Committed to Australia's ICT, electronics and electrical manufacturing industries

AEEMA

INQUIRY INTO WASTE GENERATION AND RESOURCE EFFICIENCY

SUBMISSION BY AEEMA

INTRODUCTION

The Australian Electrical and Electronic Manufacturers' Association Ltd (AEEMA) is the peak national industry body in Australia representing some 400 infrastructure providers for Australia's ICT, electronics, and electrical manufacturing industries. AEEMA is organised in three principal Divisions (Electrical, Electronics and 'ICT Australia®'). Among other industries, AEEMA represents manufacturers and suppliers of domestic appliances and lighting products. These sectors in particular are potentially affected by policy decisions relating to waste generation and resource efficiency and are the focus of attention in this submission.

AEEMA welcomes this opportunity to contribute industry input to the Commission's inquiry. We recognise the Commission's central issues in the terms of reference, namely:

- the economic, environmental and social costs and benefits of waste and waste-related activities;
- market failures associated with the generation and disposal of waste; and
- required strategies to be adopted by government and industry to improve economic environmental and social outcomes in regard to waste management,

We address these objectives in the body of the response.

In the interest of providing a succinct response to the Commission and due to the constraints of time in preparing this industry response, AEEMA has responded to those questions raised in the Issues Paper where we believe we can provide the greatest contribution. AEEMA industry representatives will be pleased to expand on other areas in public hearings if provided the opportunity.

This submission addresses the Inquiry's terms of reference as they relate to a) large domestic appliances and b) lighting products.

a) Large domestic appliances include items such as water heaters, washing machines, ovens, dishwashers, air conditioners and refrigerators. Large domestic appliances are just one of the many products covered under the European WEEE Directive (Waste Electrical and Electronic Equipment) which covers all electrical and electronic goods. As small electrical appliances and electrical equipment usually end up in the general waste because they readily fit into domestic wheelie bins, we have focused on large domestic appliances.
b) Lighting products. These include lamps and light fittings. Depending on the technology employed, luminaires may contain mercury and plastics with polybrominated flame retardants. The batteries in emergency luminaires contain lead and may contain cadmium.

Consistent with the Issues Paper, this response does not address hazardous materials.

PRELIMINARY COMMENTS – THE WASTE DEBATE

International debate and action on e-waste is a crucial issue for suppliers and manufacturers of electrical and electronic goods. The European WEEE Directive encourages and sets criteria for the collection, treatment, recycling and recovery of electrical and electronic waste – it affects any business that manufactures, brands, imports, sells, stores, treats or dismantles electrical or electronic products within the European Union. Industry recognises that the WEEE Directive and

other such initiatives internationally are driving Australian governments to increase the level of recycling in this country.

For AEEMA members this developing policy debate has implications for:

- whitegoods and other electrical products
- televisions
- lighting products

The debate has implications for these industries due to the volume and/or type of materials used. The most common materials in appliances and lighting products are metals and plastics.

AEEMA's high-level policy platform on issues raised by the various stakeholders in the current debate can be summarised as follows:

- Any product stewardship scheme must be national and effectively policed. In particular local government must follow state and territory governments rather than acting unilaterally.
- In order to help ensure that product included in a product stewardship scheme is selected on justifiable environmental, social and economic grounds, all candidate product should be subject to a rigorous regulatory impact statement process.
- Safety net regulation introducing a mandatory requirement on suppliers to comply with product stewardship arrangements, irrespective of whether the framework is co-regulated or fully regulated, must be binding on all suppliers without exception.
- Orphaned and historical product must not be the sole responsibility of industry. Product stewardship rests on the premise that stakeholders including government, consumers and industry will share the responsibility for end-of-life disposal. In many international jurisdictions, governments have assumed responsibility for orphaned product for a number of years, after which industry takes over. AEEMA rejects the assertion that the electronics and electrical industries can alone sustain the cost burden of recycling orphaned product.
- AEEMA is opposed to governments recovering their costs through industry and using stewardship to shift cost burdens.

