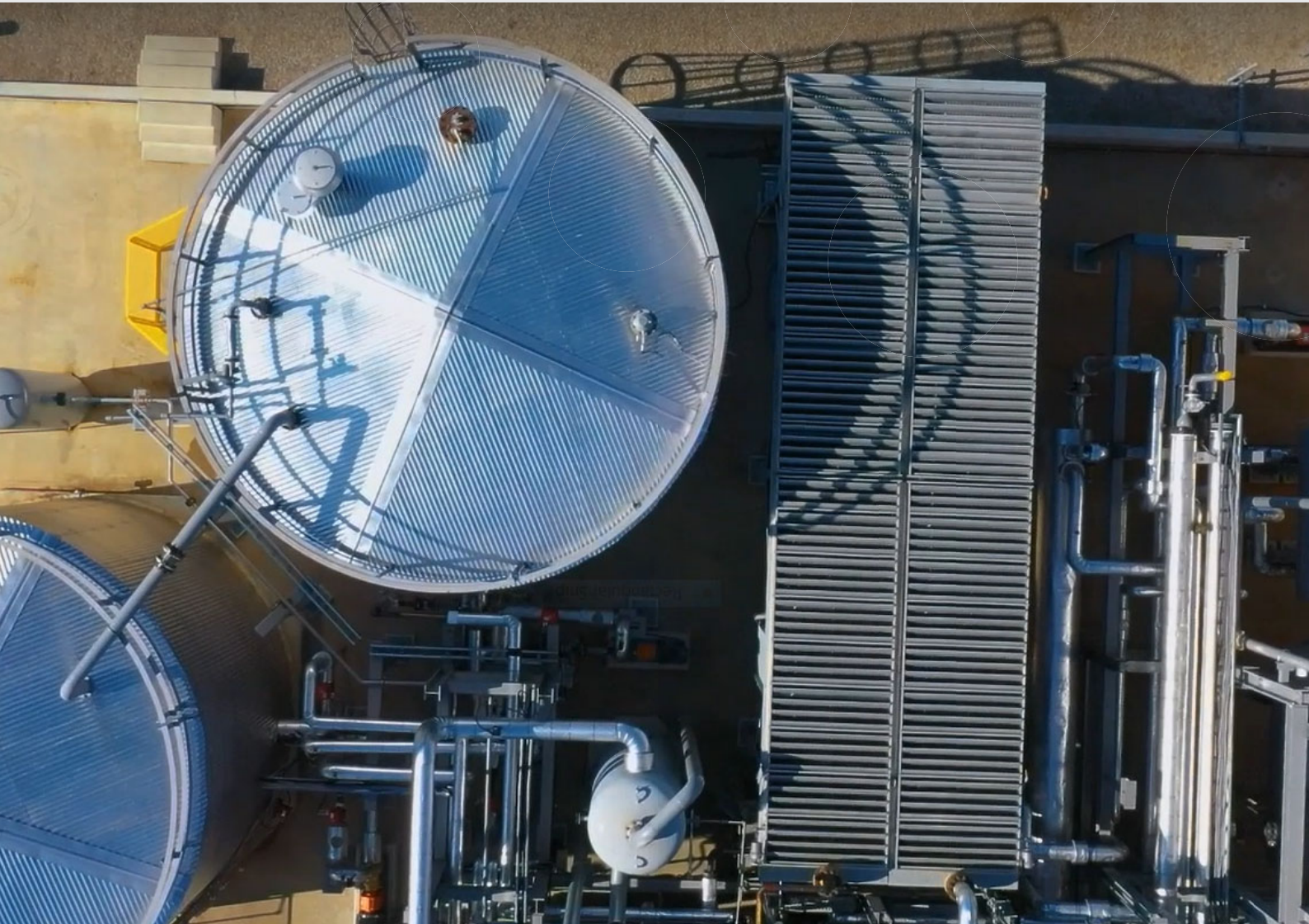


Silver City Energy Storage Project

ENVIRONMENTAL IMPACT STATEMENT

SUMMARY - AUGUST 2023



Silver City Energy Storage Project



PROJECT SUMMARY

AUGUST 2023

This Summary provides a high-level non-technical overview of the Environmental Impact Statement (EIS) assessment outcomes. For further information on the Project and assessment outcomes please read the EIS.

What is the Project?

A-CAES NSW Pty Ltd (A-CAES NSW) is proposing the Silver City Energy Storage (SCES) Project (the Project), which will use Hydrostor's proprietary advanced compressed air energy storage (A-CAES) technology to provide large-scale, long-duration energy storage for Broken Hill and the Far West of NSW.

The Project includes the SCES Facility and a new 220 kV electricity transmission line approximately 16km in length. The proposed SCES Facility is to be co-located on the Potosi Mine site, approximately 3km northeast of Broken Hill between the Silver City and Barrier Highways. The proposed transmission line passes between South Broken Hill and the airport, connecting to an existing Transgrid substation in Pinnacles Road.

The Project responds directly to the energy policy of the Commonwealth and NSW governments, moving toward net zero energy generation and supporting the increased development and utilisation of renewable energy. As a large energy generation and storage system, the Project will also deliver direct benefits to the electricity grid, improving system strength and reliability. The Project will replace ageing diesel-fired turbines used for backup power in Broken Hill with a new low-emissions technology that results in a wide spectrum of benefits for the power system and the region.

