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Attention: Sally Munk

27 November 2020

Dear Mr Ritchie,

SSD 10395 - Proposed Western Sydney Energy and Resource Recovery Centre

Thank you for the request for advice from Public Authority Consultation (PAE-9656615), requesting a review by the NSW Environment Protection Authority (EPA) of the Environmental Impact Statement (EIS) for the Cleanaway and Macquarie Capital proposal to construct and operate the Western Sydney Energy and Resource Recovery Centre (WSERRC), at 339 Wallgrove Road, Eastern Creek.

The proposal is for an energy-from-waste facility designed to thermally treat up to 500,000 tonnes of municipal and commercial and industrial waste per year, diverting this material from landfill and generating up to 58 megawatts of base load electricity.

Based on the information provided, the proposal will require an environment protection licence under Clause 40 of Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) for Waste Disposal (thermal treatment) as it will thermally treat more than 200 tonnes of general solid waste received from offsite per year. The proposal is also subject to the criteria NSW Energy from Waste Policy Statement.

The EPA has reviewed the *Western Sydney Energy and Resource Recovery Centre Volume 1 Environmental Impact Statement* – ARUP 23 September 2020 and the supporting Technical Reports:

- *Technical Report A - Air Quality and Odour Impact Assessment* - Todoroski Air Sciences 10 September 2020;
- *Technical Report B - Human Health Risk Assessment* – EnRisks 21 September 2020;
- *Technical Report C - Waste and Resource Management Assessment* – ARUP 10 September 2020;
- *Technical Report D - Best Available Techniques Assessment* - ARUP 4 September 2020;
- *Technical Report E - Waste Flow Analysis for Greater Sydney* – Arcadis 18 September 2020;
- *Technical Report F - Soils and Water Assessment* – ARUP 24 August 2020;

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- *Technical Report G - Detailed Site (Contamination) Investigation* - Douglas Partners 14 August 2020;
- *Technical Report G1 - Actual Report on Geotechnical Investigation* Douglas Partners 22 June 2020;
- *Technical Report G2 - Remediation Action Plan* - Douglas Partners 14 August 2020;
- *Technical Report G3 - Due Diligence Contamination Investigation* - Douglas Partners 14 August 2020;
- *Technical Report H - Hydrology and Flooding Impact Assessment* – ARUP 21 September 2020;
- *Technical Report I - Noise and Vibration Impact Assessment* – ARUP 24 August 2020; and
- *Technical Report J - Preliminary Hazard Analysis* - ARUP 9 September 2020.

The EPA has reviewed the EIS and supporting documents and considers that additional information is required to accurately assess the proposal as follows (further advice, supporting the request for additional information is provided at Attachment 1):

Matters to be addressed prior to determination

Air Quality and Odour Impact Assessment

1. Justification of proposed limits

The proposed emission limits do not accurately reflect the best practice design which is required for the proposed new plant. The EPA recommends that the proposed emission limits be revised to reflect what can be feasibly achieved by best practice emission control technology operating in a proper and efficient manner.

2. Clarification of the modelling scenarios

The proponent should:

- Provide hourly TSP, PM₁₀ and PM_{2.5} mass emission rates used in the modelling of Scenario 4 and the EPA limit scenario;
- Provide clarification regarding modelling Scenario 3, and whether it should model 24 hour impacts; and
- Clarify LP1 flowrates presented in Table 6-11.

3. Additional information required for certain receptors, including those to the north east of the proposed facility

- The proponent should justify the size of the model domain and demonstrate that it is large enough to capture all potential adverse pollutant impacts caused by the proposal.
- The modelling should be revised to include discrete receptors in the residential area to the north east of the Great Western Highway, in Blacktown. Further, the analysis of the results at these receptors should include a contemporaneous assessment at the most impacted receptors.
- The contours which indicate localised maxima should be labelled.