A logical tactical approach endorsed by industry to support this policy platform is:

- promote the concept of developing a *waste processing industry* rather than placing encumbrances on the supply sector

- promote, and convince governments to fund, programs of responsible consumption alongside responsible production

- encourage the use of regulation only to the extent that is necessary and consistent with open trade in electronics/electrical sectors

- ensure any regulatory framework guards against unfair competition in the marketplace

WEEE – THE NEED FOR BALANCE

Before addressing specific issues raised in the Commission's paper, AEEMA urges the need for a balanced approach to regulation when considering claims of adverse environmental impacts from shredder floc (material remaining after recycling) after it is disposed in landfill. There are many research examples that counter such claims, and AEEMA references some of these below. AEEMA cautions against the precautionary ban principle when assessing the results of adverse research on the impact of shredder floc on the environment. Accordingly, AEEMA supports a policy framework that promotes the concepts of recovery where justified and regulation only where appropriate.

A substantial body of peer reviewed scientific evidence shows that fears of adverse environmental impact of heavy metals (such as lead) from landfilled domestic appliances and other waste electrical and electronic equipment (WEEE) have been exaggerated. There is no compelling evidence that WEEE items leach heavy metals in landfills (Jang and Townsend 2003). Furthermore, extensive data based on a one-year

study in the US shows that 'heavy metal concentrations in leachate and landfill gas are generally far below the limits that have been established to protect human health and the environment' and that 'municipal solid waste landfills can provide for the safe, efficient and long-term management of products containing heavy metals and can effectively control the release of heavy metals to the environment' (SWANA 2004).

Similarly, some concerns expressed about the brominated flame retardant (BFR) decabromodiphenylether (deca-BDE) have been exaggerated. Australian safety standards are stringent and often result in the use of flame retardants in electrical products *to ensure consumer safety*. This apparent public policy dysfunction is actually in place to serve an appropriate outcome. Accordingly, AEEMA supports the continued use of materials *where, on balance, they improve the inherent safety of the product.*

A 10-year risk assessment by the European Union released in 2004 found 'no identifiable risk' from deca-BDE and no justification for applying the precautionary principle to ban the use of deca-BDE. Gattuso (2005) finds that these results are consistent with similar studies by the US National Academy of Sciences, World Health Organization and US Consumer Product Safety Commission. A 2000 study by the Swedish National Testing and Research Institute weighed the benefits of fire safety against the environmental cost of producing and using a given flame retardant. The study compared fire safety data in the US (where flame retardants were required) with fire safety data in Europe (where concerns about retardants such as deca-BDE led to reduced fire safety standards). The study found that limiting use of flame retardants led to increased fire danger and that resulting fires caused dramatically higher emissions of toxic products such as dioxins, furans and polycyclic hydrocarbons (Gattuso 2005, Simonson and Stripple 2000).

It should also be noted that the appliance and lighting industries have already made significant product changes to accommodate regulatory requirements related to waste/hazard reduction. These include changing refrigerant and foam blowing agent types to prevent ozone depletion and support for reducing mercury content in fluorescent lamps (currently subject of a Standards Australia public comment draft).

However in some instances new regulations can also increase waste. Improved energy efficiency of refrigeration appliances can result in increased quantities of insulation. Thus in order to comply with one government compliance regime, an industry may be adding to shredder floc.

Recover Where Justified

In a paper published in December 2005, the Network of Heads of European Environment Protection Agencies stated that 'voluntary agreements between governments and industry can prove to be useful policy tools to promote innovative environmental practices particularly based on core, realistic regulatory frameworks accompanied by a series of specific voluntary measures and activities of common interest set up with a wide range of stakeholders' (*The Contribution of Good Environmental Regulation to Competitiveness*, op. cit., p.3). Consistent with this recognition, mandatory take-back and recycling requirements for WEEE can impose significant costs, yet fail to reduce environmental risks. In fact, some efforts to increase recycling or reduce the use of lead or leaded solder could result in significant *increases* in environmental impacts from increased energy consumption, such as greenhouse gas emissions (Gattuso 2005). It is contentious whether the health benefits, if any, that may result from elimination of lead in printed circuit board solder would justify the additional waste costs of premature failure of boards due to inferior performance of joints made with lead free alternatives.

