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Friday, 30 June 2006

Inquiry into Waste Generation and Resource Efficiency
Productivity Commission
Locked Bag 2, Collins Street East
MELBOURNE VIC 8003

Your Ref:
Our Ref:

By email: waste@pc.gov.au

Dear Commissioner

Submission on the Draft Report

I refer to the Productivity Commission's draft report on waste management. These comments are submitted as partial and by no means exhaustive response to the report's content and recommendations.

Hyder Consulting agrees with some of the report's conclusions. We concur with the Commission's conclusions that metropolitan regions may be better served by regional waste bodies, and that state targets of zero waste are aspirational at best in the foreseeable future. However, we believe the Commission's report is otherwise very significantly flawed. Some key points are outlined below.

1. No identification of optimal approaches to resource recovery

It is our view that the report fails to identify "optimal approaches" to resource recovery and waste management. In fact, the report criticises approaches identified by others – generally by questioning their validity rather than proving them wrong – without even attempting to identify or evaluate any alternatives.

In essence, the Commission infers that current approaches to resource recovery are either sufficient or been driven too far, and that a continuation of landfilling of waste at current levels is the optimal future direction. Adoption of this approach would clearly set Australia apart from the rest of the developed world. We have identified a number of other significant errors or omissions in the draft report. A brief summary is outlined below.

2. No evidence of financial or economic impacts

The Commission repeatedly either directly states or implies that increased resource recovery will cost more and may therefore not be justifiable. However, nowhere in the Commission's report is any evidence provided that would fundamentally prove this point. Further, no information, no assessment and no estimate is provided as to:

- at what point in increased resource recovery would this occur;
- which industries would be negatively affected;
- for what material streams this would be the case, and;
- what the actual direct or distributed impacts would be.

Indeed, the Commission's report contains simply no estimates of potential costs to businesses, no appraisal of the significance of impacts on governments and / or on

industries, and no estimates of any impacts – or benefits - on a macro economic level.

The Commission frequently references – and criticises - work indicating that impacts within previously considered frameworks (e.g. increased resource recovery of packaging under a revised Covenant) are small or negligible on a national scale, but never once provides evidence or undertakes its own assessment of the consequences it believes may occur.

It is inappropriate for the Commission to criticise others for not providing rigorous assessment and then not provide any in support of its own assertions.

3. No recognition of well documented environmental benefits

Environmental impacts and benefits can be expressed in a number of different ways. There are site-based (localised) aspects which may, or may not, include risks or actual damage to human health. There is also the more holistic consideration of environmental performance, including impacts and benefits throughout the various stages of a product or service. Life Cycle Assessment (LCA) is the most internationally recognised and standardised method for such consideration. LCA results are commonly aggregated into a number of (environmental) impact categories.

Over the course of the last two decades, a large body of scientific evidence has been developed both in Australia and internationally1 that clearly demonstrates that the recovery of materials prior to landfilling and the treatment of residual waste has significant environmental benefits.

It is difficult to understand why the Commission does not appear to have given due regard to this virtually indisputable fact.

4. Misinterpretation and misrepresentation of environmental economic valuation and LCA method

As Commission staff are aware, after the LCA stage involving materials accounting, results can be aggregated into scientific scores or a single indicator. Internationally, indicators which are used to provide a single score are Damage Points, Ecological Footprints, and Monetisation. These aggregations and indicators are not compliant with international LCA standards[2]. Rather, they are seen as a way of making the results (such as valuation of environmental externalities) more meaningful to more people, and are used primarily to indicate the relative environmental performance of different scenarios. They are used by policy makers throughout the developed world to support cost benefit assessment and remove the more broadly subjective elements from a given debate or policy and management option.

