

APPENDIX 3

CONSOLIDATED MANAGEMENT AND MITIGATION MEASURES

Appendix 3 – Summary of Management and Mitigation Measures

A-CAES has committed to the implementation of the management and mitigation measures identified in the EIS. The management and mitigation measures will be implemented through a Construction Environmental Management Plan (CEMP), Operational Environmental Management Plan (OEMP) and Decommissioning and Rehabilitation Strategy. These plans will be prepared sequentially, prior to each stage of the Project by A-CAES and any relevant specialists and contractors, and in consultation with relevant Government Agencies. The following table provides a consolidated list of the management and mitigation measures applicable to the Project and relevant timing for implementation.

Issue	Management and/or Monitoring Measure	Timing
General	A-CAES NSW will prepare and implement a Construction Environmental Management Plan (CEMP) for the Project, incorporating all relevant management and mitigation measures outlined in the EIS and relevant specialist assessments.	Prior to construction
	A-CAES NSW will prepare and implement an Operation Environmental Management Plan (OEMP) for the Project, incorporating all relevant management and mitigation measures outlined in the EIS and relevant specialist assessments.	Prior to operation
	Should the Project require decommissioning, A-CAES NSW will prepare and implement a Decommissioning and Rehabilitation Strategy for the Project, incorporating all relevant management and mitigation measures outlined in the EIS.	Two years prior to decommissioning
Biodiversity	<p>The CEMP will include the development and implementation of biodiversity management measures (as outlined in Section 8.4 of the BDAR, which are likely to include:</p> <ul style="list-style-type: none"> • Ecologist pre-clearance surveys and supervision of works and tree-felling procedures • Permanent fauna exclusion (non-barbed) fencing installed at the SCES Facility • Implementation of vegetation protection zones for areas to be retained • weed management • fencing and access control • bushfire management • erosion and sediment control • environmental awareness workforce education and training 	During Construction

Issue	Management and/or Monitoring Measure	Timing
	A-CAES NSW will develop a Biodiversity Offset Strategy to ensure that the credit liability of the Project can be acquitted in accordance with the requirements of the Biodiversity Offset Scheme prior to the commencement of construction.	Prior to construction
Aboriginal Cultural Heritage	A-CAES NSW will prepare an Aboriginal Cultural Heritage Management Plan (CHMP) in consultation with the RAPs and relevant government agencies, incorporating the following mitigation and management strategies and staged salvage recommendations.	Prior to and during construction
	<p>Avoiding and conserving known sites wherever practicable:</p> <ul style="list-style-type: none"> • known sites outside of the proposed disturbance area will be avoided and where necessary demarcated with temporary fencing or flagging during construction • transport routes around the proposed disturbance area will be planned and managed to avoid impacting existing sites or areas of high archaeological sensitivity • relevant construction personnel will be provided with maps of site boundaries to guide avoidance activities • all construction and facility workers involved in works with potential to interact with or impact on heritage values will undergo a cultural heritage induction facilitated by the Wilyakali Aboriginal corporation to communicate the importance of protecting cultural heritage, and the legal, ethical, social and practical issues involved. 	During construction
	During the detailed design phase – reviewing opportunities for further impact avoidance where practicable (e.g., siting the locations of power poles to avoid existing sites and areas of high archaeological sensitivity).	Prior to construction
	Where disturbance is unavoidable, implement a program of staged archaeological salvage.	During construction
	An unexpected finds protocol will be established and included in the CEMP and OEMP.	During construction and operation
	In the event that Ancestral remains, or suspected Ancestral remains, are encountered during any of the proposed construction activities or salvage actions, all work must stop and the procedures outlined in the Salvage Methodology be implemented.	Prior to construction