Mandated recovery of higher quantities of domestic appliances over current levels would involve significantly higher marginal costs, yet likely result in little additional material recycling.

AEEMA supports recovery and recycling of WEEE items only after full life-cycle consideration of social, economic and environmental costs and benefits. Only after such analysis can there be consideration of regulatory approaches such as extended producer responsibility. Preliminary research shows that mandatory recycling is not justified for most WEEE items – particularly of large domestic appliances - on these grounds. Appliances and lighting products are widely distributed across Australia. The environmental concern to recycle must be balanced with the environmental cost to transport end-of-life product, sometimes substantial distances. If some of the materials were to be considered hazardous, the environmental impact of transport, likelihood of accidents and attendant safety considerations, should also be considered and local waste disposal of small volumes approved where appropriate.

AEEMA further supports co-regulatory industry-based initiatives to increase product recovery where deemed necessary, but notes that appropriate 'safety net' legislation is essential before the introduction of such schemes.

RoHS Directive

Providing that it is done in a consultative manner and with sufficient lead times for manufacturers, AEEMA supports the introduction in Australia of legislation consistent with the European Union's Restriction of Hazardous Substances (RoHS) Directive. Appropriate RoHS type legislation can assist responsible manufacturers reduce or eliminate hazardous substances from their products while protecting Australia from 'dumping' of products not in compliance with the Directive or with other environmental regulations. Importation of non-conforming product has the very real potential to undermine product stewardship efforts.

Maintain a rational, life-cycle perspective

AEEMA supports the Commission's objective to adopt a life-cycle perspective and its efforts to guide rational policy development based on full consideration of social, economic and environmental impacts. Available evidence shows that current product stewardship efforts for domestic appliances perform especially well under these parameters, although the introduction and effective enforcement of RoHS legislation in Australia could provide additional benefits and reward environmentally responsible manufacturers of domestic appliances and lighting products sold in Australia.

AEEMA'S RESPONSE TO QUESTIONS RAISED IN ISSUES PAPER

Are local governments sufficiently aware of best practice approaches to waste management that would suit their circumstances? What institutional constraints are preventing the adoption of best practices?

Local governments are keenly aware of the benefits of including domestic appliances in hard waste collections due to their scrap metal value. As an indication of such value, domestic appliances left by consumers for hard waste collections are often recovered first by scavengers who sell them for metal recycling. Due to their size and weight, these appliances are not likely to end up on general waste collections (as mentioned earlier, they cannot fit into wheelie bins). In addition, domestic appliances' bulk and scrap metal value lead local governments to have these appliances separated at transfer stations, landfills and other waste management facilities and recycled with other metals. Therefore, large domestic appliances are rarely disposed of in landfill in Australia.

Appendix 1 of this submission contains images of end-of-life domestic appliances placed on nature strips for collection. It also contains images of domestic appliances being prepared for recycling.

To what extent is the lack of disaggregated data (that is, the lack of information about quality and composition of waste) a problem? What are the most significant data gaps? What are the costs and benefits of collecting more comprehensive and disaggregated data?

Large domestic appliances, often categorised as whitegoods, are integral to existing metal recycling programs and currently have an estimated 70%-80% recycling rate in Australia (DEC 2005). However, this integration means that accurate figures on domestic appliance recycling are not currently available. Although we would prefer to have more precise data, AEEMA has found that obtaining greater detail on domestic appliance recycling rates and material flows involves significant cost, yet would not result in significantly more accurate data, or increased recycling. AEEMA believes that this 70%-80% recycling rate estimate for large domestic appliances in Australia is conservative. Domestic and overseas reports show comparable rates (DEC 2005, SRI n.d., WDO 2005). In the US, 2000 to 2004 appliance recycling rates ranged from 84% to 90% (SRI n.d.) and the 2002 midpoint for appliance recycling in Ontario was 83% (WDO 2005). However, domestic appliances are integrated so effectively with long-standing metal recycling efforts that precise recovery figures are not available.

