portion of the funding dedicated to providing research and assistance to achieving waste reduction at source.

Concerningly, is the current unquestioning approach by the media on the way in which waste levies are installed and are used to boost state internal revenue. It is all

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3 There are some other findings associated with waste including $18 million to reduce illegal dumping as the financial incentives will be increasing considerably. In addition, Local Government will receive a $3 rebate per tonne of curb side material diverted from landfill, but a little more than $4 million appears to have been allocated for this in the NSW 2006-07 budget.

done under the guise of being environmentally beneficial, but appears more of a means to patch budgetary shortfalls.

This approach is not limited to Australia as far heavier taxes and government led costs. Just consider the German Duales System, which was about 5 years ago estimated to cost 4.5 billion marks annually to collect packaging material.

4. CONTAMINATED SOILS AND LANDFILLING

AEBN undertook a scoping study titled *Blending Various Wastes With Asphalt* which is attached. One surprising finding was the enormous quantities of, AEBN calls mildly contaminated soils[4] that are disposed to municipal landfills.

Soil Quantities

In NSW there are 2 main landfill types; inert and solid. The solid waste landfill is generally licensed to accept municipal waste. The study found that approximately 250,000 tonnes of mildly contaminated soils are disposed to Sydney solid waste landfills each year. This estimate was based on discussions with landfill operators and contaminated site remediation consultants. For example, AEBN was told that one large site would generate 120,000 tonnes alone of excavated materials to landfill.

The phone survey did not extend to inert landfills—those disposing of construction and demolition wastes. It is assumed that similar if not larger quantities of less contaminated excavated material is also disposed of at Sydney's inert landfills. As Sydney generates about 4 to 4.5 million tonnes of waste to landfill, the contaminated soils make up around 20% of the total waste to landfill and about 35+% of industry's contribution.

Why Does it Go to Landfill?

Pertinent to the WMR is why does so much mildly contaminated soil going to landfill and pay the levy? The reasons are partly economic and part government regulation. Cleaning up contaminated land is expensive processes costing up to $1 milion for say a badly leaking underground diesel tank, to perhaps billions of dollars if all Sydney harbour's contaminated sediments were to be cleaned up.

Much of the incentives to clean up industrial land has been the conversion of old industrial land to residential use. Australia's increasing property values make the expense of clean up of brownsite lands profitable. However, the process of actual clean up requires a government intervention and oversight from planning and environmental agencies. Time is a crucial for the remediator of a brownsfield site to change a cash absorbing process into one which generates an income flow. A quick clean up is generally a profitable one. Hence digging out the soil and dumping it to landfill is usually the cheapest and quickest way to remediate contaminated sites. It is

[4] Soils that meet the NSW DEC's Waste Guidelines are permitted to be disposed of to the landfill in which they meet the criteria for. As these soils are not considered hazardous or controlled waste they are with in the scope of the Productivity Commissions terms of reference for WRM project.

important to realise that most of the contaminated soils on a brownsfield site is only mildly contaminated and suitable for landfill. Consultants are expert at picking out the 'hot spots' of high contamination and treating them separately.

Pushing the dig and dump process is the way in which government agencies intervene. Firstly Councils usually adopt a very conservative approach requiring most of the soil, even if suspect be cleaned. The common result is where contamination is located that the soil is removed down to the bedrock.

Planning Process and On site Treatment

So why cannot the soil be treated on site and remain on site? Again the costs of treating the soil to remain on site can me more costly, but usually the planning system extends the time taken to gain approval for on-site for any treatment process to many years. In fact it is very easy to trigger the Environment Impact Statement (EIS) process in NSW. An extract of NSW's *Environment Planning and Assessment Regulation 2000* identifies the triggers for the EIS process:

15 Contaminated soil treatment works

Contaminated soil treatment works (being works for on-site or off-site treatment of contaminated soil, including incineration or storage of contaminated soil, but excluding excavation for treatment at another site):

(a) that treat or store contaminated soil not originating from the site on which the development is proposed to be carried out and are located:
- (i) within 100 metres of a natural waterbody or wetland, or
- (ii) in an area of high watertable or highly permeable soils, or
- (iii) within a drinking water catchment, or
- (iv) on land that slopes at more than 6 degrees to the horizontal, or
- (v) on a floodplain, or
- (vi) within 100 metres of a dwelling not associated with the development, or

(b) that treat more than 1,000 cubic metres per year of contaminated soil not originating from the site on which the development is located, or

(c) that treat contaminated soil originating exclusively from the site on which the development is located and:
- (i) incinerate more than 1,000 cubic metres per year of contaminated soil, or
- (ii) treat otherwise than by incineration and store more than 30,000 cubic metres of contaminated soil, or
- (iii) disturb more than an aggregate area of 3 hectares of contaminated soil.

