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PROJECT MANAGEMENT

SUBMISSION TO PRODUCTIVITY COMMISSION

Waste Generation & Resource Efficiency Inquiry

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Preface

Eco Waste is a specialty consultancy operating entirely in the area of urban solid wastes and resource recovery. Exactly the sector covered by this enquiry.

(Abridged Corporate Profile attached A).

After some 20 years in the industry, we have observed that one of the major constraints affecting the orderly progression **from waste management** to sustainable and cost effective **resource recovery** has been a **lack of coordination and integrated vision and inertia**. The timing of this enquiry is exquisite in that the effects of a lack of leadership, coordination and common vision are now clearly evident and the potential to learn from these experiences, for the long term and sustainable economic good of the country, is available and immediately actionable.

For this reason Eco Waste welcomes the opportunity to make a detailed submission to the enquiry. We have collated all the specific questions raised in the discussion paper and numbered them for reference throughout the submission.

Because Eco Waste is so intimately involved in the sector, we will be authoring or making major contributions to at least three other specialist submissions from specific special interest groups in the sector. These other submissions include:

i) **WMAA NSW Branch – Strategic Planning and Implementation Working Group (S.P.I.G.)** in role as Co-chair of the Working Group. **A submission directly addressing Government strategy implementation, infrastructure planning and delivery and overarching policy / regulatory / coordination issues – converting the intent and rhetoric into action.**

ii) **Joint Working Group Gyres (JWGT)** – in role as Group Convener and Facilitator of the National Used Tyre Product Stewardship Scheme, that is currently in advanced stages of negotiation between manufacturers, Government and other stakeholders. This submission will focus on the **potential for Resource Productivity / Efficiency to provide the basis for long term and sustainable solutions to today's waste problems with special emphasis on Product Stewardship / EPR schemes.**

iii) **WMAA National EfW Division** in role as Chairman of the division. **This submission will specifically focus on the potential role of EfW and the related Resource Productivity / Efficiency issue.**

In light of the Commission's advice to contributors "...although every submission is welcome, multiple submissions do not carry any more weight than the merits of an argument in a single submission" we have structured this submission to only address each issue or point of view once. This Eco Waste submission takes a high level, all embracing view of the issues and aims to address every question raised (1-74) in at least some detail. Where an issue has been more specifically addressed in one of the other three submissions, no further comment will be made by Eco Waste. However, where Eco Waste has a different point of view to the other specialist perspectives, some comment may be appropriate. In any event, the opinions in this particular submission are entirely those of Eco Waste. Similarly, the other submissions represent specialist points of view, and differences are possible.

Contents

Introduction

By way of introduction we provide a fairly extensive, if high level, response to the first three questions to set the context for the subsequent, more specific questions, and to reference certain important initiatives and/or documents to demonstrate the appropriateness and practicality of the approach promoted in this submission. We shall refer to MSW, C&I and C&D wastes, collectively, as **Urban Solid Wastes** (USW).

Question 1

What are the economic, environmental and social costs and benefits of waste and waste-related activities?

Costs and benefits of satisfying social needs

The "…benefits of waste and waste-related activities" present in two basic forms:

a) The initial provision of the goods and services, that are the social (community) "needs", that, in sustainability terms, we aim to provide without compromising the options for future generations to do the same, and

b) The resultant resource streams (currently presenting as Urban Solid Wastes) potentially available as valuable inputs into the economy.

Urban Solid Wastes are, by definition, an economic cost or disbenefit. An unwanted collateral impact that results from the essential provision of social "needs". Wasting these materials is now presenting as an "extravagant" and/or "ineffectual use of.." these materials and certainly a practice, that in a resource constrained world, is limiting or denying options for future generations to cater for their own "needs". See Carbon Trust (http://www.thecarbontrust.co.uk/carbontrust/about/publications/CTC603_Supply_chainfinal.pdf). Since waste and carbon emissions are closely related, the connection is made "…all carbon emissions can be attributed to the delivery of products and services to meet the needs of the consumer".

In relation to the second potential "benefit", the resource potential, Urban Solid Wastes share a characteristic which is almost a definition and that is heterogeneity or mixture. For any given quantity of such materials, if they are accurately sorted by material type they will present as homogeneous quantities of clearly identifiable materials that all have currently available reuse markets (even if nascent) or opportunities – even in the current state of the industry (bricks, concrete, plastics – by polymer, glass – by colour, metals, paper/cardboard, food/garden organics etc.). This common feature of mixture is created a) at the point of product (or packaging) **design** and b) at the point of **discard**. These issues will be addressed in greater detail in response to questions related to potential solutions or remedies (Q 19, 48 and Attachment C).

Urban Solid Wastes arise as:

a) Unwanted or undervalued materials created in the primary pursuit of the materials extraction and conversion processes to supply the subsequent manufacturing/ productive processes including these processes themselves (C&I),

b) Post consumer spent, surplus or otherwise unwanted products or packaging (MSW), and

c) Collateral material flows of the building, engineering and land development sector (C&D).

Again, looking ahead to potential solutions or sustainable alternatives, the same materials should present as **valuable by-products** rather than as **negatively valued wastes** – which occurred usually as a result of inappropriate discard practices (or options). The post consumer waste stream is generated because of a) a lack of consideration at point of product design / initiation, b) inappropriate discard practices or the unavailability of appropriate discard options or c) a lack of coordination or interface between a) and b); the designers of products and services, the providers of post consumer options and capabilities and the informed involvement of the participating community. (Q48) (see EfW submission and in particular http://www.wmaa.asn.au/efw/task36.pdf and Attachment C).

To summarise, urban solid waste is created as an unwanted collateral impact of the provision of the basic social good – providing for the (goods and services) "needs" of the community. However, as a result of a lack of common vision and understanding of both the unsustainability of the problem and the opportunities available by the adoption of an integrated solution, the majority of urban solid wastes are being managed in a disposal paradigm, based on historical precedent; rather than as a valuable source of inputs back into the productive economy. (Attachment C)

Costs and benefits for the economy

The provision of all the goods and services (public and private) that the community needs / demands provides the basis of most of the economic activity in the country. The delivery of the social benefit (above) provides the stimulus for the economic benefit. However, in so far as the economic benefit is measured as GNP, the economic costs or externalities are substantially ignored. Where GNP is increased as a result of social and environmental negatives, such as storm damage, repatriation of low lying island communities or even the construction of desalination plants (in areas where global warming has so altered rainfall patterns that community survival is challenged), then GNP is not an appropriate or accurate measure of economic benefit.

The economic costs relate to:

- Resource depletion, for future generations to address
- Environmental damage for current and future generations to address
- Opportunity costs for wasted energy and resources
- Cost of waste management services (that are not what society actually wants, but has got used to in the absence of the sustainable resource recovery capabilities that they would actually demand – **if they were fully informed**).

Costs and benefits for the environment

There are not many benefits for the environment. The environment supports the economic activity that provides for the material needs of the community, firstly in the provision of eco system services. Functions such as:

- The production of oxygen and purification of air and water
- Storage, cycling and global distribution of fresh water (the cost of the small amount of fresh water available by desalination now being proposed for Sydney puts this service into perspective on a global scale)
- Regulation of the chemical composition of the atmosphere (it's only now that we have so abused this service, to the limits of natural resilience, such that climate change is induced that we can fully appreciate what was previously being provided for free)
- Sequestration and detoxification of human and industrial waste
- Production of genetic library for food, fibres, pharmaceuticals and materials (where industry is now trying to do a minor fraction of this work themselves, the real value can be evaluated)
- Fixation of solar energy and conversion into raw materials (despite man's clumsy attempts at PV energy production and voracious harvesting and destruction of the very forests that provide much of this service, the community is still serviced by this vital service)
- Protection from harmful cosmic radiation
- Regulation of the chemical composition of the oceans
- Regulation of global climate (although there is now strong evidence that this service has been pushed past the natural resilience point)
- Formation of topsoil and maintenance of soil fertility
- Production of grasslands, fertilizers and food
- Storage and recycling of nutrients

Ray Anderson, CEO Interface, refers to our current abuse of eco services as "plundering" the planet.

In May 1997 Nature Magazine published an article "The value of the world's Eco System services and Natural Capital" valuing such services at between $36-58Trillion (1998 dollars). Since Gross World Product was $39Trillion at that time, it suggests that our national GNP could be subsidised to the tune of 48-60%. For a "market" alone to address waste / sustainable resource issues it would appear that at least 50% of the apparent cost of service provision is hidden in unrecognised externalities.

On this theme, the Nolan-ITU report to the National Packaging Covenant 2001 (http://www.packcoun.com.au/NPC-FINAL-01.PDF) found that whilst the direct cost to householders for a separate recycling service was some $26/yr, the net economic / environmental benefit was some $68/household/yr. An advantage of some $42 /household/yr, or an advantage some 60% greater than the apparent direct costs.

The systematic, integrated and coordinated paradigm change from truck / dump / waste to resource efficiency / recovery is not only essential for sustainability but also very good for business and economic growth, and the vital social outcomes that drive the whole process.

Against this background urban solid waste is:

a) An unsustainable environmental, economic and social cost – **that is entirely avoidable**

b) A "canary" issue for society as a whole that points up:

   i) The unsustainable "demand" from society for certain goods and services

   ii) The flaws in the current extractive / productive processes that seek to satisfy the apparent social demand/need for goods and services

   iii) The opportunity to systematically influence i) and ii) above, for the better

c) A basis for cost effective and sustainable economic growth, if approached from a Resource Productivity / Efficiency point of view – rather than the truck and dump paradigm that we have all grown up with.

Urban Solid Waste currently presents as an environmental cost in such areas as:

- Noise, odour, dust, groundwater pollution etc.
- Loss of amenity
- Opportunity cost (for future generations) creating a diminishing resource inventory going forward (the same materials should be constantly presented back as productive inputs into the economy in accordance with the concept of Highest Net Resource Value) (see Q 13).

Question 2

What are the market failures (including externalities) associated with the generation and disposal of waste?

As the NSW Branch of the WMAA Strategic Planning and Implementation Working Group (SPIG) submission can demonstrate and confirm, the current disposal / landfill paradigm is the service that society has become used to – but doesn't want and, in our view, shouldn't be required to accept.

The concept of Market Failure is most obvious in light of the assertion that if the community was **fully informed** of the issues, potential and ramifications (and were of good conscience) nobody would knowingly condone or accept or (directly or indirectly) pay for a disposal / landfill service (or outcome), and yet that is exactly the service and outcome that the vast majority of the community receive **and pay for** every week.

Why is it that if no one wants a wasteful disposal / landfill paradigm, the community receives and pays for exactly that outcome? Especially when the systematic and sustainable resource efficient, resource recovery systems are cheaper, more cost effective (with legitimate externalities included), sustainable and greater contributors to economic growth and social wellbeing than the current arrangements?

Within the purview and focus of this submission to this inquiry we will attempt to address this issue and promote the timely nature of this inquiry to provide the catalyst for the necessary paradigm change on a national basis.

For market forces to drive appropriate and /or preferred social development, all the relevant signals, facts and options need to be available and understood by the "market".

Whilst doing things sustainably and properly, even if differently, would be a "motherhood" response if the community was canvassed, is it reasonable to suppose that because -

Waste issues have always been around

And managed in much the same way over time

And alternatives, they are told, are more expensive for only marginal improvement

And it's always someone else's fault / responsibility

And anyway, what can each individual do about such a huge problem alone?

