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By email: ellen.luu@planning.nsw.gov.au

EPA Supplementary Advice on Environmental Impact Statement
Wagga Wagga Lithium-Ion Battery Recycling Facility – SSD-67983064

Dear Ellen,

I refer to the previous letter from the NSW Environment Protection Authority (EPA) dated 13 May 2025 responding to the Environmental Impact Statement (EIS) for the proposed Lithium-Ion Battery Recycling Facility at 61 Edison Road, Wagga Wagga.

I am writing to provide supplementary advice from the EPA regarding waste management, which should be considered in conjunction with the EPA's previous response.

The EPA has reviewed the following documents:

- *Environmental Impact Statement (Revision 2) – GHD – 17 March 2025*
- *Hazard and Risk Assessment (Revision 0) – GHD – 7 November 2024*

The EPA understand the proposal is for:

- Processing capacity of 3,000tpa of waste lithium-ion batteries (LIB),
- External storage of 52.8t of unprocessed LIB,
- Installation of 15KL of LPG storage.

Based on the information provided, the proposal will require an environment protection licence under the *Protection of the Environment Operations Act 1997* (POEO Act) for Resource Recovery, Clause 34 of Schedule 1 of the POEO Act.

Further to the matters identified in its previous letter, the EPA would like to provide the comments in **Attachment A** for consideration by the Department of Planning, Housing and Infrastructure (DPHI) as part of its assessment, and recommends that these matters be addressed prior to determination of the application.

The EPA also provides the comments in **Attachment B**, which relate to management of waste batteries. These are provided for consideration by DPHI as part of its assessment, and potential inclusion in as part of any post-approval waste management plan.

The EPA is willing to be consulted further should a response or additional information be provided regarding these matters in this or its previous letter, as it would likely recommended conditions for any approval of the project, particularly relating to waste management, air quality and noise impacts.

If you have any further questions regarding this matter, please contact Carlos Ferguson at environmentprotection.planning@epa.nsw.gov.au.

Yours sincerely,

Christie Jackson
Unit Head – Environmental Protection Planning
NSW Environment Protection Authority

ATTACHMENT A – Detailed comments – Matters to be addressed prior to determination – Wagga Wagga Lithium-Ion Battery Recycling Facility – SSD-67983064

The EPA provides the additional detail below for consideration by DPHI as part of its assessment of the proposal, prior to determination of the application.

Waste Management

a. Total amount of LIB to be stored on-site is unclear

   The EIS refers (s3.1) to a maximum storage of 52.8 tonnes of unprocessed LIB, however it is also noted the proposed nominated storage amount is only 20 tonnes of LIB (s3.3.2).

   The proposal should clarify the likely maximum amount of LIB to be stored at the site, to assist with considering risk, management and mitigation measures required.

   Recommendation: The EPA advises the EIS should be updated to clarify the quantity of LIB to be stored on site.

b. Waste storage should be consistent with best practice to address environmental risks

   LIB's that are incorrectly stored or that may be damaged, weathered or faulty, or subject to elevated ambient temperatures, may present a risk to the environment and human health through discharge of contaminants to the air, or from leaching or leaking to land or water. The EIS states LIB's will be stored in dedicated storage containers external to the building in a dedicated storage area (s3.3.2) for up to five days prior to undergoing the discharge process.

   The EPA notes the storage of LIB's outside, where the batteries may be subject to elevated temperatures, is not considered ideal or consistent with best practice LIB storage practices, which includes keeping LIB storage in a way to prevent overheating.

   Recommendation: The EPA advises the proposal should include detailed information on the risks, requirements and controls relevant to the storage of waste batteries. Battery storage and management practices should be demonstrated as consistent with best environmental practice and use of best available technology.

c. Consideration of all types of LIB electrolyte

   The EIS refers to processing and destruction of organic electrolyte contained within LIB via evaporation post battery discharging and shredding, and treatment in the gas cleaning plant. However, the EIS does not appear to contain any details regarding treatment LIB's that do not contain organic electrolytes.

   The EPA notes generally 15% of LIB is electrolyte. In addition to organic electrolyte containing LIB, other LIB types can contain other electrolytes, include aqueous, solid, solid polymer, gel polymer, polyvinylidene fluoride and ionic liquid electrolytes.

   These electrolyte types contain other materials, chemical compounds and properties compared to organic electrolytes, there is potential for LIB processing of these electrolytes to generate other emissions and risks.

   Recommendation: The EPA advises the proposal should include detailed information on the management of and risks associated with all LIB to processed, including LIBs that contain electrolytes other than organic electrolytes.

d. Risks associated with exposure to lithium

The EIS or Hazards and Risk assessment do not appear to consider potential risks associated with exposure to lithium. It is noted LIB's generally contain a relatively small amount of lithium (typically above 2% depending on the battery type and chemistry), compared to other heavy metals such as cobalt, nickel and manganese.

However, lithium can be present in the LIB cathode as a compound often with nickel, manganese and/or cobalt, in the graphite anode, and as a lithium salt in the electrolyte with an organic solvent. It is considered the amount of lithium likely to be derived from waste LIB is not insignificant. The proposal should address potential impacts from lithium to humans and the environment.

Recommendation: The EPA advises the proposal should consider and comment on risks associated with lithium, and consideration of any requirements of SafeWork NSW.

e. Details regarding generation of contaminated surface water and appropriate water management

The EPA notes spill, leaks and discharges from batteries at receival, or during storage or transfer may result in the generation of surface and stormwater contaminated with chemical compounds in LIB. However, the proposal does not appear to include any details of the stormwater collection system or the management of stormwater that may be contaminated by LIB at the site, including details of how any contaminated stormwater will be identified and managed at the site.