The Project involves the design, construction and operation of the SCES Facility, including ancillary power, water and road infrastructure. The key project components include:



The SCES Facility, comprising two 100 mega watt (MW) generator trains for producing 200MW of electrical power and associated infrastructure and civil works



An underground compressed air storage cavern of approximately 250,000m³ and a depth of 600m below ground, located immediately below the SCES Facility and connected by an air and water shaft



A 350ML (maximum capacity) water storage reservoir with a new connection to the existing Stephens Creek raw water pipeline



A high-voltage 220kV transmission line approximately 16km long, predominantly above ground on monopoles



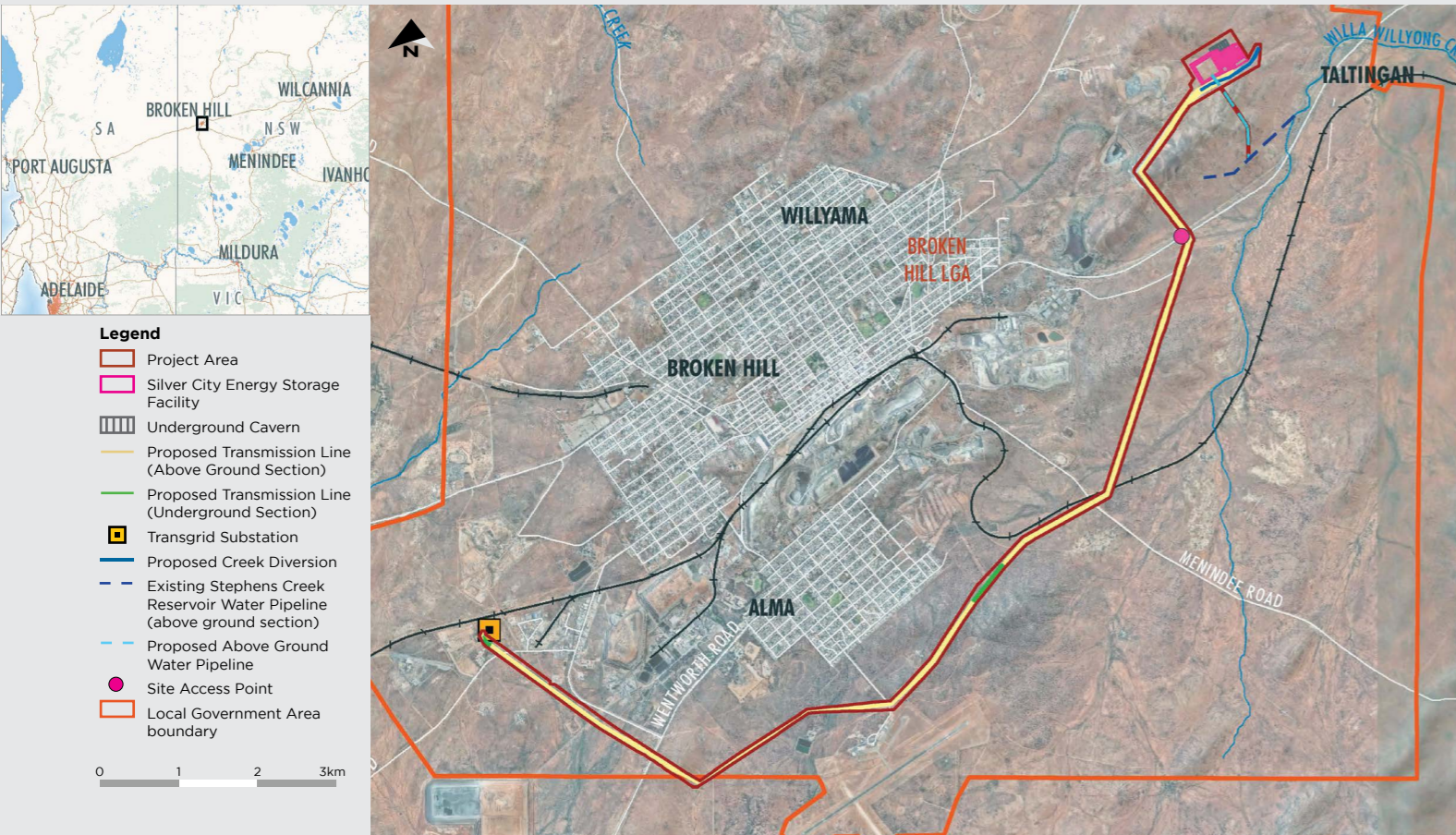


Figure 1: Project locality

A-CAES technology uses electricity from the grid when it is plentiful or in low demand, to compress air from the atmosphere. Heat from the compression of air is recovered and stored as high-pressure hot water, and the compressed air injected into a deep underground cavern via an air shaft. The air remains in the cavern, sealed under pressure by the weight of water in the water shaft and the water storage reservoir at the surface. When energy is in demand, the compressed air stored in the cavern is released, combined with the stored heat from the hot water, propelling a turbine generator to generate electricity.

