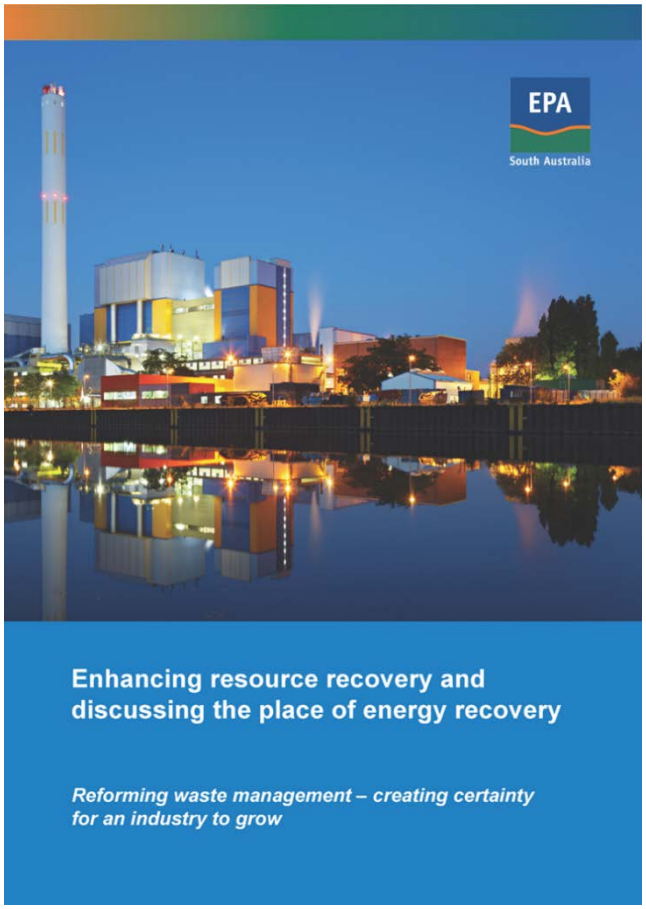
Environment Protection Authority

Summary of submissions

Enhancing resource recovery and discussing the place of energy recovery



EPA
South Australia

Summary of submissions – Enhancing resource recovery and discussing the place of energy recovery

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Abbreviations

CBD	central business district
C&D	construction and demolition
C&I	commercial and industrial
EfW	Energy from Waste
EPA	South Australian Environment Protection Authority
EU	European Union
GHG	greenhouse gas
MSW	municipal solid waste
RDF	refuse derived fuel
Waste to Resources Policy	*Environment Protection (Waste to Resources) Policy 2010*

1 Introduction

South Australia has introduced many waste management reforms over the past decade that have successfully promoted resource recovery in our state and established our reputation as a leader in this field.

The waste and resources industry is a significant part of South Australia's economy, with an annual turnover of around $1 billion. Despite innovation and growth in this sector, stakeholder feedback over time has indicated the need for changes to regulatory settings to help unlock the next growth opportunities and address current challenges.

Opportunities exist to respond to increasing interest in Energy from Waste (EfW) schemes and to pursue further development of sustainable resource recovery activities.

Our state has helped lead the way in demonstrating that protecting the environment need not come at the expense of industry activity, and that environmental protection can support business and growth in jobs.

The Environment Protection Authority (EPA) regulates waste by:

1 minimising the risk of environmental harm occurring, and

2 supporting the highest and best, safe available use of recovered materials in accordance with the waste management hierarchy.

The EPA is also pursuing a regulatory approach to EfW that is proportional, consistent, transparent, targeted and timely.

Well-framed legislation and policy that is effectively used is an essential element in supporting our industries, and can have an important influence on markets.