And the "problem" is always kept out-of-sight-out-of-mind

Could it be the classic "boiling frog" syndrome – the issue never quite gets acute enough for the community to take the we're-as-mad-as-hell-and-we're-not-going-to-take-it-anymore approach. In these circumstances Australia continues to waste to landfill 50,000 tonnes of urban solid wastes **each day** (SPIG). That's a garbage barge the size of the Sydney Cricket Ground arriving in Australia **every day** and depositing its foul contents in some hole or gully – and there is currently no public outcry.

Market Failures

As the JWGT submission so thoroughly demonstrates – a waste problem can be completely resolved by realigning the prevailing economic drivers to recognise and realise the Highest Net Resource Value (HNRV) of the materials themselves such that used tyres will cease to present as an expensive waste problem, but instead, as a valuable resource that can and will support an integrated system of resource value recovery and product supply back into the productive economy. In this example an economic disbenefit (landfill cost of whole tyres on a National basis – range $125.69 to $170.05/tonne, shredded tyres – range $52.66 to $71.25/tonne (plus shredding costs)) can be transformed into a potential benefit in the order of $400 to $500/t for currently recognised Tyre Derived Products (URS *Economic & Financial Analysis* – JWGT submission - http://www.atma.org.au/Position%20Papers.htm).

The catalyst for a change (in this used tyre example) from a waste / disposal paradigm to a sustainable resource efficiency paradigm is Government / Industry cooperation and coordination supported by a common vision and understanding that has been modelled to provide the inertia for change.

In the case of used oil, a similar outcome is being achieved on the basis of a differentiated benefit scale – that rewards quality, excellence and HNRV products. In that industry the value achievable from quality used oil derived products has increased the returns available to collectors, who in turn can now afford to collect used oils that present in smaller volumes, lower quality or more distant locations than before. Again demonstrating the increased GNP available from striving for HNRV from "waste" materials and simultaneously delivering environmental advantages as collateral impacts of simply pursuing self interest in a resource efficient market place. And so to Urban Solid Wastes (USW) and the related market failures.

As introduced (Q1) USW is in effect a mixture of readily recognised materials and resources that could and would all be readily accepted back into the productive economy as valuable inputs – if it wasn't for the mixture or purity issue.

In short, **for USWs to be presented as useful inputs into the economy they need to be systematically recovered, sorted and reprocessed to bring them up to a standard recognised as useful and valuable in the mainstream economy**.

This sorting and reprocessing is well established technologically in Australia and elsewhere in the world, but it is more expensive than simple disposal and so in a market that doesn't recognise sustainability or the broad range of externalities that are ignored in a disposal paradigm, change is terminally constrained where market forces are to provide the inertia.

The opportunity presented by this Productivity Commission inquiry is to establish the sustainable, resource efficient, community preferred paradigm to the management of USWs such that their inherent and embedded resource values can be realised to:

a) Offset the additional direct costs, and

b) Deliver the social and environmental benefits as collateral impacts of doing-the-job-properly, and

c) Creating additional GNP, on a sustainable basis, for the benefit of genuine growth and the productive economy as a whole.

In the existing market place the additional cost of sorting and reprocessing the materials (often referred to as Alternative Waste Technologies (AWT)) (see separate submission from WMAA NSW Branch AWT Working Group) is currently benchmarked against the apparent cost of the disposal / landfill alternative in determining viability.

This points up a number of important issues that establish the existing rationale for waste services to be offered where sustainable resource recovery services are needed and actually wanted by the community as a whole.

- In the case of MSW, Local Government makes the primary contractual / service provision decisions, to stay with disposal / landfill versus AWT, on the basis of their own localised perspective –

  i) They have been used to landfill and managing MSW for direct cost advantage and public health outcomes

  ii) Local Government is close to the community and their needs and expectations, but they are not risk takers or likely to adopt major new initiatives in MSW in isolation

  iii) AWT and the integrated network of up and down stream systems, facilities, capabilities and markets are all regional or national in scale and too hard for local Government to asses and manage individually

- In the case of C&I (and MSW) the traditional waste contractors have significant investments in the status quo, disposal-based service delivery – they seem to be of the view that all other forms of AWT or resource recovery present smaller returns per tonne of waste handled, than their simple, traditional service.

- Viability and cost effectiveness of the sustainable resource efficiency / recovery systems is benchmarked in the market place against disposal / landfill services and outcomes.

The totality of this submission will aim to establish that this "market" determination of viability is a major failure to be addressed.

"Market" viability evaluation framework

If the market is to self select for the appropriate outcomes in the USW sector, certain detailed evaluations must be completed and reflected in **a fully informed market place**.

a) True cost of landfill

Landfill is often priced as little more than the direct operational costs, plus a commercial margin, plus a levy or tax imposed by a State jurisdiction to raise revenue and disencourage landfill as an option (or encourage alternatives).

In fact, landfills have far reaching impacts which include:

- Opportunity cost for the materials and resources consumed and further degraded in the landfill (see b) below)
- Loss of amenity (vermin, dust, odour, noise, dust, litter etc.)
- Land sterilisation for more productive uses
- Long term management (30-100yrs) issues including surface and groundwater and subsidence and gas management and (100%?!) gas capture
- Site rehabilitation management and costs

Any low value for the completed site or gas recovery or disposal service offered are of nominal value in the face of the core costs and impacts.

b) Opportunity costs for landfill materials

Materials recovered from USW, and thus not lost to landfill, need to be benchmarked or valued in comparison to the virgin or alternative materials being supplied into the broad economy. For this to be a valid comparison, **virgin materials need to be transparently priced**, including:

- Full cost of primary extraction and conversion
- Cost of existing Government subsidies to primary industry
- Full long term impact of wastes, water use, land sterilisation, discharges to atmosphere, loss of local amenity etc.
- Opportunity cost of non-renewable resources
- Full production cost of presenting the base materials and resources for use in the productive economy

The net effect of this approach is that transparently and fully priced virgin materials would present to the market at considerably more than the currently offered prices. That said, virgin resources will benchmark such important issues as material quality, homogeneity, reliability of supply etc.

If the USW resource recovery, processing and beneficiation sector presented the secondary materials back as quality assured resource and energy inputs into the productive economy, comparatively priced against the "real" cost of the virgin resources, their availability would reflect:

- A volume of virgin resource not required for a similar level of net productivity, including the savings of collateral impacts of extraction / conversion etc.

- The direct cost of sorting from MSW – but offset by the "waste" collection service fees

  NB: Most of the major material types (metals, plastics, glass, building materials, biomass etc.) present in USW in greater concentration than they occur in nature – for primary extraction

- A measurable lack of purity / homogeneity

- A finite value for long term resource security and reliability of supply (since USW volumes are finite)

- But, finally, a systematic realisation of the embodied and embedded energy inherent in such materials

The examples in used tyres (JWGT) and used oil (http://www.sor.com.au/) demonstrate that even without full accounting for the collateral costs of initial extraction and manufacture, the cost benefit equation tips heavily in favour of HNRV resource recovery over landfill.

Many of the constituent materials in USW have lower market values than tyres and oil ($500/t and 0.75c/Litre respectively) but as will be demonstrated throughout this submission, the broad concept is entirely valid.

In summary, Market Failures are evidenced in the current waste sector in a number of ways:

i) The uncosted externalities (that could equate to more than 50% of the Cost of Sale) that are not reflected in the productive economy and not considered when:

   a) Deciding to initiate the manufacture of any particular good or service, and its viability and net cost

   b) Selecting materials and energy for production

   c) Considering potential for resource recovery from the C&I or MSW material flows. In other words, the current market is **very uninformed** when trying to make rational decisions.

ii) For parties interested in accessing resource value in all or part of the USW, the conventional (collect, truck and dump) contractual arrangements with industry (C&I) or Local Government (MSW) do not allow such activity. A specialised resource recovery operator can not access all or part of the USW stream without providing a complete "safety net" disposal service. In effect a resource recovery operator needs to be a landfill operator to get access to the USW.

iii) The current "market place" assesses the viability of AWT or systematic resource recovery benchmarked against the disposal / landfill alternative. This landfill option may or may not have attracted a State jurisdiction landfill levy, to demonstrate the social / political / environmental / economic unacceptability of this option. In fact, viability should be assessed as:

$$V1 - V2 + M = \text{Service Fee}$$

Where

V1 = the actual cost of providing the recovered resources, from USW, as quality assured inputs back into the productive economy

V2 = the full economic (Q1) cost of providing the particular basket of virgin materials (and energy) as inputs into the productive economy

M = operator's margin for providing the service

Service Fee = is the resultant cost / benefit to the community – currently represented as the landfill disposal fee.

For example (JWGT) the economic assessment (Section 3 – URS Report) supports the expectation that used tyres will eventually (within 5-7 yrs of the Scheme operating) go from a negatively valued waste problem to a commodity that used tyre crumbing plants will accept for nil cost at the door – or even pay for as vital inputs into their integrated facilities for generating valuable Tyre Derived Products.

Similarly with used oil re-refining. When the CPSS first started, Southern Oil Refineries (SOR) was paying 5-8c/Litre for wet black oil feed for the refinery. Now that their HNRV re-refining operation allows them to sell base oils back to the market at the same as virgin base oils – or even a premium, the wet back oils are fetching 18c/Litre from collectors. All this extra resource value (as will be the case with tyres) comes from fully realising the optimum V1 value for the materials (supported at present by a differentiated CPSS scheme).

Whilst the V2 values for individual USW materials will be lower on average than oil or tyres, and V1 values lower to reflect the heterogeneity of the materials, never the less, the basic formula will give substantially better outcomes, in terms of service fee, to the general community by:

- Lowering the net cost of "waste" services currently being provided
- Optimising the presentation of recovered resources (and energy) back into the productive economy
- Lessening the impact of virgin extraction for the same volume of GNP or productive output
- Increased GNP with increased sustainable and essential jobs growth and investment in the non landfill alternatives (much of the cost of which will be justified from the value of the resources themselves eg. tyres and oils).

Question 3

What strategies should be adopted by government and industry to improve economic, environmental and social outcomes in regard to waste and its management?

1) Which Government?

The three levels of Government have quite different existing roles and potentially quite different roles in the delivery of lasting and sustainable solutions.

Local Government

Local Government initially developed to provide waste services as a core business, at a time when public health was the primary driver. Wastes were predominantly organic and needed to be collected and dumped – neatly. Most municipalities grew up as self contained units – managing their own collections and cartage and disposal / treatment facilities. Even twenty five years ago, most councils had their own landfills.

Then initially in the metropolitan areas they started sharing landfills on a regional basis (MWDA in NSW created in 1972 to manage the sharing of Sydney landfills).

However, in 2006, the organic fraction of MSW is a sought after input into public and private composting and digestion facilities and the non organic fraction has reuse and recovery markets on a **regional and national scale** – **not a local scale**.

Recommendation1: that policy and strategy be developed that leaves Local Government responsible for systematic collection of MSW and presentation at the first point of receival (for the various streams) to the regionally or nationally planned reverse infrastructure / resource recovery network (see Q17 & 19). Because issues of Product Stewardship / EPR are national (Q48) and markets for recovered resources are regional or national, and the plant, technologies and infrastructure to provide the systematic resource recovery are not applicable at a local Government level, responsibility for the final use, application or disposal as last resort should no longer be a Local Government concern. **They need to fulfil a vital but incremental role as collectors of MSW and presenters of such material to the systematically provided resource value recovery sector.**

State Government

USW is a State jurisdictional issue at present but with the overstretching influence of Local Government at one end and the natural national influence of the Commonwealth at the other, State agencies are delivering mixed results – at best.