Project Capacity:

- 200 megawatt (MW) generation and 1600 megawatt hours (MWh) of energy storage, including a reserve of 250 MWh (50 MW of electricity for up to 5 hours) to provide back-up power to Broken Hill and the Far West

The Project's co-location with the existing Potosi Mine minimises the potential for environmental impacts through the use of existing mining land and use of some of the existing mining infrastructure.

The operation will co-exist with the mining operations and, once the operations reach the end of their economic life, will provide a long-term post mining land use for the site.

The Project Area is approximately 200 ha and includes areas of freehold and Crown Land. The proposed disturbance area for the Project within the total Project Area is approximately 46ha.

The SCES Facility site is approximately 28ha with a further 3ha for the water pipeline and both areas will require vegetation removal. The transmission line construction and management will require a 50m wide easement (total area of approximately 80ha), however, vegetation removal along the transmission line will be limited to approximately 15.3ha. Vegetation under 10m in height, within the easement (and outside of the disturbance area) will be retained.

A-CAES has committed to limit the removal of vegetation within the proposed disturbance area and within limited locations within the easement where vegetation is over 10 m in height.

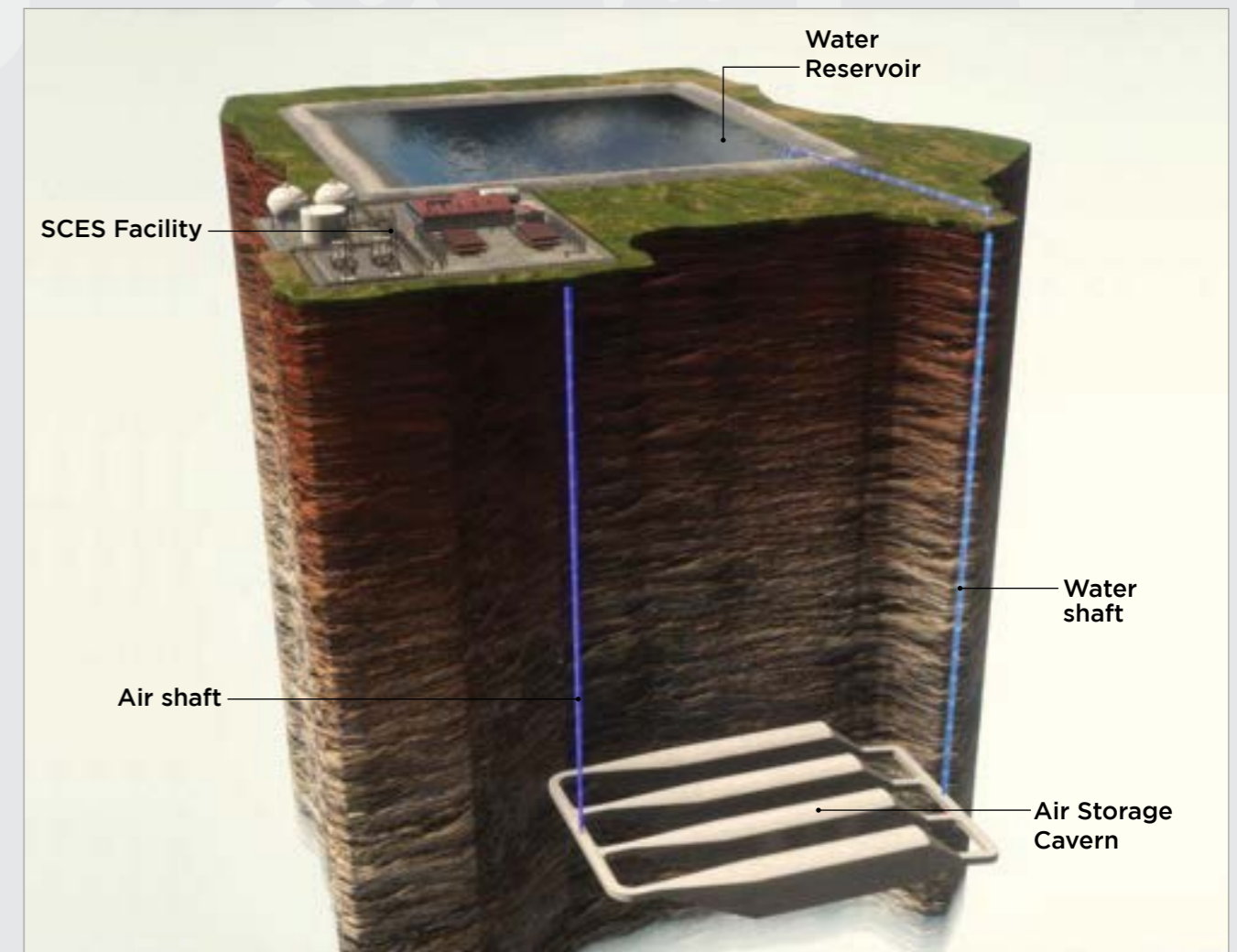


Figure 2: SCES Facility

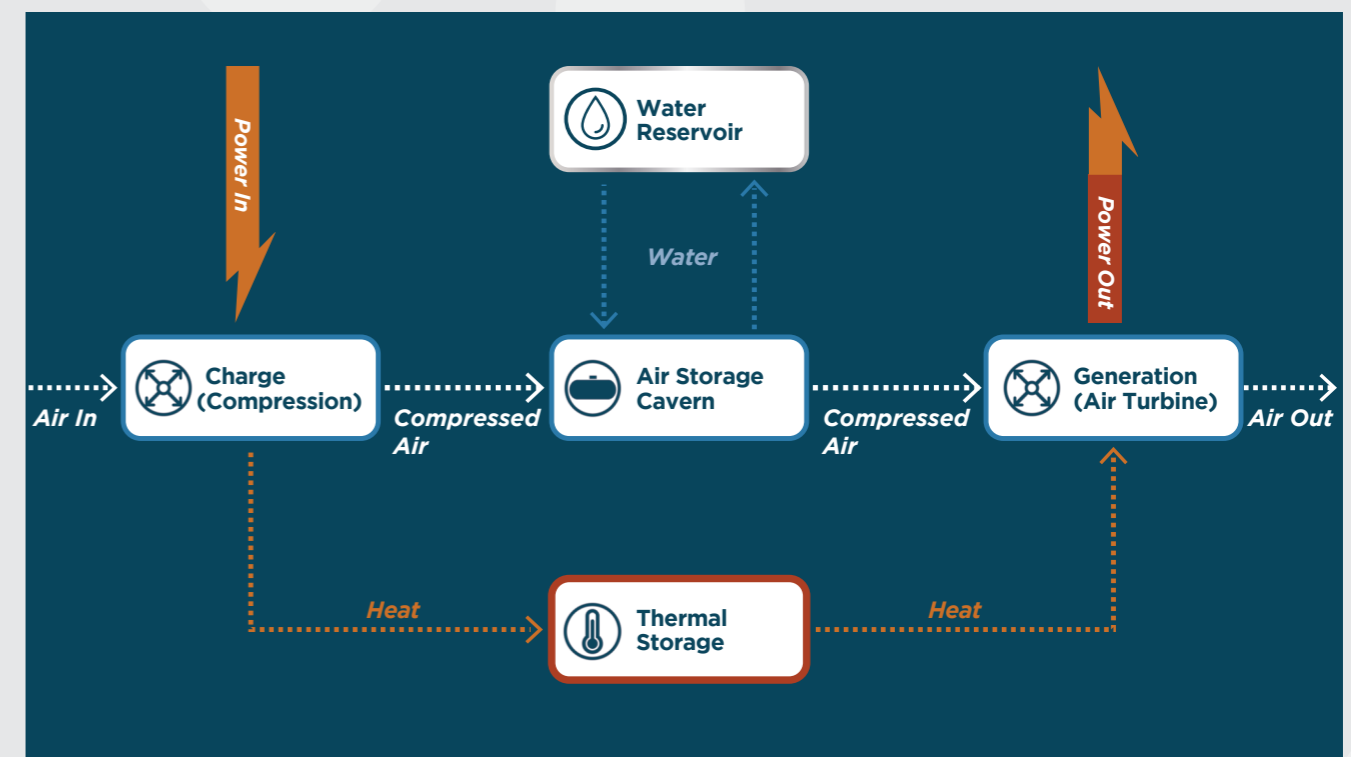


Figure 3: A-CAES Technology

Why is the Project Needed?

The NSW Government's Electricity Strategy and Electricity Infrastructure Roadmap (Electricity Strategy) identifies Broken Hill and the surrounding region as highly suitable for both solar and wind energy generation. Over 250MW of renewable energy generation in the Broken Hill area is currently being curtailed and subject to significant revenue reductions as a result of impediments to power transfer and usage.