Domestic appliances and light fitting products often arrive at metal recyclers mixed in with other metals and are offloaded and then mixed with other metal products in preparation for metal shredding, material separation and subsequent recycling. Some advocates of EPR have used the lack of readily available domestic appliance recycling rates to argue for the introduction of EPR. However, various recycling operators have told AEEMA members that incoming products are so variable and co-mingled that more

reliable estimates of domestic appliance recovery would not be likely, even if considerable resources (including money) were dedicated to this problem.

What countries collect and use data on waste more effectively than we do and what are the lessons for Australia?

As discussed previously, Australia's data on recovery of metals and domestic appliances is generally comparable to overseas data. AEEMA supports the approach followed by Ontario for addressing WEEE items, under which baseline data is first collected, then used to determine whether recycling targets are necessary. Program funding requirements are then developed only after program needs to achieve specified recycling targets are determined (WDO 2005).

Are institutional or regulatory barriers preventing the uptake of better waste management practices and how?

Proceeds from any levies raised on general waste or on specific products should be directed to addressing the waste(s) on which the levies are assessed. AEEMA is opposed to the situation in NSW where a significant portion of the waste levy is appropriated for general revenue. The levy has recently been significantly increased and this increase will be used for general environmental programs, which may be worthy, but which generally are not designed to reduce waste to landfill. Certainly the levy increases the cost to landfill and raises revenue for the NSW Government but does not adequately encourage resource recovery.

How should Australia's performance in waste management relative to other countries be measured? What role is there for key performance indicators in making such comparisons and which key performance indicators are the most useful for public policy purposes?

AEEMA is wary of direct comparisons with other countries without a full understanding of the comparability of datasets. Unfortunately, this can only be assessed on a case-by-case basis. For example, even in Europe, where EU Directives are intended to promote harmonisation, legislation and implementation of the Directives in EU member states can vary significantly due to different geography, demographics, economic circumstances, enforcement priorities and technical difficulties as well as lack of clear product definitions to distinguish product groups.

What are the economic, environmental and social benefits and costs of recovering energy from waste? What is hindering the greater use of recovering energy from waste in Australia?

Strong arguments can be made for the use of energy from waste (EfW) or alternative waste technologies (AWT) on economic and environmental grounds, although low gate fees for landfill and relatively low feedstock densities may result in these approaches being uncompetitive in some areas. Public perceptions and misunderstandings about such approaches, fuelled by some environmental advocates, appear to be the major hindrance.

For domestic appliances, landfilling of shredder floc is environmentally and economically preferable to energy recovery under current conditions in Australia. Energy recovery of shredder floc at less than $1,000^0$C can result in emissions of dioxins, furans and polycyclic hydrocarbons. Currently energy recovery of shredder floc without these emissions would only be possible if the floc was shipped to Japan or Europe for appropriate treatment. However, this option is not currently feasible due to low landfilling costs in Australia and potential regulatory difficulties.

Are there particular products or locations for which recovering energy from waste would be the most efficient approach to waste management?

Other than as described above, for residual materials remaining after cost-effective recycling AEEMA supports energy recovery and resource utilisation through EfW or AWT consistent with the Waste Management Association of Australia's (WMAA) Sustainability Guide (WMAA 2005).

What are the advantages and disadvantages of extended producer responsibility and product stewardship schemes?

The OECD defines EPR as 'an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life-cycle' (p9, OECD 2001 – incomplete reference) with the objective of reducing 'the volume and hazard from products at the post-consumer stage' (p8, OECD 2005).
In contrast to EPR's emphasis almost exclusively on producers, 'product stewardship' involves sharing responsibility through the lifecycle of products, including the environmental impact of the product through to and including its ultimate disposal (EC n.d.).

The US Environmental Protection Agency (USEPA) has coined a similar term, extended *product* responsibility, in broadening EPR beyond product end-of-life management in recognition that producers have significant ability to reduce life-cycle impacts of their products through programs addressing supply chain commitments and energy efficiency (EC n.d., USEPA 1998, Walls 2003).

This submission has focused on performance against the two principal objectives common to most EPR programs (OECD 2005):

- providing ‘design for environment’ (DfE) incentives for producers; and
- increasing recycling rates.