In this context, the Commission's comparison of two Nolan-ITU reports with other reports where environmental 'externalities' feature is wrong for the following reasons:

In the valuation of landfill impacts, the "other" reports quoted by the Commission consider a very limited range of substances. *They are not, and do not claim to be,* a complete environmental economic valuation of the impacts of landfill. The Nolan-ITU (now Hyder) estimates of the environmental benefit of avoided landfill (impact of landfill) accounts for a more complete set of substance emissions arising from landfill disposal, applying best available data and methods from a range of sources. Details are provided below and put in context the reports cited by the Commission for comparison with Nolan-ITU estimates.

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[1] References in all of our reports
[2] Which is clearly stated in all of our reports.

The avoided landfill benefits valuation undertaken by Nolan-ITU for Global Renewables Limited is entirely consistent with the report of the NSW EPA (1996, p.60). The EPA estimate does not claim to be, and is not, a complete valuation of the environmental impacts of landfill. With respect to the NSW EPA valuation, the Nolan-ITU method directly references and incorporates the EPA estimate for amenity and traffic corridor impacts within the "Solid Waste" impact category of the method.

The avoided greenhouse gas impact is calculated using the Australian Greenhouse Office calculation guidelines and Workbook - most current at the time of developing the method (AGO, 2001) which provides a more comprehensive approach than the earlier NSW EPA calculation. The estimates do not vary significantly. The BDA report (Zero Waste SA, 2004) merely reproduces the NSW EPA estimate, assuming improved landfill performance, and does not claim to be, and is not, a complete account of landfill impacts.

The OECD publication Addressing the Economics of Waste (2004) is also not, and does not claim to be, a complete environmental economic valuation of the impacts of landfill. The economic assessment conducted for the OECD report incorporates the environmental externality of greenhouse gas potential (at between $1.88 and $21.20 per tonne MSW) along side the landfill control costs of leachate management, clean up costs and monitoring costs.

If the OECD report had claimed this estimate to be a comprehensive environmental externality valuation of landfill, they would be reporting in direct contravention to the recommendations of the European Commission in its extensive research and reporting on environmental cost benefit assessment.[3]

The Commission has attempted to draw conclusions from data sets that are incomplete in isolation. In so doing, the Commission has disregarded the complex system interactions that exist such as energy inputs and outputs and subsequent treatment or processing. The Commission has drawn incorrect conclusions based on erroneous analysis.

In its consideration of upstream impacts, the Commission dismisses the work undertaken by Nolan-ITU on kerbside recycling in 2001. The Commission uses the same anti-recycling arguments that had been very extensively debated by stakeholders and Government agencies at that time; they were roundly rejected prior to finalisation of this study (details below).

Nevertheless, these same arguments have been resurrected by the Commission. The Commission is aware of the amount of data and analysis required in order to arrive at an environmental economic valuation. Rather than acknowledge the benefits of scientifically founded assessment, the Commission has set out to specifically discredit the valuation approach. The Commission's analysis of our valuation data is not only wrong, it is disappointing, and fails to embrace an international and inevitable trend towards more informed decision making. It appears to the observer that the Commission was intent on providing a politically derived conclusion irrespective of the inquiry process or the environmental merits of resource recovery.

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3 including:

Cost Benefit Analysis and Policy Responses (European Commission, 2000).

Study on the Economic Valuation of Environmental Externalities from Landfill Disposal and Incineration of Waste (European Commission, 2000).

ExternE' Project: Externalities of Fuel Cycles. Report Volumes 1 – 6 by the European Commission, DGXII, Science, Research and Development, (1995, 1999 Methodology Update).

5. "Show me the dead bodies" approach

Further, the Commission plays with terms, such as stating that the Nolan-ITU method values "potential impacts" and not "expected impacts".

Firstly, Hyder Consulting does not value "potential impacts". The valuation is based on damage assessment of ambient pollutants. In particular, the method used to value trace air contaminants applied benefits transfer to a damage valuation for a base pollutant. The only application of "potential impact" values is to determine the "equivalence factor" or scientific relationship between pollutants, which is applied as the basis for the benefits transfer. The base pollutant benefits valuation for trace contaminants is taken directly from published government Regulatory Impact Statements as a damage value of sulphur dioxide – a value that is some 5 to 50 times lower than values adopted in Europe as current best available data.