4. Additional information required for NO_x:NO₂ conversion

In order to clarify that A and α are variable in the applied calculations, the proponent should extend Table E-1 to all hours of 1 January 2015, and provide the calculation spreadsheet for all hours.

5. Additional information regarding modelling of upset conditions

The proponent should provide additional information on how emissions will be managed in the event of a pollution control equipment malfunction, such as reagent dosing malfunction. If emission limits cannot be met during such situations, upset conditions at emissions greater than emission limits should be further assessed.

6. Additional information required for emissions from the emergency diesel generator

To demonstrate adverse impacts will not result from the operation of the diesel generator, the proponent should either remodel with the generator emissions included, or provide information on the relative proportion of generator emissions compared to the plant emissions, as was provided for the auxiliary burners.

7. Validation of the Calmet generated meteorology data used in the modelling

The proponent should provide:

- a) The location in the modelling domain corresponding to Cell 5349, where windroses are presented;
- b) Details of how the Calmet data set was validated. If validation was not undertaken using measured data not already used in the modelling, then:
- c) If there is another meteorology station in the modelling domain that has not been used, then validation using this data should be undertaken;
- d) If there are no other meteorology stations in the modelling domain for model validation, then additional information regarding the representativeness of modelled meteorology at the site is required. For example, the proponent could provide frequency plots of windspeed and stability class, and a temperature distribution using measured data at both Horsley Park AWS and the DPIE monitoring station at Prospect, for comparison with Figure 6-4; and
- e) Windfields for some other meteorology conditions should also be provided, in order to demonstrate that the Calmet generated windfields are valid.

8. Odour assessment and proposed controls

The proponent should justify the assumption that 4.5% of odorous air escapes through the bunker room roller doors during normal operations.

The proponent should provide additional information on the design parameters of the proposed odour control during shut down, which includes:

- a) Information regarding the location and height of the discharge point (i.e. exhaust system with the carbon filters); and
- b) Demonstration that the proposed carbon filters will be sufficient to prevent adverse odour impacts and facilitate compliance with the odour assessment criterion.

9. Cumulative assessment should include impacts from the Austral Bricks Facility

The cumulative assessment should be revised to include emissions of all relevant pollutants (not just criteria pollutants) from the Austral Bricks Facility.

10. More information needed to demonstrate Cl content is < 1% at all times

The proponent should provide statistical analyses to robustly demonstrate that the Chlorine content will be lower than 1% at all times.

11. CO impacts not documented

CO impacts should be included in Tables 7-1—7-3.

12. Further information is required to demonstrate that the minimum operating temperature can be achieved at all times:

The EPA recommends the proponent provides additional information to rigorously demonstrate that the minimum operating temperature of 850°C in the combustion chamber can be maintained at all times.

13. Reported non-compliances at the reference facility

The proponent should provide additional information regarding CEMs data for the reference facility in Dublin. This information should include:

- a) A summary showing the number of times the CEMs data has been above the maximum license reporting limit (30 min average) for all pollutants.

- b) A summary showing the measured concentrations when exceedances of the maximum 30 minute average were recorded.
 - c) Analysis of the reasons causing the exceedances.
- This analysis must be used to inform and propose management and mitigation measures to ensure this will not be the case for the proposed facility.

Human Health Risk Assessment

14. Other gaseous pollutants

EnRiskS should revise the HHRA for assessment of acute risk of harm to human health, using the lowest guideline value for each gaseous air pollutant from the reference sources cited as a conservative approach. If the lowest guideline value is not chosen for any particular gaseous pollutant, justification on the selection of the guideline value needs to be provided in the HHRA.

Surface and Groundwater Impact Assessment

15. Excavation and dam dewatering

The proponent should clarify how intercepted groundwater and polluted water contained in the existing farm dam would be managed. The proponent should first consider a range of options including off-site disposal, discharge to sewer under a trade waste agreement or appropriate on-site reuse. Treatment and discharge to waters should only be considered where other alternatives are not practical, reasonable and feasible.