The EPA also notes management of site water management must include consideration of LIB contaminated water generated as a result of fire-fighting activities at the site.

The EIS refers to use of the approved stormwater management system for the building, and states (Section 6.8.2.2) there will be no discharge of process water to either surface or groundwater.

The proposal should consider implementation of typical control measures such as bunding, safely storing hazardous materials, pipeline maintenance and visual inspections.

The EPA suggests identified measures can be implemented through an operation environment management plan (OEMP), including a pollution incident response management plant (PRIMP).

Recommendation: The EPA advises the proposal should include consideration of the potential for the site to generate contaminated surface water, including fire wash water, and how any associated impacts will be mitigated.

f. Clarification on adequacy of baghouse to capture fine particles generated from LIB processing

Lithium particles are light and thus are more likely to become airborne, which creates potential risk of inhalation exposure to lithium. Dusts containing heavy metals present in LIB, considered to be highly toxic, will also be generated from LIB processing. Use of nano materials in battery product may result in potential exposure risks.

It is proposed that all processing activities that potentially generate dust are enclosed, with dedicated baghouses used to capture particles in ventilated air from process equipment prior to emission to the atmosphere, which reduces emission sources.

It is noted the EIS does not include information on the dust generated from LIB processing, such as likely particle size range and distribution, which will help inform requirements of the dust collection systems.

Recommendation: The EPA advises the proposal should clearly address risks associated with the potential presence of nanomaterials in LIB and generation of fine (eg nano) particles, and the suitability of the baghouse in the dust collection and mitigation system.

ATTACHMENT B – Detailed comments – Matters for consideration – Wagga Wagga Lithium-Ion Battery Recycling Facility – SSD-67983064

The EPA provides the additional detail below for consideration by DPHI as part of its assessment and potential inclusion in any post-approval waste management plan.

Waste Management

a. Details regarding battery sorting, dismantling and management of non-conforming batteries

   It is noted the EIS refers to LIBs being dismantled down to the individual battery cell level however details are not provided on the dismantling process.

   The EIS also provides information on storage methods for lead acid batteries and nickel cadmium batteries, which are stated to be pallet and steel drum. However, it is unclear if pallet storage will be sufficient for ULABs, especially if battery case integrity is compromised and causing leakages. Additionally, the proposal does not refer to use of a fire retardant for battery storage, nor the possibility of other battery chemistries being present, or badly damaged and unlabelled batteries hidden in large consignments.

   Non-conforming batteries are proposed to be either returned to the supplier or sent to an approved recycler for processing. However, it is unclear what contingencies are available where the suppliers or recyclers are not able to receive the non-conforming batteries.

   The proposal should describe the dismantling process and identify risks and mitigation measures associated with this process. Clarification should be provided with respect to the management and fate of non-conforming batteries, and contingencies for waste battery scenarios that may be reasonably expected.

b. Controls to manage risks associated with the transport of LIB's

   The EPA notes the significant risks associated with the transport of LIBs, especially waste LIB's that may be ruptured or otherwise damaged but not obvious by visual inspection. The proposal should demonstrate waste battery transport to the facility will be undertaken in a safe and environmentally sound manner.

   The EIS indicates suppliers will be responsible for transporting waste LIB's to the facility, which may potentially include a wide range of battery sizes, types and condition likely to be received.

   The proposal should clarify how the commitments made in the EIS (Sections 3.3.2 and 6.6.3.2) will be achieved.

   In particular, the proposal should clarify how it will manage:
   - Controlling transport of LIB's to the site via heavy vehicle only at approximately 1 load per day,
   - Suppliers complying with batteries transport requirements, including packaging requirements (eg. specialised containers described in the EIS),
   - Quality of batteries transported to the site,
   - how packaging used including the specialised containers by Calibre Metals will meet the requirements of DG packaging instruction P909,
   - noting UN38.3 will not apply to the waste batteries transported to the facility.

c. Discharge process details and gate of the resulting brine solution not provided

The EIS advises the brine solution used to discharge LIB is stated to be continually reused and not require disposal (s3.3.2). It is noted there is potential for brine solution to become unusable over time due to contaminants introduced through the discharging of old batteries.

The EIS does not appear to address the potential for the brine solution to require replacement and disposal, and contingencies should be in place should this be required.

The EIS also states that discharged LIB removed from the brine solution will be drained and stored for up to 72 hours prior to processing via the automated battery recycling machine. Clarification should be provided on where the draining will take place and how the batteries will be handled and transferred are not provided in the EIS.

d. Details on fate of baghouse dust

Dust collected in the baghouse is presumably recovered rather than disposed, due to it containing black mass. However, the proposal does not appear to include information on the management and intended fate of dust collected in the baghouse system.

e. Waste management prior to processing

The EIS (s 3.3.2) states incoming LIB will be received in their original hard plastic casing, weighed and stored in the same specialised non-conductive containers that were used during transportation to the facility. The containers referred to are 1 x 1.2 metres and unknown height. Various suppliers will be undertaking the transport of LIB, and the battery types will likely be of various types and sizes.

The EPA notes it is unclear if the containers will be sufficient for the storage of all LIB, and suitable for all LIB types, collections and generators. Such battery types are likely to have different requirements, for example based on their size/capacity and design – which should enable or facilitate easy loading, storage and unloading.

It is also unclear if containers address ventilation to avoid gas build up and heat accumulation, and suitable for storing potentially mixed battery types including non-LIB some of which may contain incompatible substances.