Catalyst to achieving a circular economy

Submission to the

Australian Waste Management and Recycling Industries Inquiry

By the Commonwealth House of Representatives Standing Committee on Industry, Innovation, Science and Resources

31 January 2020

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Introduction

Thank you for the opportunity to provide a submission to the *House of Representatives Standing Committee on Industry, Innovation, Science and Resources - 2020 Inquiry into Australia's Waste Management and Recycling Industries.* The AIEN both congratulates and encourages the Australian Government's efforts to address the issues associated with resource management. In particular, the issue of building Australia's capacity to minimise waste, manage material flows and generate demand for commodities produced from recyclates. The AIEN considers the collective response must be collaborative, comprehensive and coordinated if Australia is to emerge from its current waste/resource management predicament.

It is understood the terms of reference (TOR) require the *House Standing Committee on Industry, Innovation, Science and Resources* to inquire into, and report on, innovative solutions in Australia's waste management and recycling industries, including:

- Industrial, commercial and domestic waste;
- Waste in waterways and oceans;
- Landfill reduction; and
- Other related matters.

Further, the Committee is to focus on opportunities presented by waste materials, including energy production, innovative recycling approaches and export opportunities, and to also consider current impediments to innovation.

Following are the AIEN's immediate thoughts in relation to the issues to be addressed. However, the AIEN would be pleased to provide additional information or clarification of any points if/as required.

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Attachments

What is the AIEN?

The Australian Industrial Ecology Network (AIEN) is a vibrant network of like-minded individuals, companies and institutions with a common interest in sustainable development through the study and practice of industrial ecology. We advocate the principles and concepts of industrial ecology in policy formation and business practice. The AIEN actively engages with organisations to facilitate improved performance and environmental benefits.

AIEN's Charter is to:

1. **Advocate** the principles and concepts of industrial ecology in policy formation and business practice.
2. **Provide services** to industry and all levels of government, which facilitate the transition from linear to circular economies.
3. **Maintain a forum** for networking in which individuals and organisations can engage with one another to share information and experience in order to encourage and develop the use of Industrial Ecology.
4. **Collaborate with educational institutions** to promote awareness of industrial ecology and help develop teaching resources.
5. **Be a 'go-to/can-do' organisation**, that facilitates and promotes Industrial Ecology

Put simply, in line with its charter, AIEN does whatever it can to further the cause of Industrial Ecology and be a catalyst for change to promote the transition to a Circular Economy. Currently the AIEN is investigating the prerequisites for successful change through bringing together key stakeholders with a view to identifying criteria for new Circular Economy initiatives.

Industrial Ecology (IE) and Sustainability

The overarching aim of IE is the sustainability of economically developed and developing societies. Theoretical IE is concerned with the principles, concepts and techniques for analysis that help us understand the myriad interactions between humans and the natural environment. It is axiomatic that for human existence to be sustainable, human activities must be compatible with environmental sustainability. If we wipe out the species on which we depend for survival or destroy their habitat or render unviable the natural resources that support our way of life, then our species will not be sustainable.

Sustainable development is the route to achieving sustainability, essentially by bringing about intended changes in human behaviour. That is the focus of IE in practice and arguably its ultimate objective. If IE is not applied in practice, and particularly with stakeholder 'license to operate', sustainable development has no chance of happening either.

1. List of Recent Related AIEN Submissions

The table below is a compilation of the various submissions, responses and contributions made by the AIEN during calendar 2018 and 2019. All but one of the listed submissions was forwarded in response to invitations by Government.

Submission Date	Submission Title	Jurisdiction(s)
Dec 2019	Recycling and Resource Recovery Infrastructure Evidence Based Report	Victoria
Dec 2019	COAG Waste Export Ban Consultation	COAG
Sep 2019	20 Year Waste and Resource Recovery Strategy	NSW
Aug 2019	Energy From Waste in a Circular Economy	AIEN Communique
Aug 2019	Energy From Waste Policy Discussion Paper	Queensland
Aug 2019	Circular Economy Issues Paper	Victoria
Jul 2019	Phasing Out Single Use Plastics – Discussion Paper	ACT
Jun 2019	Thermal Energy From Waste Activities - Consultation	South Australia
Jun 2019	Resource Recovery 10 Year Roadmap and Action Plan	Queensland
May 2019	Inquiry into Recycling and Waste Management	Victoria
Apr 2019	Waste Management and Resource Recovery Strategy	Queensland
Feb 2019	Turning the Tide on Single Use Plastic Products	South Australia
Dec 2018	Waste to Energy Information Paper	ACT
Nov 2018	Too Good to Waste Circular Economy Policy Statement	NSW
Oct 2018	Updating the 2009 National Waste Policy	National Environment Ministers
Jun 2018	Recycling and Waste Industry Directions Paper	Queensland
Jun 2018	Review of Product Stewardship Act	Commonwealth
Mar 2018	Turning Waste Into Energy Discussion Paper	Victoria
Mar 2018	Waste Avoidance and Resource Recovery Strategy Consultation Paper	Western Australia
Jan 2018	Enhancing Resource Recovery and Discussing the Place of Energy Recovery – Discussion paper	South Australia

This submission to the *House of Representatives Standing Committee on Industry, Innovation, Science and Resources - 2020 Inquiry into Australia's Waste Management and Recycling Industries* constitutes the initial submission for the 2020 calendar year. All submissions have (and will continue to be) composed and forwarded by the AIEN in the very best of faith.