Australian standards and common law liabilities already provide significant DfE incentives for Australian domestic appliance manufacturers. With current recycling rates in the 70-80% range, mandated recovery of higher quantities of domestic appliances would involve significantly higher marginal costs, yet likely result in little additional material recycling. For these and other reasons in this submission, EPR is therefore clearly not an appropriate policy instrument for domestic appliances.

AEEMA is especially concerned with the OECD (2005) finding that there is no upper limit on costs of EPR, as EPR costs are incurred even if they exceed benefits. Such an approach would likely run foul of Council of Australian Governments policy development guidelines. A more appropriate objective for EPR and product stewardship schemes is to attain an efficient level of the environmental externality in question, and to do so cost-effectively (Walls 2003).

Which products are most amenable to (EPR and product stewardship schemes)?

Collection and disposal of non-hazardous end-of-life products from households are usually the responsibility of municipal governments and funded through general taxation such as rates or through user charges for households and/or businesses. The system and societal costs that may result from the introduction of problematic materials into such systems are significant, and it therefore makes sense to establish through EPR separate, controlled channels for toxic or hazardous products such as tyres, lead acid batteries and mercury-containing products (OECD 2005).

Focus on end-of-life management of household wastes by EPR may be misplaced. For example, it is estimated that the social costs of landfilling waste represent less than 5% of the total societal cost of production and consumption of goods, since a large volume of the waste stream consists of inert or non-harmful materials (MMA and BDA Group 2003a).

Separate collection schemes and EPR and product stewardship approaches such as advance disposal fees (ADFs) and advance recycling fees (ARFs) and development of producer responsibility organisations (PROs) are most appropriate for managing and funding end-of-life management of hazardous or difficult-to-manage products such as certain electronics, oil, tyres and lead acid or nickel cadmium batteries and lamps containing mercury (perhaps in excess of a particular mercury content). For such products, AEEMA supports the adoption of product stewardship and shared responsibility principles and approaches that address the full life-cycles of such products and the reduction of overall environmental impacts. We note that a variety of approaches may be required in combination to achieve the desired objectives.

How should importers be treated under these schemes?

Importers should be treated exactly the same as domestic producers (just as they should be treated the same way in all product compliance regimes). It should be acknowledged that a realistic assessment of environmental compliance of manufacturing facilities located overseas is speculative at best in the current global market. Some countries have well established environmental regulations that are credible and transparently enforced. However many of our trading partners have token regulations at best.

Who should bear the responsibility for the disposal of 'orphaned' products (that is those products in circulation before the scheme is introduced)?

While we recognise the political imperative to do so, AEEMA does not support requiring current suppliers to provide for the disposal of orphan products. Such a requirement may increase recovery rates slightly, but would not provide DfE incentives for producers, and therefore would be inconsistent with the OECD's objectives for EPR. The extra cost for recycling orphan products dilutes the benefits of DfE for producers of current products, and does not promote DfE as the products have already been manufactured and distributed.

Australian appliance manufacturers already face significant cost pressures from imports and products not manufactured to the same environmental standards. It is unrealistic and unfair to expect local manufacturers to then be responsible for addressing problems caused by international competitors. A more appropriate solution would be that if EPR is proved necessary, to require responsibility as of a given date and allow local governments or collection centre operators to charge for cost recovery to recycle orphan products.

AEEMA supports the view that responsibility for 'orphaned' products should be shared among all of the industry stakeholders, including governments, consumers, manufacturers and importers.

What are the advantages and disadvantages of the different regulatory options for setting up extended producer responsibility or product stewardship schemes: self regulation, co-regulation and explicit legislation?"

Self regulation

In broad terms, self-regulatory approaches provide significant flexibility for progressive companies. However they can lead to market distortions due to 'free riders', or 'non-participants' that gain unfair competitive advantage by not participating in EPR or product stewardship schemes and thus not contributing an appropriate share of the costs of such schemes, despite their contribution to the waste stream. In schemes affecting a large number of companies or where responsible parties are difficult to track, free riding can threaten the financial viability of entire schemes (EPHC 2004, OECD 2001).

