ATTACHMENT B

NSW Environment Protection Authority

NSW Energy from Waste Policy Statement

The NSW EPA has assessed the proposal against the *NSW Energy from Waste Policy Statement* (the Policy). In addition to this, the NSW EPA have engaged a technical expert, ARUP, to undertake a technical assessment of the proposal against the Policy, focusing on the technical and thermal efficiency criteria, the resource recovery criteria, as well as the requirement for a fully operational reference facility. Below is a summary of the EPA's comments, which should be considered in conjunction with ARUP's assessment.

Summary

There is not enough information presented in the proposal for the EPA to make an assessment regarding compliance with all criteria within the Policy. To make a revised assessment the NSW EPA would require the following information:

- **Waste Source Availability:** evidence that the facility will not monopolise the market for residual C&D waste, potentially restricting any future investment in other resource recovery or energy recovery opportunities in the Sydney metropolitan area.
- **Waste Source Composition**: further information regarding the characterisation of the waste streams, clarity around categories (combustibles, other combustibles, non-combustibles and other). More information regarding the characterisation of floc waste.
- **Resource Recovery Criteria:** evidence that the facility is receiving waste that is compliant with the Resource Recovery Criteria. This includes information about the processing facility, and percentages of the residual waste taken from these facilities for use at the proposed facility.
- **Reference Facility Requirement:** evidence that the technology can handle the waste stream and quantities proposed.
- **Technical and Thermal Efficiency:** The EPA will defer to comments provided by Arup Pty Ltd, the technical expert.

Waste Source Availability

Section *10.4.3.2 C&D and C&I Waste NSW* presents information on the proposed waste streams for the facility. The NSW EPA does not consider the estimations in the National Waste Report 2013 to be an appropriate and accurate source of information to extrapolate available tonnages for a facility. There is also concern around the age of the data as it is six years old. The NSW EPA would argue that the industry, and associated recovery rates have improved significantly since then, and the 2011 data is not reflective of the current waste industry and data.

The proponent outlines that the facility will use approximately 50% C&D waste as a feedstock for the facility. If the total tonnage per annum proposed for the facility (with four lines) will be 1,105,000 tonnes per annum, it means 552,500 tonnes per annum of C&D waste is required.

According to the calculations in section 10.4.3.2, there are 1,112,150 tonnes of C&D waste available. If this facility utilised 552,500 tonnes, this is approximately 50% of the total available C&D waste in the Sydney metropolitan area.

The NSW EPA has concerns that the quantities of waste required for the facility will result in market monopolisation of available residuals for any current or future investment in resource recovery and processing facilities, compromising present and future resource recovery

activities. The EPA is aware of some future investment opportunities that may reduce the estimated available inputs that have been proposed by the proponent for their facility.

The EPA does not believe there is enough evidence, or enough residual waste to sustain a facility of this scale, as well as allow for future investment opportunities for higher order resource recovery and energy recovery processes. The EPA would require an in-depth assessment from the proponent on this matter to ensure there is sufficient available waste for the facility.

Waste Source Composition

Appendix DD.3_Design Fuel Mix_Concept to Definition Reports, outlines the composition of the waste streams proposed to be used at the facility. *Table 2 Ramboll Updated Technical Design Information*, outlines the percentages of materials in each waste stream.

An accurate characterisation of the waste streams proposed for use as a feedstock for an energy from waste facility is essential in order to be able to accurately determine the potential air emissions that would be generated from their combustion, and moreover suitable best available control technologies and techniques that may need to be implemented to mitigate any risks.

The NSW EPA has concerns that the proposed design fuel mix contains multiple categories that do not provide clear information of the material composition. They include *other combustibles*, *combustibles, non-combustibles* and *other*. There is no explanation of what these categories include, and how they differ.

The category *other* comprises a total of 10.14% of the design fuel mix. *Other combustibles* comprises 10.16% of the design fuel mix. When combined, this results in a total of 20.30% of the proposed fuel composition has not been described in sufficient detail. A full scale operational facility (1,105,000 tonnes per annum), would equate to a total of 225,766.45 tonnes per annum that has not been categorised sufficiently.

In floc waste, the category *other combustibles* is 70.41%. This excludes *combustibles* and it is unclear what materials would be included in this category. This is of significant concern, as the EPA believes floc waste can be variable and potentially hazardous, dependent on the source and processing of the material. For the EPA to approve the use of this waste stream in an energy recovery facility, a clear understanding of the material composition, and strict controls would be required to ensure there is no risk to human health or the environment.