If the proponent proposes discharging intercepted groundwater and/or water from the farm dam to waters, then the following information is required:

- a) a water pollution impact assessment for these discharges (Requirements for a water pollution impact assessment are detailed in the 'Water pollution impact assessment' section below)
- b) details of management criteria (e.g. pollutant concentrations) and associated management actions, with:
 - i) management criteria developed with reference to the relevant guideline values from the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018), the predicted treatment efficiency and predicted discharge quality
 - ii) alternative disposal or appropriate reuse included as management actions where management criteria are exceeded.

16. Construction stage stormwater discharges

The proponent should clarify whether controlled discharges of construction stormwater are proposed. The proponent should first consider a range of alternative options, such as appropriate on-site reuse, with discharge to waters only considered where these alternatives are not practical, reasonable and feasible.

If the proponent proposes controlled discharges of construction stormwater it is recommended that a water pollution impact assessment for these discharges is undertaken prior to determination (Requirements for a water pollution impact assessment are detailed in the 'Water pollution impact assessment' section below).

17. Water pollution impact assessment

If construction stage discharges are proposed, it is recommended that a water pollution impact assessment is prepared. The level of detail in the assessment should be commensurate with the risk. Subject to the results of this assessment the proponent should consult with the EPA regarding whether water discharge limits are required to be included on the environment protection licence for the construction stage.

If the impact assessment indicates a risk of non-trivial harm to human health or the environment after all practical measures are implemented, then discharge limits may be included on the environment protection licence. The water pollution impact assessment should be provided prior to determination and should:

- be prepared in consultation with the EPA
- include a risk assessment identifying all pollutant sources on site that could potentially influence the quality of any proposed discharges to waters
- a discharge characterisation, predicting the concentrations of all pollutants expected to be at non-trivial levels in surface water discharges (desktop assessment and/or based on surface and groundwater sampling) under typical and worst-case conditions
- assess the potential impact of the proposed discharges on receiving waters based on the discharge characterisation and with reference to the relevant *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018) guidelines for slightly to moderately disturbed ecosystems
- specify the analytical limits of reporting used for any data that is being assessed and compare the analytical limits of reporting to the relevant ANZG (2018) assessment criteria for slightly to moderately disturbed ecosystems—where the limit of reporting does not provide a suitable basis for assessing risk of water pollution, propose alternative options to characterise the risk, including more sensitive laboratory testing or risk mitigation options
- where there is a risk of non-trivial harm from discharges, investigate practical measures that could be taken to avoid or minimise pollution. Consideration should include alternative disposal options for contaminated water, at-source controls, reducing wastewater run-off volumes (covering stockpiles, bunding, flow diversions), appropriate onsite reuse and additional and/or alternative treatment measures
- provide details of a construction stage surface water monitoring program.

If the proponent prepares a Water Pollution Impact Assessment, it is recommended that the appropriate guidelines and associated guideline values including those detailed above are adopted.

18. Contamination remediation

The proponent should provide details of enhanced water pollution controls that would be implemented prior to and during remediation of contaminated areas where there is potential for water quality impacts.

19. Reuse of oil water separator effluent

The proponent should provide details of management of effluent from the oil water separator/s, confirming that the effluent would not be discharged to waters and demonstrating that it would be of an appropriate quality for any proposed reuse.

20. Reuse of operation stage stormwater

The proponent should consider options to avoid discharges from the proposed operation stage detention basin and minimise potential associated pollution, such as reuse for irrigation of landscaped areas.

Contaminated Land Assessment

21. The proponent should submit:

- a. an updated hazardous building survey;
- b. detailed procedure on unexpected finds in their Remediation Action Plan;
- c. an interim audit advice from a NSW accredited site auditor commenting on the nature and extent of the contamination and the appropriateness of the Remediation Action Plan (Technical Report G2) in ensuring that the site can be made suitable as a resource recovery centre.