The AIEN encourages any/all efforts to promote and adopt a uniform national approach across the jurisdictions. A very real concern exists regarding the potential for all jurisdictions to act unilaterally and perpetuate the confusion and border dislocations so prevalent in many areas of national endeavour.

This submission to the *House of Representatives Standing Committee on Industry, Innovation, Science and Resources - 2020 Inquiry into Australia's Waste Management and Recycling Industries* constitutes a distillation of the submissions/contributions listed in the table above. The AIEN promotes many bold and innovative solutions to the current resource management nexus being faced both domestically and internationally.

The AIEN commends innovative social design solutions with respect to resource and material management to all levels of Government. A well-known definition of insanity (incorrectly attributed to Albert Einstein) is as follows: "***Insanity is doing the same thing over and over again and expecting different results.***" Surely now is the appropriate time to consider appropriate holistic approaches to usher in basis for a circular economy in Australia. Such an outcome will not magically appear from within mantras and resource management systems that:

- Have been historically designed, regulated and operated with public health outcomes as the sole criteria of success. (Please note the AIEN does not advocate a reduction in the importance of maintaining public health criteria. Rather, these criteria must be expanded upon to include additional important resource management criteria);
- Do not respect the inherent value of resources through ensuring their use is minimised and their future life is considered in all aspects of product design/utilisation;
- Do not ensure all resources are recycled/repurposed into genuine markets where the presence of adequate commodity/product demand fosters the emergence of a domestic circular economy (See Section 2);
- Do not respect the inherent value of resources through ensuring their future/repurposed uses constitute the highest achievable net value (See Section 3).

2. Resource Value and the Importance of 'Market Pull' vs 'Supply Push'

Before summarising some of the key functions and drivers for the logical operation of a broader circular economy, it is perhaps useful to consider the global scrap metal sector as a potential template as a model for other waste stream components. The global scrap metal sector functions as smoothly as it does due in large part to the presence of the following elements:

1. The fully quality controlled/assured sector is driven by "market pull". The sector provides scrap/secondary resources to its informed customers based on the clearly definable benefits, not as cost effectively available from primary sources.
2. Well defined product specifications exist to support and enable "sight unseen" global trading and as marketed via well-established exchanges (LME, CBoT, etc.).
3. Such "recyclate" materials are made and delivered to the defined specifications referred to in the customers' orders and are delivered fit for the identified purpose.

The AIEN is of the view that whilst the scrap metal sector is not perfect, the fact that such a system can work so effectively for one particular set of resources (metals), provides some comfort and guidance for the achievement of related "market pull" systems and outcomes for all the main material categories in urban waste streams, including:-

- All the types and colours of product and packaging applied plastics;
- All types and colours of glass;
- All forms of residual biomass;
- All forms of paper and cardboard;
- All the products and materials requiring and/or benefiting from direct management as product stewardship defined materials; and
- Miscellaneous synthetic and multi-layered materials (much of the current designed packaging material is not recycled due to the use of multi-layer materials which are not cost effective to reduce back to their component materials).

The genesis of our "waste/resource management" system is derived primarily to address public health protection obligations. Although the assurances regarding public health cannot be diminished, it is possible that nothing short of complete root and branch restructure will be required to transition toward a society-wide resource management revolution (i.e. a circular economy). For the sake of simplicity and expedience alone, we should resist endeavours to inappropriately "shoehorn" the revolutionary resource management requirements into structures/systems designed primarily to promote the interests of public health. It will remain to be seen the extent to which the existing structures/systems can be retained and advantageously applied.

It must be accepted and understood the basis for the establishment of a circular economy is simple application of supply and demand principles. In assessing the "waste" model largely in operation within Australia to this point, it must be accepted the model (driven by "supply push") exists simply because there is more "waste" supply, than there is demand for those materials as a resource. The consequence of resource oversupply (be it components of the waste stream or anything else) is a fall in value. In fact, in its extreme, oversupply results in the resource in question being assigned a negative value. That is, the resource owners being required to pay to relieve themselves of the excess resource. This description characterises the model we have collectively built around "waste". The only way out of the above described nexus is to implement policies to establish (or re-establish) value in relation to the resource in question.

The transition to a circular economy must successfully navigate the society from the existing "waste" sector, driven by gate fees to a quality assured "recyclate" manufacturing sector, making virgin replacement raw materials that the brands can absolutely rely on for quality and reliability of supply. The current “Gate Fee” driven system being a response to the lack of market pull from brands to take back the material they produce.

All of this must additionally be based upon recycled material values remaining competitive relative to virgin raw material equivalents. This transition will require careful management to ensure the endeavours of all participants are fully co-ordinated. Some examples of this thinking exist but, in every case, opportunity must be taken to appropriately marshal all participants (including the major brands) at the highest level.