Issue	Management and/or Monitoring Measure	Timing
	<p>Development of the CHMP will include the development and implementation of a staged salvage program, with surface salvage occurring across the disturbance area and subsurface salvage within areas of high archaeological sensitivity and at identified sites with predicted moderate-high or greater scientific value (as shown on Figure 6.4 of the EIS.</p>	<p>Prior to construction</p>
<p>Noise and Vibration</p>	<p>The CEMP and OEMP will include monitoring and management controls to manage potential noise and vibration impacts associated with construction activities and site operation including:</p> <ul style="list-style-type: none"> • noise objectives and targets consistent with the Development Consent • noise management measures in place at the site • provision of general noise awareness training for key operational staff • noise monitoring processes implemented at the site to provide for ongoing noise management, including monitoring and determination of compliance with relevant noise criteria provided in the Development Consent • stakeholder consultation • complaint/enquiry handling process including maintenance of a 24-hour community contact line • a roles and responsibilities matrix, with responsibilities being clearly defined through all levels within the operation. 	<p>Construction and Operation</p>
	<p>The CEMP/OEMP will include the development of a Trigger Action Response Plan (TARP) that includes an Incident Investigation and Response process that:</p> <ul style="list-style-type: none"> • is implemented following notification of elevated noise levels through compliance/validation measurements or complaint • records the actions taken by site personnel following notification of elevated noise levels including mitigation measures undertaken to achieve compliance • in the event that an exceedance of the noise impact assessment criteria is identified, guides the notification process for relevant government agencies and any affected landowners within the statutory timeframe. <p>If a non-compliance is identified or a request for installation of noise impact mitigation measures is received, the CEMP/OEMP will document the corrective or preventative actions to be implemented in accordance with the Development Consent. This will also include a review process required to assess the effectiveness of the corrective/preventative action taken and specify the timeframe for</p>	<p>Construction and Operation</p>

Issue	Management and/or Monitoring Measure	Timing
	<p>the review following the implementation of the corrective action.</p> <p>In the event that an exceedance of the noise criteria is identified, A-CAES NSW will notify the relevant government agencies, report within the statutory timeframes and liaise with any affected landowners.</p>	
	<p>A-CAES will undertake further assessment of noise levels associated with operational activities during the detailed design phase of the Project to confirm the mitigation measures required for the SCES Facility to achieve approved noise limits.</p>	Detailed Design
	<p>The CEMP will include the development of noise and vibration mitigation measures generally in accordance with the <i>Interim Construction Noise Guideline</i> (ICNG,2009) including:</p> <ul style="list-style-type: none"> • all potential significant noise and vibration generating activities associated with the Project • feasible and reasonable mitigation measures to be implemented • a monitoring program to assess performance against relevant noise and vibration criteria • arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures • contingency measures to be implemented in the event of non-compliance with noise and vibration criteria. • The CEMP and NVMP will be regularly updated to account for any changes in noise and vibration management of the Project. • For best practice, the additional mitigation measures outlined in the Transport for NSW (TfNSW) Construction Noise and Vibration Guideline (CNVG, August 2016) should be adopted. • All sensitive receivers likely to be affected by noise levels greater than 10 dB above the NML will be notified prior to commencement of any planned works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of: <ul style="list-style-type: none"> ○ the Project ○ the construction period and construction hours ○ contact information for project management staff ○ complaint and incident reporting ○ how to obtain further information. • All employees, contractors and subcontractors will receive an environmental induction. The induction will include applicable noise mitigation measures; hours of works; any limitations on high noise-generating activities; location of nearest sensitive receivers; designated parking areas; relevant approval conditions and incident procedures. • Where feasible, contractors are to keep noise to a minimum including no shouting or the use of 	During construction