The SPIG submission is a case in point, where for years successive State Governments have waxed lyrical about policy, strategy and targets – but achieved almost nothing tangible. And for good reason. Once policy and strategy is established by interpreting the community's desire for sustainable resource use and outcomes, State jurisdictions are frustrated in the area of implementation because of the overreaching influence of Local Government in the critical areas of "supply", and zoning and sites etc. and the natural monopoly of the Commonwealth in the areas of national strategies, markets, trade policy and coordination of a nation vision.

Recommendation 2: that national policy and strategy be developed to promote regional groups of councils to act within a nationally coordinated strategy. That such regional groups (approx. 200,000+ population each) be responsible for coordinated collection and delivery to regional first-point-of-receival, transfer, sorting or reprocessing facilities that, whilst supplied by the private sector, are coordinated at a national level. That regional groups identify and allocate suitable sites for the suite of "reverse infrastructure", materials processing (instead of disposal facilities) in conjunction with the national strategy.

The Commonwealth

USW is usually 50% **unbranded** organics (food waste, garden waste etc.) and 50% **branded** products, packaging and spent or surplus materials/resources. The organic fraction suggests applications back into the productive economy as:

- Quality soil amendments
- Energy (digestion, fermentation), Bioenergy etc.

Because of the intensely degradable nature of such materials – such materials need to be treated / managed regionally, within a national framework of national policy / strategy in such areas as:

- Land degradation / rehabilitation
- Marketing and standards
- National sustainability and environmental policy
- National coordination of regional (supply) groups

The other 50% of branded goods, packaging and surplus / spent materials tend to be more durable and less in need of prompt treatment and can be traced to an originating sector or individual brand. This opens up a much broader range of possible initiatives with the originating parties as well as coordinating resource recovery systems and infrastructure and markets for the recovered materials (detailed discussion of this issue Attachment C).

Recommendation 3: that the Commonwealth should develop and deliver national policy that integrates a coordinated resource recovery position with:

- Environmental policy and sustainability strategies
- Agricultural policy (especially organics)
- Trade and industry policy
- International treaties – obligations
- Economic and finance policy and strategies

Such that State and Local Governments can understand and participate appropriately within their respective areas of expertise and responsibility.

2) What industry?

Industry comes in two parts in this context. First the general extracting, converting, manufacturing, marketing, distribution and wholesale / retail sectors, which collectively provide the goods and services that constitute the social need / community demand. Then there is the specific service sector that currently manifests as the "waste industry" but should be presenting as the resource recovery and recovered resources brokering / provision sector.

For the first, waste / resource recovery outcomes are vitally informed and affected by the relationship between design intent and the post consumer options publicly available for systematic end of life resource recovery. (Attachment C - for detailed discussion).

For the latter, the current "waste" industry**; there are major structural changes required**. To illustrate the point, one can compare the business model of the existing and established scrap metal industry with the existing "waste" industry to understand the strategic and operational differences.

The scrap metal sector works as follows:

Step 1 – the primary income earning step

The operators bid for and seek to secure supply orders from end customers (metal smelters, re-processors, end users) who themselves have final customers in the mainstream metals supply industry.

NB: The maturity of the metals sector means that the trading conditions for quality, quantity, price, conditions of supply etc. are all well established via the London Metals Exchange etc.

Step 2

Once a bid has been accepted and an order received it needs to be physically filled by collecting materials from the inventories in the various scrap yards – to exactly meet the quality criteria and terms of supply established in the initial order from the customer. The order is filled, dispatched and invoiced.

Step 3

The scrap buyers from the individual yards select and purchase replacement inventory for the yards so that the traders (Step 1) can bid for orders secure in the knowledge that the usual range and quantities of basic inventory are available at any time they enter into a binding agreement with an end user.

This scenario features:

- Market pull that can be reliably supplied
- A supply and processing capability focused on supply orders and not over capitalising inventory until the exact customer requirements are established
- Primary income is from sale of Quality Assured products. Scrap recovery services are provided as essential but secondary services.

Compare and contrast this existing successful and sustainable approach with the existing "waste" sector.

Step 1 – the primary income earning step

Secure waste collection and removal contracts by any appropriate means – private treaty, tender etc.

Step 2

Seek out the lowest cost disposal option for the materials that they are being paid to remove

Step 3

Seek to maximise market share so as to be able to offer the lowest possible fees at Step 1 through size of operation and synergies

This scenario features:

- Market push for recovered resources – (if in fact any incentive to recover resources is specified in the initial collection, removal contract)

- A processing capability – if any, to limit the disposal cost – rather than to proactively recover and present resources

- Primary income from collection and removal – rather than sale of products

Until such time as the "waste" sector converts to operate more as a scrap operator they must become progressively marginalised in favour of those enlightened industry entrants who are market focused (even if specialised).

This issue goes to the vital issue of access to USW for such operators, which is currently difficult, if not completely denied by current waste management contracting arrangements – for no good purpose or public good.

3) Summary of Preferred Commonwealth Strategy

USW is a nationally significant problem and opportunity in terms of national economic and resource efficiency policy.

From a supply (problem) perspective, Local Government, operating as regions (approx. 100 regions nationally), can effectively service the community and oversee collection and supply into an integrated, nationally coordinated reverse logistics and reprocessing infrastructure.

The Commonwealth is the natural party (alone or on behalf of the State jurisdictions) to coordinate the cost effective provision of services and engage with the (productive) industry sector to participate fully in the change of paradigm from waste management to integrated and systematic resource efficiency and recovery.

The States, which are the currently empowered jurisdiction, **are the least suitable or capable of providing leadership at any level.** USW is no respecter of State boundaries, but does acknowledge national borders. The States' inability or awkwardness is evidenced by the spotty or strained performance in this area over the last 30 years, with little prospect of vision or performance anywhere in the country.

With every day that passes another 50,000 tonnes of non renewable resources, materials and complex manufacturers are wasted to landfill disposal. This 50,000 t/yr does not include the loss of the 50% of additional value provided by apparently free or unaccounted for Ecosystem Services and all the embodied energy and effort that is expended extracting, converting, manufacturing, marketing and distributing these same materials to supply them to the consumer.

A recent report to the National Academy of Science by Gordon, Graedel & Bertram established that 26% of the extractable copper in the Earth's crust is now lost in non recycled wastes. For Zinc, the figure is 19%. These are just two non renewable resources that confirm the trend to unsustainably deplete the Earth's capacity to provide for current and future generations – FOR NO GOOD PURPOSE! other than a lack of vision and simple coordination. And this loss has all occurred in the last 150 years!!!

For USW materials there is no practical difficulty or economic disincentive or technological breakthrough required to place systematic resource efficiency / recovery onto a path for complete sustainability over (say) 10 to15 years, **if coordinated with vision and commitment**.

- Landfill – as a waste treatment technology should be banned nationally – effective say 8-10 years out in metropolitan areas and 10-15 years out in regional areas.

- Landfill should be redefined (for its essential purpose) as "filling land" (a simple civil function) with materials that have no greater potential resource value than to be applied for filling holes. This would immediately disqualify biomass or materials that had even inherent energy value.

- With the signals established that landfill, as the last resort option, was being phased out, the focus would then be on coordinating the transitional arrangements to ensure the orderly establishment of the network of systems, capabilities and infrastructure to recover the resources currently being lost to landfill.

- Local Government's role needs redefining (and authorising) to focus on **coordinated collection and provision of suitable sites** for reprocessing facilities and infrastructure, **to a national master plan.**

- State jurisdictions need to operate productively in conjunction with the overall Commonwealth national planning OR have their authority amended accordingly.

- The manufacturing sector needs to be engaged, by sector, to optimise Product Stewardship / EPR schemes where practical. This incentive will focus on icon products and materials that have recoverable resource value if aggregated and/or will negatively impact generic AWT products (Fig. 48.2).

- For more generic materials, structured MBIs could channel "branded" materials and "unbranded" organics away from landfill systematically.

  (NB: the UK LATS system could be a valid model for an interim incentive to initiate productive change).

- The eventual landfill redefinition or ban over time would underpin the national strategy, especially in metropolitan and regional areas (90% of the population).

When Sydney was experiencing beach quality problems as a result of sewage ocean outfalls, the problem and solution were well articulated and an $80 levy applied to fix the problem. From the public's perception, the problem was fixed and the levy removed. In this focused and fully hypothecated scenario, the levy was "popular" and a result delivered in a reasonable time frame.

The current 50,000t/day landfill waste, linked to much indiscriminate and useless consumption, in conjunction to climate change and a current paradigm of unsustainability and profligacy, provides an ideal background for a clear, productive, focused initiative to develop and deliver a comprehensive program of systematic change that, if handled appropriately, will:

- Be politically popular
- Good for jobs growth
- Contribute to GNP
- Lessen the community's dependence on virgin resources
- Be energy saving and contribute to GHG reductions
- Put Australia on a sustainable footing whilst contributing significantly to social, economic and environmental growth

Within industry we have the means if Government can provide the vision, leadership and coordination.

At 18 million tonnes per year currently wasted to landfill, the entire project would rank, at the very least, as a major resource management project – and resource management is something Australia is traditionally very good at. Let's build on our strengths and demonstrate that sustainability can be fully commercialised and that doing the right thing is better for growth in the economy than the current waste paradigm and wasted opportunities.

On the issue of timing, it is informative to study the situation in the UK at present. After years of prevarication and denial, the compliance date for the EU landfill directive suddenly galvanised the authorities into action which has now led to a serious capacity constraint within the technology vendor and service sectors to be able to complete all the plant and infrastructure projects now required.

Australia can avoid both the artificial compliance dates and the capacity constraints by starting **now** with properly planned and efficiently commissioned projects.

Types of Waste covered by the Inquiry

Question 4

Are there any items (either specifically noted above or not listed) that should be included or excluded from this inquiry? What are they and why should they be included/excluded?

We agree with the types of waste being considered by the inquiry.

Whilst we have adopted the collective term Urban Solid Waste to include the MSW, C&I and C&D categories, the inclusion of primary industry wastes (agricultural, mining, forestry and energy generation) is vital in fully assessing life cycle impacts of the provision of consumer goods and services (especially mining) and the accounts for the externalities currently not reflected in the market place.

Also the inclusion of those Household Hazardous Wastes (electronics, chemicals, car parts etc.) represents an important sector for:

- Product stewardship initiatives
- Provision of systems and infrastructure for the recovery of household durables (Attachment B - Q56)
- The detoxification of the balance of the USW stream with a view to opening up a greater range of reprocessing options and markets for this bulk fraction (Fig. 48.2).

Overview of Solid Waste

Question 5

This section presents a snapshot on the disposal and recycling of waste. It relies on drawing together various disparate sources of information, which illustrates one of the key policy issues: there are not much data in this general area. *Your views on the need for additional data are sought.*

Data is vital as a primary management tool and the gathering of ever more accurate data should always be a defined and funded line item in any program going forward – BUT there is more than enough data to set the high level goals, policy and strategy platform. Collection of more data at this time **must not be used as an excuse for delayed action**. 80-85% of the problem / opportunity is well known and defined and data collection from now on can be iterative, incremental and conducted in parallel with broad scale initial action.