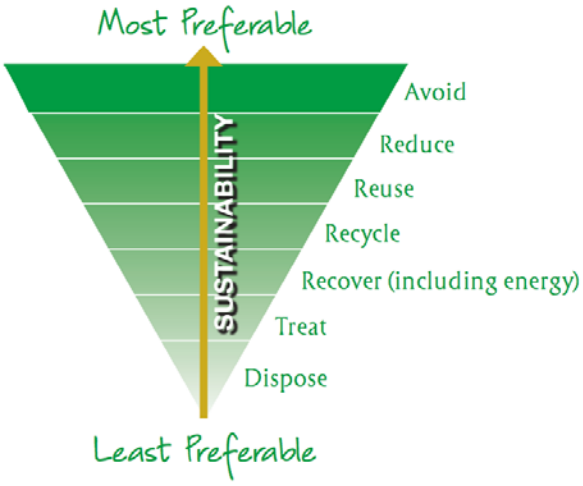

Figure 1 Waste management hierarchy

The more waste that we can recycle, reuse or remanufacture, the stronger the basis for an expanded recycling and resource management industry, creating more 'green jobs' in reprocessing, sorting, collection and manufacturing.

Stakeholder consultation on the EfW discussion paper, *Enhancing resource recovery and discussing the place of energy recovery* in October 2017 has assisted the EPA in considering the key elements required to develop a regulatory framework that provides for investment certainty, fair operation within the material resource recovery sector and appropriate growth in the EfW sector.

2 How we consulted

The EfW discussion paper outlined the issues and drivers influencing the waste industry with respect to material resource recovery and the potential for growth in EfW. The paper discussed a variety of topics and regulatory issues on both national and international scales with the aim to investigate the most common regulatory approaches surrounding EfW that could create certainty for industry. The discussion paper also asked a series of questions addressing current challenges, and seeking to bring greater clarity to those growth opportunities in the waste and resource recovery industry while ensuring that past successes in material resource recovery are not undermined by inappropriate development.

Views on the discussion paper were sought between 24 October 2017 and 12 January 2018.

The discussion paper, together with summary information, was published on the EPA website. Key stakeholders were directly invited to make submissions. The discussion paper's availability was publicised to all EPA waste depot licensees, and via the Local Government Association Circular and Waste Management Association of Australia online notice.

Throughout November and December 2017, the EPA held two regional consultation sessions (Mount Gambier and Port Pirie) and two Adelaide CBD consultation sessions in collaboration with Green Industries SA. A number of additional meetings were held with key industry stakeholders at their request. The Waste Management Association of Australia also hosted a breakfast seminar attended by a wide variety of industry and government stakeholders.

Thank you

Thank you to every organisation and individual who took the time to attend a consultation session and/or submit their views on EfW regulatory framework ideas to the EPA, and especially those who endeavoured to address many or all of the questions presented in the paper. This summary of submissions outlines the nature of views expressed for each of the key matters raised for consideration as well as nominating priorities that have emerged through the consultation process.

Views submitted on the discussion paper will be used to guide changes in the EPA's regulatory framework with the aim of further developing the industry.

Views submitted in response to questions posed in the discussion paper are being used to assist in analysing the potential opportunities and costs that may arise from growth in EfW and the development of an EfW position statement to further guide the development and regulation of EfW facilities.

3 Participants

The EPA received 17 submissions from the following sectors, via a targeted industry consultation process. Broader public consultation is planned for subsequent policy related work in this area.

State government

Environment Protection Authority (New South Wales)

Primary Industries and Regions SA

SA Water

Local government

Adelaide Hills Region Waste Management Authority

East Waste

Fleurieu Regional Waste Authority

Hitachi Zosen Inova Australia Pty Ltd

LMS Energy Pty Ltd

Local Government Association

Northern Adelaide Waste Management Authority

Southern Region Waste Resource Authority

Waste and resource recovery industry

Australian Industrial Ecology Network (AIEN)

ResourceCo Pty Ltd

Veolia Environmental Services (Australia) Pty Ltd

Waste Management Association of Australia – SA Branch (WMAA)

Waste Recycling Industry Association of South Australia (WRISA)

Non-government organisations and individuals

One individual

4 What you told us

The majority of submitters chose to highlight general views on selected topics with a few directly addressing questions posed in the discussion paper. Some submitters also chose to express views on regulatory reforms relating to EfW that they considered should be addressed as priorities.

4.1 Major themes

The major themes emerging from consultation are:

- Health and environment:
  - Community acceptance is paramount.
  - A consistent regulatory framework is required to engender community trust.
  - Transparent industry development and operation is required to create trust.
- Social responsibility:
  - Delineation of an appropriate resource recovery framework in line with the waste management hierarchy and a sound regulatory framework for emissions and waste are important.
- Clarity and certainty for investors:
  - Clarity on waste levy application is required.
  - Identification of appropriate feedstock/waste inputs with long-term certainty is also required to inform investment decision making.