Issue	Management and/or Monitoring Measure	Timing
	<p>loud stereos/radios on site in areas where it may be audible at sensitive receivers.</p> <ul style="list-style-type: none"> • Where practical, no dropping of materials from height, throwing of metal items or slamming of car doors. • The noise levels of plant and equipment should have operating Sound Power or Sound Pressure Levels consistent with those nominated in Appendix C of the NVIA. • Non-tonal reversing beepers should be fitted and used on all construction vehicles and mobile plant used regularly on site and for any out of hours work. • Limit the use of engine compression brakes. • Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration should be scheduled during less sensitive time periods. • Noise emitting plant to be directed away from sensitive receivers and to be throttled down or shut down when not in use. • In the event of noise complaints from the community, a noise verification program should be carried out in accordance with the NVMP for the Project. 	
	<p>In the event that any vibration-generating equipment would be used within the recommended safe working distances, A-CAES will apply the following:</p> <ul style="list-style-type: none"> • an independent specific structural assessment is undertaken on the structure to ascertain the structural integrity and its ability to withstand vibration, and establishment of an appropriate vibration criterion • a dilapidation survey is undertaken on the structure prior to works commencing, and regular inspection of the structure throughout the construction activities • pre-construction vibration monitoring to establish baseline vibration impacts induced on the structure from road traffic • establish site specific vibration minimum working distances for the nominated equipment on site • where appropriate, continuous vibration monitoring is conducted on the structure for the duration of the period of construction while vibration generating equipment is used. The vibration logger should be equipped with the facility to remotely alert the site to reduce or cease construction activities if vibration levels are approaching the criterion threshold. <p>The management and monitoring of construction blasting associated with the construction of the SCES Facility and associated infrastructure will be in accordance with blast management plan for Perilya Broken Hill Limited (Perilya) Potosi Operations.</p>	<p>During construction</p> <p>During construction</p>

Issue	Management and/or Monitoring Measure	Timing																											
	<p>A-CAES NSW will undertake a combination of attended monitoring and noise logging for compliance assessment within three (3) months and once following nine (9) months of the commencement of the Project operating at full capacity.</p> <p>The attended noise should be completed at three (3) locations surrounding the Project, monitoring locations (NM01, NM02 and NM03). Monitoring will also be undertaken at R1 to assist with validating the noise modelling outputs.</p> <p>Recommended Noise Monitoring Locations and Criteria</p> <table border="1" data-bbox="474 518 1566 1070"> <thead> <tr> <th data-bbox="474 518 632 691" rowspan="2">Noise Monitoring Location</th> <th data-bbox="632 518 842 691" rowspan="2">Receiver Area/Residences represented by monitoring location</th> <th data-bbox="842 518 1108 691" rowspan="2">Possible real-time noise monitor location ¹</th> <th colspan="2" data-bbox="1108 518 1566 594">Proposed Noise Monitoring Criteria for the Revised Project, dB(A)</th> </tr> <tr> <th data-bbox="1108 594 1373 691">Day/Evening/Night LAeq,15minute</th> <th data-bbox="1373 594 1566 691">Night LA1,1minute</th> </tr> </thead> <tbody> <tr> <td data-bbox="474 691 632 769">NM01</td> <td data-bbox="632 691 842 769">NCA 1</td> <td data-bbox="842 691 1108 769">R1 - Lot 7333 DP1201053</td> <td data-bbox="1108 691 1373 769">- ²</td> <td data-bbox="1373 691 1566 769">- ²</td> </tr> <tr> <td data-bbox="474 769 632 847">NM02</td> <td data-bbox="632 769 842 847">NCA 1</td> <td data-bbox="842 769 1108 847">R2 - 18817 Barrier Highway, Broken Hill</td> <td data-bbox="1108 769 1373 847">46/35/35</td> <td data-bbox="1373 769 1566 847">52</td> </tr> <tr> <td data-bbox="474 847 632 925">NM03</td> <td data-bbox="632 847 842 925">NCA 2</td> <td data-bbox="842 847 1108 925">R9 - 770 Silver City Highway, Broken Hill</td> <td data-bbox="1108 847 1373 925">40/35/35</td> <td data-bbox="1373 847 1566 925">52</td> </tr> <tr> <td data-bbox="474 925 632 1070">NM04</td> <td data-bbox="632 925 842 1070">NCA 2</td> <td data-bbox="842 925 1108 1070">R10 - 1 Mann Street, Broken Hill Broken Hill Outback View Holiday Park</td> <td data-bbox="1108 925 1373 1070">58/48/43</td> <td data-bbox="1373 925 1566 1070">-</td> </tr> </tbody> </table>	Noise Monitoring Location	Receiver Area/Residences represented by monitoring location	Possible real-time noise monitor location ¹	Proposed Noise Monitoring Criteria for the Revised Project, dB(A)		Day/Evening/Night LAeq,15minute	Night LA1,1minute	NM01	NCA 1	R1 - Lot 7333 DP1201053	- ²	- ²	NM02	NCA 1	R2 - 18817 Barrier Highway, Broken Hill	46/35/35	52	NM03	NCA 2	R9 - 770 Silver City Highway, Broken Hill	40/35/35	52	NM04	NCA 2	R10 - 1 Mann Street, Broken Hill Broken Hill Outback View Holiday Park	58/48/43	-	During Operation
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Air Quality	<p>The CEMP will include relevant standard dust mitigation measures, including:</p> <ul style="list-style-type: none"> • watering of haul routes • minimising vehicle speeds on unsealed roads • modifying activities if excessive dust is visible 	During construction																											

