STATE
PLANNING
COMMISSION

Assessment Requirements

ENVIRONMENTAL IMPACT STATEMENT

Battery Anode Material (BAM) Facility
Purified Spherical Graphite (PSG) Manufacturing Plant
Unit 1, 9 Robinson Road, Bolivar

Renascor Resources Ltd

30 March 2023

Government of South Australia
Department for Trade
and Investment

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1 Objective of the EIS

Assessment of impacts for projects declared as impact assessed development (not being restricted development) is undertaken through the preparation of an Environmental Impact Statement (EIS).

The EIS process is the highest level of assessment under the *Planning, Development and Infrastructure Act 2016* (PDI Act) and enables the holistic consideration of major development or projects that are considered to be of economic, social or environmental importance to South Australia.

The EIS process provides a comprehensive assessment of a development or project proposal and expected effects on the receiving environment and within the broader context of its setting.

2 Description of Development

On 17 November 2022 the Delegate of the Minister for Planning declared that the proposed Purified Spherical Graphite (PSG) Production Plant, as part of the Renascor's Integrated Battery Anode Material (BAM) Manufacturing Operation, at Unit 1, 9 Robinson Road, Bolivar be assessed as an Impact Assessed development pursuant to section 108(1)(c) of the *Planning, Development and Infrastructure Act 2016* (the PDI Act).

The project scoping application provides the following preliminary description of the proposal.

The subject site is a 20.5ha parcel of land owned by SA Water, located north-east of Port Adelaide (approximately 18km by road), and adjacent SA Water's Bolivar Wastewater Treatment Plant (WWTP). The site has street frontage to Robinson Road (local road) along its eastern boundary. Located within the Rural Horticulture Zone, the site was previously cropped and is free of buildings / structures. The majority of vegetation on site was planted in 2010 and the site is now used for grazing.

The proposed BAM (PSG) plant is an industrial facility to process graphite concentrate extracted from Renascor's Siviour Graphite Mine at Arno Bay on the Eyre Peninsula. The facility will create PSG, an essential mineral resource used in the manufacture of anodes for lithium-ion batteries.

The BAM (PSG) facility comprises a range of industrial buildings, storage silos, heavy vehicle loading / unloading facilities and specialised equipment for the processing, movement and packaging of PSG and by-products.

The BAM (PSG) facility will receive graphite concentrate transported from the Siviour Graphite mine via trucks and conveyed into silos. The graphite will be mechanically shaped through micronisation and spheronisation processes, followed by purification through a caustic roast and leach process. The PSG product is then dried and packaged in a bagging plant before being transported off-site via truck to Port Adelaide.

Supporting infrastructure required for the PSG plant includes:

- Electric and/or gas-fired equipment for the production of steam.
- Air compressors
- Demineralisation water treatment plant
- Wastewater treatment plant
- Negative pressure environment and dust mitigation

Utility requirements for the development include power, natural gas, water, sewerage and transportation networks.

The facility will produce a range of by-products, liquid and solid wastes. Wastewater will be treated on site and then discharged to SA Water's Wastewater Treatment Plant (WWTP) outfall channel. Solid chemical wastes and graphite fines are also produced by the processing plant(s). The various waste streams may be re-used, recycled and/or disposed of subject to further investigation.

Figure 1: Location Plan (subject land delineated by red line)

3 Background to these Assessment Requirements

This document contains the Assessment Requirements to guide the preparation of an EIS by the project proponent.

Every attempt has been made to ensure these Assessment Requirements address all of the major issues associated with the proposed development, however they are not necessarily exhaustive. The Assessment Requirements should not be interpreted as excluding from consideration matters deemed to be significant but not incorporated in them, or matters that emerge as important or significant from environmental studies or otherwise during the course of the preparation of the EIS.

The EIS must therefore address other matters not covered in these Assessment Requirements in the following circumstances:

- Studies reveal a matter that had not been foreseen when the Assessment Requirements were finalised.
- Stakeholder engagement and consultation with the community identifies an issue of widespread concern to the public, which had not previously been considered contentious. This may include a public perception of significant environmental harm that may not be borne out by technical studies, or which may also be attracting extensive media coverage.
- New or amended legislation or policies come into effect after the Assessment Requirements have been finalised, which may or may not have been referred to in the Assessment Requirements. Transitional arrangements or exemptions may apply, but it is considered best practice and of net benefit to a project to consider emergent legislation or policies even if not specifically required. This serves to 'future-proof' the EIS.
- The proponent makes amendments to the proposed project that would result in a change in the nature, scale, timing or location of any impacts.

4 The Impact Assessment Process

4.1 EIS process

Once a development has been categorised as impact assessed development (not being restricted development), a Scoping Application is prepared by the proponent which includes a preliminary assessment of the key social, environmental and economic issues and impacts associated with the development. The Commission uses the information provided in the Scoping Application to develop Assessment Requirements to inform preparation of the EIS.

The EIS must be prepared by the proponent in accordance with the Assessment Requirements for each environmental attribute in line with the level of detail specified. The level of detail is determined by the Commission based on the Practice Direction, the views of the relevant government agencies and the local council. The proponent is also given an opportunity to provide feedback on the level of detail required.

Assessment Requirements are intended to be outcome-focused and, supported by relevant guidance documents and legislation, are generally accompanied by a method of investigating the highlighted impacts and measures to assess these impacts. The methods provided are not necessarily exhaustive and a wide range of methods may be available to consider and respond to a particular issue.

If additional matters requiring detailed assessment become apparent after the final Assessment Requirements are issued, the EIS must also address these new matters in a comprehensive manner and identify means by which the effects can be managed.

The matters that must be included in an EIS are set out in Section 113 of the PDI Act and in the sections below. These requirements include detail of expected environmental, social, economic and climate effects of the development, consistency with state and regional planning documents, consideration of the provisions of the *Environment Protection Act 1993* and commitments by the proponent to avoid, mitigate or satisfactorily manage and control any potentially adverse effects of the development on the environment.

The EIS process is illustrated in Figure 2.

4.2 Consultation Process

After the completed EIS is submitted to the Minister for public release, it is referred to council(s) and relevant government agencies for comment. The public is provided with an opportunity to comment when the completed EIS is released for public exhibition.

Public consultation is a valuable resource to the EIS preparation process and a well-considered engagement strategy can play a pivotal role in the assessment of a project. The PDI Act sets out the principles of the Community Engagement Charter which guide public participation in the planning process and ensure that people and communities have a greater opportunity to engage in the planning process. The Minister will consider the Charter in determining the consultation program for an impact assessed development.

Public exhibition is undertaken for a minimum of 30 business days. An advertisement will be placed in The Advertiser and local newspapers inviting submissions. The public consultation process will cater for those with special needs or those not able to access documentation electronically.

Figure 2: Steps in impact assessed development process.

4.3 Responding to submissions

Copies of submissions from the public, council(s) and other relevant agencies will be provided to the proponent who then prepares a Response Document to address matters raised during the public exhibition period.

Following the receipt of the Response Document, the Commission will prepare an Assessment Report. The Assessment Report must set out:

- The Minister's assessment of the development.
- Any comments by the Minister relating to:
  - the EIS
  - submissions received through the public consultation process
  - the proponent's responses to submissions received and matters raised by the Minister
- Comments provided by the Environment Protection Authority, another Minister, a council or other authority or body.
- Any other comments or matters as the Minister or the Commission thinks fit.

The Assessment Report and the Response Document will be available for inspection and purchase by members of the public at a place and for a period of time determined by the Commission.

Availability of each of these documents (primarily on the PlanSA Portal website) will be notified by advertisements in The Advertiser and local newspapers and in writing to persons who made a written submission. A copy of the EIS, Response Document and the Assessment Report will be provided to the relevant council(s). Requirements for public availability and notification of an EIS, Response Document and Assessment Report are laid out in Section 113 (10) - (12) of the PDI Act.

The Minister will make a final decision subject to Section 115 of the PDI Act.

In deciding whether the proposal will be approved and any conditions that will apply, the Minister must have regard to:

- The State Planning Policies
- Regional Plans, including the 30-Year Plan for Greater Adelaide (where relevant).
- Provisions of the Planning Rules and the regulations.
- If relevant, the Building Code of Australia.
- Where development involves or is for the purposes of a prescribed activity of environmental significance, the Environment Protection Act including the objects, General Environmental Duty and relevant environment protection policies.
- Where relevant, the view of the Minister who is responsible for the administration of an area of the State subject to a special legislative scheme.
- The EIS, Response Document and the Commission's Assessment Report.
- Where relevant, any other government policy and/or legislation.

Pursuant to Section 115(2)(a) of the PDI Act the Minister can at any time indicate that the development will not be granted authorisation. This may occur if the development is inappropriate or cannot be demonstrated to be properly managed. This is commonly referred to as an "early no."

4.4 Development of the Assessment Requirements

Assessment Requirements set out the environmental attributes relevant to the development which are to be assessed (e.g. soil, water, heritage, threatened species etc). The key environmental, social and economic impacts to these environmental attributes are to be addressed in the EIS. The level of assessment required is determined by the Commission based on consideration of key factors to determine whether a standard level of assessment will be sufficient or whether more detailed assessment is required.