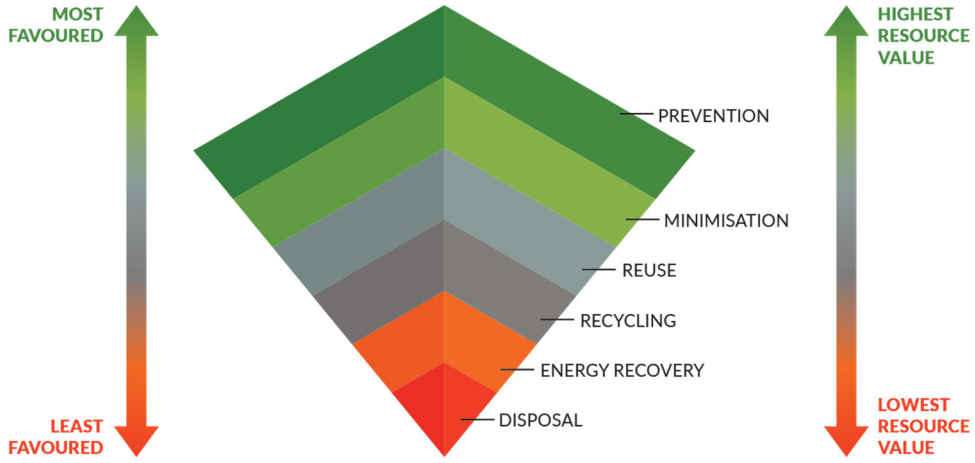
In developing an initial “road map” for the transition to a circular economy, the Australian Governments must be prepared to countenance a much wider range of views around resource management than has been historically necessary. In the context of the current resource management crisis, it is imperative for all sides of politics and all economic interests to commit to their respective roles in order to achieve the transition we collectively seek.

3. An Introduction to Highest Net Resource Value (HNRV)

There are existing opportunities available for the recycling/reuse of mixed plastics, rubber, glass, timber, aggregates, etc as valuable resources in higher value add product markets. Further, the AIEN endorses the concept of Highest Net Resource Value (HNRV) as worthy of detailed consideration and promotion. It is a concept enshrined within the waste hierarchy, but with a more tangible and measurable output.

HNRV reflects an approach that seeks to achieve or retain the highest possible resource value from the materials under consideration, "Net" of the cost and effort to achieve such an outcome.

The waste hierarchy is normally presented only in the context of environmental/social good. The AIEN has re-imagined the waste hierarchy as representing the notional value applied to a given 'resource'. At the low-end, disposal to landfill implies the generator places a negative value on the resource. At the high end the generator places full commercial value upon the resource through avoidance and/or minimisation.



As a community, Australia has afforded insufficient attention to recycled product markets. It is recognised the waste hierarchy and the circular economy must be underpinned by markets to utilise reusable and recycled content.

The AIEN would urge all governments to more fully consider rewarding outcomes at the market/recycled product end of the resource management spectrum. Proper consideration of the complete resource recovery/management system (with emphasis on the critical role of markets for recycled products and content) will require/necessitate a significant coordination between waste policy, employment and industry policy, regional investment policy, etc being postulated as an element in a larger resource management picture.

Any failure to properly consider the importance of the waste hierarchy and HNRV principles may result in losses in the longer term through stranded investment. When resource availability becomes a constraint, resources will always flow to those who can afford to pay the most for them. This is why overinvestment in energy technologies is not recommended.

In certain circumstances, including remote geographic location, small and highly diffuse resource quantities, etc, there may be valid arguments that energy recovery represents the HNRV achievable for resources otherwise considered as wastes. However, it would be lazy in the extreme to settle for lower resource values simply for ease and expedience. Energy from waste should only be considered where:

- HNRV alternatives have been fully saturated with the resources they require. This means energy recovery activities are restricted to "residual" resources not required by the higher value adding processes; or
- Where very unusual circumstances are such that energy recovery is the only feasible process for the recovery of economic value from resources that would otherwise be wasted in landfill.

The ambition of Australia's renewed approach to recycling and waste should be to foster the creation of a comprehensive resource management system. The AIEN would be supportive of all policies contributing to that outcome.

The objectives of a holistic circular economy approach to resource management must include:

- Clear obligations upon manufacturers, importers, distributors and other persons in relation to the mechanism by which 'waste' is to be avoided or eliminated from the utilisation of their products. A greater emphasis on product and packaging design is required. The current product stewardship regime is not considered to be adequately driving improvements to product design and packaging design to ensure reuse and recyclability.
- Clear obligations upon manufacturers, importers, distributors and other persons in relation to the mechanism by which 'waste' is to be harnessed as a resource for reuse and or recycling. (These are higher order resource utilisation options than either treatment or disposal.)
- Clear obligations upon manufacturers, importers, distributors and other persons in relation to the mechanism by which 'waste' impacts on the environment are to be minimised or how the overall greenhouse inventory (product creation, use, recycling, treatment, disposal, etc) of products is to be minimised.

Existing policies and resource management frameworks have primarily focussed upon raising awareness and placing obligations upon manufacturers, importers, distributors and other persons in the following important areas:

- Separation and segregation of materials/components so as to avoid contamination;
- Aggregation of post-consumer materials/components; and
- Initial treatment of the post-consumer materials/components (in some cases).

However, the other important pre-requisites for a circular economy include identification and/or establishment of processes and infrastructure to enable the materials/components to be reused and/or recycled and the establishment and support for consumer markets for the reused and/or recycled materials/components.

A holistic Australian approach must incorporate these additional elements in order to successfully move toward a circular economy.