Another concern is the risks presented by treated timber which are prevalent in mixed waste streams including C&I and C&D. The design fuel mix suggests that 30.24% of the total feedstock is wood, which is made up of predominately CRW (C&I and C&D sourced from on-site processes), C&I and C&D waste. This amounts to approximately 334,152 tonnes per annum at full scale (1,105,000 tonnes per annum). There is a high probability that these materials will contain treated timber, including CCA treated timber.

It is noted that the proponent suggests that only a small amount of wood waste will be treated (6% C&I and 14.4% C&D), however, even small amounts can result in emissions to air, and at these quantities it could have a significant impact. *Appendix J Waste Management Assessment, Section 5* outlines the management of incoming waste. This includes visual sorting and removal checkpoints. Section 5.4.1 outlines how treated timber will be managed, which includes visual sorting, waste composition audits and analysis of the ash. Some treated timber cannot be identified by visual inspection, and analysis of the ash, although it would provide a more accurate assessment, is after the material has been processed.

Considering this information, there is still concern as the facility will only reach a temperature of 850°C. In Europe, timbers at risk of being treated with CCA and other chemicals are combusted at hazardous waste thermal treatment facilities operating at higher temperatures to ensure destruction of harmful compounds so that there are no harmful emissions.

Additionally, the ***Source of Waste Report*** provided by the proponent to the EPA states that the 68.25% of "non-contaminated" soils currently being landfilled at Genesis are suitable for energy recovery. Soils are unsuitable for energy recovery. It also states that landfillable materials that are currently being recycled will be used for energy recovery instead. This goes against the objectives of the energy from waste policy.

The EPA believes the waste streams and fuel mix has not been properly identified or categorised sufficiently, and are concerned about the potential risk those materials could pose, especially considering there is no reference facility to provide assurance of the capability of the plant with the proposed waste streams. The NSW EPA requires more information about waste categorisation to ensure there is no risk to human health and the environment.

Resource Recovery Criteria

Appendix J Waste Management Report (Ramboll), Section 8.6 Resource Recovery Criteria Table 11, includes information relating to the Resource Recovery Criteria set out in Table 1 of the Policy. This table outlines percentages of waste streams allowable at an energy recovery facility. This is to ensure that only residual wastes with no other reuse or recycling opportunities are used at an energy recovery facility.

In the report, the resource recovery percentages have been miscalculated, using the National Waste Report recycling percentages to support use of the waste streams proposed. State-wide resource recovery rates or data limited to the regulated area of NSW cannot be used to justify the resource recovery rates of any particular facility.

The Resource Recovery Criteria are to be applied to each individual facility processing mixed or source separated waste streams. Once the waste stream has been through a processing facility, a proportion of the residuals can be utilised as a fuel in an energy recovery facility, such as the proposed facility. This also applies for separated waste streams, or streams that come directly from the generation site. This proportion is the percentages outlined in Table 1.

The proponent has not supplied sufficient evidence to demonstrate compliance with the Resource Recovery Criteria under the Policy at this stage. The EPA would require further evidence to show how the proponent will meet the criteria.

Reference facility

Appendix DD.1 Reference Facilities, is an assessment undertaken by Ramboll to determine compliance with the requirement for a reference facility under the Policy.

The Policy states: *Energy recovery facilities must use technologies that are proven, well understood and capable of handling the expected variability and type of waste feedstock. This must be demonstrated through reference to fully operational plants using the same technologies and treating like waste streams in other similar jurisdictions.*

As noted in *Appendix DD.1*, it is stated that: *We acknowledge that it has not been possible to identify an EfW plant (neither with comparable nor with alternative technology) processing a documented input of 50% C&D waste. The same technology has been used in other jurisdictions, but not utilising like waste streams, and similar capacity.*

In the EPA's assessment, the proposal has not met the requirement to have a fully operational reference facility, and could therefore not prove that this technology can handle this waste stream at the capacity proposed. The EPA requires further information to ensure there will be no harm to human health or the environment.

Technical and thermal criteria

As outlined above, the NSW EPA engaged a technical expert, ARUP to undertake an assessment of the proposal against the NSW Energy from Waste Policy. This includes assessing the proposal against the technical, thermal efficiency, reference facility and resource recovery criteria. The NSW EPA will defer to the ARUP assessment for advice regarding the best available technology, technical and thermal efficiency criteria of the Policy.