The need for more data

Question 6

To what extent is the lack of disaggregated data (that is, the lack of information about quality and composition of waste) a problem?

Disaggregated data will be a useful tool to optimise and de-bottleneck a systematic resource recovery system and base line collection, recovery and reprocessing capability on a national scale. However, that is some years in the future. To date we have all the data, disaggregated or otherwise, to establish the basic systems and infrastructure.

Since USW is by definition variable in quality and quantity, the basic suite of systems must:

i) Provide encouragement to industry and consumers to dematerialise service delivery and present any spent, surplus or otherwise unwanted materials as homogeneous by-products / resources, rather than as heterogeneous wastes

ii) Provide the systems for efficient recovery, beneficiation and brokering of such source separated material streams

iii) Provide the systematic and commonly available collection, sorting and reprocessing of all other mixed wastes so as to:

- Optimise additional resource recovery
- Separate the balance into the five generic resource types (see Fig. 48.2):
  a) (Moist) biomass
  b) (Dry) hydrocarbon based materials
  c) Metals
  d) Inert / fully mineralised materials
  e) Obvious toxics or gross contaminants
- Support the speciality converters / processors of these five material groups, such as:

a) biomass – Digestion / fermentation / composting / Carbonisation to produce:
- Treatment outcomes
- Energy recovery
- Soil amendment / improvement / quality restoration products

b) HC fraction – Sorting / polymer recovery / re-fractionating to produce:
- Treatment outcomes
- Energy recovery
- HC products / polymers for reuse / resale

c) Metals – Direct recycling through existing and new marketing channels

d) Inerts – Sorted to produce:
- Recoverable minerals and resources
- Civil applications (filling land!)

e) Contaminants – Positive sorting as part of a) to d) above and return to the individual manufacturers or generic sector as EPR schemes or submit to specialty treatment

We have all the available data to design and deliver all the above systems and infrastructure and further data disaggregation, whilst always useful, isn't necessary and cost effective to initiate these first order systems.

Question 7

What are the most significant data gaps?

The current data could be improved in sophistication in areas like relating waste volumes and recovery to important K.P.I.s like GHG measures or sustainability indices or net society improvement in quality of life / happiness indices etc., but none of this additional sophistication need delay immediate progress.

Question 8

What are the costs and benefits of collecting more comprehensive and disaggregated data?

If data collection was seen as an essential first step, the delay in delivering real progress and tangible outcomes (50,000t/day to waste in landfill) would be significant and could be calculated and should be sheeted home as failure to whomsoever is responsible for coherent progress on these issues.

Question 9

How would the data set be used?

System optimisation and de-bottlenecking, BUT not an essential first step or reason to delay the design and delivery of the first order resource recovery systems and infrastructure.

Question 10

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

Perhaps the EU collects more and better data, and they now have a solid historical data base to work from to identify inputs, trends and outputs, but the EU has also used legislative push to stimulate the market for increased resource recovery, supported by ever more data collection, failed to produce on-the-ground results commensurate with such effort.

Whilst Australia has been slower to address such waste and resource efficiency issues than many other developed countries, this now presents a significant advantage to Australia. It is now possible to learn from all the trial-and-error approaches in the EU and USA in particular, to streamline and expedite capability installation in Australia.

Question 11

What role can web-based exchanges play in promoting the efficient disposal of waste and the recovery of recyclables? What role should government play in developing such exchanges?

Web based exchanges may be useful at the margins or for specific material types, but this is not a mainstream activity – and certainly **not** Government business.

As the scrap metal / LSE example established (Questions 2 & 3) the future for presenting recovered resources as inputs back into the productive economy will be via the same market mechanisms that supply the virgin resources. Recovered resources need to present with known quality and quantity characteristics and reliable conditions of supply and must not be presented so that they have to apologise for their origins. Waste exchanges have always proven to be a waste of time and effort.

Benefits and Costs

Under the general heading of benefits and costs we take the opportunity to address the commission objective "…an optimal approach would be one that maximised the net benefits to the community as a whole", and the concept of a sustainable role for landfill including "…it can help in the rehabilitation of disused quarries".

To this end we rely on Attachment D as a useful contribution to this discussion.

Attachment D – "The Strategic Role for Landfill in a Resource Management Environment" Draft Discussion Paper Rev 3 20/09/02 was developed as an initial program for the then newly formed Landfill Division of the NSW Branch of the WMAA.

As is the nature of consensus position papers developed by a wide range of disparate stakeholders, on an occasional and voluntary basis, such documents can remain in "draft" form for some time. Since this important early work, the NSW Landfill Division's attention has since been directed to debating and negotiating new NSW DEC Landfill Guidelines and S88 structures. However, attachment D, whilst still a work-in-progress does provide some very useful insight into the topics of specific interest to the Productivity Commission.

First, it seeks to address three vital questions:

i) What is so wrong with landfill (in the community's perception of the activity) that we seek to avoid it? and

ii) If (certain types) of landfill should be avoided – why an arbitrary percentage? and

iii) Is there a legitimate role for landfill, for which no avoidance percentage is appropriate and which should be encouraged and supported as an essential activity?

With a view to:

(a) Promote the essential and sustainable landfilling activities

(b) Lobby for greater integration of the sustainable landfilling activities into Government policy and planning approaches.

(c) Attract additional membership to the division

And refers to the NSW Branch Committee (then current) Strategic Directions Discussion Paper in the process.

Section 2 consolidates the description of the Nature of Wastes and concludes that:

"A sustainable society preserves non-renewable resources for continual use and reuse and balances consumptive activities with the availability, and efficient conversion, of renewable resources".

This very important concept goes a long way to define the "optimal approach" that the Commission is seeking to identify.

Such a concept should be financially benchmarked against he full cost of providing virgin resources for the same functions and not against the then prevailing and apparent cost of landfill (see Q2 above).

Then referencing the very detailed WMAA EfW Division Sustainability Guide and Code of Practice the paper posits:

"In a sustainable society, or society aspiring to and moving towards sustainability, is it an appropriate starting point to assert that the only materials that should be landfilled are those that have no higher resource value than to fill land"

This crucial concept is then concluded by proposing four legitimate roles (functions) for landfill as a technology in Section 3. These are:

i) Filling land

ii) Storage

iii) Remediation

iv) Last resort disposal

We will not repeat the coherent discussion since Attachment D is self contained, but would encourage the Commission to become fully conversant with the concepts contained therein as background to the balance of this submission. Certainly the issue of "…rehabilitation of disused quarries…" is systematically addressed so as to avoid such an apparently unimportant function being the "tail" that "wags the dog" of sustainable / efficient resource utilisation.

The waste hierarchy

Question 12

How has the waste hierarchy influenced waste management policy?

The various forms of the waste hierarchy have been a useful tool to popularise and provide structure and reference for the very broad range of stakeholders to the "waste issue"'; but as a literal and precise tool, to be applied by expert and fully informed practitioners, it is over simplistic and bordering on infantile.

However, the function it has served and continues to serve is important. Stakeholders include individuals, families, communities, three levels of Government and the broad sweep of industry, most of which are **not** expert practitioners in the area of resource conservation, eco efficiency, logistics and sustainability in general. For them the concepts of:

- Just because I don't want it – it should be wasted to landfill, or
- Just because it will burn, we should, or
- I have a divine right to make products (and profits) but what the impacts are or what happens post consumer are none of my business, or

- We will only show enough interest to get re-elected and tomorrow can look after itself etc.

are given some structure or grounding by the adoption of the simplistic hierarchy. If all non expert or empowered or specifically concerned stakeholders adopted the hierarchy – even literally, the sustainability agenda would be significantly advanced and make the task for the expert and empowered stakeholders much easier.

Question 13

What are the advantages and disadvantages of using the waste hierarchy approach to waste management?

For the general population the hierarchy is a useful guide to direct productive, consumptive activity into a more sustainable direction.

For the expert policy makers and program implementers and service providers it is little more than a first form primer for the thorough understanding and interpretation of the complex concepts of sustainable resource application.

For the expert practitioner in this area, such as the Commission, the hierarchy should have but passing interest on the path to fully understanding Highest Net Resource Value, Resource Productivity / Efficiency and the delivery of a sustainable framework for the community as a whole.

Question 14

Under what circumstances, and for which wastes, is it appropriate to proceed sequentially through this hierarchy?

For the general public – most circumstances.

For the expert policy maker /sustainability practitioner – never.

See WMAA EfW Sustainability Guide Section 3 for a decision making framework that can be adopted for USW in general as well as the EfW context in which it is presented.

The hierarchy could be considered as being to the sustainable resource use sector as the "Take a Bex and a good lie down" response is to detailed medical diagnosis of an ailment.

Question 15

When would it be more appropriate to consider these approaches as options rather than an ordered sequence? For example, under what circumstances would it be appropriate to forgo reuse or recycling in favour of energy recovery?

For expert practitioners – never. The example of the ONP optimum recover rates is informative, as is the EfW Sustainability Guide, as is studying nature and the concepts of biomimicry.

In essence there is a trickle down structure of practicality whereby most of the material, most of the time, should be directed to the highest (net) value application as a product of a functioning market framework (a market framework fully informed and cognizant of all the appropriate uncosted externalities). Further materials may be directed to lower value applications simply because other factors inform the net benefit (market) calculation; such as distance / travel, quality / homogeneity, reliability of supply, capacity constraints etc.

The hierarchy points in the right direction but there is no substitute for detailed, systematic and analytical planning on a case by case basis for each material and each region etc.

For determining when to conserve a resource or when to "flick-the-switch" to irrevocable energy (CV) recovery see EfW Sustainability Guide Section 3.

Resource Efficiency

On the topic of definitions and relevance to the inquiry we would reference the explanations of "Resource Productivity" and "Biomimicry" and "Service and Flow" Chapter 1 of *Natural Capitalism* Hawken, Lovins & Lovins 1999. Within the terms of reference for the inquiry such explanations and definitions provide the opportunity to thoroughly address USW issues once and for all. Leaving subsequent debate to focus on the detail of implementation and not about the fundamental need for change.

On the issue of the impacts (wastes) generated during the primary production / extraction stage, no final report can have demonstrated proposing an outcome that was "…concerned with getting the best return for the community from the use of all its scarce resources…" if such costs and impacts are not fully understood and brought to account (Q2: V1 – V2 + M = Service Fee).

To not bring all such vital sustainability / intergenerational issues to account is purely selective accounting to accommodate short termism at the expense of the real common good.

Question 16

Are there any other interpretations of resource efficiency that should be taken into consideration when considering policy in the waste management area?

See *Natural Capitalism* in general, Chapter 1 in particular.

Question 17

How can Australia improve the economic efficiency with which resources are used in waste management and disposal?

A free market system may well provide the most integrated and comprehensive framework to improve the efficiency and productivity and sustainability of resource use and application – **BUT** such a system must be **fully informed**; ready and open access must be provided to the available resources and all externalities must be internalised or fully recognised or fully accounted for, with no free riders. It may well be considered a worthy outcome of this inquiry to propose the economic, social / political and strategic framework for such a market based system going forward.

Question 18

Are the levels of waste generation and disposal in Australia too high? If so, what is the basis for assessing this?