Initiatives promoting circular economy principles will be inadequate, and ultimately fail, where they collectively fail to:

- Sponsor and/or promote resource utilisation facilities and technologies. Product stewardship schemes that can aggregate waste (at least contributing positively to litter reduction) while the materials/resources carefully separated and segregated by others are ultimately destined for landfill due to the underdeveloped nature of local/domestic recycling and resource reuse industries is still considered failure.
- Reward organisations/entities genuinely promoting recycling and reuse industries through their purchasing/procurement decisions.
- Recognise the distinction between separation/segregation (the recovery of a specific material stream), processing of the material stream and reuse/manufacturing (productive reutilisation of the recyclate (as a raw material)).

4. Desirable Industry and Government Roles/Actions

Industry

A supply of quality recyclates to the manufacturing sector is almost entirely dependent on the brands/brand owners (industry) having confidence and supporting a sufficiently mature recyclate manufacturing sector. That mature recyclate manufacturing sector must be capable of providing:

1. Recyclate materials of the agreed quality;
2. Recyclate materials in the quantity and long-term reliability of supply necessary to meet the defined "virgin replacement" or "virgin supplementation" requirements over the logical production run of a finished product or service;
3. Recyclate materials available at an agreed price benchmark that reflects the price of virgin alternatives; and
4. The circular economy/sustainability properties so valuable to the brands when marketing to their customers and/or observing their responsibilities/commitments to Governments.

The entire concept of creating a circular economy is dependent upon the preparedness of industry to utilise recyclates as their raw materials. In turn, the appetite of industry for change will be governed by consumer acceptance regarding the aesthetics and efficacy of the products they produce.

Government

The brands will be faced with a dilemma in committing to the systematic procurement of high quality recyclates when no corresponding or adequate recyclate manufacturing sector exists. In addition the existing urban waste processing sector may be unwilling to tool up to supply a potential market that cannot be readily identified and secured. This "chicken and egg" scenario might be defined as a basic "market failure". The current situation where recyclates/resources have negative value would constitute market failure in any other industry or field of economic endeavour. Where manifest market failure exists, it is incumbent upon Government to coordinate an active response.

The importance of Government intervention in overcoming "market failure" cannot be overstated in the establishment of education, health, utilities and transport systems. Privatisation may occur later but our education systems, our health systems, our provision of utilities and transport systems would likely **never** have succeeded in the way they have, without Government being highly active in overcoming initial market weaknesses in infrastructure provision and market establishment/development.

Establishment of a progressive, stable policy and regulatory framework are understood to be important prerequisites to investment by business and industry. However, in like manner to the education, health, utilities and transport systems before it, the circular economy is unlikely to magically appear just because Government has the correct regulatory and legislative settings. The Government role in seeking to establish a circular economy may of necessity, be more pro-active. Any reasonable assessment of the early isolated successes in introducing circular economy principles in a European context, would lead to this inescapable conclusion.

A key issue that Government must address is the current lack of manufacturing capacity in Australia. With the current levels of product importation there will be more recyclate available than can be absorbed. Government policy needs to influence a desired outcome whereby there is market for the product, whether that be domestically or overseas.

Consumers

With encouragement and education from industry and government, all consumers must be fully supported in their purchasing decisions. That support must include messaging that is trustworthy, consistent and accurate. An understanding of the social benefits associated with purchasing goods with both high recycled content and efficacy must be established and consistently reinforced.

5. The Current Position and Opportunities Moving Forward

In assessing the "waste" model largely in operation within Australia to this point, it must be accepted the model (driven by supply push) exists simply because there is more "waste" supply, than there is demand for those materials as a resource. As previously described (in Section 2), the consequence of resource oversupply (be it components of the waste stream or anything else) is a fall in value. In fact, in its extreme, oversupply ultimately means the resource in question has a negative value with owners required to pay to relieve themselves of the excess resource. As previously concluded, this situation characterises the model we have collectively built around "waste". The only way out of the above described nexus is to implement policies to establish (or re-establish) value in relation to the resource in question.

The transition to a circular economy must successfully navigate the society from the existing "waste" sector, driven by gate fees to a quality assured "recyclate" manufacturing sector, making virgin replacement raw materials that the brands can absolutely rely on for quality and reliability of supply. All of this must additionally be based upon recycled material values remaining competitive relative to virgin raw material equivalents. This transition will require careful management to ensure the endeavours of all participants are fully co-ordinated. Australia must ensure the appropriate participants (including the brands) are marshalled at the highest level.

The AIEN believes Government policy must be directed to all key participant groups in order to realise the circular economy we seek. The AIEN is satisfied the jurisdictional offerings implemented to this point have endeavoured to address:

- Product stewardship schemes, product design pressures and consumer behaviour programs in order to minimise the amount of waste being generated; and
- Incentives, supports for better separation/segregation infrastructure and pressures to be placed upon 'waste industry' actors in order to maintain their social license to remain in operation, etc.

In relation to the key questions of processing and manufacturing infrastructure requirements and market development requirements, the AIEN does not consider any Australian jurisdictions have to this point provided sufficient support and/or leadership.

The AIEN urges all Australian Governments (particularly the Commonwealth and State Governments) to address some of the key elements of the critical processing and manufacturing infrastructure requirements required, and the proactive promotion of markets and the market development for recycled products as prerequisites for a circular economy.

