Australian Industrial Ecology Network

Submission to the

Energy from Waste Policy

Discussion paper for consultation (QLD)

26 August 2019

Australian Industrial Ecology Network Pty Ltd
PO Box 965, Paradise Point QLD 4216 ◆ ABN 44 601 455 743
t 1300 446 303 ◆ f 02 8624 4779 ◆ info@aien.com.au ◆ www.aien.com.au

Table of contents

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.

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.

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.

Introduction

Thank you for the opportunity to provide comment on the *Energy from Waste Policy - Discussion paper for consultation.* We congratulate the QLD government on the research and consultation process they have done and are entering into. The AIEN is generally supportive of the consideration for facilitating greater recovery of energy from waste where there are clear net benefits to society. However, 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.

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

Contacts

Colin Barker
Chairman
Australian Industrial Ecology Network
T: 0412 043 439
E: cbarker@newtecpoly.com.au

Veronica Dullens
Administrative Director
Australian Industrial Ecology Network
T: 0400 449 100
E: info@aien.com.au

Observations

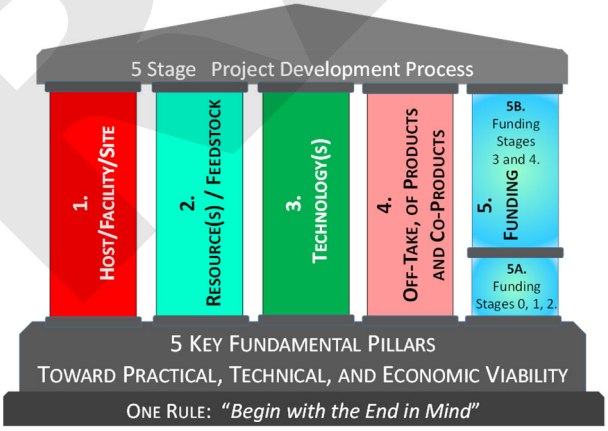
The AIEN's general position is to support the principle of Energy from Waste (EfW) within the constraints of a higher value best use of End of Life (EOL) products. For EfW projects the AIEN will ask the following questions:

- Is it relevant to the community expectations and the requirements of the regulator?
- Is the project an energy project or is it a materials destruction project?

The AIEN would not view material destruction purely for the purpose of diversion from landfill as a project that necessarily meets with its values, after all AIEN is disposed to a position of highest best use of materials as the primary goal.

In certain circumstances, including remote geographic locations, small and highly diffuse resource quantities, suggests 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
- 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.



At the inaugural AIEN Australian Waste to Energy Forum held in February 2016 in Ballarat, a presentation over breakfast introduced the concept of five pillars that support a viable WtE project. In preparing our position policy statement, we have utilised these five pillars.

These 5 pillars, which are not in any particular order, are integral to any project development process, whether an EfW, a distributed generation (DG), a microgrid application of DG projects, or a fully integrated resource recovery and EfW project.

The 5 pillars explained

1. Host/Facility/Site

The 'majority of the energy from waste policy statement criteria require that consideration and criteria ensure the energy recovery facility incorporates the following considerations:

- The operation and emissions of the facility poses minimal risk of harm to human health and the environment
- Does not undermine higher-priority waste management options, such as avoidance, re-use or recycling
- Requires that facilities proposing to recover energy from waste meet current international best practice techniques, particularly with respect to process design and control, emission control equipment design and control, and emission monitoring, with real-time feedback to the controls of the process
- Have a social licence to operate within that host community and
- Incorporate the required buffer zones for nearest sensitive receptors

2. Resource(s)/ Feedstock

The AIEN supports the premise that energy recovery from waste must represent the most efficient use of the resource and be achieved with no increase in the risk of harm to human health or the environment.

The AIEN in principle supports the requirement that feedstock for EfW should be the residuals from primary recovered products process, a resource recovery facility or source separated collection system.

3. Technology

The AIEN is agnostic about the technology selected for a particular application. However, as discussed earlier, our position is that the chosen EfW solution is determined to ensure the highest and best practical, technical, economic and environmental viability, and that will complement existing resource recovery systems within the context of the highest best use hierarchy. Generally, the AIEN approach to technologies is that the project and feedstock should determine the most appropriate technology to achieve the required results, rather than vice versa.

4. Off-take of products, and co-products

The AIEN supports the principle that the energy recovered must be greater than the energy required to operate the process. The AIEN, in principle, does not support technologies that produce either low grade compost products (only good for landfill rehabilitation) or highly contaminated bottom or fly ash.

5. Funding

The AIEN makes no representation as to the sources of funding as that is clearly outside of their remit. The discussion points that we will make are to encourage the following financing needs to ensure technical, economic and environmental viability of the project.

1. Funding to ensure that all prefeasibility and feasibility studies are adequately undertaken to ensure the long-term viability of the project.
2. Funding to ensure that appropriate design and technology installations are undertaken and effected.
3. Appropriate funding for take-off requirements for products produced
    a. Substations & Electrical connections
    b. Liquid fuels storage and transport
    c. Waste heat
    d. Residual solids
4. Commissioning and ramp up to minimum operational capacity

The AIEN recognise that a failure in the EfW space will set the whole process back significantly so encourage proper due diligence to ensure technical, environmental and economic viability.

Response to Consultation Questions

Further to the above general position of the AIEN on Energy from Waste and as somewhat of a summary to this submission, below we will answer the specific questions raised by the discussion paper.

1.Do you agree that energy should be extracted from residual waste material rather than disposing of those material in Landfill?