Not withstanding the laws of thermodynamics and inevitable generation of entrophy throughout the productive economy, within the limited but practical terms of reference for the Inquiry **there should be no such thing as waste**; energy and resources employed should present continually as products or by-products from each application in the economy. Revisiting paper recycling as an example, there is an inevitable down cycling as fibre length and quality decreases with each recovery and recycling operation, but subsequent if lower value applications are available. **The measure of eco efficiency relates to the closeness of the iterations adopted in the spiral of subsequent uses**. Burning a hardwood dining table to make energy is likely to be an unsustainable downward spiral in reuse iterations.

Similarly, the used oil CPSS has demonstrated via Southern Oil Refineries (http://www.sor.com.au) that retaining lubricant value (lube-to-lube) is more commercially and ecologically sustainable than simply burning waste oil for a one off application of the inherent CV. Whereas using recovered pulp from a paper recycling operation to manufacture pulp moulded products may well demonstrate practical sustainability.

So, Australians' waste and disposal levels are 50,000 t/day too high. **All** the materials currently presenting in the nation's USW streams have at least one or two further uses (including energy recovery) and most have multiple uses available if collected and processed through a systematic, national scale, reverse logistics infrastructure as will be proposed in this submission.

Most of the precious, semi precious, toxic or just utilitarian commodities circulating through the nation's USW streams do so in concentrations many times higher than in their virgin state and many demonstrate significant subsequent conversion and processing values that provide further benefits over the virgin sources, yet they are currently thoughtlessly wasted to disposal. The community has been relying, unsustainably, on the biosphere's natural resilience to this point. Hopefully this inquiry marks the point where the natural resilience of the biosphere can be rested before natural tipping points are reached and nature's catastrophic responses are experienced globally.

On the issue of "basis for assessment" it is vital to understand that man made accounting systems and commercially adopted value systems give results and outcomes **entirely in proportion to the boundary or battering limits adopted for the evaluation.** These are usually short term (1-5 years), localised and tightly focused whereas **genuine sustainable resource utilisation assessments are global, eternal and fully integrated.** The difference between the two assessment regimes represents the natural resilience values that are now at another crucial breaking point.

Question 19

What are the costs and benefits of the different approaches to waste management (such as reuse, recycling and energy recovery)?

Avoidance, minimisation, reuse, recycling, resource (and energy) recovery are all essential and inter-related strategies and options to be adopted, not in terms of a simplistic Waste Hierarchy (Q12-15 above), but as determined by a thorough assessment of:

- Initial need / demand / social good for the individual goods / services
- The most resource efficient delivery pathway
- The highest net value application of the primary and secondary resources and by-products

The question suggests a reversion to a strict hierarchy approach which is not a tool for experts in the area or the current inquiry.

On this issue it is informative to read the Oakdene Hollins report for the (UK) Institution of Civil Engineers (ICE) (http://www.ice.org.uk/downloads//ICE_Resource%20Management%20Strategy.pdf) which addresses the need for public policy in this area to be established as a **Resource Management Strategy** rather than as the prevailing National **Waste Management Strategy** that currently prevails. By adopting CO_2 as a comparative measure the ICE report seeks to demonstrate that a systematic Resource Management approach (such as advocated Q1, 2 & 3 above) is necessary to genuinely address the prevailing Sustainable Consumption and Production Agenda and residual USW in general.

Market Failures and Arguments for Government Intervention

As addressed above the main market failures in the current USW / sustainable resource issue are:

i) Uncosted externalities in the provision of materials and energy as inputs into the productive economy

ii) Uncosted contribution of eco system services (Q1) – which are the services now giving out or under threat as a direct result of our unsustainable consumption

iii) Uncosted externalities of the productive /manufacturing process

iv) The opportunity costs of all the resources lost / wasted to disposal – landfill is not the service that the community requires (see Benefits and Costs above).

v) Access – MSW is tightly controlled by the same stakeholders that designed and delivered the essential public health protection services of 30-50 years ago – Local Government (with State Government oversight) and traditional waste contractors. The sustainable solutions will come from innovative new parties focused on the resource recovery potential first, working with regional groups of councils and with access to highest net resource value markets and marketing arrangements. Thus the design,

delivery and implementation of solutions requires a) the existing parties to realign / reinvent themselves, or b) the existing parties to make way for the new breed of resource recovery operators trying to obtain access, or c) a combination of a) and b).

vi) The sustainable resource management outcomes are the public good that must be delivered.

As previously stated, a **fully informed** market place could deliver the bulk of the outcomes required, **BUT** not without a sustained period of **organised transition** and **centrally orchestrated realigning of the fundamental market forces.**

Question 20

How large are the external costs of properly constructed and managed landfills and other types of waste disposal in Australia? What types of costs are involved? How do these costs vary according to the type of waste?

See above (attachment D) – landfills have only a marginal role in a sustainable resource management paradigm and the major cost of the current landfills is the opportunity cost for current and future generations. A sow's ear is never going to make a silk purse!

Question 21

What externalities are associated with other waste disposal options, such as incineration and composting?

Waste disposal is not an option anyone objectively wants as a service or outcome or should aspire to.

Incineration is another entirely unsustainable form of disposal and is old thinking even with nominal energy recovery. The WMAA *Sustainability Guide and Code of Practice* (Attachment E) provides a very detailed explanation of the issues and provides the decision making framework for the sustainable alternatives.

Composting is an essential reprocessing and product development process for quality soil improvement products – as a waste treatment alternative it is only a stabilisation / pre-treatment technology.

Question 22

Do these externalities warrant a government policy response?

Yes. All as described above.

Question 23

How large a problem is illegal dumping and littering? What types of waste cause most of the problems?

Illegal dumping has a number of root causes including personal behavioural issues. In so far as much illegal dumping is due to the lack of convenient, cost effective alternatives, the proposed suite of integrated, readily available, resource recovery, reverse logistics infrastructure (below) is the solution (see attachment B).

Question 24

What are the main costs of illegal dumping and littering?

Clean up, policing, lost resource value, social frustration.

Question 25

What are the most cost effective policy and enforcement mechanisms for limiting illegal dumping and littering?

No comment.

Other negative externalities associated with the product life-cycle

Question 26

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?

As above – the market for recovered resources can not exert its full beneficial influence whilst primary production is a) subsidised by a wide range of Government programs and initiatives, and b) does not acknowledge or account for the externalities associated with virgin resource extraction / harvesting. The techniques and technologies to recover optimum resource value from USW materials are readily available but whilst the benchmark of virgin resources is so effectively under priced, the more fully costed secondary resources seldom compete favourably on price and quality etc.

This full cost accounting for virgin resources has the potential to be one of the most significant factors that could sustainably address these waste issues.

The Inquiry's selected definition of "sustainability" includes as sub clauses:

(a) The precautionary principle – namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

(b) Inter-generational equity – namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.

(c) Conservation of biological diversity and ecological integrity.

(d) Improved valuation and pricing of environmental resources.

Of these the issue of improved valuation of resources is germane.

Market power in waste management

Question 27

How important are market power issues in waste management? Are there barriers to entry in the markets for collecting and recycling waste and what are they?

As above (Market failures v)). The majority of the existing **waste** management industry (service providers) are stuck in their historical disposal based paradigm and their customer base (Local Government) are not the party or stakeholder best placed or equipped to oversee paradigm change. State Governments, nationally, see too many political "black eyes" in the waste debate and not being service providers, customers or able to influence the markets, so they write policy and strategies and/or set targets – BUT DO NOTHING systematic or tangible or long lasting. They seem to restructure strategies or departments with each electoral cycle and then hope the problem will solve itself.

For expert, capable and empowered parties to break into the existing "waste industry" supply and sites are the major constraints. Supply equals access, which is closely guarded and contracted for 7-20 years. New infrastructure and facilities (sorting, reprocessing etc.) require suitable sites, and little or no provision has been made for such issues and the best process and technology can be thwarted by planning issues and a lack of suitable sites – **where they need to be** to fulfil their strategic role.

The market power issue for recyclables is only an issue for parties with a waste / disposal mentality. The new breed of resource recovery service providers will be motivated by the market potential first and waste management second and will have proposed markets for a range of products made from USW materials.

Question 28

What competitive discipline do exports have on the market power of domestic processors?

A fully informed market will produce products for local conversion / consumption and export. Especially where the virgin resources present to the market full priced – with all externalities accounted for.

Institutional and Regulatory Barriers

These issues have been addressed in the previous discussion but can be summarised as:

Question 29 and Question 30

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

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?

There is a complete lack of an integrated coherent national vision, strategy and implementation planning. Without a consistent framework for all the new and existing stakeholders to plan for and operate within, they are all pulling in different directions, with a range of skills, capabilities and responsibilities, but no common vision of how to productively interact with the other stakeholders. Within this visionless and rudderless paradigm:

i) Local government units are too small to initiate regional or national facilities, capabilities, markets and outcomes generally.

ii) Local government as individual units are focused to differentiate themselves from their neighbours – therefore are reluctant to regionalise in pursuit of a common goal.

iii) Local Government effectively manages "supply" into the necessary suite of reverse logistics and processing capabilities necessary. This often leads Local Government to seek too great an influence over downstream, reprocessing options on a no risk basis. A level of influence quite disproportionate to their respective needs, skills and areas of responsibility – but often this interest is stimulated by the absences of clear policy, strategy or planning from State of Commonwealth agencies.

iv) Local Government is the primary planning authority for suitable sites for waste reprocessing facilities – in the absence of State Government leadership or planning oversight.

v) Since resource recovery is a vital infrastructure requirement sites need to be made available by State and Local Government of the type and location ideally suited to the task. In the current paradigm projects only go ahead where the proponent had a site or fluked an approval. Systematic, efficient and sustainable resource recovery is essential, "public good" and needs to be centrally planned as with roads, hospitals and schools etc.

vi) In the waste management paradigm Local Government sought to let contracts (access / supply) for waste removal services for secure / long periods. This legacy now makes access to MSW for the new generation of market focused resource recoverers impossible and is a major constraint to forward progress. In a fully informed free market the party, technology, or process that could derive the highest net value from a common resource would get prior access to the resource – over the incumbent that squandered or only partially realised the full inherent resource value (see JWGT). In the current long term contracting framework the party who is not only squandering the resource potential in USW's is actually charging the community to waste it completely in landfill disposal.

Question 31

What regulatory and institutional barriers are impeding the development of markets for recovered resources? What is the case for removing these barriers?

As detailed above (Q3.2) recovered resources need to be presented back to the market place without the need to apologise for their origins and be evaluated in the market place on quality, price (relative to the virgin equivalent), quantity and reliability of supply. The scrap metal sector performs in exactly this fashion and is a solid model on which to base future policy.

However, to make this market mechanism work efficiently one or all of the following need to occur:

i) Virgin sourced materials need to present to the market as fully priced (reflecting externalities, primary industry subsidies and the eco services consumed or recovered resources need to attract a benefit equal to such externalities and subsidies).

ii) Some market or exchange will need to emerge in each sector (if not available already) to interface with the market for the virgin resources. **NB** The metals sector has the LME which allows "sight unseen" trading.

iii) The waste industry has to transform into the secondary resource recovery and supply / brokerage industry (metals model) with waste services delivered as a secondary or collateral product / outcome. (Currently waste removal is the primary service – with resource recovery as the collateral or secondary output).

iv) Government planning is necessary to provide assurance for the transitional phase / arrangements as a prerequisite for significant private capital to be allocated to deliver the suite of reverse logistics, processing and materials beneficiation that will be required.

v) Government to communicate a clear end to landfill as an acceptable practice, and to stop benchmarking the viability of alternatives **against landfill** – but rather, against the alternative provision of the materials available from USW compared with the **fully priced** virgin alternatives (as with reclaimed rubber and oil - JWGT).

vi) Access to USW flows to be available on merit (the ability to realise the highest net resource value from USW) rather than long term waste disposal systems.

vii) Local government to be encouraged to regionalise and to provide access to their MSW streams on merit (HNRV). Reprocessing infrastructure to be more centrally / generically planned by the Commonwealth (with or without State participation).

viii) Industry (productive / manufacturing) be engaged and obliged to plan for the post consumer fate of their respective goods, services and/or packaging such that they actively seek to reuse recovered materials and lessen the collateral impacts at all subsequent stages in the supply value chain (attachment C).