Issue	Management and/or Monitoring Measure	Timing
	<ul style="list-style-type: none"> • minimising the areas of disturbed land • water sprays on stockpile areas • rehabilitating disturbed land as soon as practicable 	
	<p>The CEMP and OEMP will include the following Greenhouse Gas mitigation measures:</p> <ul style="list-style-type: none"> • planning and scheduling works to minimise fuel usage and to maximise energy efficiency • maintenance of plant and equipment to minimise fuel consumption and associated emissions • training staff on improvement strategies to minimise fuel usage and maximise energy efficiency 	During construction and operation
Traffic and Transport	<p>The CEMP will include the development and implementation of a Construction Traffic Management Plan (CTMP) which will include the following construction traffic management measures:</p> <ul style="list-style-type: none"> • A-CAES NSW will engage a licensed and experienced transport contractor with experience in transporting OSOM component loads. The contractor would be responsible for obtaining all required approvals and permits from NHVR and local Councils and for complying with conditions specified in the approvals. • A-CAES NSW will ensure all relevant transport-related permits and approvals (eg. OSOM heavy vehicle movement permits) are secured prior to commencement of construction. This includes addressing issues (as relevant to the Project) during the detailed design phase. • To ensure adequate road safety is maintained, the construction traffic management measures will be prepared in consultation with Broken Hill City Council and the relevant road authorities prior to construction. The CEMP will include: <ul style="list-style-type: none"> • details of all transport routes and traffic types to be used for development related component and material delivery. • Details of the measures that would be implemented to minimise traffic safety issues and disruption to local users of the transport route(s) during construction or decommissioning works. 	During construction
	<p>The CEMP will include a Drivers' Code of Conduct that typically addresses, but is not limited to, the following:</p> <ul style="list-style-type: none"> • travel speeds • fatigue management • procedures to ensure that drivers adhere to the designated transport routes • procedures to ensure that drivers implement safe driving practices; and • include a detailed program to monitor and report on the effectiveness of these measures and the code of conduct. 	During construction

Issue	Management and/or Monitoring Measure	Timing
	Development of the CEMP will include the consideration of establishing a 'car pool' initiative or providing shuttle bus services for construction staff from the Broken Hill urban area to minimise the impact of vehicle movements.	During construction
	<p>To address cumulative transport-related impacts, during the detailed design phase, the construction timeframe will be finalised with consideration of any overlapping timeframes and potential transport impacts resulting from other projects. Should the other projects overlap with the construction phase of the Project, additional mitigation measures will be considered during the preparation of the CEMP including:</p> <ul style="list-style-type: none"> • scheduling of construction activities and deliveries for each project so that any overlap is suitably managed in order to minimise road transport movements along shared transport routes • consultation with project developers / construction companies to seek to minimise impacts • engagement in any region-wide traffic management in conjunction with relevant road authorities, e.g. Council and TfNSW • targeted dilapidation and reinstatement programs • collective community consultation programs. 	During construction
	The OEMP will include a procedure to ensure the ongoing maintenance of the internal on-site access network during the operation phase.	During operation
Water Resources	The SCES Facility and associated infrastructure will be constructed above the flood planning level (to provide an appropriate freeboard for the lowest edge above the maximum 1% AEP flood level)	Detailed design
	The proposed creek diversion will be appropriately designed for the 1% AEP event and considerations will include design flows and velocities, bank slopes, bank stability, and soil conditions.	Detailed design
	All waterway crossings will be designed and constructed in consideration of the Department of Primary Industries, Office of Water, <i>Guidelines for riparian corridors on waterfront land Guidelines for watercourse crossings on waterfront land</i> .	Detailed design
	The Stormwater Evaporation Dam will be sized to accommodate runoff from a 24-hour, 2% Annual Exceedance Probability rainfall event.	Detailed design
	The CEMP will include the development and implementation of a construction soil and water management plan (CSWMP) prepared by a suitably qualified person to facilitate implementation of	Prior to construction