Processing and Manufacturing Infrastructure

The AIEN is always pleased to see resources being allocated with the objective of increasing the capacity to recover resources and subsequently rebirth/manufacture products.

Unfortunately, the experience in all jurisdictions would indicate that up to 90% of the available infrastructure funding gravitates to improved separation/segregation regimes in order to qualify and subsequently transport large quantities of resource to interstate and overseas destinations. If the funding continues to be so directed, there will unfortunately be little progress toward a circular economy within Australia.

The AIEN Recommends that financial resources be applied to genuine resource value adding domestic product manufacture and the marketing of rebirthed/recycled content products within Australia.

Market Development

All Australian Governments are understood to be signatories to the National Waste Policy which includes a target for 30% recycling (into products!!!) of all recovered resources by 2030. This includes 30% recovered content in all Government purchases by 2030. All Government procurement policies could well pursue such opportunities in demonstrating leadership in the promotion and development of a circular economy. (For completeness, the October 2018 AIEN recommendations regarding updating the 2009 NWP are attached).

According to the Economic Development Australia website, aggregate Government spending across all domestic jurisdictions represents approximately 20% of the total Gross Domestic Product. In terms of market development, commanding that amount of purchasing power should allow for the mandating of certain goods to be procured only from recycled content. To do less would be to abdicate the leadership positions the collective Governments could readily occupy. There are many examples of SMEs in the resource recovery sector taking surplus resources from Corporate Australia on the proviso they purchase, or cause to be purchased an equivalent tonnage of their products made from the recycled content. It is exactly this type of market support that will grow a circular economy. All Australian jurisdictions have thus far comprehensively failed to genuinely deliver on the possibilities available.

Potential deals can be set up as follows:

1. The large corporate (Brand, packaging manufacturer or Government Agency) provides information regarding the specifications and price points for various products they could procure (or would cause to be procured) in exchange for the SME guaranteeing to take a certain quantity of “excess resource” for each unit of product.
2. The SME commits to a specification and production level to satisfy the large corporate (Brand, packaging manufacturer or Government Agency) at an agreed price. That guarantees the SME market volume, eliminates the cost of waste disposal for the large corporate (Brand, packaging manufacturer or Government Agency), creates really interesting tight examples of the Circular Economy in action and the large corporate (Brand, packaging manufacturer or Government Agency) still obtains the goods it was required to procure at a market competitive rate.

Everyone wins in such a scenario and most critically, the developing SME with the innovative technology or product manufacturing process receives the necessary product market support.

6. Closing Thoughts

There are Australian developed, emergent disruptive technologies for the processing of each/all individual component of the waste stream. The AIEN can assure the Australian Government that many of the innovative technologies it seeks, in order to implement a circular economy, already exist within Australia or elsewhere in the world.

All jurisdictions within Australia have proven themselves (to this point) to be spectacularly unsuccessful at identifying and backing world leading Australian technologies in the resource management and resource recovery space. The AIEN would be pleased to provide introduction to any/all Governments (and Government agencies) to a significant number of such technologies through its network.

The resource management revolution we collectively seek will not be realised through adherence to a 'business as usual' approach. It is time for Australian Governments to expand the number of voices being utilised as counsel in the field of resource management. A significant national opportunity will be missed if the existing Government advisory bodies/interests are the only voices to be consulted.

AIEN is working to further the cause of Industrial Ecology and be a catalyst for change to promote the transition to a Circular Economy. Currently the AIEN is investigating the prerequisites for successful change through bringing together key stakeholders with a view to identifying criteria for new Circular Economy initiatives.

All elements of the supply chains will be required to act in concert if a circular economy is to emerge within an Australian context. This will not occur without:

1. Insightful regulatory supervision and coordination. It will be necessary for the required outcomes of the regulatory regimes to be agreed by all stakeholders and clearly communicated.
2. Transitioning from a supply push to a market pull resource management model (**Section 2**).
3. Recognising the importance of concepts such as HNRV (**Section 3**) in directing the optimum allocation of capital resources and minimising risks associated with capital becoming stranded.

AUSTRALIAN INDUSTRIAL ECOLOGY NETWORK

AIEN

Submission to the

Updating the 2009 National Waste Policy: Less waste, more resources

Discussion Paper

5 October 2018

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The AIEN is also a forum in which people can discuss ideas, seek advice from one another, connect with resources associated with the practice and study of industrial ecology or simply keep in touch through the network with developments and best practice in their areas of interest.

The AIEN was established as a proprietary limited company in October 2014 to promote and facilitate industrial sustainability through the application of industrial ecology. The company aims to provide a 'window on the world' of industrial ecology by relaying news, canvasing new ideas, producing 'position papers' on topics, such as energy from waste, organising events and alerting people to developments in academia and in practice. In effect, AIEN aspires to become the 'go-to' organisation for all things to do with industrial ecology, including collaboration on the design, planning and implementation of IE projects.

Introduction

Thank you for the opportunity to provide comment on the discussion paper - *Updating the 2009 National Waste Policy: Less Waste, More Resources.* The AIEN congratulates the Federal Government on this initiative and is fully supportive of the drive for improvement and targets for waste reduction, resource recovery and the diversion of waste from landfill.