To **not** address these barriers, systematically, will condemn current and future generations to continued and unsustainable waste.

Unsustainability of Current Practices

This submission, to this point, has been entirely focused on the **unsustainability** of the current practices. The World Commission on the Environment and Development 1987 definition is quite adequate as a general description of sustainability for the purposes of this Inquiry with particular emphasis on:

1) The precautionary principle – namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
2) Inter-generational equity – namely, that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
3) Conservation of biological diversity and ecological integrity.
4) Improved valuation and pricing of environmental resources.

Question 32

What case is there for using waste management policies to improve the sustainability of 'resource use?

The intergenerational equity issues are central to the definition of sustainability and whenever short term economic efficiency is in conflict with genuine sustainability, the latter must, and will prevail. If we don't design current economic and financial models to fully reflect the sustainability issues, the laws of nature will do it anyway. It's just that ever increasing impacts of flood / drought, hot / cold, rising sea level, storm and tempest, increasing unavailability of ecosystem services etc. will present as extremely economically **inefficient**. The waste issue is not one that can be put off indefinitely – it will be resolved one way or another. The current inquiry provides the ideal opportunity to start the process sooner rather than later and reap all the economic advantages sooner.

Whilst such issues may be specifically outside the inquiry's terms of reference – they are in fact **implicit and implied** as the context and background to all of the 74 questions posed. **It is our view that the Inquiry could not report against the specifics of the terms of reference without understanding and accommodating the broader, higher level issues.**

Policy Options

Question 33

How effective has the mix of policy instruments been in achieving efficient levels of waste? What policies have produced the most efficient outcomes?

In that Australia still squanders 50,000 t/day of complex manufactures, non-renewable resources and useful commodities, in the form of USW, to disposal, the current mix of policy instruments must be seen as abject failures. Certainly it must be very hard to develop and implement effective policy in this sector without any real understanding of the importance and complexity of the issues and no vision or leadership or desire to truly address the root causes of waste whilst seeking to realise the myriad benefits and advantages of getting it right. That said, there are certain initiatives that are worthy of comment.

1) Landfill levies / taxes

State Government applied landfill levies / taxes have the immediate effects of increasing the cost of simple landfill so that:

i) Alternative disposal / resource recovery options are more attractive

ii) Raising revenue – which either is or isn't used in part or in full to stimulate better and more sustainable waste management options

Certainly in NSW the landfill levy has been a strong stimulus for resource recovery in the C&D sector, due to the significant bulk density of these materials, and the relative simplicity of the recycling processes.

The policy position adopted by State Governments when using landfill taxes as a mechanism are not always fully transparent. Is it simple revenue raising for the consolidated budget, or is there a genuine determination to address the systematic market failure that is waste to landfill?

2) Voluntary agreements with industry and other stakeholders

The National Packaging Covenant is the most obvious example of this approach. Certainly packaging materials represent a significant and readily recognised fraction of USW (especially the branded fractions of USW – Q3), but the early version of the covenant could be summarised as **a good idea poorly executed**.

The Product Stewardship principles (EPR) rely on two primary factors –

i) The design considerations built into all consumer packaged goods at time of product initiation and design, and

ii) The design, common availability and efficient operation of the post consumer resource recovery systems and infrastructure.

(see Task 36 Stage I and II reports EfW submission which addresses this issue in specific detail – Attachment C).

Kerbside recycling occurred before the NPC was initiated and will continue whether the NPC survives or transforms into a more focused, dynamic and productive organisation. As a platform for engagement with the consumer packaged goods sector it is an important initiative – but not at any cost.

The pursuit of PS / EPR as a policy position has been most successful where the target industry has been fully cooperative and driven the process and outcomes (ONP-PNEB or coolants / refridgerants management).

The Government (Commonwealth) initiated scheme, the Used Oil CPSS, has been partially successful – but ultimately suffered from Government failure to manage, on the one hand the need to be focused proactively and to systematically enter a market to resolve a clearly identified market failure; and on the other being bureaucratic and frightened to "pick winners" and actually follow through on the lofty principles that initiated the scheme. All the initial enthusiasm and promise was of benefit to SOR at the time this company was setting up the nation's only lube-to-lube facility, and a suite of collection infrastructure has now been established in most council areas in Australia – but the scheme has now lost its way and has **no clear plan to finish-the-job** and **leave the used oil collection and re-refining sector properly set up to be sustainable into the future**.

The lessons learned from the Used Oil CPSS directly informed the development of the Joint Working Group on Tyres approach to the voluntary product stewardship scheme for used tyres (see JWGT submission), which is a much more **efficient** policy approach and delivery mechanism for the future.

Zero Waste is a worthy and achievable goal – but it needs careful defining. When Eco Waste was developing the strategic planning and background research report for the ACT Government and surrounding SE Region of Councils (1993) (the platform that was later adopted as the "No Waste by 2010" initiative) the concept of zero waste referred to a situation where no USW materials **need be wasted** because there were systems, infrastructure and capabilities in place that could accept all such materials and present them back into the productive economy for an outcome better than disposal. Such a goal is entirely possible today and for an economic, social and environmental outcome that is entirely sustainable and cost effective. However, the biggest single constraint to achieving such an outcome revolves around toxicity issues in USW. Assuming that the universal post consumer systems and infrastructure (reverse logistics) are in place, EPR / PS schemes provide the most direct strategy to address toxicity issues. Current State and Commonwealth initiatives in the area of WEEE, batteries, household chemicals, paints and (CCA) treated timber are all positive initiatives in this regard.

Key performance indicators and target setting

Question 34

How are targets being set? What consideration is given to the social, environmental and economic costs of achieving these targets? How should targets be set to optimise social, environmental and economic outcomes?

How State Governments set landfill avoidance targets seems to be a mystery, known only to the person who sets them. The logic is flawed. If landfill avoidance is the goal, then why by some apparently arbitrary percentage, why isn't 100% avoidance the goal, what is the legitimate role for landfill, if any? (see attachment D).

If a part of the answer is that certain fractions of USW seem to be too hard to recover and reprocess, and therefore landfill suddenly becomes acceptable for the "too hard" wastes, the question then becomes, why are they "too hard"? Is it toxicity (Q33), in which case develop strategies to make the producer(s) responsible for treatment and further value recovery.

As mentioned (Q2) above in a sustainable system the benchmark for service delivery should not be the alternative cost of the locally available wanton disposal option, but the aggregated cost of returning the component materials in USW back into the productive economy benchmarked against the **fully priced** cost of the virgin alternatives.

Such a paradigm would benchmark the publicly patronised post recovery systems and infrastructure. Any material that could not be beneficially recovered through such a system should be the producer's direct responsibility to address comprehensively.

As a policy setting such an approach would be the primary driver for paradigm change from waste management to systematic, HNRV, sustainable resource use.

Question 35

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?

Wastage to any form of disposal is the primary practice **to be avoided** and so any such practice on a per capita basis is a universal measure of how wasteful any group or country is. Presenting by-products for a subsequent reuse opportunity is a vital tool to deliver no waste outcomes and so measuring only lost, wasted volumes to disposal per capita is a valid initial benchmark.

Over time, more sophisticated measures to reflect the dematerialisation of service delivery will become more accurate.

Recycling

Question 36

How well have these policies worked in generating economically efficient levels of recycling? What policies or mix of policies are likely to work best in this regard?

Recycling is beneficial (http://www.packcoun.com.au/NPC-FINAL-01.PDF) and should be optimised and a systematic source separated discard and resource recovery channel be made available to every household in the country (metro and rural – collection, rural and remote – drop off).

See Attachment C – NPC to oversee the proactive inter-relationship and collaboration between consumer packed goods, manufacturers (Brands) and the nationally coordinated provision of post consumer resource recovery systems and infrastructure.

Question 37

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

An important tool as long as the battery limits of the analysis are set wide enough to cover all costs and impacts of virgin extraction, ecosystem services and full cost of post consumer resource recovery to HNRV.

Question 38

Are there particular products or locations for which disposal rather than recycling might be a more efficient option?

No. Rural and remote areas pose the need for special arrangements and certain metropolitan demographics demonstrate a complete lack of ability to source separate. This may mean a lower level of net resource value recovery, but these challenges do not mitigate in favour of waste and disposal.

Question 39

How has government procurement policy affected recycling levels? How important is the demonstration effect of government actions?

It has the potential to be very important to lead the market and demonstrate viability and/or quality and/or practicality the demonstration effect can be a very important market influence but a always because the recycled materials are inherently worthy of purchase and fit-for-purpose, not as a practice of propping up an unsustainable practice or product.

Energy recovery from waste

See WMAA EfW *Sustainability Guide and Code of Practice* (http://www.wmaa.asn.au/efw/home.html) as a definitive text on the subject. This document provides (Section 3) a list of 6 Project Scoping Principles that provide a decision making framework that would seem to mitigate against any form of traditional mass burning technology – even with token (CV) energy recovery.

Question 40

What are the economic, environmental and social benefits and costs of recovering energy from waste?

See EfW *Sustainability Guide* Section 1.3.1.

Question 41

What is hindering the greater use of recovering energy from waste in Australia?

Most proponents of traditional waste to energy can't acquire a Community Licence to Operate because their project is deemed to represent too great a likelihood of presenting the disadvantages of w-t-e (EfW Sustainability Guide Section 1.3.2)

Question 42

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

Yes – all as described by following the six PSP structure of the EfW Sustainability Guide Section 3).