4.4.1 Key factors to consider in determining level of assessment detail

The PDI Act defines an EIS as "a document that includes a detailed description and analysis of a wide range of issues relevant to the proposed development or project, incorporating significant information to assist in an assessment of environmental, social or economic effects associated with the development or project and the means by which those effects can be managed".

In setting the Assessment Requirements, the Commission considers the scale, nature and sensitivity of the receiving environment associated with the proposal and refers to relevant legislation, policy, guidance documents, government agencies and subject matter experts to determine whether a standard or a detailed level of assessment is appropriate.

The Commission is required to classify the issues relevant to the proper assessment of the development or project according to categories of importance so as to indicate the levels of attention that should be given to those issues in the preparation of an EIS.

The following key factors have been considered in identifying the issues requiring assessment in the EIS and whether the Assessment Requirements are 'detailed' or 'standard':

- Scale of the impact taking into account intensity, geographical extent and duration.
- Nature of the impact which should consider direct, indirect, cumulative and perceived impacts.
- Sensitivity of the receiving environment.
- Ability to avoid, minimise and/or offset the impacts of the project, to the extent known at the application stage.
- Complexity of technical assessments and investigations required to identify and assess mitigation measures.

Description and examples of the key factors is provided in Table 1.

Table 1: Description and examples of key factors to consider during scoping

Key factor	Components of factor	Description of example
Scale of the Impact	Severity	The scale or degree of the impact relative to the current situation or adopted standards or performance measures. The intensity may be measured quantitatively and compared to reference values (e.g. area of vegetation cleared, air and water quality, noise levels, change or disruption to ecological community function) or qualitatively.
	Geographical extent	The geographical reach of the impacts of the development or the range within which the impacts are observable

	Duration	The timeframe over which the impact occurs (e.g. for a short period, during construction only; during operations permanently). It may also refer to the period/s in which the impacts are observable and the regularity of the impacts (e.g. irregular, intermittent, regularly during operations.)
Nature of the Impact	Direct impacts	Impacts caused directly by the development. They usually occur at the same time as the development and within the vicinity of the site (e.g. vegetation clearing, air emissions).
	Indirect impacts	Impacts that occur as a consequence of the development or its direct impacts. Impacts may be delayed and happen further away from the site (e.g. project changes water table, changes affect wetland and causes an impact on groundwater dependent ecosystems). Impacts may also occur due to growth or land use changes facilitated by the project (e.g. a new transmission line may open up new areas for renewable energy generation).
	Cumulative impacts	The combined impacts of the project on a matter combined with other relevant existing and future projects (e.g. marine impacts from multiple port developments).
	Perceived impacts	There are a range of perceptions of the same impacts by people or groups
Sensitivity of the Receiving Environment	Existing regulations and guidance	The degree of sensitivity expressed in legislation or relative to adopted standards and performance measures (e.g. *Environment Protection (Noise) Policy 2007*)
	Value to society	Environmental value: e.g. water quality, natural habitat). Social value: e.g. community value, landscape, recreation, lifestyle disturbance, water quality, cultural heritage, amenity. Economic value: e.g. water supply, critical transport routes
	Vulnerability / resilience to change	The degree of vulnerability of the environment to the impacts of the project or resilience to cope with change. Regard should be had to the likely scale and nature of the impacts of the development and the sensitivity and adaptive capacity of the environment.

4.4.2 Assessment Level Characteristics

The characteristics of ‘detailed’ and ‘standard’ levels of assessment are provided in Table 2. A detailed level of assessment is required if the impact of the development has one or more the characteristics set out in Table 2.

Table 2: Characteristics of detailed and standard assessment

Level of Assessment	Characteristic of the impact of the development
Standard	The project is unlikely to result in significant impacts on the environmental attribute if managed through conventional management and mitigation measures, including cumulative impacts. While the assessment of the impacts of the development on the environmental attribute will involve technical specialists, these impacts are likely to be: o well understood by regulators and stakeholders o relatively easy to predict using standard methods o capable of being mitigated to comply with relevant standards or performance measures. The assessments will be supported by quantitative assessment methods, although the focus and coverage may be on specific project components or project locations. The assessment is unlikely to involve any significant uncertainties or require any detailed cumulative impact assessment.
Detailed	The development has a high / medium probability of causing significant environmental impact on the environmental attribute, including cumulative impacts. There is a high / medium probability of impacts on the development from external environmental factors such as those associated with climate change (sea-level rise, increased frequency of bushfire, floods etc.) It is considered important by the Commission, and/or there is a public perception that an activity has the potential to cause significant impacts on the environmental attribute (even though this may be mistaken), or the activity has been the subject of extensive media coverage. Potential impacts to a Matter of National Environmental Significance (MNES) are likely to require referral and approval under the Environment Protection Biodiversity and Conservation Act 1999). The development raises requirements under other legislation applicable for the development (e.g. prescribed activities of environmental significance under the Environment Protection Act 1993). Assessment of the impacts of the development on the environmental attribute will require detailed studies and investigations to be carried out by technical specialists. During this assessment, these specialists may need to: o work closely with specialists assessing the impacts of the project on other environmental attributes to determine the likely indirect impacts of the project o undertake a detailed cumulative impact assessment for the project. Assessment is likely to involve several uncertainties in relation to one or more of the following and specific strategies may be required to address these uncertainties (e.g. further monitoring, review, technical investigations and adaptive management). o data collection (e.g. baseline information, availability of data for cumulative impacts assessment) o identifying the specific mitigation measures or suitable offsets for the project o the methods available for predicting the impacts of the project, including the indirect and cumulative impacts

	○ criteria for evaluating the acceptability of the impacts of the project ○ specific strategies may be required to address these uncertainties (e.g. further monitoring, review, technical investigations and adaptive management).

4.4.3 Environmental Attributes to be considered in the EIS

Issues relevant to the proposal are addressed by each Assessment category within which a range of environmental attributes are identified. Specific Assessment Requirements are then determined for each environmental attribute relevant to the proposal with the level of detail tailored for that element or issue.

Table 3: Assessment categories and environmental attributes

Assessment category	Environmental attribute and typical issues
Amenity and Environmental Quality	**Air quality** •Ground level concentrations (include background levels, construction / traffic), odour, stack emissions, receptors (location and sensitivity) **Noise** •Noise type (include traffic noise), underwater noise, noise level, sensitive receptors and location. Sensitive receptors may include terrestrial and marine fauna. **Transport and Traffic** •Traffic disruptions- commuter and local, public transport, pedestrians / cyclists, changes to traffic flow and volumes - temporary / ongoing, road / maritime safety, car parking, presence of heavy vehicles, impacts to road pavement, marine traffic / shipping **Visual amenity** •Interface with adjoining land, landscape changes, built form, light spill
Biological Environment	**Biosecurity** •Weeds, pest species (including marine pests), diseases and pathogens. **Matters of National Environmental Significance** •Nationally threatened species and communities, migratory species, wetlands of national importance (Ramsar), Commonwealth marine areas **Marine Flora and Fauna** •Marine protected areas, threatened species, communities/ ecosystems, seagrass clearance, biodiversity loss **Terrestrial and Aquatic Flora and Fauna** •Protected areas, threatened species and communities, native vegetation clearance, habitat loss through clearing fire or fragmentation, biodiversity loss
Climate Change and Resource Use Efficiency	**Climate Change Adaptation** •Climate change risk assessment **Greenhouse gas emissions** •Greenhouse gas emissions including emissions reduction targets, NGER reporting, cumulative impacts on state and national GHG inventories and targets. **Sustainable use of resources** •Sustainable procurement, products / materials, energy efficiency **Waste Management** •Waste hierarchy; waste recycling / disposal
Economic Environment	**Local, regional and state economies** Economic impact assessment which addresses workforce / employment, existing economic land and marine uses (primary production, tourism, ports, fisheries), infrastructure - utilities (energy, water), telecommunications, ports, rail), displacement, competition, opportunities, temporary and ongoing for existing businesses / industries, property and land values

Hazards and Risks	**Bushfire, Floods, Site Contamination** Hazard risk management, bushfire, flooding, contamination and dangerous goods
Land Tenure, Protected Areas and Land Use	**Land Tenure, Protected Areas and Land Use** Land tenure (freehold, pastoral lease, mining, oil and gas, native title, crown land), generalised land use, population centres, major infrastructure and utilities (including marine infrastructure), P&D Overlays and Zones, reserved areas (including marine parks), changes / displacement of land uses
Physical Environment	**Coastal and Marine** •Coastal land systems (dunes, estuaries, beaches, island), and marine water quality **Soils, Landform and Geology** •Erosion and sedimentation, soil compaction and inversion, contamination (spills), land subsidence and acid sulfate soils. **Surface Water and Groundwater** •Surface water quality (sedimentation, wastewater, spills, use of surface water) and groundwater use and quality. **Discharge into Bolivar Channel** •Interaction of how water discharge will interact with the Bolivar channel, other users of the channel and the environment •Sustainability of the wastewater discharge from the demineralisation plant and wastewater treatment plant across all seasons and how that will impact/change the contents of the Bolivar channel.
Design	**Urban Quality** Supporting design excellence to create desirable and socially inclusive places.
Social and Community	**Aboriginal cultural heritage** •Known and unknown Aboriginal sites, objects and remains **Community wellbeing** •Social impact assessment which addresses impacts to specific groups, impacts to services, impacts / displacement of residential areas, public safety (including perceptions), recreation and public space amenity **Heritage Places and Areas** •Listed national, state and local heritage sites

5 Content Requirements for the EIS

Section 113 of the PDI Acts sets out the legislative requirements for the content of an EIS.