The AIEN is committed to the establishment of a full circular economy for the resources currently categorised as 'waste'. The commitment of the AIEN is therefore fully aligned with the objects of the strategy.

The AIEN has a diverse membership numbering in excess of 200 individuals and businesses. Among its membership reside many fine resource recovery examples/case studies demonstrating the circular economy and its principles. However, the membership remains fully aware the current examples are merely case studies and that much effort will be required if we are to achieve the revolution in materials management requisite in ushering in the circular economy as the resource management norm.

To this end, the AIEN It is currently preparing a blueprint for prioritised action with respect to facilitating the circular economy and start the circular economy "flywheel" spinning.

This submission is forwarded at a time when the AIEN circular economy blueprint is nearing completion but remains a work in progress. However, this submission contains the relevant priority elements from the draft AIEN blueprint most directly aligned with the imperative for sympathetic government policy and supporting legislative/regulatory frameworks.

Below we have provided a summary of our feedback in response to the Directions Paper. We would be pleased to provide additional information or clarification of any points if required.

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Preamble - Circular Economy

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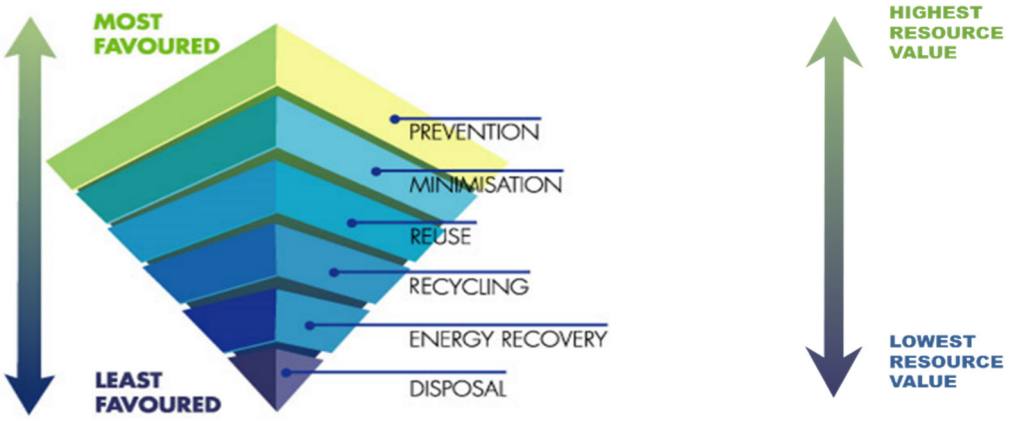

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The AIEN would urge all governments to more fully consider rewarding outcomes at the market/recycled product end of the resource management spectrum. Proper consideration of the complete resource recovery/management system (with emphasis on the critical role of markets for recycled products and content) will require/necessitate a significant coordination between waste policy, employment and industry policy, regional investment policy, etc being postulated as an element in a larger resource management picture.

Any failure to properly consider the importance of the waste hierarchy and HNRV principles may result in losses in the longer term through stranded investment. When resource availability becomes a constraint, resources will always flow to those who can afford to pay the most for them. This is why overinvestment in energy technologies is not recommended.

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for resources otherwise considered as wastes. However, it would be lazy in the extreme to settle for lower resource values simply for ease and expedience. Energy from waste should only be considered where:

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The ambition of Australia's renewed approach to recycling and waste should be to foster the creation of a comprehensive resource management system. The AIEN would be supportive of all policies contributing to that outcome.

The objectives of a holistic circular economy approach to resource management must include:

- Clear obligations upon manufacturers, importers, distributors and other persons in relation to the mechanism by which 'waste' is to be avoided or eliminated from the utilisation of their products. A greater emphasis on product and packaging design is required. The current product stewardship regime is not considered to be adequately driving improvements to product design and packaging design to ensure reuse and recyclability.
- Clear obligations upon manufacturers, importers, distributors and other persons in relation to the mechanism by which 'waste' is to be harnessed as a resource for reuse and or recycling. (These are higher order resource utilisation options than either treatment or disposal.)
- Clear obligations upon manufacturers, importers, distributors and other persons in relation to the mechanism by which 'waste' impacts on the environment are to be minimised or how the overall greenhouse inventory (product creation, use, recycling, treatment, disposal, etc) of products is to be minimised.

Existing policies and resource management frameworks have primarily focussed upon raising awareness and placing obligations upon manufacturers, importers, distributors and other persons in the following important areas:

- Separation and segregation of materials/components so as to avoid contamination;
- Aggregation of post-consumer materials/components; and
- Initial treatment of the post-consumer materials/components (in some cases).

However, the other important pre-requisites for a circular economy include identification and/or establishment of processes and infrastructure to enable the materials/components to be reused and/or recycled and the establishment and support for consumer markets for the reused and/or recycled materials/components.

A holistic Australian approach must incorporate these additional elements in order to successfully move toward a circular economy.

Initiatives promoting circular economy principles will be inadequate, and ultimately fail, where they collectively fail to:

- Sponsor and/or promote resource utilisation facilities and technologies. Product stewardship schemes that can aggregate waste (at least contributing positively to litter reduction) while the materials/resources carefully separated and segregated by others are ultimately destined for landfill due to the underdeveloped nature of local/domestic recycling and resource reuse industries is still considered failure.
- Reward organisations/entities genuinely promoting recycling and reuse industries through their purchasing/procurement decisions.

