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26 August 2019

Energy-from-waste paper
Office of Resource Recovery
Department of Environment and Science
GPO Box 2454
Brisbane Qld 4001

Delivered via email to: wastepolicy@des.qld.gov.au

RE: ASBG's Submission on *Queensland's Draft Energy from Waste Policy - Discussion paper*

The Australian Sustainable Business Group (ASBG) welcomes the opportunity to comment on the Draft Energy from Waste Policy - Discussion paper (EfWP).

ASBG is a leading environment and energy business representative body that specialises in providing the latest information, including changes to environmental legislation, regulations and policy that may impact industry, business and other organisations. We operate in NSW and Queensland and have over 110 members comprising of Australia's largest manufacturing companies and other related businesses.

ASBG members strongly support the development of a practical and supportive Energy from Waste Policy which will be a key driver of new waste infrastructure to reduce waste to landfill and improve energy efficiency across Queensland.

In general the conceptual outline of the framework for an EfWP is considered a good effort. ASBG's comments are made to ensure the EfW policy is properly interpreted and has clear boundaries where it fits among other waste management strategies and systems. The EfWP should permit alternative approaches for EfW processes and systems which do not fit under the generic EfW approach which are largely designed for the large scale waste incinerator model.

Support for EfW

Use of EfW technologies is widely accepted in Europe with 11 EU countries using EfW for over 20% of their waste streams and Switzerland and the Netherlands sending less than 3% of their wastes to landfill[1]. ASBG considers EfW an essential waste infrastructure which has been largely rejected by most Australian states, largely based on non-scientific or environmental reasons. EfW fills the gap where a waste is so contaminated it will cost more environmentally in terms of natural material and energy use to recycle due to its high and or difficult to remove contaminants.

Landfills are rapidly filling across Australia due to the recycling crisis and also tighter environmental protection criteria on waste. Asbestos waste is an example where tiny traces of asbestos condemn large volumes of soils and residues to landfill. The Asbestos Safety and Eradication Agency National Strategic Plan for Asbestos

[1] Though they do export waste to landfill such as incinerator ash and fly ash when it cannot be reused.

Management and Awareness Report 2014-18 states over 41,000 tonnes was removed from Queensland, but nearly 2,000,000 tonnes was removed from NSW. This probably made up much of the 1.3 MT NSW sent to Queensland landfills. Being asbestos waste it is currently exempt from the waste levy.

The point is there will be the need for more landfills, but the siting of large EfW plants can extend the existing landfill life considerably. While both new landfills and EfW plants are difficult to for communities to accept, they will need to choose between the two. Noting that a landfill always will have a finite life, while an EfW plant may be upgraded and extend its life much longer lessening the planning decision pains later on.

Emissions, upstream resource recovery and operational detailed criteria included in the final EfWP should be outcome based, which build on the risk-based approach for the EfW framework.

The Pathways and Scope of the Policy

ASBG supports the three pathway approach; however it will not fit **all** EfW processes. Nevertheless, given the issues raised in other jurisdictions there are some lessons which should be incorporated into Queensland's EfWP.

EfW Policy or EoW Codes?

The scope of the EfWP should be clarified as there can be confusion as to where it stops and other mechanisms take over such as with End of Waste Codes (EoWC). It would seem that the EfWP is made for larger use of wastes from highly mixed waste streams.

Clarification between the EfWP and EoWC will assist where waste materials are used to supplement existing industrial process.

> *Example 1*, a cement kiln can accept in coal washery waste, which includes a mix of carbon, silicon and other inert materials. The coal percentage can be quite low, less than 10%, but when fed into the top the kiln can replace a considerable amount of coal. The same can be said for other more homogeneous wastes such as untreated timbers, rubber, etc. These wastes are a poor fuel, but good replacement for other raw materials and provide an energy source are best covered under the EoWC framework. Alternatively if the cement kiln accepted Refuse Derived Fuel (RDF), which made up 25% of its energy for the process, this could be better service via the EfWP.
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> *Example 2* is the use of marginal fuels in ceramics, such as saw dust, coal washery fines, and coal combustion products. Here coal combustion products already have an EoWC.
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> *Example 3:* a coal fired power station accepting less than 5% wood waste blended in with its coal.

The EoWC also considers air emissions as well as environmental issues for land use. The issue is which instrument to use? ASBG suggests that a two tier threshold could be considered as a rule of thumb for generally homogenous (i.e. meet a range of tolerance of variations) waste streams without significant contaminants, where the air emission changes from the use of the fuel are not significant. This can be addressed by scale. As an example, the use of this EoWC does not exceed the replacement energy of 500 GJ per year or xx kg of (additional) air contaminant.

For more heterogeneous waste fuels with significant contaminants, such as halogens and some heavy metals the thresholds would be lower, based on the increase in mass and concentration of air emissions.

An alternative threshold should be based on outcomes regarding air and land environmental protection criteria, which is generally well established. As a consequence, and a minimum, the EfWP should state that if a

waste is covered under an EoWC, it should be exempt from the EfWP. This assumes the EoWC will specify the limits of where it applies.

Allowances for Innovative Processes

EfWP's scope should also better define what is being considered. As an example, some innovative processes operate at relatively low temperatures. The EfWP needs to be sensitive enough not to pigeon hole innovated EfW processes under the same rules that apply for Municipal Solid Waste (MSW), Commercial and Industrial Waste (C&I) or other major heterogeneous waste streams EfW processes and plant. While food based EfW is mentioned there are many other alternative solutions where Queensland can structure its EfWP to support rather than hinder their development as well.