Noise Impact Assessment (NIA)

22. Cause of the predicted exceedance at R1

The proponent should clarify the cause of the predicted exceedance at R1 and if it is confirmed to be caused by low frequency noise, further information on louvre design to mitigate this should also be provided.

23. Adequate mitigation regarding the low frequency requirements of the louvres employed in C2 and D1 halls

The proponent should clarify the method proposed to be employed during detailed design to ensure that adequate mitigation is provided, particularly with reference to the low frequency requirements of the louvres employed in C2 and D1 halls. This assessment should consider feasible and reasonable contingency measures that could be employed to mitigate these annoying noise characteristics or accommodate the correction factors that may be applied (potentially retrospectively) should correction factors be found to be relevant. The additional assessment should include measurements or available acoustic data on similar operational facilities to demonstrate that presented operational noise levels are indeed achievable.

24. Suburban residential amenity category

The suburban residential amenity category should be adopted in the assessment. Additionally, the EPA recommends that additional characterisation of the ambient noise environment (i.e. background noise levels) is undertaken to determine potential seasonal differences given the fact that the ambient noise environment is significantly influenced by a single noise source and direction.

25. Project noise triggers levels and predicted noise levels

The assessment should be amended to present project noise triggers levels and predicted noise levels using the LAeq,15min descriptor so that limits in accordance with the Noise Policy for Industry (NPfI) can be considered for the development, noting that a project specific equivalence could be adopted, if appropriately justified.

26. Evening operational noise

The NIA should be amended to present evening operational noise levels in accordance with the requirements of the NPfI.

NSW Energy from Waste Policy Statement

27. Pre-sorting of all waste

The proposal should be modified to demonstrate that all waste intended for incineration at the premises will be pre-sorted at a suitably licensed waste processing facility:

- In compliance with the resource recovery criteria of Table 1 of the *NSW EPA Energy from Waste Policy*;
- That will identify and remove all contaminants and other non-conforming waste from the feedstock in accordance with Note 2 to Table 1 of the *NSW EPA Energy from Waste Policy*;
- Producing feedstock with a content of less than 1% of halogenated organic substances as expressed as chlorine in accordance with the Technical Criteria of the *NSW EPA Energy from Waste Policy*;
- That maintains sorting processes, sampling and other QA/QC procedures of sufficient rigour to produce feedstock to an approved specification for the energy from waste facility
- Maximise the potential for diversion of resources from the waste stream prior to incineration at the facility;

- Minimise the risk of contaminant concentration spikes passing into the facilities burner with the subsequent risk of stack emission exceedances;
- Ensure contaminants captured as IBA (Incinerator Bottom Ash) residual ashes are minimised to enhance the potential resource recovery of these materials;
- Ensure contaminants captured as FGTR (Flue Gas Treatment Residues) residual ashes are minimised providing greater certainty around the immobilisation and subsequent disposal of these hazardous wastes.

28. Feedstock specification required

Further detail is required regarding:

- pre-sort processes at the nominated processing facility to demonstrate a compliant feedstock;
- Manufacturer specification or other detail of the feedstock tolerances of the proposed incineration plant to inform the design of sampling and other QA/QC procedures both at the pre-sort facility and at this proposal; and
- Feedstock specification to ensure compliant operation of the incinerator, its stack emissions and quality of residual ash outputs.

29. Erskine Park Waste Transfer Station

The proponent should provide discussion of the Erskine Park Waste Transfer Station facilities capability to be upgraded appropriately for a pre-sort facility; and contingencies, should that facility not gain the appropriate approvals.

30. External consultant review

The EPA and Planning and Assessment engaged SLR to undertake a Merit Review of Western Sydney Energy and Resource Recovery Centre EIS and supporting documentation. A copy of the *“Western Sydney Energy and Resource Recovery Centre - Environmental Impact Statement – Merit Review Waste legislation, Air Quality & Odour, Waste Management”* - SLR November 2020 is included as part of the EPA’s submission and will be provided as a final attachment shortly (as advised 27/11/2020).