5.1 Statutory Requirements

The EIS must Include the following (subject to any Practice Direction):

1. A statement of the expected, predicted or potential environmental, social and economic effects of the development, whether positive, neutral or negative. The assessment of effects should include all issues identified in the Assessment Requirements and be cross referenced to supporting technical studies.
2. A statement of the expected impact of the development on the climate and any proposed measures designed to mitigate or address those effects.
3. A statement of the extent to which the expected, predicted or potential effects of the development are consistent or at variance with the provisions of—
    a. Any relevant State Planning Policy.
    b. Any relevant Regional Plan(s), including the 30-Year Plan for Greater Adelaide (if applicable).
    c. The Planning and Design Code.
    d. Any matters prescribed by the Regulations.
4. If the development involves, or is for the purposes of, a prescribed activity of environmental significance as defined by the *Environment Protection Act 1993*, a statement of the extent to which the expected, predicted or potential effects of the development are consistent or at variance with—
    a. The objects of the *Environment Protection Act 1993.*
    b. The general environmental duty under that Act.
    c. Relevant environment protection policies under that Act.
5. If the development will, or is likely to, significantly impact one or more MNES under the EPBC Act, a statement of:
    a. The expected, predicted or potential effects of the development on each identified MNES.
    b. The extent to which the expected, predicted or potential effects of the development are consistent or at variance with the provisions of any relevant Commonwealth of Australia conventions, agreements or obligations under international agreements or treaties as they relate to MNES aspects.
    c. The extent to which the expected, predicted or potential effects of the development are consistent or at variance with any relevant Commonwealth plans (such as threat abatement plant and recovery plans), conservation or management principles.
6. If the development is to be undertaken within an area of the State that is specifically subject to a special legislative scheme—a statement of the extent to which the expected, predicted or potential effects of the development are consistent or at variance with the State Planning Policy that specifically relates to that special legislative scheme.

7. A statement of the proponent's commitments to avoid, mitigate and satisfactorily manage and/or control any potential or likely adverse impacts of the development on the environment (including any proposed offsets to reduce residual significant impacts) or any matter that may be directly relevant to a special legislative scheme.
8. Any other particulars in relation to the development required by the Regulations, relevant Practice Direction or by the Minister.

The proponent's commitment to meet conditions proposed to avoid, mitigate and satisfactorily manage and/or control any potential or likely adverse impacts of the development on the physical, social or economic environment, must be clearly articulated in the EIS.

The design and construction of the proposed development should be flexible enough to incorporate changes to minimise any impacts highlighted by this evaluation.

5.2 Summary of the EIS

The EIS should include a summary of the matters set out in the Practice Direction prepared pursuant to Section 109 of the PDI Act and include mention of all environmental attributes set out in the Assessment Requirements. The reader should be able to obtain a quick but thorough understanding of the proposal and associated environmental impacts. The summary should convey the most important aspects and environmental management commitments relating to the proposed project in accessible, easily understood language.

The summary should aim to construct a narrative around what is being proposed in the EIS, alternatives that were considered, what the broad environmental implications are of the proposal and how they will be managed to provide a net benefit. The summary should be logical and easy to read and need not reflect the precise order of chapters within the EIS itself. Images and graphics are suggested as a means of assisting to succinctly communicate the contents of the summary.

Content should be summarised accurately and objectively. It should report all of the EIS's key conclusions and be consistent with the rest of the EIS. Specific issues and impacts should be addressed at an appropriate level of detail proportionate to their potential for significant impact and depth of study undertaken.

5.3 Introduction to the EIS

The introduction to the EIS should set the context for detailed assessment of the project in subsequent sections of the EIS, and include:

- Background to, and objectives of, the proposed project.
- Proponent details, including;
    - Contact information for the proponent or representatives of a proponent organisation for the project, including full name, street and postal address, Australian Business Number, telephone, fax, email and other details as appropriate.
    - Identify the legal entities that would develop, manage and operate the project.
    - Provide a description of corporate structure including joint ventures, corporate policies and objectives relating to the project, in particular environmental policies.
    - Specify mechanisms used to ensure that corporate policies will be implemented and adhered to for the project in addition to requirements for Environmental Management Plans.

- Identify key personnel, contractors, and/or subcontractors responsible for preparing the EIS.

- Staging and timing of the proposal, including expected dates for construction and operation.
- Relevant legislative requirements and approval processes.
- Purpose and description of the EIS process.

5.4 Need for the Proposal

The EIS should provide a statement of the objectives and justification for the proposal including:

- the specific objectives that the proposal is intended to meet, including market requirements.
- expected local, regional and State benefits and costs, including those that cannot be adequately described in monetary or physical terms (e.g. effects on aesthetic amenity).
- a summary of environmental economic and social arguments to support the proposal including the consequences of not proceeding with the proposal.

5.5 Description of the Proposal

The EIS should provide a comprehensive and consolidated description of the proposal for which the proponent is seeking approval, using suitable maps, plans, figures and tables.

The proposal description sets out what the proponent is presenting for assessment and provides the basis for the Commission's evaluation against the Assessment Requirements. As the proposal may have undergone changes since the initial scoping stage (e.g. in response to stakeholder engagement, risk analysis or planning, technical or compliance grounds), it is important that the EIS provides an up to date and comprehensive description of the proposal.

The description of the proposal should address all aspects of the proposed project that are assessed by the EIS, and address the following information:

- Nature of the proposal and location.
- Scale and intensity of the project.
- Key elements of the receiving environment.
- A project plan to outline objectives, constraints, key activity schedule and quality assurance.
- Site layout plans (including indicative land division plan if relevant).
- Construction and commissioning timeframes (including staging).
- Description of working hours.
- Description of the existing environment (including the immediate and broader location, identifying sensitive receptors and adjacent land uses which may lead to cumulative impacts).
- Description of the current commercial activities occurring in the area.
- Details of all buildings and structures associated with the proposal.

- Details of any other infrastructure requirements and availability.
- Details on the operation of the proposal, including operating hours.
- Relevant Zones and Overlays defined by the Planning and Design Code.
- Management arrangements for the construction and operational phases (including Environmental Management and Monitoring Plans).
- A contingency plan for delays in construction.

5.6 Project Alternatives

Feasible alternatives considered for the proposed project should be presented in the EIS described and evaluated the comparative environmental, social, and economic impacts (including the option of not proceeding).

Each alternative and its potential impacts should be discussed in sufficient detail to enable an understanding of the reasons for preferring certain options and courses of action while rejecting others. This may be used to inform a justification of why the proposed project and preferred options should proceed.

5.7 Summary of Preceding Actions

The EIS should provide a summary of actions and activities that have been undertaken prior to or as part of the preparation of the EIS. These could include prior engagement with the Commission, government agencies, local councils and other stakeholders, engagement with the local community, the process of project development, pre-feasibility studies and any technical reports which may have bearing on the level of detail required by a relevant Assessment Requirement.

5.8 Matters of National Environmental Significance

The EPBC Act ensures that ‘nationally significant’ animals, plants, habitats and places are identified and any potential significant impacts on them are carefully considered before changes in land use or new developments are approved.

There are nine MNES under the EPBC Act:

- Listed threatened species and communities.
- Listed migratory species.
- Ramsar wetlands of international importance.
- Commonwealth marine environment.
- World heritage properties.
- National heritage places.
- The Great Barrier Marine Park.
- Nuclear actions.
- A water resource, in relation to coal seam gas development and large coal mining development.

If the Commonwealth determines that your project is a controlled action under the EPBC Act, it is recommended that the assessment provide sufficient information about the existing environment, the action and its relevant impacts, including any avoidance measures, feasible alternatives to the proposed action, mitigation measures, safeguards and offsets.

Whilst there is no current bilateral agreement between the State of South Australia and the Commonwealth of Australia that accredits the impact assessed process under the PDI Act, where potentially significant impacts to MNES are identified, it is recommended that these matters still be addressed in the EIS to provide a comprehensive assessment (and to ensure the provision of similar documentation for each assessment process).

Opportunities to streamline administrative processes between the State and Commonwealth Governments are being actively progressed, which may result in the opportunity to implement project specific assessment arrangements, or provide for more streamlined processes (i.e. similar assessment criteria, notification timing etc).

5.9 Sources of Information

All sources of information (e.g. reference documents, literature services, research projects, authorities consulted) should be fully referenced, and reference should be made to any uncertainties in knowledge. Where judgements are made, or opinions given, these need to be clearly identified as such, and the basis on which these judgements or opinions are made need to be justified. The expertise of those making the judgements including the qualifications of consultants and authorities should also be provided.

Any technical and additional information relevant to the EIS that is not included in the text should be included in appendices.