> *Example 4:* CDP Waste2Energy was an Australia company holding a licence for a process to convert plastics, wood and other carbon based materials into liquid fuels,. This is achieved at a temperature of less than 200^{o}C. Converting plastic waste involved the dissolving of the plastic in hot oil, adding a simple reagent/catalyst and subjecting the mix to high shear. Diesel and kerosene type liquid hydrocarbons can be made. This company has gone into liquidation due to difficulties in meeting EfW Policies around Australia as it was often lumped in with MSW incineration requiring the same controls, monitoring etc in other jurisdictions. NSW's EfW Policy Statement mandates continuous monitoring on all EfW plants regardless of size on air emissions such as HCl, CO etc. Typically this costs $1 million in capital expenditure, which is a game stopper for smaller EfW systems. Also this type of EfW should be at a higher order in the waste hierarchy than combustion and energy recovery.

For Pathway 3, the EfWP needs to consider EfW solutions which do not fit the standard EfW process. Under the above example moving from a Pathway 3 to 2 may not fit all innovative and alternative EfW processes given their scale and known emissions types or lack of them from a fundamental design perspective. An alternative pathway or an exemption process from Pathway 2 should be made available. There is a need to define the many parameters under EfW carefully including:

- What is a waste fuel, by-product or product?
- What is a thermal process? Is it a minimum temperature, oxidation process or other?
- What is a fuel?

Care is again needed to ensure that many existing fuels are not classified as waste and captured unnecessarily under the EfWP.

Pilot Plant and Commissioning

ASBG members also raise the issue of the high costs and lack of tolerance for any exceedances during pilot and commissioning phases of innovative uses of fuel additives. With innovative methods, there will be adjustment periods during its development and commission phases where process improvements are required. Being intolerant to minor glitches in meeting standards also needs to be considered in the EfWP, until the plant can reach an acceptable set of outcomes.

Proposed Principles

ASBG is supportive of the proposed principles, except for the following, which require adjustment:

Principle 2: Use of the waste hierarchy is a good rule of thumb, however, it should not be rigidly applied to all waste solutions. There will always be exceptions.

Example 6: Consider a pizza box which is loaded with cheese fat. Recycling of the cardboard back to cardboard will likely consumer more natural resources than it replaces given the energy and water and wastewater treatment required in its recycling. Fat must be removed as it also affects printing quality on the cardboard product. Such a contaminated cardboard box is environmentally much better served by extraction of its energy.

The less well educated may say on the above pizza box should go to paper recycling, but this would result in poorer environmental outcomes and likely does not meet Principle 3. Expertise, flexibility and care in the assigning of wastes according to the hierarchy is required.

Principle 4 is based on the premise that all residual wastes will change over time. While this is certainly true of MSW, post consumer wastes and certain evolving recycling areas there are examples where waste streams are quite consistent. For example; saw dust, timber off cuts, other off cuts from consistent raw materials – metals, plastics paper, cardboard etc. As a consequence Principle 4 should read:

The composition of residual waste can change over time as recycling improves and Queensland transitions to a circular economy. EfW facilities accepting such variable waste must be designed to accommodate this change.

Flexibility needs to underlie this principle to permit waste streams unlikely to change to be used.

Question 6: ASBG opposes bans on products and waste materials in general. Instead acceptance and outcome criteria should be used to limit the waste types going to landfill, recycling or EfW facilities. Bans stop innovation and the circular economy needs innovative processes, systems and products to move forward. There are too many cases where a ban places a waste into no man's land. Consider a ban on old computers to landfill, but a load arrives and is also contaminated with asbestos.

Principle 5: Examples 1, 2 and 3 show that this principle cannot apply to all wastes and EfWs where energy is extracted. There needs to be clear delineations where for example, you have a fuel additive which is a combined raw material and fuel in blended raw materials using a thermal process. Again the one rule fits all can block many innovative and alternative practices where wastes are used to supplement energy in processes. Consideration of what defines an EfW process is central to applying the EfWP to main waste streams and where there are different, effective and environmentally sound approaches to alternative EfW processes, new (to Queensland) and innovative systems.

Principles 7 & 8 Makes the assumption the EfW process is a new stand alone process requiring development approval. As discussed in this submission there are many EfW process, which use existing processes and the fuel additives supplement the energy consumption. Many manufactures using thermal processes are struggling with high energy prices in existing processes. Requiring all 'waste' fuel use to be subject to full planning and community consultation processes, as would large new EfW projects, would stifle effective and environmentally sound energy recovery. Be careful of the one rule fits all approach that other jurisdictions use.

CONCLUSION

Overall Queensland EfWP is a sound approach to establishing an EfW Policy for the state, which covers large volume, conventional waste to energy plants and equipments for MSW and C&SI mixed waste streams. However, it also needs to permit alternative EfW approaches where a waste fuel, even with small energy contributions are permitted to be exempted from overarching EfWP criteria. Essentially, the once size fits all approach of EfW is poor regulatory practice as there are many existing, alternative and innovative EfW processes, which need different assessment framework to the generic. Clear delineation between EfWP and the EoWC instruments would greatly assist both the applicants and agency.

ASBG welcomes the opportunity to engaging in the discussions on The EfWP and looks forward to working with the Queensland Government in its roll out.

This submission has been prepared with the input and assistance of members of ASBG's Policy Reference Group (PRG).

Yours Sincerely

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