4.2 Summary of submissions

A line-by-line analysis of each submission was undertaken – both for answers to all 28 questions and in respect of the more general submissions made on all topics raised through the discussion paper. A summary of the topics from the formal information sessions and workshops undertaken during the consultation period are provided in Appendix 1.

Several topics that dominated the discussion have been identified as emerging themes. To avoid undue length, general or commonly submitted responses to the themes identified were summarised, while some of the more specific or contrasting comments have been outlined with a higher level of detail in order to provide an accurate representation of the submissions received.

4.2.1 General support for a regulatory position on EfW

This section summarises the general themes arising from submissions on further policy development in this area. All submissions supported the development of further advice, guidance or policy regarding EfW and material resource recovery.

A high number of submissions signalled that clarity on the application of the waste levy and identification of suitable feedstocks for various technologies were required.

A moderate number of submissions supported prohibiting/banning specific waste streams such as certain recyclables from EfW by regulation, allowing simple updates over time to reflect technological improvement in resource recovery as it occurs.

A low number of submissions focused upon the perceived or actual contractual barriers to establishing a medium-to-large scale EfW facility due to the number of long-term contracts for the substantial volume of waste feedstock that would be required in order to secure financial viability of such EfW projects.

4.2.2 Energy rationale

This section summarises comments made with regard to the energy generation potential or energy rationale for EfW as it was investigated by the discussion paper. Most submissions focused on the waste management aspects of EfW proposals and did not comment on energy generation aspects. Some submissions emphasised the potential for growth in biogas applications utilising organic feedstock such as anaerobic digestion with gas grid injection or electricity grid export outputs.

A low number of submissions addressed the energy generation potential of EfW.

Specific submissions stated that:

- EfW can provide baseload electricity at many levels and especially on a medium-to-large scale direct combustion level.
- The energy produced would not be significant at a whole-of-state or national level compared to equal investment in conventional dedicated energy infrastructure.
- District heat reuse as well as electricity outputs would yield greater efficiency and contribute to better overall project feasibility.

4.2.3 Applicability of the Waste Levy

SA's Waste Strategy 2015–2020 requires the EPA to clarify the application of the waste levy to EfW technologies, and whether a levy should apply to EfW.

A high number of submissions discussed the role of the waste levy generally or expressed views on its potential role relating to EfW. Only those comments relating specifically to the levy with regard to EfW have been presented here.

In general terms, contrasting views were submitted on the applicability of the waste levy to EfW, particularly thermal technologies.

A low to moderate number of submissions discussed a differential levy set lower to that of landfill disposal.

Specific submissions stated that:

- If the levy was applicable to EfW it would not be beneficial and would destroy projects.
- A levy on EfW would not be logical due to the recovery of value from the waste and the avoidance of the environmental impacts of landfill disposal.
- No levy on EfW would discourage landfill disposal and make feedstock available for EfW.
- EfW on a scale costing hundreds of millions of dollars would only be possible with a guaranteed exemption of levy on approved facilities.
- A lower rate or no levy at all should be applied to bottom ash from EfW because bottom ash is more stable within a landfill and also has potential reuse opportunities.
- A levy on destruction of waste to produce energy should be applied to ensure the market signal for higher order reuse remains.
- When considering the application of a levy it should recognise that EfW is likely to be higher in the waste hierarchy than landfill. However it is also an act of destruction by combustion of waste, which is lower on the hierarchy than other options that avoid, reduce or recycle waste, where the embodied energy is retained and the material remains part of the circular economy.

- The levy is a blunt tool with a bias toward heavy waste products (ie the heavier the waste, the more levy it attracts), and considering that many of the energy dense products are light it may not be an adequate incentive.

4.2.4 Waste management hierarchy

Various aspects of EfW with regard to the position of energy recovery within the waste management hierarchy were explored in the discussion paper.

A high number of submissions commented that EfW should support the hierarchy and that higher order recycling and reuse must not be undermined by EfW.

