Australian Industrial Ecology Network

Submission to the

Waste-to-Energy (WtE) in the ACT
Information Paper

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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.

Introduction

Thank you for the opportunity to provide comment on the *Waste-to-Energy (WtE) in the ACT Information Paper*. We congratulate the ACT 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.

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

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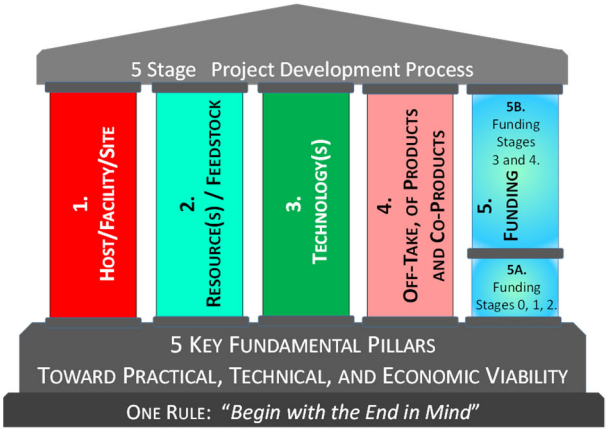
Observations

The AIEN basic position is to support the principle of Waste to Energy (WtE) projects within the constraints of a higher value best use of End of Life (EOL) products. For WtE 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 from the position 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.



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

The five pillars explained

1. Host/ Facility/ Site

The AIEN supports the ACT waste to energy policy statement with the requirement that any considered technology and criteria would ensure the energy recovery facility at a minimum 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.

It is a key principle of the AIEN approach to energy recovery that feedstock for WtE should in its entirety 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 WtE 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. Offtake of products and co products

The AIEN supports the principle that the energy recovered is greater than the energy required to operate the process. The AIEN in principle supports technologies that do not 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 WtE space will set the whole process back significantly so encourage proper due diligence to ensure technical, environmental and economic viability.

Consideration of PEF for export (domestically and internationally)

Although the production of Process Engineered Fuel (PEF/RDF) is currently a viable use for residual waste and an effective landfill diversion strategy in the short term the AIEN would like to raise the following concerns:

1. The production of PEF for cement kilns as mentioned in the Information Paper must only be considered as a short-term solution. At current production levels the market will saturate quickly.

2. PEF represents the recovery of only a fraction of the value of waste as a sustainable energy source.

3. The production of PEF in the ACT then exported out of the territory can only be seen as a landfill diversion process not a true resource recovery function. In the view of the AIEN, export of PEF is a short-term outcome which we would strong discourage under the principles if Industrial Ecology and should be seen as an intermediate step towards longer term sustainable outcomes. If we have learnt anything from the recent China Sword initiatives and the subsequent flow on to our recycling outcomes the reliance on the production of PEF for export into Asian markets is short sighted and ACT should position themselves to do better in the long term not seek short term outcomes.

4. Current export markets for PEF/RDF are limited to those countries already reducing the amount of imported waste products they accept. AIEN research shows that many of the current PEF customers are starting to source their local waste to replace imported fuels.

Landfill gas capture is best practice landfill management, not EfW

Although an environmentally sound practice, AIEN would like to point out that the capture of landfill gas and subsequent cleaning and use in generators is not widely considered to fall within WtE approvals or policy. Landfill gas management is clearly a requirement of best practice landfill management and is a condition of an operational licence, flaring of methane or production of electricity are purely an environmental compliance issue and as such we would recommend this practise be excluded from any policy documents.