Co-regulation

Co-regulatory approaches help to address free riders through underpinning legislation such as the NEPM for Product Stewardship currently under development by the Environment Protection and Heritage Council (EPHC). In order for such schemes to be viable, this underpinning legislation must capture 100% of the market to eliminate all free riders.

The OECD (2005) has found that co-regulatory approaches or market-based instruments (MBIs) such as tradable recycling credits allow greater flexibility, help to ensure goal achievement cost-effectively and provide greater transparency, in contrast to explicit legislation such as mandated targets.

Explicit legislation

Regulation and enforcement of explicit legislation is by far the most expensive of the regulatory approaches considered. Further to this, explicit legislation is not inherently more effective at reducing negative social and environmental externalities.

What should be the relative roles of industry and government in the development of such arrangements?

AEEMA supports industry and government working collaboratively to develop sensible, effective EPR and product stewardship schemes where their development is justified, as addressed above. An example of such collaborative activity is a scheme to recover ozone depleting refrigerant gas regulated under the Ozone Protection and Synthetic Greenhouse Gas Management Act 1989.

A key role for government is to develop and effectively enforce any underpinning legislation to ensure that industry leaders and other scheme participants are not competitively disadvantaged by free riders. Some schemes call for government to collect levies for funding the scheme and distributing proceeds in agreed manners as a means of addressing the free rider dilemma. However we note that this involvement can vary significantly from scheme to scheme and must be considered on a case-by-case basis.

A major concern for industry is the difficulty in having non-compliant product removed from the market. In other regulatory compliance regimes, such as electrical safety, regulators have been notified of deficient products and no effective action has been taken.

What is the most appropriate way of collecting products covered by an extended producer responsibility or product stewardship scheme?

Again, most appropriate approaches will vary according to the specific product category and require industry and all levels of government working collaboratively to ensure effective implementation. We make the point that consumers generally will opt for the

easiest or least costly option. This means they will place items in their wheelie bin if they fit.

What is the role of levies in extended producer responsibility and product stewardship schemes?

Levies can be appropriate to fund PROs or similar organisations that are intended to increase recycling rates of particular products or achieve other environmental objectives. AEEMA supports the use of levies to fund PRO activities collaboratively determined between industry and governments, and in a manner intended to reduce the overall environmental impacts of the product(s) on which the levies are assessed.

AEEMA does not support the Industry Funding Organisation (IFO) approach being applied to a range of products by Ontario. IFOs focus almost exclusively on funding as a means of demonstrating EPR. The IFO is responsible for calculating and obtaining fee contributions from member companies and ensuring that funding is channeled to designated organisations such as municipalities. The principal example of an IFO is Stewardship Ontario, through which industry funds half of the cost of kerbside recycling in Ontario, Canada in order to show EPR for packaging. A substantial flaw of the Stewardship Ontario model is that industry is expected to fund recycling efforts without any efforts to improve the cost-effectiveness of the program and without any control over the program's effectiveness in increasing recovery.

If producers are required to pay a mandatory levy, what other obligations should be placed upon them?

The objectives and amount of any mandatory levy payable by producers should be specified by agreement with those producers. Producers paying mandatory levies should also be required to report independently verifiable data in a transparent manner to help

ensure accountability for levy proceeds. Where such transparency occurs, it has often resulted in decreased levy amounts over time. Recipients of the proceeds of any mandatory levy should also be held accountable.

Producers paying mandatory levies should also be required to report independently verifiable data in a transparent manner to help ensure accountability for levy proceeds. Where such transparency occurs, it has often resulted in decreased levy amounts over time.

What is the appropriate mix of producer levies and post consumer charges (including local government rates and tipping fees)?

Regardless of the point of assessment, levies and charges will inevitably be passed on to consumers. The debate about the consumer paying rather than the ratepayer is merely shifting apparent costs, as in most cases the consumer contributes to paying rates. It is imperative that producer levies be introduced only after full consideration of social, economic and environmental costs has clearly identified the need for some EPR or product stewardship approach, and after industry and government have agreed on effective responses. Cost-effectiveness to achieve specified environmental and social objectives is paramount in order to minimise distortions from levies and charges. These parameters may vary significantly from product to product and over time.