5.10 Consultation process

The EIS must include an appropriate public consultation program, outlined within a Community Engagement Plan. The Community Engagement Plan must detail:

- All legislated notification requirements to be undertaken by the Minister pursuant to the PDI Act and Practice Direction.
- The Proponent's overall engagement and collaboration strategy including scope and guiding principles.
- Engagement undertaken to date on the proposed project.
- Engagement activities proposed throughout the EIS process including performance outcomes, level of public participation, techniques, indicative timeframes, responsibilities and measures for measuring performance.
- A list of affected stakeholders, interest groups and other relevant parties.

The extent to which a proponent consults with relevant persons and organisations is to be proportional to the public interest and significance of the proposed project's potential environmental, social and economic impacts. Early and sustained consultation with all relevant stakeholders is recommended.

Prior to the public release of the EIS, the Community Engagement Plan will be reviewed by the Minister with regard to the principles of the State Planning Commission's Community Engagement Charter. The Minister may require alterations to the Community Engagement Plan to ensure consistency with the Charter and an appropriate level of public participation in the EIS process.

5.11 Required Plans and Forms

- Current Certificate(s) of Title.
- Context and locality plans should illustrate and analyse the existing environment and site conditions and the relationship of the proposal to surrounding land and buildings. Plans should be drawn to a large scale to allow presentation on a single sheet and be readily legible, according to standard mapping conventions. Plans should include:
    - Any neighbouring buildings, infrastructure or facilities, including identification of all nearby sensitive receptors and the likely use of existing or proposed neighbouring buildings (e.g. dwelling, farm outbuildings, shop, office).
    - Locations of any watercourses, surface water bodies (including dams), underground water sources, and any other sensitive environmental receptors/areas in the locality.
    - Locations of any State heritage places in relation to the site.
    - Existing native vegetation, regulated or significant trees.
    - Known sites for State or Nationally listed protected or threatened species (including migratory species) or ecological communities on the site, adjoining land and marine environments.
    - Existing roads (public and private).
    - Potential areas of habitat for native fauna, including relevant vegetation communities.
    - Any other information that would help to set the context for the locality.
- Site plans (drawn at a scale of 1:100 or 1:200) clearly indicating all proposed buildings, structures and works.
- Elevations (drawn at a scale of 1:100 or 1:200) showing all sides of buildings, structures and works with levels and height dimensions provided in Australian Height Datum.
- Cross sections of the buildings, structures and works, including stockpile and storage facilities showing ground levels, floor levels, ceiling heights and maximum heights in Australian Height Datum.
- Floor plans (drawn at a scale of 1:100 or 1:200) for each building or structure demonstrating what is proposed at each floor, with indicative internal layouts.
- Site survey plan demonstrating the development will be contained within relevant allotment boundaries.
- A schedule of construction materials, finishes and colours.
- Location and dimensions of any external advertising displays, including information as to whether signs are to be illuminated or contain a moving display.

5.12 Key Issues and Project Specific Assessment Requirements

The Commission has undertaken a preliminary review of the proposed development, based on the proponent's project scoping application, and identified the following as key issues associated with the development:

- Interface and land use impacts noting proximity of the site to existing food production / horticultural / agricultural activities, commercial operations, dwellings, and the St Kilda township.

- Visual impact including design and appearance of the facility, and alteration to the existing landscape character.

- Air quality impacts including dust and gaseous emissions during construction and operation noting the development is expected to trigger prescribed activities of environmental significance including chemical works.

- Impacts on coastal and marine flora and fauna from the discharge of wastewater via the Bolivar WWTP outfall channel.

- Impact on terrestrial fauna and fauna (in particular bird species) from the clearance of native vegetation and location of site adjacent sensitive coastal / marine environments and protected areas including the Adelaide International Bird Sanctuary.

- Stormwater management and flood mitigation with regard to existing surface water movements.

- Traffic management and impact on existing traffic networks during construction and operation.

- Cultural heritage impacts with respect to known Aboriginal heritage site and proximity to the coast.

A scoping analysis of the environmental attributes associated with these key issues has been undertaken in accordance with the methodology detailed in Section 4.4.1.

A summary of the analysis is presented in Table 4. This scoping exercise has informed the level of assessment for each relevant environmental attribute (standard or detailed) and guided the preparation of the project specific Assessment Requirements presented in Section 6.

The Project Specific Assessment Requirements are reflective of the Assessment Requirements Library available online at PlanSA. The Library is a planning practitioner's resource that provides draft standard and detailed Assessment Requirements, from which the initial project specific requirements are based. The Library also provides descriptions of each attribute and reference material to assist proponents in preparing an EIS.

It is noted that not all key issues are automatically assigned the 'detailed' level of assessment – that determination is made in accordance with the criteria presented in Section 4. The detailed Assessment Requirements should be given the greatest level of attention and detail in the EIS.