A moderate number of submissions outlined the potential to recover more food organics from MSW and C&I waste streams as it should not be considered residual waste available to EfW, rather feedstock for organics processing facilities currently accepting this waste.

A low number of submissions cautioned against 'down-cycling' by thermal EfW and highlighted the importance of subsidising higher order avoidance and recycling operations to the exclusion of subsidies for EfW involving the thermal destruction of waste.

A low number of submissions considered that the inherent value of many material resources within various waste streams as commodities will always ensure that they avoid disposal or energy recovery pathways, and iterated that detailed resource recovery criteria would be unnecessary or over-prescriptive.

Specific submissions stated that:

- Since avoidance is the most preferable element of the waste management hierarchy, it should be a higher priority for policy reform.
- Avoidance, reuse, and recovery should be prioritised wherever technically and financially feasible to continue to reduce the volume of waste being disposed to landfill.
- There are opportunities to further utilise pathways for refuse derived fuel production from non-recoverable materials.
- Some materials that are theoretically recyclable may not have end markets and consideration should be given to accepting those materials as residual waste for energy recovery.

4.2.5 Resource recovery (EfW feedstock eligibility) criteria

The discussion paper provided information on resource recovery processes that could be undertaken prior to waste streams being used in an EfW process, in order to maintain the upward momentum of waste in accordance with the waste management hierarchy. In general, mixed responses were provided with regard to the resource recovery criteria questions and discussion.

A moderate number of submissions discussed the frequency of kerbside waste collection and that changes to the frequency had the potential to alter the amount and composition of residuals available to EfW.

A low to moderate number of responses supported some form of mandatory resource recovery prior to feedstock eligibility for EfW using the Waste to Resources Policy in a similar manner to the requirement for the pre-treatment of waste prior to landfill.

A low number of submissions considered the three-bin kerbside collection system to be a sufficient recovery process for MSW prior to the residual being eligible for EfW. However one submission considered food organics must be recovered to a higher extent than at present and community education would assist in achieving a higher diversion rate.

A low number of submissions commented that the NSW resource recovery criteria were over-prescriptive and/or arbitrary with the potential to stifle innovation.

A low number of submissions suggested that specific resource recovery criteria could result in perverse outcomes.

Specific submissions stated that:

- A definition of 'residual waste' could be provided and future proofed by regulating via schedules of declared recoverable and residual wastes that could be amended as required.
- Mandatory resource recovery criteria applying to EfW should be consistent with landfill.
- Any additional criteria for EfW would not be equitable in comparison to landfill which sits lower on the waste management hierarchy.
- The diversion of waste provides no guarantee of meaningful resource recovery and with the change to China's policy position where no onshore processing facilities are available and there are underdeveloped or non-existent end markets, EfW might provide a sustainable alternative option for waste streams currently excluded from consideration.
- The NSW criteria ensures only unrecyclable materials can be considered for EfW and if this approach was adopted nationally the community and industry would have the confidence that EfW would complement and not compete against recycling.
- Two industry submissions iterated that C&I remains the most challenging stream with regard to source-segregation, with both submissions suggesting mandatory pre-treatment of this stream prior to EfW through an approved resource recovery process.
- Regular feedstock auditing is an important aspect to ensure that only approved material is received and processed by an EfW facility.

4.2.6 Waste composition over time

Many of the comments received touched on changes in waste composition over time and the need for certainty around feedstock availability and consistency for the life of an EfW investment. Several submissions generally discussed the consistency of all waste streams over time and particularly of what is considered 'residual' due to the likelihood of technological improvement and innovation in material resource recovery techniques over the life of an EfW asset. This section deals with comments made with direct reference to waste composition, however some of the emerging themes are also addressed in other sections of this report.

Several submissions placed emphasis on the need for a regulatory framework to be adaptable over time with some suggesting restrictions on recoverable feedstock from EfW activities in the future must be balanced against the need to provide certainty to industry for the life of an investment.

A few submissions presented the view that relaxing the weekly collection requirement for residual kerbside collected waste could have extensive implications for EfW feedstock going forward as the composition of all three kerbside collected bins could change, and result in increased material recovery and less residuals available to EfW if policies were to change in this area.