As a consequence only sites that have large quantities of heavily contaminated soils that cannot go to landfill choose the on-site treatment option. The Rhodes site which is undergoing on-site treatment from an old pesticide factory, took in excess of 4 years to gain planning permission.

What other options are there?

The dig and dump practice is contrary to the government's policy of reducing waste to landfill. Nevertheless, government planning and environmental regulations tend to force site remediation process to choose the dig and dump option. The government's argument is that the levy is a counter measure against the dig and dump process. As

the levy goes up then there is an increasing incentive to move to on-site treatment and leave the soil in situ.

AEBN is concerned that another approach by government could be to place a ban or reduce the incentive to dig and dump in order to promote more on-site treatment. However, this more likely to result in less clean ups occurring and the generation of orphan sites when owners walk away from a brownsfield site or go bankrupt. This outcome would not serve the environment and would be a punitive approach rather than trying to fix the problems contaminated land presents.

Alternative Approaches

The dig and dump approach may be the best environmental and economic outcome. However, there are actions governments can take to permit efficient clean up of sites and reduce the dig and dump incentives.

The United States of America uses a regulatory mechanism which permits mildly contaminated soils, if they pass environment test criteria, to be used in non-residential infrastructure, such as the internal of road overpasses, levee banks, blending with asphalt and Portland cement, use in foundations etc.

In Australia such projects will only be considered by governments if comprehensive risk assessments on the use of soils out side of landfills are undertaken. This reduces the projects which can take advantage of this approach to ones with large volumes and budgets. Typically a comprehensive risk assessment will cost at least $10,000. Even then only some of the soils can be diverted from landfill or treatment.

If Australian governments were to adopt the USA's approach of use of a laboratory test method, rather than risk assessments as the only choice, then recycling of these soils back into the built environment can take place.

Soil and Other Wastes Recycling

This brings the argument back to AEBN's Blending of Various Wastes With Asphalt report. Asphalt is by far the most recycled material in Australia and in most developed countries.

The US EPA waste figure for 2001 stated that approximately 73 million tons of reclaimed asphalt pavement are reused within the United States of America, which is nearly twice as much as the combined total of 40 million tons of recycled paper, glass, aluminum and plastics.

80% of asphalt road is reused when widening or resurfacing road. This recycle rate is one of the highest for any material, yet is so common it is an unknown fact among the waste industry and reflects on the paucity of data Australia has on wastes.

Again there is a regulatory vacuum in environmental criteria for use of wastes in asphalt, portland cement and other civil works projects. NSW DEC has not been able to define a set of criteria for what is equivalent to virgin excavated material. If one was available then more

soils would be either left on site or moved for use in other ways rather than being dumped into landfill. Better still would be a range of soil criteria for certain uses.

5. SUMMARY

Industry must work and operate in the regulatory environment it finds itself. The WMR identifies the considerable economic inefficiencies in the waste regulatory and policy systems built up over the last 25 years in various forms by largely state governments. This is unlikely to change and industry will have to cope.

It appears that waste is the pariah to government and the community attracting mostly putative controls such as levies, with little economic incentives from government to assist it operate more efficiently and to ultimately advance government policies of waste reduction. The WMR findings and recommendations while economic in its approach should also identify the environmental dangers of governments continuing to taxing waste more and failing to measure it and to address its issues based on its facts in a logical manner.

In NSW there appears a schizophrenic government approach to utilities. Water and energy have substantial grant schemes to assist industry to cut there use and introduce more efficient practices. This approach not only helps companies save money the environment and conservation of resources, it also postpones the need for utilities to construct expensive new infrastructure. Waste management, as a utility, is treated far more putatively, especially with the use of increasing levies and difficult almost reluctance by government to site new waste management infrastructure, especially landfills.

Improvements to the regulatory processes to enable alternative uses of many wastes is currently in a state of partial vacuum. Regulatory innovation on the reuse of wastes offers considerable opportunities for state governments to assist in the recycling and reuse of wastes. Underpinning a better set of regulatory tools and reuse criteria is the need for good consistent data on wastes which as pointed out in the WMR is considerably lacking.

Please contact me on 02 9453 3348 if you wish to discuss the recommendations and positions made by AEBN.

Yours Sincerely

Andrew Doig

ANDREW DOIG
Director
AUSTRALIAN ENVIRONMENT BUSINESS NETWORK