6 Summary of Project Specific Assessment Requirements

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
Amenity and Environmental Quality (AEQ)				
AEQ1	Air Quality	To ensure the development does not have unacceptable adverse air quality impacts on the surrounding receiving environment, in particular sensitive receivers in proximity to polluting development.	▪ Provide an air quality impact assessment prepared by an appropriately qualified specialist for all potential sources of dust / particles and gaseous pollutants associated with the construction and ongoing operation of the proposed development, to identify any known or potential human health and amenity effects of air emissions (including point source and diffuse sources) on the residential population and local businesses and describe how these would be mitigated, minimised, managed and monitored. ▪ The impact assessment must include modelling undertaken in accordance with the Environment Protection (Air Quality) Policy 2016 and the EPA's Ambient Air Quality Assessment 2016 guidance document. Techniques used to obtain the predictions should be referenced and key assumptions and data sets explained. ▪ Impact assessment must outline the impacts of dust / particles and gaseous pollutants on existing food production / horticultural / agricultural activities, commercial operations and any other identified nearby sensitive receivers in the vicinity of the proposed development, including cumulative impacts.	DETAILED
AEQ2	Noise	To ensure the development does not have unacceptable adverse noise impacts on the surrounding environment, in particular sensitive receivers in proximity to noise sources.	▪ Provide an impact assessment of noise associated with the construction and ongoing operation of the proposed development, prepared in accordance with the Environment Protection (Noise) Policy 2007 by a suitably experienced, professional acoustic engineering consultant. ▪ Describe and design strategies to mitigate noise impacts and how environmental management objectives for noise would be achieved.	STANDARD
AEQ3	Transport and Traffic	To ensure impacts to the safety and efficiency of transport modes and the broader transport and traffic system and infrastructure are avoided or mitigated.	▪ A Transport and Access Impact Assessment should be prepared by a suitably qualified traffic engineer, evaluating current and proposed traffic generation and access arrangements including the effect on the network (including arterial roads) and car parking, and vehicle interface with the local road network. The assessment must address: – Implications for the entire supply chain. – Implications for road safety, particularly with respect to existing road users in the locality. – Impacts over the construction, operation, maintenance and decommissioning phases. – Any upgrades or modifications to transport infrastructure required to support the development or mitigate its impacts. ▪ The assessment should determine the transport system asset improvements, asset management / maintenance requirements, and operational management requirements to accommodate the increase in movements and/or vehicle sizes/mass for affected transport assets and services across all modes for the proposal's construction / implementation and operational phases.	STANDARD
AEQ4	Visual Amenity	To ensure adverse effects on visual amenity, landscape and open space values are avoided or minimised and opportunities to enhance these values are maximised.	▪ Provide a description of the landscape character, features and values of the development area and its environs. ▪ Describe the effects of the development on visual amenity and landscape quality for residents and visitors for both near and distant views, from important viewing points. This should include construction, operations and closure / rehabilitation aspects of the proposal and address light spill from the development.	DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			▪ Provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development. ▪ Describe the rationale for the major design elements of the proposed development and measures to mitigate their visual impact. ▪ Describe how the design and construction of all buildings and structures will be controlled to ensure cohesive visual amenity, including details of construction materials, colours and landscaping for all buildings and structures. ▪ Describe the use of screening / amenity / landscape plantings and potential broad scale revegetation, including the opportunities for the use of locally endemic species.	
Biological Environment (BE)				
BE1	Biosecurity	To ensure that construction and operation of the development avoids the introduction or spread of biosecurity threats including pest or nuisance animal and plant species (including marine pests), diseases and pathogens.	▪ Identify the potential for the introduction or dispersal of new, and/or increased distribution and abundance of existing, exotic, pest or nuisance plant and animal species, diseases and pathogens, and the associated implications for native species, habitat, agricultural land and other environmental values. ▪ Propose measures to remove, control and limit the introduction or spread of exotic, pest or nuisance plants and animals, diseases and pathogens on the development site and any areas under the proponent's control (e.g. decontamination of vehicles, mobile plant, equipment and materials), having regard to the effectiveness of such mitigation measures in the past. This includes declared plants and animals under relevant State and Commonwealth legislation.	STANDARD
BE2	Marine Flora and Fauna	To ensure that the nature and scale of the development avoids or minimises adverse effects on biodiversity, threatened and protected marine flora and fauna species, their ecological communities and habitat	▪ Describe the development activities with the potential to impact on threatened and protected marine species and habitats, and listed threatened, protected and migratory fauna species, and provide an assessment of how those impacts will be avoided or mitigated. Address discharge to marine waters. ▪ The assessment of impacts to threatened and protected species and habitat will consider: – The potential impacts of water discharge on the Bolivar channel, other users of the channel and the receiving environment. – Impact on conservation parks, marine reserves, the Adelaide International Bird Sanctuary and the Adelaide Dolphin Sanctuary. – Cumulative impacts, noting that the receiving environment is already a stressed ecosystem. ▪ If potential impacts on MNES require approval under the EPBC Act, an assessment of impacts on the affected MNES must be prepared by an appropriately qualified specialist. ▪ Prepare a Discharge Criteria Management Plan, prepared by a suitably qualified expert, which details the existing environment and identifies any marine features or habitats. The plan will focus on the management measures and strategies adopted to ensure water discharge to the Bolivar Channel meets compliance criteria.	DETAILED
BE3	Terrestrial Flora and Fauna	To ensure that the nature and scale of the development avoids or minimises adverse effects on biodiversity, threatened and protected terrestrial and aquatic flora and fauna species, their ecological communities and habitat.	▪ Describe the development activities with the potential to impact on native vegetation and listed threatened flora species and ecological communities and provide an assessment of how those impacts will be avoided, mitigated or offset. ▪ The assessment of impacts to terrestrial flora and fauna will consider impact beyond the site, with respect to dust and noise. ▪ If potential impacts on MNES require approval under the EPBC Act, an assessment of impacts on the affected MNES must be prepared by an appropriately qualified specialist. ▪ Prepare a Native Vegetation Clearance Data Report prepared by an Accredited Consultant approved by the Native Vegetation Council. The assessment should undertake a survey of the	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			vegetation and fauna (including EPBC Act Listed threatened species and communities), detail compliance with the impact mitigation hierarchy and describe how the significant environmental benefit would be achieved. ▪ Outline measures to mitigate effects on native vegetation by addressing the mitigation hierarchy, including any compensatory activities in already degraded areas and use of existing easements. Refer to guidelines produced by the Native Vegetation Council and outline the likely effectiveness of any mitigation measures adopted during both construction and maintenance.	
Climate Change and Resource Efficiency (CCRE)				
CCRE1	Climate Change Adaptation	To ensure that development and design are climate resilient and risks from climate change are reduced.	▪ Undertake a climate risk assessment of the relevant potential impacts on the development of projected climate change over the lifetime of the development (e.g. increasing temperatures, extreme heat and heat waves, decline in rainfall, increased drought, extreme rainfall events, harsher fire weather, and sea level rise). Include proposed adaptive management strategies. ▪ For developments with a lifetime to 2050 or before, the risk assessment should be based on climate projections from the RCP 8.5 scenario (high greenhouse gas emissions scenario). For developments with a lifetime beyond 2050, the risk assessment should be based on climate projections under both the RCP 8.5 and RCP 4.5 scenario (moderate greenhouse gas emissions scenario). ▪ Examine the potential cumulative effects of climate change from a risk management perspective (including adaptive management strategies). ▪ Outline the potential effects of, and identify strategies to protect against, extreme weather events, including a 1% AEP storm event and sea level rise as per Coast Protection Board policy and allowances from a risk management perspective, including adaptive management strategies. Include mitigation strategies should the structure not withstand such an event.	STANDARD
CCRE2	Greenhouse Gas Emissions	To ensure the development minimises greenhouse gas emissions associated with its construction and operation so as to meet South Australia's goal to reduce greenhouse gas emissions by more than 50% below 2005 levels by 2030 and achieve net zero emissions by 2050.	▪ Undertake a greenhouse gas assessment that: – identifies all sources GHG emissions that would be generated – provides the estimated annual GHG emissions from each source – provides an estimate of yearly net GHG emissions and emissions intensity, including an uncertainty assessment – provide an inventory of projected annual Scope 1 and Scope 2 emissions for each GHG over the life of the development. Provide an estimate of annual Scope 3 GHG emissions for the life of the development. ▪ Describe how the project will contribute to South Australia's emissions targets i.e. 100% renewable energy target by 2030, 50% emissions reduction below 2005 level by 2030 and zero net emissions by 2050. ▪ Describe measures that have been incorporated in the design to minimise, reduce and ameliorate greenhouse gas emissions, particularly the use of alternative or renewable energy sources and off-sets, energy efficiency and energy conservation measures, and if it incorporates integrated passive design principles and climate-responsive techniques and features and identify barriers to implementation.	DETAILED
CCRE3	Sustainable Use of Resources	To ensure opportunities to procure and use resources efficiently and sustainably are maximised, supporting South Australia's transition to the circular economy	▪ Describe the sustainability objectives of the development and the approach and methodology used to achieve these objectives. ▪ Describe design guidelines for aspects of the development (including transport options) that would be adopted to ensure sustainability. ▪ Describe how sustainability of the development will be audited.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			▪ Identify ways in which power use can be minimised or supplemented, especially using alternative energy sources, energy efficient measures and energy conservation. ▪ Identify ways in which water use can be minimised or supplemented, especially using sustainable water sources, water efficiency measures, and recycling. ▪ Describe the proposed approach to matters such as design, construction methods, materials and equipment to reduce energy use (including vehicle emissions), disposal of waste, water use efficiency during construction and operation over the life of the project. ▪ Detail the infrastructure and service requirements for the development including power, water and waste management; identify required infrastructure upgrades or new installations; and consider access and easement requirements. ▪ Assess the impact of resource use on existing users including food production / horticultural / agricultural activities, and commercial operations.	
CCRE4	Waste Management	To ensure that waste generated, transported or received as part of the development is managed in accordance with the waste hierarchy and in a manner that protects all environmental values.	▪ Identify, quantify and classify all the expected waste streams to be generated from the proposed project activities during the construction, operation, rehabilitation and decommissioning phases of the development. ▪ Assess and describe the proposed management measures against the waste management hierarchy, namely: avoid and reduce waste generation, recycle, reuse, recover, treatment and disposal. This includes the generation, storage and transport of waste. ▪ Prepare a waste management and minimisation strategy (for demolition, construction and operation where relevant), detailing the sources of waste, the location of waste storage (including separation of waste streams, such as recyclables, hard waste and e-waste) and disposal facilities on the site or development -related sites (e.g. laydowns) and provide details of how these facilities will be serviced. ▪ Identify if any waste outputs require further treatment before waste can be disposed of (e.g. low level contaminated waste disposal) and describe any management measures.	STANDARD
Local, Regional and State Economies (LRSE)				
LRSE1	Local, regional and state economies	To ensure adverse economic impacts arising from construction and operation of the development are avoided or mitigated, and net economic benefits to the region and state are created	▪ Provide a full economic analysis of the development including the long-term economic viability and efficiency of the operational aspects of the development, incorporating a regional impact analysis (RIA) and cost-benefit (risk return) analysis (CBA). ▪ The RIA should focus on the direct impact of the project on the local, regional and state economies. The identification of economic impacts should include the prediction of spending on goods, services, taxes etc. during construction and operation of the project and the distribution of income generated by the project. ▪ The CBA should assess the impact of the project on the economic welfare of the economies of interest by estimating a dollar value for as many economic, social and environmental benefits and costs as can reasonably be predicted.	DETAILED
Hazards and Risks (HR)				
HR0	Hazards – General	To ensure the risk of, and adverse impacts from natural and man-made hazards from the development are avoided, minimised or mitigated to protect people, property and the environment.	▪ Undertake a risk assessment which describes the potential risks to people and property that may be associated with the proposed project for all components of the development. ▪ The assessment will address the specific requirements listed in HR 1, 2, 3, 4 below.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
HR1	Bushfire / Fire	As above	▪ Evaluate and identify any bushfire risks on the site, in particular how risks from bushfire will be minimised with regards to the potential for uncontrolled bushfire events, high levels and exposure to ember attack, impact from burning debris, radiant heat, likelihood and direct exposure to flames from a fire front. ▪ Evaluate the risk of fire explosion the site and any potential impacts on human health and to the environment. ▪ Describe measures that would be taken to minimise the risks of these events during all stages of development.	STANDARD
HR2	Flooding	As above	▪ Assess the vulnerability of the area to flooding. Describe the history of flooding onsite and in proximity to the development site. ▪ Identify the potential impacts on people, property, infrastructure and the environment from potential flood risk. ▪ Identify the wider impacts of stormwater and flooding from existing and planned upstream growth areas of the 30-Year Plan for Greater Adelaide. ▪ Include modelling that considers future increased rain intensity scenarios as a result of climate change and future land use change scenarios in the area that may also increase runoff. ▪ Describe measures that would be taken to minimise the risks of these events during all stages of development.	DETAILED
HR3	Site and Groundwater Contamination	As above	▪ Detail any known or potential sources of contaminated soil and/or groundwater that could be impacted by the development. ▪ Identify the potential impacts on people, property, infrastructure and the environment from potential soil and/or groundwater contamination. ▪ Describe measures that would be taken to minimise the risks of these events during all stages of development.	DETAILED
HR4	Dangerous Substances	As above	▪ Identify all dangerous and hazardous substances and any explosives to be used, transported, stored, processed or produced and the rate of usage. ▪ Describe the use, handling and disposal of these materials during construction and operation, with reference to storage (including any associated fire protection facilities). ▪ Describe how hazardous contaminants and waste substances produced by the development will be treated or contained until their disposal at an approved facility. ▪ Evaluate the potential effects of any accidents involving dangerous substances on the environment and public health in the vicinity of the site. ▪ Describe measures that would be taken to minimise the risks of these events during all stages of development.	DETAILED
Land Use and Site Conditions (LUSC)				
LUSC1	Land tenure, protected areas and land use	To ensure that the impacts of development on environmental, social and economic values of adjoining land uses, land tenures and protected areas are avoided or minimised.	▪ Provide details of the development (activities or structures) with the potential to impact on existing land uses, future (envisaged) land uses, land tenures and protected areas that overlap, adjoin or are in the region of the development. ▪ Provide an assessment of local impacts to adjoining land uses and describe any measures to mitigate these impacts. ▪ Assessment to consider City of Salisbury's *Strategic Growth Framework – Waterloo Corner and Bolivar Corridor*.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
Physical Environment (PE)				
PE1.1	Coastal	To ensure the natural features and processes of coastal systems are protected so that the environmental values of the coast are maintained.	<u>Coastal Systems</u> ▪ Describe existing coastal environmental values including estuarine, littoral and marine environmental values that could be impacted by construction or operation of the development. ▪ Identify the flooding and erosion risks to the site (including flooding and erosion exacerbated by sea level rise and extreme weather events) and measures to reduce the risks. ▪ Identify any potential for Coastal Acid Sulfate Soils (CASS) to be encountered on the site and how this might be mitigated (refer to the Coast Protection Board policy on CASS). ▪ Assess the potential impacts to the coastal system and existing uses from the development and propose mitigation measures to avoid or minimise those impacts during construction and operation. ▪ If MNES have been identified, undertake an assessment of potential impacts relevant to the MNES	STANDARD
PE1.2	Marine	To ensure the quality and productivity of marine waters, sediment and biota are protected so that environmental values are maintained.	<u>Marine Waters</u> ▪ Assess the potential impacts of the proposed project's activities in marine waters including any potential impacts on marine parks, commercial or recreational fisheries, effects of the development on nursery habitat (e.g. seagrass beds, reefs, or, mangroves) and target species (such as prawns and fish). ▪ The assessment of impacts will: – Consider spills of fuels and chemicals from the development. – Consider run-off / discharge from the development. – Propose mitigation measures to avoid or minimise those impacts during construction and operation. – Consider the potential impacts of water discharge on the Bolivar channel, other users of the channel and the receiving environment. ▪ If MNES have been identified, undertake an assessment of potential impacts relevant to the MNES	DETAILED
PE2	Soils, Landform and Geology	To ensure development is undertaken in a manner that protects the productivity and quality land including, soil, subsoil and landform and avoids impact to other environmental values.	▪ Provide a detailed description of the soils, landform and geology in the area of the development including the potential for water and wind erosion, soil salinity, acid sulfate soils and soil contamination. ▪ Describe the development activities with potential to impact on soils and ground stability. ▪ Identify the risks of contamination of land from spills of fuel (or other toxic substances). Describe measures for the prevention and containment of spills, describe the contingency plans to be implemented in the event of spills, and comment on their expected effectiveness. ▪ If acid sulfate soils would be disturbed or unexpectedly encountered during construction, describe measures to avoid oxidation of the sulfides, treat and neutralise the acid if it forms and manage any excavated material. ▪ Ensure that appropriate soil contamination investigations have been undertaken and that soil generated from earthworks is managed in accordance with EPA guidelines, including for re-use on site or removal of material off-site for re-use, treatment or disposal.	STANDARD
PE3	Surface Water and Groundwater	To ensure the quality of groundwater and surface water is protected so that environmental values including ecological health, land uses and the welfare and amenity of people are maintained.	<u>Surface Water</u> ▪ Describe existing surface water conditions upstream and downstream of the site (including seasonal variations and variations with flow). Water quality, any existing site contamination and potential sources of surface water pollution should be addressed.	STANDARD