4.2.7 Economy of scale and investment challenges

This section presents a summary of comments regarding achieving economies of scale to proceed to a medium-to-large scale investment in EfW technology, particularly as it is relevant to thermal EfW processes which are expensive to construct and operate and are to be amortised over a long-term timeframe of 30 to 50 years. Three submissions said that sourcing a critical mass of waste feedstock to enable investment in EfW is a current barrier to some types of EfW (direct combustion).

Two of these submissions suggested that the government could assist in aggregating waste to achieve or enable some types of EfW, and the last suggestion was that levy revenue could be used to fund grants for EfW.

Two submissions indicated that smaller scale and niche opportunities with local markets are likely to be easier to establish in SA due to issues in achieving economies of scale for larger EfW activities.

One submission commented that there could be several issues affecting small-medium scale EfW investment:

- Reliability and consistency of some types of waste feedstock creates issues in guaranteeing energy supply.
- Cost of network charges can be prohibitive (at some scales).
- Licensing to become a gas distributor and compliance with transmission reliability standards can also be challenging.

4.2.8 Greenhouse gas emissions

The discussion paper presented some data on greenhouse gas (GHG) emissions with regard to conventional fuels used for energy generation and also with respect to the GHG reductions attributed to the recycling industry in SA.

A moderate number of submissions commented on GHG emissions relating to EfW.

A low number of submissions iterated that best practice landfill gas recovery can achieve net positive GHG reductions, with two of these submissions emphasising that SA could achieve better GHG emission savings now by investigating further regulatory opportunities for GHG reductions through best-practice landfill gas management at relevant landfill sites.

Specific submissions stated that:

- EfW projects should demonstrate the GHG emissions intensity and lifecycle emissions using publicly known waste composition data. In operation these should be validated and reported as part of licence conditions.
- There is a notable lack of subsidy to encourage bio-methane fuels and that these fuels are currently subject to federal taxation as fossil fuels despite their potential carbon-neutrality.
- EfW has favourable GHG outcomes compared to landfill due to eliminating fugitive methane emissions, and reducing waste handling and transport as EfW can be located closer to waste sources.
- EfW would need to produce enough capacity at the right time in order to significantly assist with net GHG emission reductions (i.e. have an impact during periods of peak consumption) and also supported understanding the GHG emissions intensity of EfW at the proposal stage.

4.2.9 Refuse derived fuel (RDF)

The regulatory framework for RDF in SA is currently set out in the *Standard for the production and use of refuse derived fuel.* However it is considered a type of EfW and relevant to the broader discussion of EfW. A low number of submissions discussed RDF.

Specific submissions stated that:

  - An ideal pathway for residual waste is for its addition into current RDF pathways.
  - Clarity is required on the application of the waste levy as it might apply to RDF produced from kerbside collected MSW (which is currently not being undertaken in SA) and to EfW generally.
  - While the production and use of RDF is an energy from waste process, EfW facilities with commercial outputs of electricity, heat or combined heat and power should be differentiated from RDF. The production of electricity and alike is of higher order than the burning of materials to displace the use of other resources and this should be recognised accordingly.

- RDF or a waste stream used in its production should be clearly defined and produced to a consistent and agreed specification with high calorific value.
- A waste to energy plant, and RDF production generally, must account for the full cost of waste management including the management of residual wastes from the production as well as combustion processes.

4.2.10 Thermal efficiency criteria for direct combustion

The discussion paper provided some information on the European Union (EU) R1 Efficiency Indicator, which must be applied to the direct combustion of MSW in the EU, and asked questions around its potential application in SA. Seven submissions referenced thermal efficiency of direct combustion EfW facilities.

Three submissions supported the use of the EU R1 indicator as a best-practice, scientifically sound method for determining the thermal efficiency of direct combustion.