Broken Hill is also currently supported by two diesel-fired turbines, operated by Transgrid, which provide backup power during both planned and unplanned outages of the existing X2 transmission line, extending over 300km between Buronga and Broken Hill. These diesel-fired turbines are approaching the end of their operational life and a new energy security solution is required for Broken Hill.

Transgrid applied the Regulatory Investment Test for Transmission (RIT-T) process to assess the long-term options for maintaining reliable energy supply to Broken Hill. The RIT-T process concluded that the continued operation of the existing diesel-fired turbines would be pursued as an interim measure, followed by the implementation of the Project as the preferred backup power supply option. The existing diesel-fired turbines will continue temporarily to provide network support until the Project is operational, at which point the existing diesel-fired turbines will be decommissioned.

Benefits of the Project include:



enhanced energy security and reliability for Broken Hill and the Far West by provision of a low-emission technology replacement for existing diesel-fired turbines which are approaching the end of their operational life



generation of approximately 36 enduring jobs (26 direct and 10 indirect) during the operation and maintenance phase



firming (maintenance and output) of variable and intermittent power sources with significant energy storage to increase renewable energy use in the NSW power system



leveraging existing mining investment, providing additional land use outcomes during the operational life of the Potosi Mine and a unique post-closure mining land use for the site



providing significant economic benefits to the Broken Hill economy and to NSW through capital and operational expenditure



supporting existing and new renewable energy projects in Broken Hill and the Far West



generation of 780 full time equivalent (FTE) job years (over three-year construction timeframe) with an average of 260 FTE workers per year and peak of 400 FTE workers



provide ongoing financial assistance through Community Benefit Agreements that provide direct benefit to the local community, with a focus on skills; training and education; community energy; local heritage; enhancement of the environment; social housing and cultural heritage awareness.