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			▪ Describe the potential for pollution (e.g. sediment plumes, spills to land and water, discharge of stormwater and wastewater, dewatering) of water bodies, watercourses, drainage channels, wetlands and floodplains during construction and operation. ▪ Describe potential alteration to surface water flows as a result of the development. ▪ Impact assessment to consider impacts to downstream water users including food production / horticultural / agricultural land uses. ▪ Describe the proposed mitigation measures to protect environmental values and downstream water users. Provide details of proposed wastewater and stormwater management, as well as any water sensitive design features as part of the development. ▪ Describe the options for supplying water to the development including potable water (if relevant) and temporary demands during the construction period. Describe on-site storage and treatment requirements for wastewater from accommodation and/or offices and workshops. ▪ Describe measures for storage and management of stockpiled topsoil and subsoils during the construction phase. <u>Ground Water</u> ▪ Describe the known groundwater related environmental conditions including quality and significance of groundwater in the area of the development and any surrounding area potentially affected by the proposed development's activities. Groundwater testing is required. ▪ Describe the potential changes to hydrology (including water quality), as a result of the proposal, and the implications of these changes. Consider impacts to existing groundwater wells and aquifers. ▪ Describe stormwater and wastewater management and the potential impact on groundwater resources with regard to fuel and chemicals used in construction and / or operation of the development. Describe measures proposed for management of stormwater and wastewater during construction and operation to avoid impacts to groundwater.	
Design (DQ)				
DQ1	Urban Design and Place-Making	To ensure development promotes the value and quality of good design across South Australia's built environments, and that contributes to healthy neighbourhoods, supports innovation and the integration of smart and sustainable technologies.	▪ Demonstrate the proposal's servicing strategy including the location of any required services infrastructure and the proposed material/screening treatment of any visible services. ▪ Describe the proposal's Environmentally Sustainable Design (ESD) strategy and targets. ▪ Describe how the proposal considers Crime Prevention Through Environmental Design (CPTED) principles. ▪ Provide visualisations (including long view perspectives) to demonstrate the proposal in context. ▪ Provide a full set of documentation including site plan, plans, elevations (including streetscape elevations where relevant), sections/site sections and shadow diagrams.	STANDARD
Social and Community (SC)				
SC1	Aboriginal Cultural Heritage	Avoid adverse effects on Aboriginal cultural heritage values and maximise opportunities to appropriately complement and preserve these values.	▪ Describe how the proposed location and /or design avoids and / or mitigates potential impacts and risks to known and unknown Aboriginal heritage. Where impacts to Aboriginal heritage cannot be avoided, provide detailed justification for this. ▪ Undertake an on-ground cultural heritage survey undertaken by qualified heritage experts (ideally an anthropologist and an archaeologist) in consultation with the RARB/Traditional Owner representatives. This survey should cover the entirety of the project area. ▪ Preparation of a subsequent Aboriginal heritage report which should:	DETAILED

Library Ref	Environmental Attribute	Objective	Method of Investigation	Level of Assessment
			– be prepared by a suitably qualified heritage expert – clearly outline the results of the heritage survey, including the location of Aboriginal heritage within the project area, as well as any areas where unrecorded sub-surface Aboriginal heritage is likely to occur – consider the results of the AAR central archives search results, as well as any other searches of local archives or other relevant databases – consider the views of the RARB, or where no RARB is appointed, Traditional Owner representatives. Note that any sensitive or restricted information relating to Aboriginal heritage must remain confidential, and should not be publicly disclosed – consider both the archaeological and anthropological/ethnographic values of the area, based on relevant literature, previous heritage assessments etc. – consider the project's potential impacts to known and unknown Aboriginal heritage – provide recommendations for the management of Aboriginal heritage during project works, in light of the above ▪ Preparation of a Cultural Heritage Management Plan (CHMP) by an appropriately qualified heritage expert in consultation with the RARB/Traditional Owner representatives that: – addresses the potential for the project to impact known and unknown Aboriginal heritage – outlines measures agreed with the RARB/Traditional Owner representatives to be taken in order to manage and protect Aboriginal cultural heritage wherever possible – establishes processes for the management and protection of Aboriginal heritage before, during and after the proposed development, which may include: o establishment of avoidance or 'no-go' zones to avoid known heritage or areas of identified high risk o establishment of bunting or fencing around known Aboriginal heritage o conditional access areas (e.g. limits on heavy machinery in particular areas) o the engagement of Aboriginal heritage monitors to observe ground disturbing works in high risk areas - noting that the location and details about the heritage must not be made public. – includes an Aboriginal heritage discovery protocol, outlining the steps that will be taken in the event of an Aboriginal heritage discovery	
SC2	Community Wellbeing / Social Impact Assessment	To ensure adverse effects on the community near the development are avoided or minimised including with regard to community cohesion, access to services and facilities and health impacts and capitalise on opportunities to enhance benefits for communities.	▪ Provide a social impact assessment (SIA) of the development which addresses: – the existing social environment of communities potentially impacted by the project – the potential social impacts (both positive and negative) of the project, and how they will be managed and monitored – workforce management, housing and accommodation – local business and industry procurement – health and community wellbeing	STANDARD
SC3	Heritage Places and Areas	To ensure that the nature and scale of the development does not compromise the recognised heritage significance of a heritage place or heritage area.	Provide details of the location, nature and known potential heritage values of all historic heritage potentially affected by the development particularly State and Commonwealth-listed places and areas.	STANDARD