Specific submissions stated that:

- Some EfW technologies can be net users of electricity or generate a small amount of electricity when the facility's own consumption is taken into account.
- The R1 indicator grew from incineration technology and was not specifically tailored and designed to assess a dedicated energy recovery plant, and SA may need to be able to improve upon the requirements of the R1 indicator.
- Energy recovery facilities must demonstrate that any heat generated by the thermal processing of waste is recovered as far as practicable including the use of waste heat for steam, electricity generation or combined heat and power schemes.
- A thermal efficiency criteria should be adopted which demonstrates the energy output for the proposal will be equal to or greater than the total energy input, as is required by the NSW EPA.
- Thermal efficiency criteria to differentiate thermal disposal from energy recovery should be applied to MSW and C&I waste only, and any criteria would be supported on this basis and provided that:
  - The efficiency level is set based on global experience using good data and sound modelling.
  - Applied to all operators without exception for these feedstocks.

4.2.11 Emissions, waste and net environmental benefit

The potential emissions and waste generated by various EfW processes was summarised in the discussion paper. A relatively large number of submissions (nine) discussed emissions and waste, however these were highly varied in focus ranging from discussion of one or a combination of emissions, waste or net environmental benefits related to EfW facilities and in comparison to landfill.

Mandatory air monitoring and modelling for EfW facilities was directly supported by a large number of submissions.

Specific comments on emissions and waste were highly varied in focus.

A few submissions discussed that EfW proposals should establish net environmental benefits with respect to air, waste, and greenhouse gas emissions with comparison to existing practice, eg landfill.

The following specific technical comments were made with respect to emissions monitoring and management:

- Real-time emissions monitoring should be mandatory and continuous for nitrogen oxide, carbon monoxide, particulates, total organic compounds, hydrochloric acid, hydrogen fluoride, and sulphur dioxide.
- Monitoring data should be available to the public in real time.

- Mandatory minimum evaluation distances are unnecessary where air quality modelling is compulsory and many international examples are in very close proximity of EfW facilities to residential and other land uses.
- Minimum evaluation or separation distances will be a site-specific function of emission levels and receptors.
- A robust scientific justification should be required at the development application stage to understand potential impact of emissions and waste.
- Proven EfW technology has no unacceptable impacts on humans or the environment as is evidenced by the hundreds of plants in operation across Europe and the world.
- Modern plants have proven low emission levels with no impact upon humans and the environment.
- Environmental performance must meet international accepted standards for environmental emissions preferably the EU which are higher.

The following general comments were made:

- Other industries such as aquaculture will require a system to ensure that EfW facilities will not impact on the clean and green environment.
- EfW can deliver net environmental benefits due to elimination of:
  - landfill gas fugitive emissions leading to a reduction in greenhouse gas emissions
  - all other environmental impacts associated with landfilling
  - waste transfer and transport associated with landfill as EfW plants can be built closer to waste generation (eg Wingfield).
- Disposing and managing residual waste from EfW facilities such as liquid, solid and gaseous wastes including baghouse dust and bottom ash should be addressed as a high priority to ensure that wastes are managed as such for disposal and not considered products by virtue of having undergone an industrial process.

4.2.12 Proof of concept

The paper discussed proof of concept for EfW facilities within the national context whereby EfW is an emerging industry with no locally proven track record. Three submissions addressed proof of concept with contrasting views.

Two submissions supported a requirement to only use proven technologies with reference to facilities in operation overseas, given that Australia has little demonstrable commercial experience in these technologies.

One submission cautioned against requiring data and reference facilities to be demonstrated as it may stifle local innovation and provide data from a process/technology that is several years old.

A specific submission stated that:

- Moving grate combustion, anaerobic digestion, and alternative fuel are all well proven:
  - anaerobic digestion is suitable for clean organic waste streams
  - thermal moving grate for residual waste streams such as the ‘red lid bin’ MSW, and non-recyclable C&I streams
  - alternative fuel is suitable for specific high embodied energy, non-recyclable waste streams from C&D and C&I waste (eg plastic, textiles, unclean biomass).

4.2.13 Cost recovery for regulatory assessment

Three succinct submissions were received regarding regulatory cost recovery as follows:

If benchmarking assessment criteria were established for EfW compliance, a fee for service framework could be introduced with a percentage cost 0.2–0.5% fee could apply depending upon the scale of a proposal, and a licence fee similar to landfills could apply (for direct combustion proposals).

Cost recovery by regulators should be proportionally similar to all other industrial, resource recovery, and waste projects.

Cost recovery methods should be used as in other industry assessments such as mining and manufacturing, EfW proposals should be treated equally with other industries.