Where levies are instituted, they should provide clear signals designed to achieve the program's objectives and there should be a reasonable level of transparent public reporting about the levies collected and uses of the levies to address environmental impacts of the product in question. There should also be sufficient flexibility to allow the levies to be reduced as programs become more cost-effective and problem areas are addressed.

Point of return charges are appropriate for local governments to apply to orphan domestic appliances recovered through municipal facilities such as transfer stations or landfills, where such costs have not already been addressed through industry funding. One area that is often not considered is the working life of the product. If the average working life of the product exceeds 10 years, as is the case with most domestic appliances and light fittings, post-consumer charges make more economic sense. Setting a fee to be collected at point of sale for a task to be performed in ten years' time to environmental standards not yet defined is unrealistic.

When is it appropriate to implement uniform national approaches and when is it appropriate for the jurisdictions to pursue their own agendas?

Nationally consistent policy approaches are critical to limiting compliance costs of companies and in recognition that viable trade generally shows little regard for jurisdictional boundaries. AEEMA supports jurisdictions working with industry leaders in innovative environmental initiatives and where jurisdictional action is necessary to support underpinning legislation such as NEPMs. However, jurisdictional efforts should be complementary to, rather than undercutting, nationally consistent initiatives and be based on a full understanding of social, economic and environmental considerations.

AEEMA is concerned that the NSW Government may currently be pursuing policies that have not been agreed within the Environment Protection and Heritage Council. Our Association has been issued with a set of demands from the Minister for the Environment that we understand extends beyond agreed parameters established by the EPHC. This sends confusing signals to members of our Association and begs the question of where scarce resources to meet jurisdictional demands should be placed.

How well is the Environment Protection and Heritage Council functioning in developing waste management policies that are in the national interest?

AEEMA understands that a shortage of resources in the Environment Protection and Heritage Council led to individual state jurisdictions being given responsibility for waste streams. New South Wales, for example, has responsibility for electrical and electronic waste. Such devolution of responsibility has been at the expense of national consistency and led to the problem referred to in our response to the last question. Hence in order to achieve national consistency it is important that the Council be adequately resourced.

How useful is full life-cycle analysis in determining the environmental and economic costs and benefits of recycling various products?

Full life-cycle analysis of environmental and economic costs (LCA) is primarily useful in driving economic and environmental improvements for individual product types over time. AEEMA does not, however, support the use of LCA to develop policy, as framing and assumptions are easily called into question and policies based on LCA would fail to adequately account for product innovation and changes over time. Policies should be based on full considerations of social, economic and environmental costs and benefits, within which LCA can have a complementary role.

To what extent do negative externalities associated with resource extraction and materials processing (and other stages of the product life-cycle) result in non-optimal levels of waste?

It may be worth investigating whether virgin material or related subsidies create any unfair bias against recovered materials and if so, move toward reduction and/or elimination of such subsidies to ensure they are not 'perverse' subsidies that are

damaging to both the economy and the environment. The OECD (2005) notes that proper pricing of virgin resources to accurately incorporate externalities could result in greater encouragement of DfE and greater use of recycled materials where there is a social case for doing so.

CONCLUSION

The introduction of the WEEE and RoHS Directives in Europe have lent considerable impetus to similar waste reduction programs in Australia. Any policy consideration of waste generation and resource efficiency measures must take into consideration the economic, environmental and social costs and benefits of waste and waste-related activities. This should be within the framework of transparent and rigorous analysis.

Nationally consistent policy approaches to waste management are critical for industry in containing costs and achieving economies of scale in recycling programs. Consistent treatment of local manufacturers and importers is also important for maintaining the competitiveness of local industries such as appliances and lighting.

Finally, AEEMA urges caution when considering certain claims on the subject of shredder floc. The most appropriate policy framework is one that promotes the concepts of recovery where justified and regulation only where appropriate.

Acknowledgement

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Appendix 1

Figure 1: Hard waste collection
Source: MS2

Figure 2: Hard waste collection
Source: MS2

Figure 3: White goods mixed with other metal items arrive for recycling
Source: MS2

Figure 4: White goods mixed with other metals prior to processing
Source: MS2