Hazardous Materials

31. The management of incinerator bottom ash (IBA) is unclear

The proponent should:

- a. Clarify the fate of IBA;
- b. Provide detailed information on the handling and management pathways if IBA is classified as RSW; and
- c. Provide contingencies should one or more suitable landfills not be available for the duration of the project to dispose of any IBA or FGTR that is classified as restricted solid waste.

32. It is unclear if the IBA as described in the EIS will be suitable to be loaded/unloaded from vehicles, transported and landfilled

The proponent should clarify:

- a. if the IBA is suitable for loading and unloading vehicles, transportation and landfill disposal, and how this will be ensured;
- b. what the fully enclosed ash handling system comprises; and
- c. the means of loading of the IBA into vehicles at the WSERRC facility.

33. It is unclear if ferrous items may require cleaning prior to transport offsite for processing.

The proponent should clarify:

- a. if ferrous metals might require cleaning or pre-treatment prior to be transported offsite for processing and how this would be done; and
- b. how bulky items that cannot be recovered will be managed.

34. Pathways for recovery or disposal for the ash residues (IBA and FGTR) must be determined by robust classification of the ash at the WSERRC facility and in accordance with the NSW requirements.

The proponent should include in the proposed mitigation and management measures the requirement to prepare a sampling, analysis and quality plan or equivalent, to ensure waste generated by the WSERRC facility will be accurately and reliably characterised for waste management purposes.

35. Disposal pathways for FGTR which is classified as restricted solid waste are not assessed in detail.

The proponent should provide additional information to:

- a. justify the proposed FGTR treatment facility at St Marys can lawfully and practically treat and immobilise an additional 360 tonnes of hazardous waste per week;
- b. demonstrate one or more other suitably licensed facilities are available to treat FGTR, and/or other contingencies are available to address the scenario where the Cleanaway St Marys facility is not operating or cannot process the FGTR waste generated by the proposal; and
- c. consider onsite immobilisation of restricted and hazardous waste streams.

36. The EIS does not refer to the need for the offsite FGTR treatment facility to obtain an immobilised contaminants approval from the EPA in order to treat and immobilise FGTR.

The proponent should include in the EIS the requirement to obtain an immobilisation approval for the treatment of FGTR.

37. The unacceptable and non-compliant waste types require clarification.

The proponent should clarify what will constitute unacceptable wastes or non-compliant wastes.

38. Details of operations and measures to manage facility hazards will be finalised in the detailed design phase. Information and outcomes from this phase will require review and may be used to inform conditions to allow the EPA to regulate the proposal and any potentially hazardous impacts.

- a) detailed plans and procedures will be required to be developed and implemented following the detailed analysis, response planning to potential hazards associated with the facility;
- b) the facility should be constructed such that all external hardstand areas are sealed, bunded and drain to a stormwater system constructed with isolation valves to contain spills or any fire fighting waters; and
- c) environment protection licence conditions may be developed based on the detailed analysis and response planning in order for the EPA to effectively regulate the proposal and any potentially hazardous impacts

39. Radiation detection system must be fit for purpose and effective

The radiation monitoring devices used at the facility should as far as practicable conform with the requirements specified in the EPA's [*Radiation Guidelines 1: Monitoring devices*](#).

The facility must develop and implement detailed procedures and plans relevant to the radiation monitoring system. The plans and procedures must incorporate all relevant

scenarios and ensure risks associated with receipt of waste emitting radiation are appropriately identified and managed.

If you have any questions about this request, please contact Damien Rose on (02) 9995 5586 or via email at damien.rose@epa.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Giselle Howard', with a stylized flourish at the end.

27 November 2020

GISELLE HOWARD
Director Regulatory Operations Metro