4.2.14 Economic viability of EfW in SA

This section summarises comments relating to direct economic or financial comparisons as they were discussed by several submissions. Almost all of the submissions addressed the viability of EfW in SA, however this section specifically presents some of the data discussed by submissions. Discussion of the waste levy specifically is provided by section 4.2.3 of this report.

A large number of submissions considered that current rates of MSW and C&I waste generation combined are more than sufficient to underpin a proven EfW plant (direct combustion).

A moderate number of submissions suggested that EfW needs appropriate certainty in volume and duration of feedstock (waste) to enable plants to operate at design capacity and deliver performance and investment returns.

Specific submissions stated that:

- There is only 890,000 tonnes per annum of material landfilled in the whole of South Australia, and recovering the green waste, organics, glass, metals and bringing the moisture content to 15%, the total material with a calorific value could be less than 200,000 tonnes per annum, so small scale close to market options may be the most economical in a South Australian context.
- EfW is cost comparable to landfill given that sustainable landfill requires a minimum gate fee of $40/tonnes. Transfer station processing and cartage costs can add an additional $30/tonnes, and the combined $70/tonnes cost added to the levy of $103/tonne will see sustainable landfilling costs exceed large scale EfW costs (ie landfill will become cost comparable to EfW).
- Large-scale EfW plants will be competitive in Adelaide. Medium-scale plants are barely competitive in SA at today's landfill pricing and levy. Small-scale plants would only make sense in the non-metropolitan areas, but it is likely less expensive to transport waste to Adelaide or interstate.
- A thermal moving grate EfW plant consuming residual MSW will require amalgamation of multiple councils' residual MSW volumes over a long-term contracted timeframe to underpin a private EfW plant.
- Public investment is not required, however commitment to supply volumes over a long term is required.
- The public private partnership (PPP) model is attractive as it de-risks the investment of a long-term complex asset and ensures continuity of operation, while also creating a share of returns for the state and inherent accountability for feedstock control. The state investment could also be critical in bridging the additional stakeholders that would need to be consulted, for example councils and SA Power Networks.
- Long-term energy offtake agreements are required, but these are not difficult to obtain.
- Grid connection of EfW would not be economically viable in South Australia, but could be confined to behind-the-meter applications (not for general retail supply contracts).

4.2.15 Social licence

The process to obtain or ensure community acceptance of EfW or any development can be described as a social licence to operate. EfW developments are quite often complex and community acceptance cannot be assured. Six submissions provided commentary on social licence.

Three submissions iterated that the same legislative process applying to all other development proposals and EPA licensing applications should also apply to EfW.

Two encouraged the good neighbour principle, involving early engagement and a genuine dialogue with the community to provide accurate and reliable information and preclude a vacuum of knowledge that can lead to the propagation of false information.

One considered that a low carbon or carbon neutral footprint approach for a facility might assist in obtaining a social licence/community acceptance of a proposal.

5 Next steps

Following this consultation process, the EPA is preparing a position statement on Energy from Waste. The EPA will also identify opportunities for legislative amendment for government consideration which may advantageously coincide with other legislative reform opportunities occurring under the broader waste reform program.

Appendix 1 Consultation workshop summary

Consultation sessions were held in 2017 as follows:

- 21 November – Local Government CEs and Mayors Information Session with Q&A (Tony Circelli, EPA Chief Executive and Ian Harvey, Green Industries SA Director Strategy and Programs).
- 29 November – Adelaide Information Session/Workshop (Kathryn Bellette, EPA Director Strategy and Assessment, and Brian White, EPA Senior Environment Protection Officer Regulatory Reform Projects).
- 8 December – Mount Gambier Information Session/Workshop (Steven Sergi EPA Manager Regulatory Reform Projects, and Brian White, EPA Senior Environment Protection Officer Regulatory Reform Projects).
- 13 December – Port Pirie Information Session (Steven Sergi EPA Manager Regulatory Reform Projects, and Brian White, EPA Senior Environment Protection Officer Regulatory Reform Projects).