Table 4: Scoping Analysis for Level of Assessment

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
Amenity and Environmental Quality (AEQ)						
AEQ1	Air Quality	▪ Emissions during construction: dust, vehicle emissions ▪ Emissions from ongoing operations: dry graphite, product processing, transporting and bagging, extent of gaseous emissions unknown (depends on fuel type and product processing)	▪ Different sources / impacts during construction and operation. ▪ Collection, containment & treatment systems and technology exists to contain fugitive dust and gaseous emissions.	▪ Direct: transmission of dust and emissions from on-site activities.	▪ Existing air quality 'good' (Pt Adelaide monitoring station). ▪ Pollution levels did not exceed EPP in 2021. ▪ Sensitive horticultural, agricultural and possibly residential neighbours. ▪ Land-based aquaculture licence approx. 800m from site. ▪ Sensitive coastal / marine environment within 3km from site. ▪ Dispersion / climate / wind patterns etc unknown.	DETAILED
AEQ2	Noise / Vibration	▪ Noise from industrial equipment, heavy vehicle movements.	▪ Construction (7am to 7pm, Monday to Sunday with potential for overnight work). ▪ Operation (24/7). ▪ Impact above existing baseline noise unknown. ▪ Transmission of noise over flat landscaping.	▪ Direct: transmission of noise from on-site activities.	▪ Rural Horticulture Zone comprises food production activities with established dwellings. ▪ Noise generated by Nth-Sth Motorway, agriculture & industry. ▪ Sparsely settled area. ▪ Nearest residential suburbs 2km	STANDARD
AEQ3	Transport and Traffic	▪ Deterioration to road pavements. ▪ Disruption to existing traffic movements. ▪ Changes to traffic movements. ▪ Interactions between light and heavy vehicles. ▪ Single access point proposed to subject site.	▪ Ongoing: increasing until completion of Stage 2. ▪ Impacts at greatest overlap of operation of Stage 1 and construction of Stage 2. ▪ Interaction with existing local road users. ▪ Large geographical extent (movement of goods to and from site). ▪ All movements limited to existing road networks. ▪ All parking and manoeuvring within subject site.	▪ Direct: light and heavy vehicle movements to and from facility. ▪ Indirect: transportation of goods to and from site may have secondary impacts to roads, road users, communities along the transportation routes.	▪ Site well connected to key arterial transport routes. ▪ Robinson Road in poor condition and not suitable for heavy vehicles – requires upgrade to cater for proposed development; not gazetted for heavy vehicles. ▪ Intersections may require upgrade to cater for proposed development. ▪ Vehicle traffic generated locally by users seeking access to Nth-Sth Motorway: ▪ Northern section of Robinson Rd: residents, rec users of St Kilda playground, commercial & horticultural business. ▪ Southern section of Robinson Rd: small number of	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
					horticultural business and rec users of Go-Kart and Gun clubs. ▪ 250 vehicles per day on Waterloo Corner Interchange Rd	
AEQ4	Visual Amenity	▪ Industrial buildings with discharge stacks, storage silos, reagent tanks, storage structures and industrial equipment. ▪ Maximum structure height approx. 26m. ▪ Visual impact of strategies adopted for stormwater and flood mitigation.	▪ Temporary visual intrusion during construction from construction machinery etc. ▪ Ongoing: permanent structures. ▪ Significant increase in scale of development compared to existing patterns of development. ▪ Geographical reach unknown (requires analysis of elevated viewpoints) – may be visible from Nth-Sth Motorway.	▪ Direct ▪ Perceived: impact on amenity can be subjective	▪ Visually 'open' landscape. ▪ Flat topography with very long viewing distances from any elevated positions. ▪ Significant areas of minimally developed or undeveloped land. ▪ Proximity to coast, St Kilda township, tourist destinations (St Kilda playground, tramway museum, mangroves), marina.	DETAILED
▪ Biological Environment (BE)						
BE1	Biosecurity	▪ Potential introduction of weeds / pathogens from vehicular to surrounding horticultural / agricultural areas.	▪ Ongoing. ▪ More likely during construction phase with movement of soil etc. ▪ Low severity given transport routes and nature of development.	▪ Direct: movement of pathogens by vehicles to/from site. ▪ Indirect: spread of pest species elsewhere.	▪ Vehicular access to site does not traverse any environmentally sensitive areas. ▪ Proximity to horticultural and agricultural land uses. ▪ Proximity to 'Zoo Block'	STANDARD
BE2	Marine Flora and Fauna	▪ Treated wastewater discharged to the marine environment at Freshwater Creek via the Bolivar WWTP outfall channel.	▪ Ongoing arrangement for disposal of treated wastewater. ▪ Off-site impact. ▪ Significant impacts on MNES not expected (based on self-assessment).	▪ Direct: treated wastewater entering the marine ecosystem may impact water quality, habitats. ▪ Indirect: changes to water quality / natural processes may impact flora / fauna, fishing industry (recreational and commercial). ▪ Cumulative: consider existing discharge via the outfall channel including the addition of BDC's high salinity discharge with evidence of nutrient enrichment around the discharge location as the salinity is consistent with the receiving environment as mixing occurs almost immediately; consider existing	▪ 2.5km from Adelaide Dolphin Sanctuary; St Kilda Aquatic Reserve. ▪ 2.8km from International Bird Sanctuary. ▪ Bolivar WWTP outfall channel enters the gulf at Freshwater Creek – likely EPBC listed spp at this location. ▪ Receiving environment already a stressed ecosystem. ▪ The receiving environment consists of mangroves and seagrass habitats that have the capacity to be impacted by the discharge from the bolivar channel. The salinity of the discharge and how it interacts with the marine environment will determine the fate of the	DETAILED

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
				condition of receiving environment.	discharge. For example, indicators of nutrient enrichment were previously found to the north of the channel outfall as the fresher water would travel along the surface prior to mixing with the marine environment. ▪ The Clinton biounit is in good condition but showing signs of nutrient enrichment. ▪ Aquatic resources (marine scalefish, prawns, blue swimmer crabs) and habitats (i.e. nursey areas) with discharge location. ▪ Both mangroves and seagrass habitats are nursery grounds for numerous vertebrate and invertebrate species.	
BE3	Terrestrial Flora and Fauna	▪ Clearance of native vegetation. ▪ Clearance of significant and/or regulated trees. ▪ Displacement of fauna. ▪ No clearance or disturbance to vegetation at the Freshwater Creek outfall.	▪ Clearance limited to BAM site. ▪ Clearance to occur in a staged manner, consistent with development stages. ▪ Possible retention of eastern boundary vegetation to provide screening. ▪ Possible retention of buffer vegetation around site boundaries for midge management. ▪ Site not likely to have any interaction with significant wildlife / movement corridors. ▪ Significant impacts on MNES not expected (based on self-assessment). ▪ Consider impacts beyond subject site with respect to due and noise (noting 24hr operations).	▪ Direct	▪ History of grazing and historical land modification – weeds prevalent. ▪ Site is mostly cleared with patches of planted amenity scrub (exotic understorey). ▪ Site currently grazed ▪ Some re-emergent native veg associations. ▪ Likely numerous regulated / significant trees. ▪ Overall low flora species richness. ▪ No state / national significant fauna species observed on site.	STANDARD
Climate Change and Resource Efficiency (CCRE)						
CCRE1	Climate Change Adaptation	▪ Potential impact to subject site from climate change impacts. ▪ Facility contributes to manufacture of lithium-ion batteries – to assist in	▪ Site is not defined as ‘coast’ or ‘coastal land’ and therefore not directly vulnerable to sea level rise, coastal erosion and/or or storm events.	▪ Indirect	▪ Low-lying land. ▪ Not within Coastal Areas Overlay or Coastal Flooding Overlay of P&D Code.	STANDARD