What Project Alternatives were investigated?

The Transgrid RIT-T process involved an Expression of Interest and Tender that invited the submission of any technology solutions that could satisfy the backup power requirements needed by Broken Hill and the Far West. From those solutions tendered, Transgrid considered the alternative options and concluded that the Project was the preferred option.

The Potosi Mine site was selected as the proposed location due to favourable geological conditions, utilisation of the existing underground mine development for access to the right depth, and utilisation of the existing mine support infrastructure to support construction. This location provides a significant buffer distance to other land uses, including the extent of the main residential areas of Broken Hill. Alternative locations for the SCES Facility within the Potosi Mine site were investigated, with the proposed location selected on the basis that it was immediately above the deepest part of the Potosi Mine, close to the existing mine access shafts, and did not directly conflict with mining operations.

The proposed transmission alignment was selected in the basis that relative to all other options, it reduced land use conflict (including land subject to determined Native Title), minimised the impact to biodiversity values, and maintained separation distances from sensitive receivers including residential dwellings, tourist attractions and non-indigenous heritage places. Three transmission alignment options were investigated including a northern alignment, central alignment and the southern (proposed alignment).

The northern alignment was rejected on the basis of significant visual impacts and interaction with numerous recreational and environmental areas of significance, whilst the central alignment was rejected on the basis of easement width restrictions, unfavourable ground conditions and interactions with non-indigenous heritage structures of significance. The southern alignment will involve the creation of new easements in freehold and Crown land.



Planning and Approval Process

The Project requires approval under the NSW environmental and planning legislation. Under NSW Planning legislation, the Project is State Significant Development and requires approval under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The EIS prepared for the Project describes the Project, its impacts (both positive and negative), how the impacts are proposed to be managed, mitigated and offset, the benefits and the justification. The NSW Minister for Planning and Public Spaces (delegated to the Department of Planning and Environment) or the Independent Planning Commission (IPC) will determine if the Project is approved to proceed. The project is referred to the IPC for determination if public objections to the Project exceed 50, any reportable political donations are made by A-CAES or if the Broken Hill City Council object to the Project.

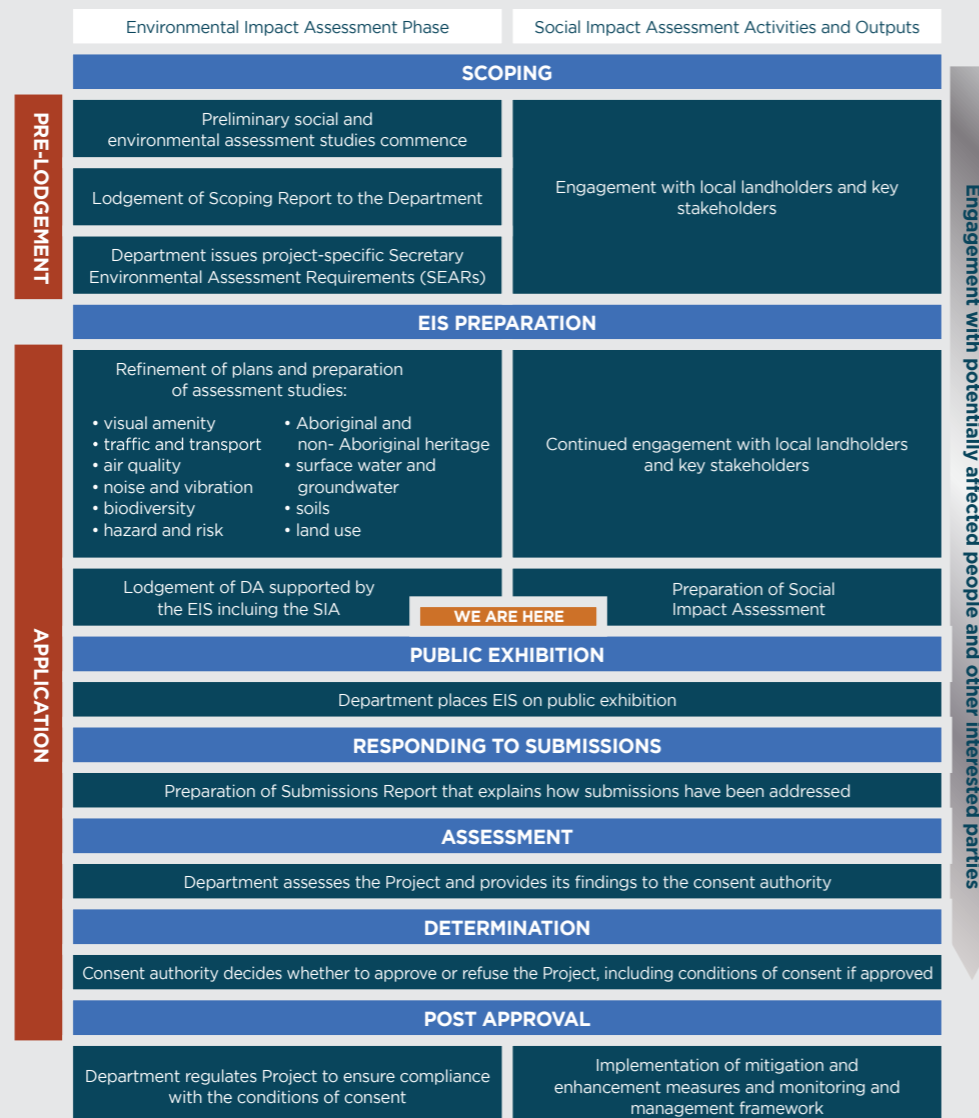
The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the primary environmental and planning regulatory instrument relevant to the Project at the Commonwealth level. Under the EPBC Act, approval from the Commonwealth Minister for the Environment and Water is required for any action that may have a significant impact on Matters of National Environmental Significance (MNES). If an 'activity' is likely to have a significant impact on a MNES then it may be a 'controlled action' and require approval from the Commonwealth Minister for the Environment and Water.