Participants at these sessions were asked to respond to several of the questions raised by the discussion paper and provide comments for voting in terms of their relevance and importance. The tables summarise the major topics and questions raised:

Table 1 Metropolitan discussion summary

Comment/issue/topic	Weighting (votes)
Technological risk	
Is there a risk of impact on community mindset – current commitment to recycling? Can we adequately prevent recyclables going to EfW?	9
What is considered to ensure that EfW is viable and efficient in terms of volume and scale?	8
Regulation needs to be flexible to support industry	5
What is more cost effective, landfill or energy recovery?	2
Need to ensure that planning regulation is complementary to environmental regulation regarding EfW	2
Changes to regulation could impact existing business models	1
What are the long-term risks associated with EfW?	1
Does the state have strong knowledge and expertise to regulate and manage EfW?	1
Waste Levy	
Economic drivers are important to establishing new EfW technology in SA	3
Levy implications – reduction, does it lead to EfW levy/tax?	3
How much of the hierarchy do you support?	3
Is there a risk to the levy and associated reinvestment (if it does not apply to EfW) how would projects be funded without levy reinvestment?	1
Regulation that is done well can help the sector	1
Capital costs an offsets of levy and waste disposal costs	1

Comment/issue/topic	Weighting (votes)
Apply a levy? How much?	1
Does a levy apply to reflect the true environmental cost? What impacts the environment and human health?	1
Waste management hierarchy	
What is the potential future of mass-burn energy from waste (overseas and generally) with regard to circular economy principles?	8
Prohibition of certain waste from EfW treatment	7
Mandatory prior treatment to recover recyclables	6
Reduced driver to develop alternative technologies – including innovation in resource recovery	6
Security of supply of source material (given national approach to transport of waste – incoming/outgoing source materials)	4
Need to support smaller local initiatives in waste management	4
Strength in regulation would provide community confidence	4
Supporting localised circular economics – matching things up	3
Could EfW lead to the import/export of waste between states and consignment authorisations	2
Education as tool to avoid plastics and increase source segregation	1
Social licence	
Monitoring data needs to be collected, stored, and made available in real-time	6
Need to establish the right regulatory criteria	6
Needs to be community education by industry (transparency) and government (regulation)	4
Need to provide proof of concept and proven track record	3
EfW should have broad social acceptance	2
Must have standards that can be met	1
Net environmental benefits	
Need to maximise recycling and direct appropriate materials to EfW	8
Concern regarding air emissions and health impacts	8
Demonstrating EfW is sustainable and environmentally desirable	7
There will be new technology and so EfW needs to be adaptable to changing future conditions in waste	4
Trade-offs, emissions vs contamination of land, which is better/worse?	4
Landfill mining could be an opportunity in the future	3

Comment/issue/topic	Weighting (votes)
Long-term post-closure monitoring of landfills would not be an issue for EfW	2
Potential benefits, power costs, waste disposal costs	1
EfW needs to follow waste management hierarchy	1
We need more source segregation	1
Sacrifice of land for landfill is not a driver for EfW in Australia	1
New emission standards – changes to NEPM which could impact emission requirements	1
Landfill gas management issues could be eliminated by EfW	1

Table 2 Regional discussion summary

What are the major challenges for the waste industry with regard to resource and energy recovery now and into the future?
• Financial costs and return on investment • Availability of expertise • Logistics of regional areas relating to waste management • Technology • Transferral of studies into commercially viable projects • Transport distance (lower volumes and longer distances in regional areas) • Certainty of feedstock • Ensuring adequate recycling rates • Cost – capital and operational • Waste levy
What would be the major issues/concerns if energy from waste were to expand in South Australia?
• Logistics/transportation and associated costs • Regulations and legislation • Ensuring recycling rates are adequate • Ensuring no harmful air emissions • Price of electricity derived from EfW • Maintaining and diverting recyclable resources to the recycling industry and higher up the waste hierarchy • Ensuring that waste is still diverted to recycling as is should be • Increases in emissions • Council cooperation • Reliance on supplier of technology

How could government regulation affect the growth of Energy from Waste processes in SA?
• Waste to landfill levy changes • Levy increase • Funding and grants to increase project viability • Access to infrastructure • No or reduced levy to allow EfW to occur • Incentives for business to divert waste to EfW • Extra charges and costs to recycle are a dis-incentive