Potential impact assessment is a well accepted method for assessing the relative impacts of pollutant and resource loads, and is the method used by the International Panel for Climate Change for measuring the often cited equivalence factors for Global Warming Potential.

Nolan-ITU, now part of Hyder Consulting, has undertaken a number of reports in this area most of which were supervised by steering committees including Government agencies. Some of these initiatives have also been peer reviewed by Australian academics and overseas experts. These reports include:

- Nolan-ITU & SKM Economics. (2001). Independent Assessment of Kerbside Recycling in Australia, Final Report, Volume 1. Prepared for National Packaging Covenant Council, January 2001. Peer reviewed by EPA NSW, Ross Chapman (CIE Sydney), Terry Coleman (EPA UK) and Peter Newman (Procter & Gamble Newcastle).
- Department of Environment and Conservation NSW (2003), Alternative Waste Treatment Technologies – Assessment Methodology and Handbook, November 2003, developed by Nolan-ITU Pty. Detailed reviewed of model and figures by NSW EPA.
- RMIT & Nolan-ITU. (2003). Life Cycle Assessment of Waste Management Options in Victoria, for EcoRecycle Victoria. Peer reviewed by Eunomia.
- DEC, Department of Environment and Conservation NSW. (2004). Getting More from our Recycling Systems, Assessment of Domestic Waste and Recycling Systems, Final Report, for NSW Jurisdictional Recycling Group and Publishers National Environment Bureau. Prepared by Nolan-ITU, March 2004. Peer reviewed by Tim Grant, RMIT.
- DEC, Department of Environment and Conservation NSW. (2005). Assessment of Garden Organics Collection Systems. ISBN 1 74137 309 3. Prepared by Nolan-ITU, May 2005. Peer reviewed by Tim Grant, RMIT.
- Nolan-ITU. (2004). National Benefits of UR-3R Implementation – A Triple Bottom Line Assessment. Prepared for Global Renewables.

Most of these reports have valued external costs of landfilling as part of the overall assessment. Already in our first study (see above), these external costs were estimated to be between $200 and $280 per tonne of waste to landfill. We have always recommended more work be done on quantifying emissions from Australian landfills (under standardised conditions), and believe that there is considerable scope to improve the environmental economic valuation method. However, we are disappointed in the Commission's dismissal of the work that has been undertaken on the basis of selective referencing and incorrect analysis.

The Commission has rejected established methods for externality valuation which rely largely on direct and indirect measures of public opinion (e.g.: willingness to pay/ or accept compensation). In their place, it substitutes the very narrow direct and proven costs approach, for example, human health impacts built around a "show me the dead bodies" attitude. *Using such an approach, hazardous waste dumping at sea would have zero externality costs*[4].

We accept that estimation and valuation of externalities associated with the full range of environmental impacts throughout the life cycle of materials and products – and including final disposal - is very complex. Nevertheless, we believe that the costs associated with such externalities are real and that the Commission fails to meet its terms of reference by understating such impacts or simply ignoring those aspects that are difficult to measure. We recommend that the Commission recognise this issue in its final report and that it includes a recommendation that this complex area be further investigated[5].

Yours sincerely

Hannes Partl
Principal Consultant
Environment

[4] It appears that the hazardous waste stockpile generated by Orica did not have any externality costs assigned when generated. Similarly, the pollution of Homebush Bay does not appear to have had any externality costs incorporated as it was mainly the public covering the costs of the clean-up for the Olympic Games. The fact that commercial fishing is now largely banned in Sydney Harbour due to pollution of Homebush Bay is another 'externality'.

[5] To date, Australian government funds available for research in this area have been minimal.