The Project was referred under the EPBC Act to the Minister via the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) and was determined not to be a controlled action. Therefore, further assessment and approval under the EPBC Act is not required.

Key Project Milestones



Figure 4
Environmental and social
Impact assessment process



Stakeholder Engagement

A-CAES NSW is committed to engagement with all relevant stakeholders and to undertaking genuine and meaningful engagement with the community as part of planning and assessing the Project. This includes a focus on developing long-term relationships and maintaining open lines of communication. Efforts have been made to consult the broader Broken Hill community, including through community information sessions and providing information (e.g. newsletters) to residents of Broken Hill.

To date, there has been limited broader community interest in the Project, however, the interest received has been predominately positive with very limited concern relating to potential Project impacts.

Ongoing consultation has also been undertaken with the Broken Hill City Council, government agencies, service providers (including Trangrid and Essential Water), businesses and various non-government organisations and interest groups. This includes an engagement process undertaken with the local First Nations communities. This engagement has been ongoing throughout the assessment process and will be ongoing during the life of the Project, should it be approved.



Assessment and Mitigation of Impacts

The Project has been designed through a comprehensive process that incorporated the findings of environmental studies, community and stakeholder feedback and engineering design considerations. A-CAES NSW has engaged with stakeholders throughout the Project planning and assessment process and has designed the Project to deliver significant benefits whilst minimising negative impacts.

Biodiversity

The disturbance area associated with the Project largely comprises areas that have previously been disturbed and historically cleared for mineral extraction purposes.

Overall, the site is dominated by native remnant arid vegetation, with creek lines generally having a high level of exotic weedy flora species present. Fauna habitat is limited with no large hollow bearing trees observed and minor areas of low-lying rocky habitat.

No Threatened Ecological Communities (TECs) and no threatened fauna or flora species were recorded within the Project Area during survey. A-CAES NSW has committed to limit vegetation removal along the transmission line to areas of vegetation over 10m in height.

A-CAES has also committed to the development and implementation of biodiversity management measures which will include pre-clearance and tree-felling procedures, non-inhibiting fauna fencing, traffic control, weed management, fencing and access

control, erosion and sediment control and workforce education and training. Where impacts to biodiversity cannot be avoided, the NSW Biodiversity Assessment Process requires use of the NSW Government online credit calculator to generate the associated biodiversity credits, informed by the results of the biodiversity survey and associated area of impact.

The credits then need to be offset by A-CAES NSW prior to construction commencing. A-CAES NSW is currently proposing to utilise a combination of different options to secure the biodiversity credits required to offset the residual impacts of the Project on biodiversity.

Aboriginal Cultural Heritage

The Project Area falls on the land of the Wilijakai or Wiljaali people and within the Broken Hill Local Aboriginal Land Council (LALC) area. An Aboriginal Cultural Heritage Assessment (ACHA) was undertaken to assess the potential impact of the Project on Aboriginal cultural heritage in consultation with the Broken Hill Local Aboriginal Land Council and other Registered Aboriginal Parties. The ACHA included field survey and a test excavation program.

Survey and test excavation results:

- A total of 65 sites were recorded within the Project Area during field survey, including previously recorded and newly recorded sites.
- A total of 70 test pits were excavated across seven test zones within four landforms during the test excavation program. 69 Artefacts were recovered from four test zones located within three of the four identified landforms.

Within the context of assessing Aboriginal cultural heritage, spiritual values are often closely tied to social values. During the consultation process RAPs indicated that the Project Area is part of a broader landscape of cultural significance utilised for foraging activities. The Project Area contains archaeological sites that establish a link to

these traditional cultural activities. These specific sites recorded within the Project Area and the broader landscape of Broken Hill are assessed as being of high Aboriginal cultural value.

In total 47 Aboriginal archaeological sites would be impacted by the Project, this includes 3 with high archaeological significance (which will be partially impacted), 6 with moderate-high archaeological significance and 3 low-moderate archaeological significance. The remainder have low archaeological significance. For the sites within the transmission line easement, as much of the easement will remain undisturbed, there will only be partial impacts to many of these sites. These impacts will be primarily related to pole construction and access tracks which will only impact discrete areas.