Issue	Management and/or Monitoring Measure	Timing
	best practice Erosion and Sediment Controls during all phases of the Project. Throughout the construction phase of the Project, erosion and sediment controls (ESCs) will be established in general accordance with the Blue Book (Landcom, 2008).	
	The OEMP will include an operational water management strategy, surface water monitoring requirements, surface water performance criteria and reporting requirements (routine and incident reporting).	During operation
	Surface water quality and quantity monitoring during the operational phase of the Project will be undertaken in accordance with monitoring program outlined in Section 7.2 of the Surface Water Impact Assessment	During operation
	<p>Stream stability and riparian health monitoring is proposed for the impacted 3rd order stream immediately north of the Reservoir, and the upstream and downstream transitions for the channel diversion south of the Reservoir.</p> <p>One round of baseline monitoring will be undertaken prior to Project construction and then on a 6-monthly interval or following significant local catchment rainfall events. Whilst the channel diversion design is expected to provide for a stable channel, it is recommended the post-construction monitoring include the constructed channel. Should inspections indicate ongoing channel stability for a period of five years after Project construction the frequency of inspections will be reduced to annually.</p> <p>If monitoring indicates any erosion becoming less stable, the requirement for remedial works should be reviewed with consideration of the mechanism of the damage (e.g., high streamflow) and relative contribution from the impact of the Project.</p>	Prior to construction and then ongoing during construction and operation
	The Decommissioning and Rehabilitation Strategy will detail site stabilisation requirements suitable for the selected post-closure land use. The erosion and sediment controls for the decommissioning phase will be implemented as per the construction phase of the Project.	Prior to decommissioning
	A site water balance will be established based on the groundwater abstraction from underground workings during the construction phase and the water volumes/levels of the surface reservoir over the life of the Project. Dewatering will be undertaken by Perilya which will include metering of the dewatering within the vicinity of the Project. Measurement of water pumped in and out of the workings/reservoir will be used to assist in the identification of groundwater make and water accumulation as construction progresses and to inform the site water balance.	Construction and operation

Issue	Management and/or Monitoring Measure	Timing
	<p>Water samples of pumped (dewatered) water and the surface reservoir will be collected monthly during the construction phase for field analysis of pH and EC with quarterly collection of samples for laboratory analysis for laboratory analysis of a broader suite of parameters to be defined in the OEMP (indicative parameters are outlined in the Groundwater Impact Assessment)</p> <p>Any water pumped to the surface as part of the dewatering process will be captured by the existing Potosi Mine water management system and there are no releases of water off site. Perilya will maintain current water licence allocations sufficient to cover groundwater take.</p>	Construction and operation
	<p>During the detailed design and construction phase additional data on the hydraulic properties and fractures/faults will be collected. Based on new data, the conceptual groundwater model and risk assessment will be reviewed, and management measures refined (if required).</p>	Detailed design
	<p>A-CAES NSW will implement a groundwater monitoring network including the four existing monitoring bores in the east of the Project Area (GW1 to GW4) and the installation of five new monitoring sites to monitor any potential seepage from the surface reservoir, potential spill/leaks within the surface facilities area and a deeper bore to the north of the Project to monitor any depressurisation within the hardrock that may impact water supply users.</p> <p>Additionally, two VVPs will be installed down to the cavern depth for ongoing monitoring of groundwater level recovery and changes in groundwater pressure head over time and provide data on the hydraulic properties of the host rock material.</p>	Operation
Hazards	<p>A-CAES will establish an exclusion zone during the detailed design phase around the cavern to prevent drilling or mining adjacent to or above the cavern to ensure the integrity of the cavern and mining personnel.</p>	Prior to construction
	<p>The CEMP and OEMP will include the development of a Bushfire Emergency Management Plan developed in accordance with PBP 2019 and in consultation with the RFS. The plan will identify all relevant bushfire risks and mitigation measures associated with the construction and operation of the Project, including detailed measures to prevent or mitigate fires igniting, outlining:</p> <ul style="list-style-type: none"> • Asset Protection Zones locations and management requirements <ul style="list-style-type: none"> ○ any specific construction management requirements ○ access locations, passing bays and any alternate emergency access ○ water supply and location and any other bush fire suppression systems (including any drenching systems, static water supply, natural water sources) • construction work that should not be carried out during total fire bans 	Prior to construction

