



Department of Water and Environmental Regulation
Prime House,
8 Davidson Terrace
Joondalup
Western Australia 6027
Locked Bag 10 Joondalup DC WA 6919
Email: wastereform@dwer.wa.gov.au

Dear Sir / Madam,

Re: Public consultation: legislative framework for waste-derived materials

Kwinana WTE Project Co Pty Ltd (“Avertas Energy”) appreciates the opportunity to review and provide feedback on the Department of Water and Environmental Regulation’s (“DWER”) issues paper on the Legislative framework for waste-derived materials issued in June 2019 (the “Issues Paper”).

We are an active developer of, and investor in, energy from waste in Western Australia and, once our Kwinana facility becomes operational, will be a significant producer of waste-derived materials. As such, we have a strong interest in the subject matter of the Issues Paper and its potential implications.

Avertas Energy understands that a key aim of DWER and one stated in the Issues Paper is to “encourage the use of waste-derived materials”. Avertas Energy fully supports this aim and is actively exploring investment opportunities that will enable the safe re-use of waste derived materials that will be generated at our facility. We have reviewed the Issues Paper focusing on the likely impact on the appetite for investment in treatment infrastructure and implications of the overall landfill diversion targets for WA.

About Avertas Energy

Located in the heart of the Kwinana Industrial Area, south of Perth, Avertas Energy will use internationally tested technologies to process 400,000 tonnes per year of residual (post recycling) waste, significantly reducing CO₂ emissions and delivering 36MW of baseload electricity to the grid. The moving grate combustion technology that will be implemented is already operational in more than 2,000 similar energy from waste facilities around the world.

Once in operation, our Kwinana facility will dispose of approximately one fifth of Perth’s waste that would otherwise be sent to landfill, occupying valuable productive land and producing a range of harmful greenhouse gases.

Energy from waste can act as an essential and integral part of a larger urban waste management strategy, as the process of recovery complements the 3Rs (Reduce, Reuse and Recycle) that underpin conventional modern waste management strategies.

Once fully commissioned, Avertas Energy will not only process residential waste for energy recovery, it will produce ash by-products which are used internationally for construction materials and recover over 6,000 tonnes per year of recyclable metals not normally recovered by other means. In total, Avertas aims to:

- Recover energy from 400,000 tonnes of waste each year, approximately one fifth of the Perth metropolitan landfill volumes;



- Recycle approximately 100,000 tonnes of ash products as construction materials, in line with international best practice; and
- Recycle approximately 6,000 tonnes of precious and non-precious metals.

To achieve this goal, investment in treatment infrastructure is required. This is achievable if supported by appropriate legislation, informed by international best practice, that provides greater certainty about when waste-derived materials will not trigger licensing and levy obligations.

This would also help Avertas Energy maximise the use of fit-for-purpose, waste-derived materials which would support Western Australia's move to a circular economy.

Possible used for ash by-products

The composition of ash products depends on the input waste, the type of incinerator and the level of treatment post-production. The most suitable use will vary depending on these factors. Common uses include:

- **Fill and cover materials:** Ash is extensively used as landfill structure material and embankment fill. This provides a significant market for it with minimal processing requirements, additionally it possesses good strength and drainage characteristics suitable for this application.
- **Pavement materials:** Ash has been used in Europe and the USA as a granular sub-base and basecourse material in pavements.
- **Cement:** The main constituents of cement - calcium oxide, silica, alumina and iron oxide - are similar to the main components of ash. Small quantities of ash have been successfully incorporated into cements in Japan and Europe.
- **Asphalt and Concrete:** Ash can be utilised to produce these products, however in general it lowers the strength of the product and therefore applications are limited to relatively low load bearing applications. In a Perth context this could include non-structural concrete for median strips and noise and screen walls.

Environmental testing

Internationally, the main chemical properties of ash that require testing to demonstrate its suitability for use in a specific environment are:

- the elemental composition; and
- the extent to which metals and other substances could leach from the ash and present environmental risk.

These form the basis of the chemical testing in the UK, Europe and the USA where ash re-use is common. Within these jurisdictions ash products will have 'product specifications' that define the sampling and leach testing program.

Application of existing legislative frameworks

Queensland has in place a legislative framework that could be applied in Western Australia. Key features include:

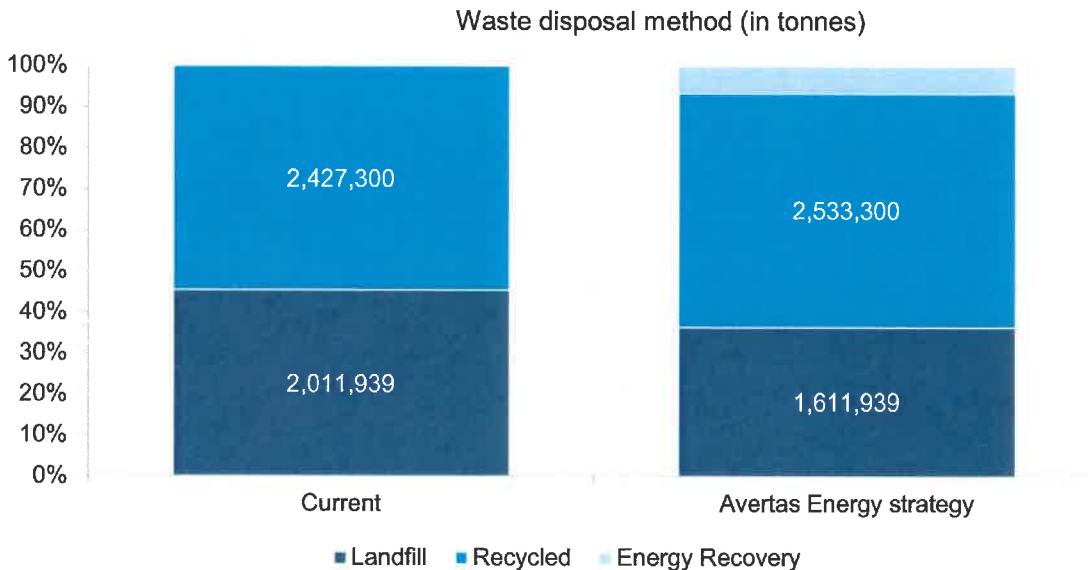
- a system of 'end of waste codes' (EOW codes) and 'end of waste approvals' (EOW approvals) whereby a waste-derived material will not be considered to be 'waste' for the purposes of the Queensland legislation governing the licensing of premises, and will instead be considered an 'end of waste resource' if it is:
 - managed by a registered resource producer in accordance with an EOW code; or
 - managed by the holder of an EOW approval in accordance with the approval

- a definition of 'waste' that explicitly excludes 'an end of waste resource' managed in accordance with EOW codes and EOW approvals from being 'waste'
- a provision that a resource will revert back to be a waste if it is disposed of at a waste disposal site or deposited at a place, or in a way, that would constitute a contravention of general littering or illegal waste dumping provisions.

In addition, EOW codes, should also ensure that the product is exempt from landfill levies provided an adequate level of treatment on the material. The application for an EOW code should involve the development of a product specification document that is approved by the DWER.

Results

The application of these rules will result in significant progress towards the goals outlined in the Waste Strategy 2030.



This would increase the amount of waste used for either recycling or resource recovery from 55% to 64%. These figures are based on the values provided in the issues paper, *Waste not, want not: valuing waste as a resource*.

We look forward to the outcomes of your department's work on this matter and are happy to provide further input, or clarifications, as required.

Yours faithfully,
Avertas Energy

Frank Smith
 Chief Executive Officer
 Avertas Energy