The AIEN fully supports the use of residual material as fuel for a well-designed waste to energy facility. The AIEN however would not like to see recyclable material sent to an EfW facility in order for any jurisdiction to meet its landfill diversion targets. The AIEN congratulates the QLD government on its definition of suitable waste for an EfW facility.

2. Does the proposed three-pathway framework for EfW technologies provide an appropriate, risk-based approach? What additional or alternative characteristics of EfW proposals should be considered?

The proposed risk based three-pathway seems to be a suitable and low risk approach to providing approval for a proposed facility.

We do note however that the terms “similar jurisdiction” is used extensively and feel that some definition around that is required.

For example, must the plant be in Australia? If not what countries or regions would you accept as “similar”?

3. How should a proposal or technology type transition from Pathway 3 (demonstration) to Pathway 2?

The key issue with this transition is the ability to prove via sustained operation that a type 3 technology can be scaled up to a type 2 operational facility. This can only be done via “full scale pilot” facility using the same fuel and process as the proposed full-scale plant. Lab scale plants cannot provide this.

4. What role should facility operators, collection contractors and local councils be expected to play in ensuring that only appropriate residual waste is accepted for energy recovery?

The AIEN is of the view that it is the responsibility of each party in the supply chain to ensure they are meeting the requirements of the policy.

This starts with local government educating residents on the correct material to be placed in the recycling bin, ensuring its contracts are written in such a way to ensure the highest net resource value is obtained from the resource, all the way through to the processor ensuring they maintain appropriate equipment and processes to recover the highest possible quality and quantity of recyclable material.

Ultimately it will fall to the appropriate enforcement agency to oversea each process in the supply chain to ensure all parties are meeting their individual obligations and adhering to the policy.

5. What should the requirements be for safeguarding current and future resource recovery? Does the solution involve source-segregation, pre-processing or both?

The ultimate safeguard of future resource recovery will be driven by the advancement and uptake of a circular economy. In the short term the AIEN sees source-segregation and pre processing both as requirements to ensure EfW is not just a landfill diversion tactic but a legitimate resource recovery operation.

6. Should the Queensland Government ban specific materials from EfW facilities, or from both landfill and EfW facilities?

The banning of material from landfill can be a useful tool to advance the move to a circular economy and encourage the reuse and recycling of the chosen material.

If the QLD government sees the need to make such a ban from landfill of a specific material it is the view of the AIEN that such a ban should also apply to EfW where the treatment process is a total destruction of that material without the possibility for higher use of the resource. For example, we would advocate that organic material should not be allowed to be placed in landfill however the thermal treatment of organic should also not be allowed. Organic matter has positive benefits to the environment when correctly treated via composing or anaerobic digestion etc. These types of technologies provide the net highest resource use of that material in a sustainable and circular way.

7. Should thermal EfW processes be required to meet the European R1 Criteria? Why/why not?

In the absence of a national environmental policy on the thermal treatment of waste the AIEN would advocate the European R1 Criteria as a robust and proven criterion to base the QLD policy on. The R1 has been in place for some years and is seen internationally as "Best Practice" for an EfW process.

8. Do you agree that the European BREF for Waste Incineration and BREF for Waste Treatment are appropriate guidance documents for Pathway 2 technologies? Why/why not?

Again, in the absence of a national guidance document the BREF documents will provide a sound basis for guidance on all EfW applications and processes. These documents are well established and proven to provide very high standards of environmental protection to the environment and public.

9. What aspects of the current planning and assessment framework do you think require clarification?

As seen in the above 5 Pillars a clear and concise application process is critical to ensure any project meets its planning requirements.

The AIEN would strongly recommend the streamlining of this application process. The most efficient way would be a single point of contact for proponents to contact. This contact point would be required to have a very good knowledge of the requirements of each approvals pathway as well as a good overview of the EfW technologies available and how they fit within the frame work of the state policy. Their job would eb then to guide the proponent down the appropriate pathway to ensure the timely processing of the application and that the proponent also met the required information requirements to ensure the best possible outcome of the application.

10. How can the planning process support effective community engagement?

First and foremost, the proponent of any facility must obtain a social licence to operate prior to any application being approved. It is incumbent on the proponent of the facility to obtain this licence from all interested parties in the community via an extensive consultation process. The appropriate governing body overseeing the application should also be involved in this process to ensure the concerns of the community and other interested parties are addressed in the overall application.

11. What role should the government play in assessing significant EfW proposals?

It is the view of the AIEN that the role of government in assessing EfW proposals is to provide sound and robust policy including a streamlined application process. We do not believe the government is in the best position to evaluate each application due to the very technical nature of the process, this requires specialised knowledge which is not always present in higher government positions.

12. Do you agree with the proposed stakeholder engagement principles and responsibilities? Is there anything you would add or change?

In principal we agree with the current stakeholder engagement principles however we also feel that these may change over time as the final policy is developed.

The overarching principle must put the onus on the proponent to obtain a social licence to operate in order to obtain governmental approval for the project. Without both these approvals the proposed project will fail.

13. How could proponents demonstrate that they have followed the proposed principles of engagement?

As we mentioned above the specific government body responsible for assessing the application should be involved in the engagement process from the beginning therefore, they would be fully aware of the proponent's engagement principles and be able to ensure they have supplied all the required and relevant information to the interested parties.

14. Should proponents of EfW facilities be required to demonstrate that they have obtained a social licence to operate the proposed facility? How would this be demonstrated?

Absolutely this should be a requirement. See above answers to question 10, 12 and 13.