Based on the synthesis of the evidence collected during field survey and test excavation, the ACHA recommends a program of staged salvage prior to construction impacts, with surface salvage occurring across the disturbance area and subsurface salvage within landforms with predicted high archaeological sensitivity and sites with moderate-high (or greater) archaeological potential. A-CAES NSW will develop an Aboriginal Cultural Heritage Management Plan (CHMP) in consultation with the Broken Hill LALC and RAPs and relevant government agencies, to manage Aboriginal cultural heritage values during construction and operation of the Project.



Tree Dtella (*Gehyra variegata*)



Historic Heritage

Given the rich history of Broken Hill, the Project Area is located in the vicinity of several heritage items listed on the Broken Hill Local Environmental Plan as well as the NSW State Heritage Register. Broken Hill, as a local government area is also listed on the National Heritage List due to its national heritage value as 'City of Broken Hill'.

The Historic Heritage Assessment included a review of the documented heritage values for the area and survey of the Project Area.

There are no historic heritage items located within the Project Area and the Project will not result in any physical impact to individually listed heritage items. The Historic Heritage Assessment also considered the archaeological potential of the Project Area which was found to be low due to the Project Area being subject to high levels of disturbance.

The significant elements of the National Heritage Listing of the City of Broken Hill associated with the Project Area are generally related to the views and landscape characteristics of Broken Hill and associated mining activities, with the exception of the original vegetation regeneration area established in the 1930s. Approximately 2.2 km of the transmission line is located within the boundary of the original Regeneration Area, however, ecological survey for the Project did not identify any historical plantings within the Project Area that could be remnants of this historically significant period.

Given the significance of views and landscape characteristics to the National Heritage Listing for Broken Hill, the assessment considered the potential for the Project to impact on these values. The assessment found that the proposed infrastructure is in character with the existing industrial elements of the current viewshed. Although the proposed infrastructure will be visible mostly at a distance from a limited number of viewing points around Broken Hill, the nature of the infrastructure will not be out of character given so much of the landscape is dominated by mining/industrial development at a large scale.

The Historic Heritage Assessment concluded that Project would not have a significant impact on the National Heritage values of the City of Broken Hill.

Noise and Vibration

Noise and Vibration associated with both the construction and operation of the Project has been assessed as part of the EIS.

Noise model predictions indicate that operational noise levels are predicted to comply with the relevant criteria at all sensitive receivers, with the exception of one dwelling where A-CAES NSW has a Project-specific agreement in place with the landowner. Impacts associated with the operation of the transmission line are considered minimal.

The noise modelling results and analysis indicate that noise mitigation measures will be required to minimise the potential construction noise impacts on the communities surrounding the Project Area. Most of the receivers predicted to be potentially impacted by the construction of the Project, relate to the transmission line rather than the SCES facility.

Given the transient nature of the transmission line works, construction works will not occur in any one location for a long period of time and so potential noise impacts at any residential receiver are anticipated to be short in duration. No receivers were predicted to be highly noise affected.

Blasting is proposed for the construction of the underground cavern with this blasting to be generally consistent with the blasting associated with the existing Potosi mining operations. No adverse impacts are predicted, with blast vibration levels predicted to readily comply with the relevant criteria at the nearest receiver. A-CAES NSW has committed to the development and implementation of appropriate noise and vibration management, mitigation and monitoring measures associated with the construction and operation of the Project.

Air Quality

Air quality risk associated with the Project relates primarily to generation of dust from construction activities, with the highest potential dust emissions being generated near the SCES Facility, where the majority of material handling and earthworks would occur. The Air Quality Assessment indicates that through the implementation of standard air quality mitigation measures the associated risk is low. Construction of the transmission line will require relatively minor earthworks and as such a “Very Low” air quality risk rating was determined.

Emissions during operation of the SCES facility will occur from venting the heated (maximum temperature of approximately 30 degrees Celsius) compressed air. No “air pollutants” will be emitted from the venting process (air from the atmosphere will be used to create compressed air and this same air will be released back into the atmosphere as part of the power generation process). There will be minor emissions associated with maintenance of equipment and the use of emergency diesel generators to operate critical systems during emergency events.

The EPA, as part of its assessment recommendations, requested a discussion of the potential impacts of the emissions of warm air propelling the turbines. This temperature may, on occasions, be higher than ambient conditions, however, based on modelling predictions there will not be any impact to sensitive receivers or overflying aircraft.

Future projections of fuel usage and electricity consumption were used to determine the GHG emissions from the Project. The SCES Facility will extract energy from the grid when there is excess electricity, and this will generally occur when the renewable generation is in surplus. This, in turn, means that emissions due to electricity consumption from the SCES Facility will be driven largely by renewables, and much lower GHG emissions than from an average grid generation mix. There will also continue to be limited use of a diesel generator during the Project operation.

The estimated GHG emissions associated with the construction and operation of the Project represent a very small fraction of Australia’s emission. Additionally, the estimated emissions associated with the operation of the Project will decrease over time through the continued decarbonization of the grid.

Traffic and Transport

The SCES Facility will be accessed directly from Silver Peak Road (which is the existing Potosi Mine access road) via the Barrier Highway. The transmission Line will have multiple access points with the main access provided from Kanandah Road/ Pinnacles Road, Silver City Highway, Wentworth Road/Picton Street and Menindee Road. Appropriate temporary access points will be established to temporary construction access roads.