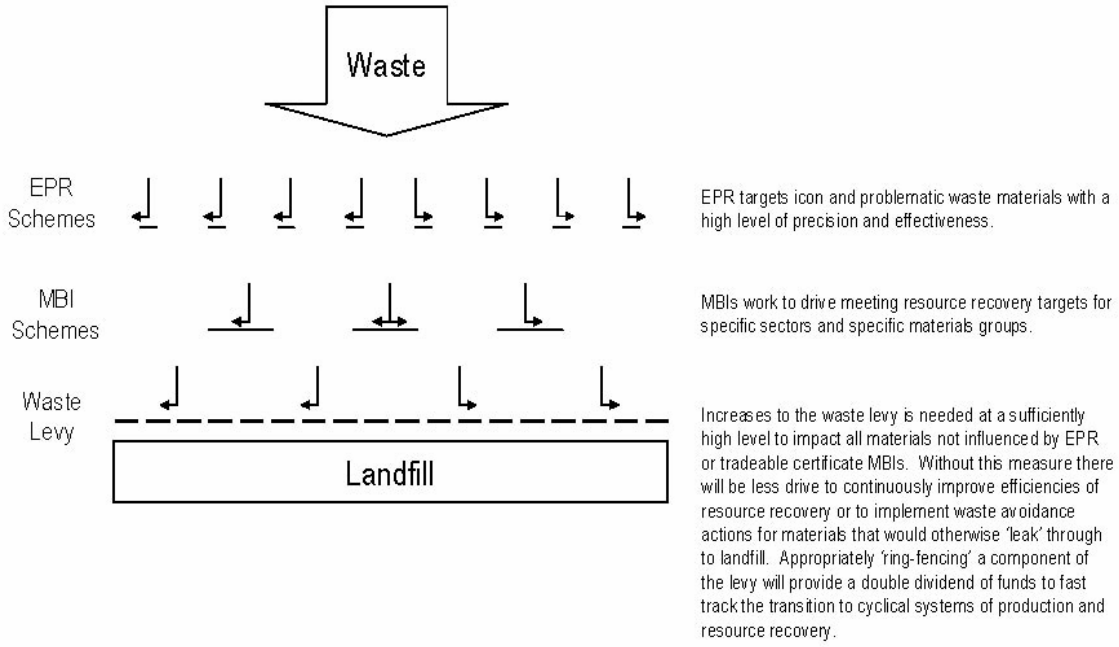

Fig 48.1

WMAA EfW Division IEA Bioenergy Task 36 Stage 1 and 2 reports (attachment C). These reports deal specifically with the relationship between EPR schemes and residual USW waste quality and quantity. The following "Generic Material Flows" diagram (extracted from the project brief for this project) is included here to assist with subsequent responses.

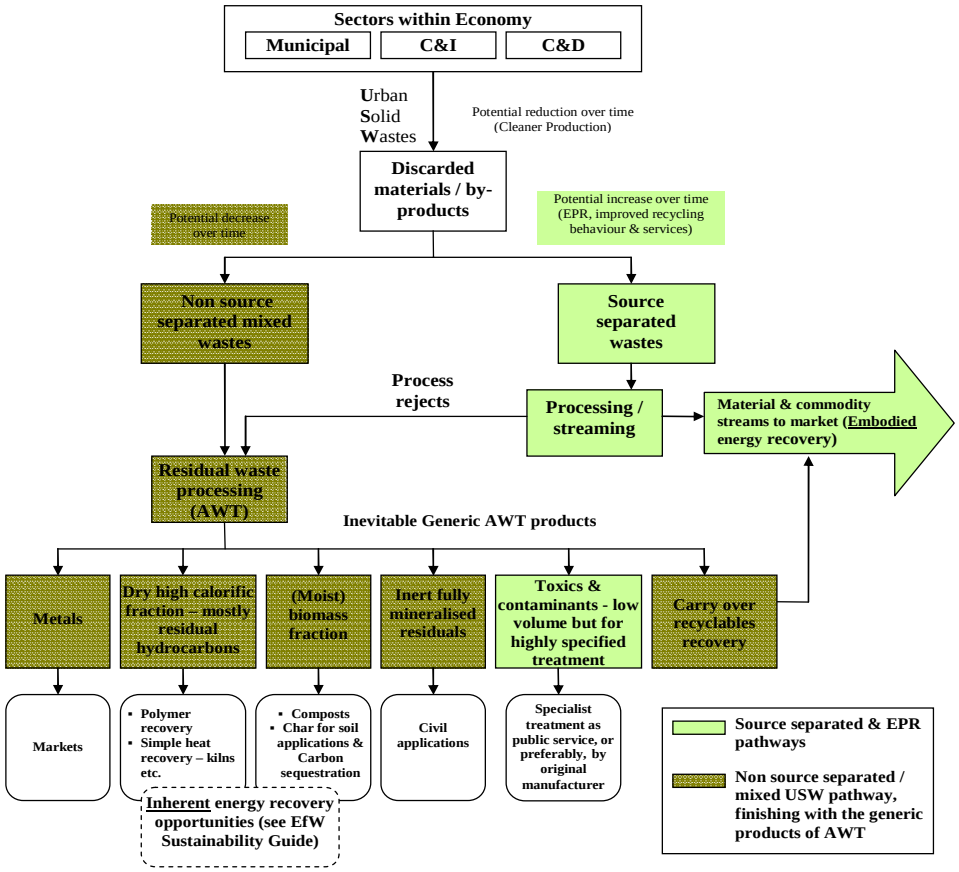

Fig 48.2

Question 48

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

The advantages of carefully designed and implemented EPR / PS schemes are:

i) The issues and full value chain impacts of the product or service can and will be addressed at the point of product design and initiation which can have the greatest impact on downstream consequences (C&I and MSW streams).

ii) USW in general and residual MSW in particular will be less toxic or contaminated with materials that materially affect the quality of AWT generic products (and hence subsequent market potential).

iii) Optimum resource value recovery from aggregated volumes of similar materials

iv) Systems and logistics to support EPR / PS schemes provide a developing platform for the continual dematerialising of the provision of consumer goods and services.

The disadvantages are only incurred if the scheme is badly designed and/or implemented:

i) EPR schemes can add cost and inconvenience for no, or a negative, net resource value realisation.

ii) If the post consumer recovery systems and infrastructure are not available or adequate, the initiating industry can experience extra cost and frustration for no net advantage

The successful design and implementation of a PS / EPR scheme is heavily dependent on proactive and constructive participation of the whole supply value chain of stakeholders and can not be beneficially designed and implemented by any one stakeholder (industry or Government) in isolation (see JWGT submission).

Question 49

How effective have they been in achieving optimal levels of waste?

Assuming that "…achieving optimal levels of waste" means realisation of HNRV and no waste, then:

i) The industry run and initiated schemes (**eg. ONP and refridgerants**) seem to be very efficient and cost effective and producing the intended results and outcomes. However, such an approach is not possible in many other product sectors due to the free rider issue and the need to ensure that the proactive participants are not commercially disadvantaged for doing the "right thing" by those who will not or choose not to participate – especially in the early stages of any scheme.

ii) The **used oil** CPSS started out well. It was well thought through as to structure and objectives and the establishment of market signals to optimise resource recovery via the realisation of HNRV (the differentiated benefit scale). And in the early stages the scheme supported substantial investment in new re-refining capacity to ensure the basic processing capability was demonstrated and available to the used oil sector. However, in recent times the scheme managers have lost their way and the processes have become overly bureaucratic and consensus driven. To the point that much of the seed funding has been repatriated / redirected to other government priorities or absorbed into admin and overheads, and the initial scheme objectives could now fail to be achieved in full. The lessons from this experience are many – but focus on comprehensive scheme design and empowered management and oversight during implementation and program delivery have been shown to be vital.

The used oil CPSS is, in effect, a targeted intervention into the market or status quo to address an identified market failure. This market failure was in effect that the highest net resource value of used oil was not recognised in the then prevailing "market" and as such it was not sufficiently valuable for comprehensive collection to be "market driven" with the result that much waste oil was presenting as a waste / disposal problem with social and severe environmental consequences. The point here is that the CPSS was in effect designed as a proactive incursion into the "market' to address a specific "failure" and as such required objective, proactive incursion into the "market" to address the specific problem.

For EPR / PS schemes to work they need empowered and focused management to deliver the results that the "market" wasn't producing on its own. This is where Government run schemes come up against the conflict of management ideologies – on the one hand, to be objective, proactive and targeted, but on the other, a natural inclination of Government administration to be bureaucratic, consensus driven and responsible to every stakeholder position regardless of the initial objective.

The used oil CPSS has achieved much, and was a good idea, variously implemented. The issue is not how much was achieved, **but** how much more could have been achieved if the oil majors had responded proactively to the concept and an industry driven co-regulatory scheme had evolved – with empowered, dedicated and proactive implementation and management structures.

The National Packaging Covenant is another suboptimal outcome. Too much "less harm" consensus building in the beginning has left a legacy of only "bare minimum" participation by the major stakeholder with industry often adopting "damage control" approaches to participation. Clear and strong and fully informed leadership of the process could have delivered major wins for industry, complete achievement of Government's legitimate social and environmental goals and a clear win for sustainability and future generations. The difference between moderate achievements and complete success can be traced back to focus, leadership and vision. The issue is not the generic usefulness of PS / EPR schemes – but the detail and quality of scheme design and implementation (see JWGT submission).

The emerging schemes for electronic goods, batteries, whitegoods etc. will have considerable challenges to overcome if they are to be truly efficient and cost effective, but these are issues of stakeholder good will and quality of leadership and attention to the fundamentals of sustainability / Resource Productivity to provide the benchmark for determining actions and options.

Question 50

Which products are most amenable to these arrangements?

This submission is arguing for the development and delivery of a common suite of post consumer USW discard options, feeding an efficient and planned suite of nationally consistent (generically) resource recovery systems and infrastructure that has the ability to present a wide range of USW derived products back into the productive economy. This submission argues that such a "common" or publicly available system should be designed to accommodate most (>90%) USW materials most of the time as a public service. This might well present to residents much as the current services (a residual mixed service supported by a separate kerbside dry recyclables service and separate green waste service in the appropriate demographics).

This defines the product categories that are most applicable to PS/EPR schemes:

i) Products that are too resource rich to be properly processed by the common systems

ii) Products that contain toxics or will unreasonably degrade the anticipated product quality emanating from AWT facilities

iii) Household durables, household chemicals, and other "icon" occasional discards

iv) Products that manufacturers and service providers wish to re-aggregate and recover as part of their own business model and who wish to share systems and infrastructure to achieve this aim.

Question 51

How should importers be treated under these schemes?

The same as local manufacturers / Brands. There are operational complexities and WTO issues to be accommodated, but all can be productively resolved if the scheme is developed with vision, objectivity and expert leadership.

Question 52

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

This is a scheme detail that will change from product to product. In the case of used tyres, the JWGT approach has been to define the orphaned product problem and to include it within the proposed scheme.

Where the resource potential from orphaned products can not fully compensate the cost of recovery and reprocessing, the initial difference is ultimately a social / environmental cost. How this cost is apportioned in the development of a scheme for current products will be an issue for stakeholder negotiation as the scheme is designed, costed and finally sanctioned.

Question 53

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?

The ONP and refrigerant schemes, which are entirely voluntary, industry initiated and administered, are ideal where the impact of free riders can be moderated because of the cost of entry into the sector (ONP) or the limited number of participants or specialised nature of the sector (refridgerants), but the vast majority of product categories are particularly vulnerable to free rider impacts, especially in the early stages.

With this in mind, the co-regulatory model emerging from the current used tyres and TVs schemes seems to be close to optimum for workability and DEH are to be congratulated for their work to date.

CPSS used oil has shown up the fundamental inefficiency of entirely Government managed schemes as they become ensnared in the conflict between specific scheme objectives and delivery and the natural tendency to not "pick winners" and to give every point of view equal attention, regardless of its impact on the scheme's goals.

Question 54

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

As above, the co-regulatory framework (http://www.ephc.gov.au/pdf/product_stewardship/ProductStewardship_IndustryDP.pdf) as developed for used tyres seems close to optimum for most material streams.

Question 55

How effective has the National Packaging Covenant (in both its initial and subsequent forms) been in promoting optimal levels of packaging wastes?

4/10 – "must try harder" – see Q49 above.

Question 56

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

This question goes to the heart of the "commonly available " systems and infrastructure for efficient resource recovery from C&I and MSW material flows.