Principle 1 - Avoid Waste

For comment: *A national target to reduce total waste generated in Australia per capita by 10 per cent by 2030*

Questions for comment:

1.1 Do you agree with the proposed target?

1.2 Is there a different target that should be included?

- should we freeze waste generation at current levels, indexed against population growth?

- should there be a target to reduce waste to landfill instead of a generation target?

- should targets be set separately for municipal solid waste, commercial and industrial waste, and construction and demolition waste?

1.3 Do you agree with strategies 1, 2, and 3 and related proposed milestones? If you suggest others, please explain why.

1.4 What other action is required to meet the target?

1.1 The AIEN is broadly supportive of a national target to reduce the total waste generated per capita.

1.2 More urgent action is required. In short, the proposed target is too modest, and the timeframe suggested is too great. Strong government signals are essential if the current waste and resource recovery issues are to be satisfactorily addressed. The specific areas where strong government signals are required include:

- Stringent packaging design criteria that minimises/eliminates the utilisation of excess packaging and unrecyclable packaging materials. Packaging must be strictly fit-for-purpose only in terms of its primary product safety and product efficacy functions;
- Product design criteria that create an environment where repair and reuse become the predominant end of life options; and
- Education programs for manufacturers and consumers to ensure behaviours are strongly aligned with waste minimisation/avoidance initiatives.

In the absence of clear evidence suggesting economic harm and/or major disruption associated with compliance issues, the AIEN would advocate for more stringent targets than suggested. A 10% reduction in per capita waste by 2030 is considered insufficient. Waste minimisation initiatives related to product design may take time to work through the economy. However, mandated initiatives related to minimisation of packaging quantities, types, etc can be implemented in much shorter timeframes.

1.3 The AIEN fully supports strategies 1, 2 and 3 as presented. The timing and milestones associated with strategies 2 and 3 are considered reasonable. The milestone/target of halving food waste in Australia by 2030 is also supported by the AIEN.

Principle 2 – Improve Resource Recovery

For comment: *A national target of an 80 per cent average recovery rate from all resource recovery streams, following the waste hierarchy, by 2030*

Questions for comment:

2.1 Do you agree with the proposed target?

2.2 Is there a different target that should be included?

- should targets only refer to recycling?

- should there be separate targets for municipal solid waste, commercial and industrial waste and construction and demolition waste?

2.3 Do you agree with strategies 4, 5, 6 and 7, and related proposed milestones? If you suggest others, please explain why.

2.4 What other action is required to meet the target?

2.5 Who should be responsible for implementation?

2.1 The AIEN is fully supportive of a national target to achieve a mean recovery rate of 80% from all resource recovery streams, following the waste hierarchy, by 2030. The AIEN would add the following points to consider in relation to the proposed target:

- The 80% average recovery rate must be a real measure of (otherwise) waste resources being utilised back in the productive economy. The diversion must be verifiable, and the utilisation of the resources at the various levels in the hierarchy must be reported. This will allow follow-up targets in aiming for higher value resource utilisation into the future. It would not be acceptable to the AIEN if the compliant recovery rate was based around high levels of energy recovery without further vision to move to higher levels in the waste hierarchy.
- In seeking to achieve the 80% recovery target, the governments must be cognisant that genuine and fundamental change is required. This genuine and fundamental change will involve new entrants to the recycling/resource reuse markets, new technologies and new marketing/commercial strategies. Simply funding or supporting new infrastructure for large industry incumbents will only result in improved transport, separation and segregation of the resource streams. The circular economy will only be realised where new processing technologies, new products and new markets are developed. Existing industry incumbents have a clear role, but they are **not** best placed to develop new processing technologies, new products and new markets.

- The circular economy can only work once the resource management sector transitions from a supply push market (with rewards driven by gate fees) to a demand driven market with supply chain participants to be rewarded in accordance with the value they add. The circular economy is predicated upon interrelated markets fully functioning as markets. The concept of a gate fee in resource recovery markets is ultimately as distorting to free trade/markets as government subsidies or tariffs in other commodity markets. The policy must accommodate this transition if the circular economy is ever to become a reality.

2.2 The AIEN is fully supportive of a national target to achieve a mean recovery rate of 80% from all resource recovery streams, following the waste hierarchy, by 2030. The AIEN strongly believes the further conditions/criteria for success are as outlined in the answer (to Question 2.1) above.

2.3 The AIEN fully supports strategies 4, 5, 6 and 7 as presented. The timing and milestones associated with the strategies are considered reasonable.

2.4 To reiterate, any action in achieving 80% resource recovery rates (or greater) **must** be predicated upon the development of a genuine domestically based circular economy. It **must not** be based upon interjurisdictional transport arrangements, interjurisdictional waste levy distortions, international disposal masquerading as commodity trading, green washing, long term reliance upon energy from waste strategies, etc. The prerequisites include:

- Introduction of new entrants into the recycling/resource reuse markets, new technologies and new marketing/commercial strategies; and
- Transition to demand pull commodity markets for the reuse of preloved goods, recycled content within new goods and goods made exclusively from recycled content.