Library Ref	Environmental Attribute	Description	Scale of Impact	Nature of Impact	Sensitivity of Receiving Environment	Level of Assessment
		transition to low carbon economy.	▪ Scoping application does not identify any other vulnerabilities to climate change (i.e. frequent & severe bushfires, heatwaves, drought).		▪ Does not meet Coast Protection Board definitions for 'coast', 'coastal land'.	
CCRE2	Greenhouse Gas Emissions	▪ Emissions (type and amount) from the facility are unknown.	▪ Spatial extent of emissions transmission unknown. ▪ Flow on benefits from use of lithium-ion batteries in renewable energy applications are global.	▪ Direct ▪ Indirect	▪ Proximity to coast. ▪ Proximity to sensitive receivers within 500m.	DETAILED
CCRE3	Sustainable Use of Resources	▪ Facility requires 120MW of power at peak production. ▪ Water intensive – requires 2.8-4.8ML of water / day at peak production. ▪ Graphite is a non-renewable resource. ▪ Infrastructure and service requirements – consider upgrade and easement requirements.	▪ Renascor investigating water and power supply options – may include reuse of WWTP outfall water. ▪ Impact dependent on water and power supply / type.	▪ Direct: high daily water and power usage ▪ Indirect: depletion of non-renewable resources	▪ Site is proximate to SEAgas pipeline, water, power, and freight networks. ▪ No sewer connection. ▪ On-site waste management will be required both for produced waste streams and on-site amenities.	STANDARD
CCRE4	Waste Management	▪ Production of liquid and solid waste / by-products.	▪ Different wastes during construction and operation. ▪ Ongoing operational impact. ▪ Renascor investigating options for reuse and recycling of waste to minimise impact.	▪ Direct: new waste streams ▪ Indirect ▪ Cumulative: consideration of existing discharge and pollutants to marine environment	▪ Proximity to sensitive coastal and marine environment. ▪ Proximity to food production / horticultural / agricultural land uses. ▪ Proximity to dwellings. ▪ Proximity to the Bolivar WWTP outfall channel.	STANDARD
Land, Regional and State Economies (LRSE)						
LRSE1	Local, regional and state economies	▪ Job creation during construction and operation. ▪ Supports Renascor's Siviour mine operations.	▪ Job creation during construction and operation. ▪ Positive economic benefit of BAM facility to LGA and potentially wider for supply of skilled labour and provision of equipment.	▪ Direct: job creation ▪ Indirect: indirect jobs in transport and logistics, support functions (food, accommodation etc)	▪ Within Salisbury LGA. ▪ Unemployment rate 7.4%. ▪ Primary industries of employment include advanced manufacturing required fewer but skilled workers.	DETAILED
Hazards and Risks (HR)						
HR1	Bushfire	▪ Standard risk of bushfire. ▪ Potential risk from explosions within facility causing fire / damage.	▪ Severity, duration and extent of impact would depend on type of fire emergency.	▪ Direct: damage to property, risk to life ▪ Indirect: transmission of smoke, fumes, pollutants via air and surface waters;	▪ Not within a bushfire risk area. ▪ Nearest CFS brigade (Salisbury) located approx. 8.5km / 12-minute drive from the east.	STANDARD

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				impacts to adjacent land users in event of emergency	▪ Nearest SES brigade (Salisbury) located approx. 12km / 18 minute drive from the south-east. ▪ Limited vegetation around site. ▪ Adequate access to evacuate site.	
HR2	Flooding	▪ Potential inundation of site without appropriate stormwater management. ▪ Infrastructure agreements requirement for necessary works.	▪ Detailed design to incorporate adequate stormwater management with diversion / treatment as required. ▪ Consider impacts of stormwater and flooding from existing and planned upstream growth areas of 30-year plan for Greater Adelaide.	▪ Direct: damage to property	▪ Within Hazards (Flooding - General) Overlay. ▪ Site is known to retain stormwater and be inundated / flooded and lacks infrastructure.	DETAILED
HR3	Site and Groundwater Contamination	▪ Potential for spills / leaks of pollutants during operation of the facility.	▪ Potential for severe impacts if pollutants were to enter drainage channels and sensitive coastal / marine environment. ▪ Leachates can travel off-site through soil and groundwater – potential long term impact and remediation implications.	▪ Direct ▪ Indirect	▪ Soil contamination not identified through Preliminary Site Investigation (PSI). ▪ Groundwater testing has not been undertaken. ▪ Sensitive marine / coastal environment to west. ▪ Shallow water table and expected higher levels of salinity.	DETAILED
HR4	Dangerous Substances	▪ Several potentially dangerous chemicals / materials used in facility (e.g. sulfuric acid) ▪ Potential for spills / leaks of pollutants during operation of the facility. ▪ Asbestos identify on site.	▪ Existing asbestos limited to subject site and at surface level; can be removed by licenced professional. ▪ Potential for severe impacts to health and environment if hazardous substance not managed correctly.	▪ Direct ▪ Indirect	▪ Asbestos containing materials identified on ground surface. ▪ Sensitive marine / coastal environment to west.	DETAILED
Land Use and Site Conditions (LUSC)						
LUSC1	Land tenure, protected areas and land use	▪ Loss of agricultural land to an industrial land use – at a scale and intensity not envisaged and value adding to any horticultural / agricultural enterprise. ▪ Potential interface impacts. ▪ Consider impact to future (envisaged) land uses in the zone.	▪ Ongoing – land unavailable for intended land use for life of project. ▪ Availability of and demand for agricultural land in the area unknown. ▪ Viability of subject site for agricultural unknown. ▪ Interface impacts may extend to locality and other land uses.	▪ Direct: new land use	▪ 20.5ha land parcel. ▪ Zoned Rural Horticulture. ▪ Industry is Performance Assessed in the zone. ▪ Adjacent the Infrastructure Zone and close to Open Space & Deferred Urban Zones. ▪ Site owned by SA Water – part of the buffer areas for the Bolivar WWTP.	STANDARD

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					▪ Option to lease from SA Water executed (40 years). ▪ Land is currently vacant / underutilised ▪ Adjacency to food production area. ▪ Land-based aquaculture licence approx. 800m from site (FT00036) ▪ Gateway to St Kilda township and environs including several facilities supporting an important tourism precinct.	
Physical Environment (PE)						
PE1.1	Coastal	▪ WWTP outfall channel passes through coastal land – no physical alteration proposed	▪ Impact is not physical (i.e. no physical alteration to coastal environment) ▪ ..	▪ Indirect – subject site is not within a coastal area however the wastewater discharge interacts with the coast	▪ Proximity to coast (west of site) with samphire marshland, coastal mangroves. ▪ Site is not within the Coastal Areas Overlay (over 2km from overlay boundary).	STANDARD
PE1.2	Marine	▪ Treated wastewater may be discharged to the marine environment via the Bolivar WWTP outfall channel.	▪ Impact is not physical (i.e. no physical alteration to marine environment) ▪ Ongoing arrangement for disposal of treated wastewater. ▪ Risk to quality of marine waters.	▪ Direct – discharge of waste water into marine environment ▪ Cumulative – consider existing water sources / quality within WWTP channel	▪ Sensitivity of marine environment from changes in water discharges.	DETAILED
PE2	Soils, Landform and Geology	▪ Erosion following removal of vegetation. ▪ Sedimentation of watercourses. ▪ Limited cut and surface levelling required. ▪ Some fill required to create elevated finished floor level.	▪ Modification to landform will occur during construction phase. ▪ Severity is minimised due to existing topography. ▪ Limited to subject site.	▪ Direct	▪ Quaternary alluvial and fluvial sediments, overlaying the St Kilda formation. ▪ Not within Acid Sulfate Soils Overlay – none identified through PSI. ▪ Gently undulating topography – less than 2m elevation variance across site.	STANDARD
PE3	Surface Water and Groundwater	▪ Sedimentation, run-off. ▪ Spills. ▪ Acid leachate ▪ Potential discharge of treated wastewater to the Bolivar WWTP outfall channel.	▪ Can extend beyond site.	▪ Direct ▪ Indirect: movement of water off site	▪ No natural surface water features on site, or within 2km – St Kilda mangroves in 2.4km to west. ▪ Groundwater depth 2-5m. ▪ Underlying geology contributes to tendency to retain stormwater on site. ▪ Prescribed Wells Area Overlay.	STANDARD

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					▪ Subject site shares underground aquifers with adjacent food production area.	
Design (DQ)						
DQ1	Urban Design and Place-Making	▪ Bulk and scale of industrial buildings	▪ Viewshed / zone of influence unknown. ▪ Impact extends beyond the site.	▪ Direct	▪ Semi-rural landscape – agricultural structures, few dwellings, low scale of development. ▪ Visually 'open' landscape.	STANDARD
Social and Community (SC)						
SC1	Aboriginal Cultural Heritage	▪ One known cultural heritage site. ▪ Several known sites within 5km of site. ▪ Possible chance finds during construction.	▪ Risk of impact increases during construction / earthworks. ▪ Ongoing presence of known heritage site. ▪ Limited to subject site and not within development footprint.	▪ Direct	▪ Native title extinguished over site due to ILUA. ▪ Proximity to coast. ▪ Disturbed site with history of grazing.	DETAILED
SC2	Community Wellbeing / Social Impact Assessment	▪ Community concern regarding industrial land use in horticultural area. ▪ Community concerns regarding environmental impacts. ▪ New interface impacts. ▪ Positive impacts e.g. employment opportunities. ▪ Influx of workers during construction and operation – requirements for housing, services etc.	▪ Impact likely to extend to local sensitive receivers. ▪ Wider community concern for sensitive coastal / marine environments.	▪ Direct ▪ Perceived: environmental and health impacts, public safety risk	▪ Small community of residents. ▪ Numerous interest / stakeholder groups associated with the mangroves, wetlands, coastal environments. ▪ Highly sensitive coast, marine and mangroves – history of damage from adjacent land uses.	STANDARD
SC3	Heritage Places and Areas	▪ Possible chance finds during construction.	▪ Risk of impact increases during construction / earthworks.	▪ Direct	▪ Nil registered European heritage places on site. ▪ Closest heritage place is 3.5km from subject site. ▪ Heavily disturbed site.	STANDARD