The materials currently covered by -

i) Occasional council clean up / kerbside hard waste collections

ii) Light industrial (tradesmen) waste streams

iii) Self haul waste streams

iv) EPR / PS schemes

are currently completely uncatered for in any systematic way as regards resource recovery. A national network of drive through recycling facilities is required to systematically and efficiently address this issue.

In 2000 the (now defunct) Western Sydney Waste Board promoted the Drive Through Recycling Centre which fully addressed this issue. Two issues arise:

a) There is a cost effective model already developed to resolve this issue, and

b) That fact that the NSW State Government took the initiative to create properly funded and empowered (regional) waste boards – and then failed to realise the huge potential that had been created, by totally scrapping all the value created (at the public expense), is one more tangible example of State Government's inability to be a primary actor in these issues.

   The DTRC project was **regionally generated** and **appreciated** and **federally supported** and **acknowledged**, but trashed for no good purpose by the State Government – who have completely failed since to address the issue of essential infrastructure or to even develop any sort of implementation measures for their barely adequate Waste Strategy (see SPIG submission).

Question 57

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

Levies or Advanced Recycling Fees are usually essential to create the necessary pool of funds to execute the finally approved PS / EPR implementation plan.

In the case of used oil and (the proposed) used tyre scheme, funds are applied to;

- Stimulate market pull for oil /tyre derived products (with a differentiated benefit scale)
- Fund transitional arrangements
- Fund scheme admin costs
- Fund appropriate capital grants schemes (if identified as needed in the scheme plan design and development process)

Where the potential market value can be relied on to support a solution in the medium to long term, such as oil and tyres, then the Advanced Recycling Fee may only be a short term / start up necessity (say 5-7 years).

Question 58

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

The question suggests that producers are reluctant participants, as with oil, in which case more effort should be put into demonstrating the win, win, win advantages of full, proactive involvement in such schemes.

The PS / EPR concept in effect seeks to internalise the external impacts that corporations are specifically set up to ignore if possible.

If the optimum resource recovery route presents the original product back into the productive economy in competition to the virgin product (as with oil) then the original producers should see the self interest in welcoming the alternative sources of supply.

Question 59

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

The mix of service for the common good and the additional amount necessary for a specific product or service is a case by case proposition.

Regulation of landfill and other waste management facilities

As an opening comment, waste disposal is no longer (if it ever was) the service or outcome actually required in a sustainable society.

Question 60

To what extent has greater regulation of landfill efficiently ameliorated the external costs of waste generation and disposal? Is further or better targeted regulation necessary? What costs have these regulations imposed on landfill operators?

Landfills are no part of the solution to sustainable resource use and resource efficiency other than as outlined attachment D.

Question 61

What constraints are urban planning requirements placing on the efficient disposal and recycling of waste?

This is a vital issue, and hopefully one to feature prominently in the Inquiry's report.

Society manages to plan adequately for the provision of basic services such as roads, rail, hospitals, schools and other essential services, but has failed spectacularly to address systematic, resource efficient systems and basic infrastructure for USW. It's not difficult but it does need doing carefully, expertly and comprehensively (see SPIG submission).

In a paradigm where locating, operating and regulating landfills was considered the limit of Government responsibility, the effort to really think through the sustainable alternatives is entirely absent. Now there is a creeping perception that if the alternatives are left to individual "waste" companies to propose and deliver, the problem will go away. IT WON'T!

Once the planning is well and properly completed (SPIG) sites will need to be made available or regionalised Local Government provided with planning tools to enable the facility that is needed to be placed **where** it needs to be.

If a road from Sydney to Newcastle is demonstrated as being essential, then building a road from Lithgow to Bathurst will be inadequate. And yet waste facilities currently only get planning approval on existing waste / landfill sites – regardless of the demographics they are designed to serve.

This is another systematic failure of State Governments. Such facilities are of essential importance and must not be left to individual councils or waste contractors to guess at.

Question 62

How can or should waste disposal and recycling facilities be treated in an urban planning context?

Centrally planned and coordinated on a generic basis so that private capital can be productively engaged in the delivery of the individual plants and capabilities and specific technologies.

Such facilities can be designed and delivered to operate within the approved environmental boundary impacts and can be located in normal industrial estates.

Litter

Question 63, 64 and 65

What are the main costs of littering and how substantial are they? What sort of litter is the most costly or problematic to deal with?

What are best practice examples of using enforcement and education to reduce the extent of littering?

What are the advantages and disadvantages of container deposit legislation in reducing litter and increasing recycling? What part do they play in optimising waste management outcomes?

No specific comment.

Education programs

Question 66

Do the benefits of community and business education programs on the creation and disposal of waste justify the costs involved? Which types of programs are more successful in this regard?

Education programs are always essential to thoroughly explain issues, impacts and alternatives to the community, and to encourage behavioural change at the appropriate time. (see Q43 above concerning when to encourage behavioural change – when the preferred alternative is in place and available). At a time when the public are generally aware of the need to recycle (kerbside), until additional / alternative options are available, promoting actions that the community can not action directly will simply generate more frustration. Programs directly linked to specific actions that can be taken are much more successful and cost effective.

Question 67

Are government programs to reduce waste cost effective for the agencies concerned? Do they provide effective signals to the wider community?

In the case of litter they are essential. In the case of kerbside source separation they are marginal until the entire suite of systems and infrastructure are in place to demonstrate tangible outcomes.

Trade in recyclables

Question 68

What effect is international trade having on the level and disposal of waste in Australia? What effect is international trade having on recycling?

If the full range of generic materials and products (including energy) are produced from USW flows, the end game is that they should be as freely traded across national (and State) borders as are metals (Q2 above).

Question 69

What effects are international agreements (including but not limited to the Basel Convention and the GATT) having on the level and disposal of waste in Australia? What influences are such agreements having on exports and imports of recyclables?

No comment.

National Coordination of Policies

Question 70

Are there any significant regulatory differences between the states and territories in waste management? What are the costs of these differences?

USW materials are not respecters of State boundaries and we agree that policy differences between jurisdictions is at best unhelpful.

The JWGT submission represents the end of a long process (>10 years) where product stewardship schemes have been tried at a State level (especially NSW), but it wasn't until JWGT approached DEH in 2001 that genuine progress was made.

The goal of sustainable resource use and the elimination of waste must be a national objective, with policy and implementation plans developed or coordinated by the Commonwealth.

Question 71

How could national coordination be further improved?

For the Commonwealth to develop a national policy and implementation plan, with or on behalf of the States, in close consultation with:

- Local Government (preferably at a regional level)
- The productive / manufacturing sector
- The wholesale, retail distributive sector
- The environmental NGOs
- The resource recovery sector and potential service providers (this may not include existing "waste" operators)

And for such a process to be chaired by a proven expert in the field, operating under a mandate or terms of reference that could orchestrate for paradigm shift, from waste / disposal to sustainable and cost effective resource recovery.

The solution is not a net cost to the economy – but a growth factor, if designed and implemented appropriately (see answers to Q3 – Recommendations 1, 2 and 3).

Question 72

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

With a functional specification developed at a national level, the jurisdictions might be the appropriate parties to localise and interpret the on-the-ground responses to suit local conditions – but regionalised Local Government could perform the same tasks just as well.

Question 73

What role should the Australian government play in pursuing uniform national approaches when this is the appropriate course of action to take?

Part 1 - As Q71 above.

Part 2 - Now.

Referring again to the Oakdene Hollins ICE report (Q19) (http://www.ice.org.uk/downloads//ICE_Resource%20Management%20Strategy.pdf) the authors make a very strong case for central Government management and ongoing oversight of the recommended Resource Management Strategy on the basis that systemic paradigm change is essential and that Local Government is not the appropriate party to design, coordinate or deliver such outcomes.

Question 74

How well is the Environment Protection and Heritage Council functioning in developing waste management policies that are in the national interest? What other models for developing policy should be considered?

The EPHC model has shown a lack of judgement in prioritising plastic bags when there are so many other vital issues to be addressed. However, the interaction between EPHC and JWGT has been entirely productive and appropriate to this point and is providing a productive framework to deliver this vital program.

Summary and Conclusions

Since the responses to this point have been dictated by the sequence and content of the questions 1-74, we therefore take this opportunity to rationalise the key points into a more logical, implementation oriented sequence.

The Terms of Reference state "the **objective of this inquiry** is to identify **policies** that will enable Australia to address **market failures and externalities** associated with the generation and disposal of waste, including **opportunities for resource efficiency** and recovery throughout the product live cycle…".

This submission seeks to make the point that:

1) The waste problem is significant (50,000 t/**day** wasted to landfill) and must be addressed systematically and immediately to put Australia on a sustainable footing, in and for the future.

2) Incremental, localised and disparate tinkering with **waste management** approaches and programs will not suffice. A nationally developed, coordinated and implemented Resource Management Strategy is essential and should be developed forthwith to inform integrated, whole of Government policy development in this area.

3) The primary actor to put the national economy on a sustainable footing should be a **fully informed** market for resources and energy – prices for virgin resources that truly reflect the full costs associated with their extraction, conversion and utilisation, including collateral impacts, uncosted ecosystem services and opportunity costs. Within such a commercial framework recovered / reclaimed resources would then be

benchmarked for quality, price and availability against the fully priced virgin sources of supply into the productive economy.

4) The waste (end of pipe) management industry should be completely replaced by a resource management sector, whose primary focus was to keep all USW materials continually available as quality assured input into the productive economy. In such a paradigm the resource management sector would continually strive to achieve HNRV for the materials under management as the primary strategy to retain market position.

5) To achieve this industry transition:

   a) The Commonwealth must take the lead role, with a national productive/consumptive strategy and willingness to design, coordinate and implement resultant policies and strategies.

   b) Local Government must be encouraged to regionalise as MSW collection / supply authorities and to present such material to the privately owned and operated resource recovery network of facilities and infrastructure that was planned centrally by the Commonwealth.

   c) Local Government to be encouraged to make appropriate sites available for the necessary resource recovery plant and facilities as identified by the integrated national plan.

   d) Industry to be fully engaged into PS/EPR arrangements for “icon” products or products that will contaminate or devalue mainstream USW derived products, or that will not be sustainably handled by such systems.

   e) That a common suite of drop off / drive through recycling facilities be established to cater for PS/EPR flows and all other materials not ideally suited to HNRV recovery via the standard MSW kerbside collection services.

   f) That levy / benefit MBI systems be established to reflect the full virgin resource / market pricing framework, to avoid international trade difficulties or inconsistencies.

   g) That the end of landfill or a disposal based approach be signalled and the transition mapped and managed proactively.

   h) That open access to USW material flows be facilitated for parties with appropriate market based HNRV resource recovery approaches over those squandering the same resources to low or negatively valued outcomes or costly disposal objectives.

The transition to a sustainable resource paradigm is not constrained by technology or commercial consideration, but, in the first instance, by a lack of common vision, leadership and coordinated implementation. May this inquiry provide the inertia for the vital change to a sustainable resource use framework in a planned and coordinated fashion before further lasting environmental, social and economic damage is needlessly incurred.

Attachment A

Abridged Corporate Profile

Attachment B

WSWB DTRC Summary

Attachment C

Task 36 Work Plan and Stage 1 Report

Attachment D

WMAA Landfill Division Draft Discussion Paper

Attachment E

EfW Sustainability Guide and Code of Practice

See http://www.wmaa.asn.au/efw/download.html to download documents

Attachment F

WISE – "Role of the Waste Levy in Reforming Resource Recovery in NSW"