2.5 Ultimately, we will all be responsible for the success or failure of the transition to a circular economy. The governments must take responsibility for setting the environment for the natural self-interest of market actors/players to be channelled into positive directions and activities. The setting of the targets, the mandating or banning of certain activities/practices/materials and encouraging development of new entrants/technologies/processes/commodity markets are all initiatives available to government in achieving its desired outcomes.

Principle 3 – Increase use of recycled material and build demand and markets for recycled products

For comment: *A national target of 30 per cent average recycled content across all goods and infrastructure procurement by 2030*

Questions for comment:

3.1 Do you agree with the proposed target?

3.2 Is there a different target that should be included?

3.3 Do you agree with strategies 8 and 9 and related proposed milestones? If you suggest others, please explain why.

3.4 What other action is required to meet the target?

3.5 Who should be responsible for implementation?

3.1 Based upon the answer to Question 2.1 above, the AIEN questions whether an 80% average resource recovery rate is consistent with a 30% average recycled/reused/repurposed content across all goods and infrastructure procurement. If a genuine domestic circular economy is to be realised, there must be a degree of correlation between average resource recovery and average recycled/reused/repurposed content in procured goods and infrastructure across the economy. It is anticipated more ambitious resource utilisation targets are required to achieve this consistency. Detailed analysis of material flows (waste generated, and products purchased) should be undertaken at a sectoral level to determine the most appropriate overall target as well as targets for individual product categories. On this basis, the AIEN does not agree with the proposed 30% target.

3.2 Without consistency between these resource recovery and resource utilisation targets, excess/surplus materials will inevitably arise, market distortions will result, and unwanted consequences will almost inevitably occur.

3.3 The AIEN fully supports the thrust and intent of strategies 8 and 9 as presented. The timing and milestones associated with the strategies are not considered satisfactory where resource recovery and resource utilisation targets lack internal consistency.

3.4 See above answers under Principle 3.

3.5 See response to Question 2.5 under Principle 2.

Principle 4 – Better manage material flows to benefit human health, the environment and the economy

For comment: *national targets to:*

(a) phase out problematic and unnecessary plastics by 2030

(b) halve the volume of organic waste sent to landfill by 2030

Questions for comment:

4.1 Do you agree with the proposed targets?

4.2 Is there a different target that should be included?

4.3 Do you agree with strategies 10, 11 and 12, and related proposed milestones? If you suggest others, please explain why.

4.4 What other action is required to meet the targets?

4.5 Who should be responsible for implementation?

4.1 The AIEN is broadly supportive of national targets to phase out problematic and unnecessary plastics and to halve the volume of organic waste sent to landfill.

4.2 More urgent action is required. The proposed targets are too modest, and the timeframes suggested are too great. Strong government signals are essential if the current waste and resource recovery issues are to be satisfactorily addressed. Within the context of Principle 4 the specific areas where strong government signals are required include:

- There are problematic plastics currently being used that cannot be reliably removed from plastic waste streams with current infrastructure. The presence of these contaminating plastic items is consistently resulting in the diversion **to** landfill of massive quantities of otherwise recyclable plastics. Examples of contaminating plastics are PVC (present in a small proportion of beverage containers) and coloured PET. Even in small quantities, these contaminants destroy the value and markets for large volumes of otherwise recyclable plastics. In line with international trends/actions (e.g. Japan, South Korea, France and California) the AIEN calls upon the Australian jurisdictions to move rapidly toward the banning of PVC, coloured PET in drink containers and other plastic materials that adversely impact upon current domestic recycling systems.
- Given the potential for rapid advent of wider retail fruit and vegetable size acceptance criteria, anaerobic digestion systems, sophisticated high value composting systems, food exchanges, etc, the AIEN would advocate consideration of stronger/quicker organic reduction targets in relation to landfill.

4.3 The AIEN fully supports strategies 10, 11 and 12 as presented. The timing and milestones associated with the strategies are considered reasonable in some instances. Specific areas where more ambitious targets are recommended are included in the answer to Question 4.2 above.

4.4 See above answers under Principle 4.

4.5 Governments must take responsibility for setting the environment for the natural self-interest of market actors/players to be channelled into positive directions and activities.

Principle 5 – Improve information to support innovation, guide investment and enable informed consumer decisions

For comment: *A national target for fit- for-purpose and timely data to be available for individuals, businesses, and governments to make informed decisions*

Questions for comment:

5.1 Do you agree with the proposed target?

5.2 Is there a different target that should be included?

5.3 Do you agree with strategies 13 and 14 and related proposed milestones? If you suggest others, please explain why.

5.4 What other action is required to meet the target?

5.5 Who should be responsible for implementation?

5.1 The AIEN is supportive of a national target to provide fit-for-purpose and timely data for individuals, businesses, and governments in order for them to make informed decisions.

5.2 See above.

5.3 The AIEN fully supports the thrust and intent of strategies 13 and 14 as presented. The timing and milestones associated with the strategies are also considered satisfactory.

5.4 None offered in this submission.

5.5 Governments must take responsibility for setting the environment for the natural self-interest of market actors/players to be channelled into positive directions and activities. This specifically includes the basic information required in order for the desired/requisite behaviours to be demonstrated within the economy. Where government takes specific actions in directing markets that would otherwise fail, additional government responsibility is warranted and must be considered as a natural element of the market intervention.