Issue	Management and/or Monitoring Measure	Timing
	<ul style="list-style-type: none"> • availability of fire-suppression equipment • storage and maintenance of fuels and other flammable materials. • notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bushfire fire danger period to ensure weather conditions are appropriate • appropriate bush fire emergency management and evacuation plan. 	
	A-CAES NSW will consult with Dam Safety NSW to confirm the consequence category and whether declaration of the reservoir is required.	Detailed design
Social	A-CAES will develop and implement a Community Engagement Strategy comprising Project-specific stakeholder analysis, identification of target stakeholders by proposed engagement and information provision/ communication mechanisms, roles and responsibilities of the ACAES team and relevant contractors and linkages to other relevant plans such as construction and operational environment management and social impact management plans.	Prior to construction
	A-CAES NSW will develop and implement the proposed Community Benefit Agreements (CBAs) as outlined in Section 6.10 of the EIS.	Prior to construction
	A-CAES NSW will develop and implement an Indigenous Participation Plan (IPP), in line with the First Nations Guideline released by the NSW Government in 2022.	Prior to construction
	A-CAES NSW will prepare and implement an Accommodation, Employment and Procurement Strategy to directly address and respond to the social impacts and opportunities of the Project as they relate to construction workforce matters and associated cumulative impacts.	Prior to construction
Visual	The CEMP will include the development and implementation of appropriate procedures associated with the placement of mobile lighting to reduce for potential associated impacts. Any mobile or temporary lighting required during the construction phase will be managed to reduce any potential offsite impacts. Management will include restricted lighting only within areas requiring lighting, use of directional lighting away from the adjoining residential and use of shielding including physical shielding and use of any vegetation and topography (if possible).	During construction
	Temporary disturbance required during the construction will be rehabilitated as soon as practicable following the completion of construction.	During construction

Issue	Management and/or Monitoring Measure	Timing
	All new fixed lighting associated with the SCES facility (operational lighting and security lighting) will be installed and maintained in accordance with the Australian Standard AS4282 – 1995 – Control of Obtrusive Effects of Outdoor Lighting.	During operation
	A-CAES NSW will consult with Outback Astronomy during the development of the detailed design to address any specific lighting requirements relating to this business.	Prior to construction
Waste	<p>The CEMP and OEMP will include the development of a waste management plan, including a detailed breakdown of waste types and quantities in accordance with relevant legislation and guidelines. The waste management plan will outline the measures and strategies to be implemented on site to manage, reuse, recycle and safely dispose of waste including:</p> <ul style="list-style-type: none"> • separation and storage of recyclable and non-recyclable materials • reuse and collection/transportation of waste • procedures for tracking waste storage and disposal. 	Construction and operation
	On-site waste management will include the appropriate separation and storage of waste streams to enable recycling and reuse wherever possible to reduce associated environmental impacts and impact to the capacity of local waste management facilities.	Construction and Operation
	The Waste Management plan will include appropriate chemical handling and storage procedures. This will include storage of fuels and chemicals in appropriately banded facilities in accordance with relevant Australian Standards, appropriate waste management systems, spill and emergency response procedures and equipment, and regular inspection and reporting processes.	During construction
	Should the Project be decommissioned, the Decommissioning and Rehabilitation Strategy will include a detailed review of the associated waste streams and recycling/disposal options available at the time.	Prior to decommissioning