The majority of components to construct the SCES Facility will be delivered via the Barrier Highway with offshore delivery of components expected to be received into port in South Australia and then transported via heavy vehicle (over-size, over-mass (OSOM) where required) to Broken Hill.

The Traffic Impact Assessment found that the existing road network and key intersections have high levels of service and significant spare capacity. Therefore, no road network or intersection upgrade works are required to accommodate traffic associated with the Project.

The majority of Project traffic generation will be associated with the construction phase of the Project. The traffic assessment found that the road network has substantial existing capacity to cater for the predicted traffic volumes and that the road network will continue to operate at a high level of service.

A-CAES NSW has committed to the development and implementation of a detailed Construction Traffic Management Plan (CTMP). The CTMP will address the management and mitigation of potential traffic related impacts.



Water Resources

The potential for the Project to impact on both surface water and groundwater was assessed as part of the EIS. This included consideration of water supply, flooding and flows, water quality and interaction with groundwater associated with the underground cavern.

Water supply:

- **Construction (prior to construction of the pipeline) – water will be supplied via the existing Potosi Mine supply**
- **Reservoir Fill - 300 ML over 12 months via the new pipeline and Essential Water supply agreement**
- **Potable water demands, will be minor and supplied by a small purification system or water tanker**

Given the water for the initial fill of the reservoir will be extracted over an extended period of time, there are not expected to be any impacts on the availability of water for other water users that rely on water supply from Stephens Creek Reservoir and Umberumberka Reservoir. Essential Water has indicated to ACAES that the required volume of water for filling the Reservoir is available based on current demands.

Throughout the construction phase of the Project, appropriate erosion and sediment controls will be implemented and maintained. The SCES Facility design includes a water management system which captures and manages rainfall runoff within the surface facilities. The nature and extent of flooding within the Project Area provides for relatively low flood risk to both infrastructure and risk to life. Due to the minimal change to existing flood conditions as a result of the Project, no specific flood management measures are required.

A groundwater risk assessment was undertaken for potential impacts to groundwater associated with the construction, operation and decommissioning phases of the Project. The overall risk rating was determined to have a low risk to groundwater with the implementation of appropriate management/mitigation measures. A-CAES NSW has committed to the implementation of appropriate surface water and groundwater management, mitigation and monitoring measures to appropriately manage the potential interaction of the Project with water resources.

Hazards



Preliminary Hazard Screening

The EIS considered if the Project would meet the definition of a ‘hazardous industry’ based on the materials to be stored, used and transported as part of the Project. The assessment concluded that the Project is not potentially hazardous as defined under the State Environmental Planning Policy (Resilience and Hazards).

Geotechnical Stability

A geotechnical review was undertaken in relation to the construction of the underground cavern. It is noted that the process of excavating the cavern is similar to the underground mining activities that currently occur at the site. The Project will not result in any off-site geotechnical hazard event scenarios as:

- geotechnical investigation undertaken over 20 years of mining operations at Perilya confirm geology is suitable for cavern construction and operation of ACAES technology
- seismic activity in the area is extremely low and therefore cavern collapse associated with an earthquake is unlikely
- the cavern is approximately 600 m below ground level and there will be no impacts including any subsidence at the surface in the event of a collapse
- the cavern footprint is within the site boundary
- if the cavern were to be overcharged (i.e. excess air pressure), air will discharge through the water shaft onsite and will not impact off-site areas due to separation distances to the site boundary
- plant will be fitted with controls including pressure relief valves, mechanical isolation valves and the cavern is designed to provide buffer air capacity limiting the likelihood of overcharging the cavern
- preventative maintenance programs will be implemented to maintain equipment integrity
- site security will restrict access to the SCES Facility by the public and non-Project personnel

Bushfire

The Project Area is mapped as Bushfire Prone Land and therefore a bushfire assessment was undertaken for the Project. The assessment concludes that bushfire risk can be appropriately managed through the implementation of a bushfire emergency management plan including Asset Projection Zones, access, water supply, construction management practices and evacuation procedures.

Electromagnetic Fields

EMF occurs wherever electricity is produced, transmitted or used, and so is commonly found in everyday life including in household electrical devices. In Australia, electrical devices and infrastructure such as transmission lines and substations, operate at a frequency of 50 Hz which falls within the Extremely Low Frequency (ELF) range of EMF (between 0 and 300 Hz).

EMF modelling was completed for the transmission infrastructure considering a range of different transmission infrastructure arrangements relevant to the Project. In all cases, the modelling found that magnetic field strength will be at least 5 times lower than the upper safe limit recommended for human exposure.

Aviation Safety

The design of the transmission line has been refined in consultation with the Airport Operator to minimise any interaction with aviation activities. This has included lowering the height of a section of the transmission line in the vicinity of the airport. The Airport Operator and the Civil Aviation Safety Authority (CASA) have confirmed they have no objection to the Project and no lighting or marking of transmission lines or poles is required.

CASA has also confirmed that it does not consider the heated compressed air projected from the SCES Facility to be a hazard to aircraft operations and no further assessment or mitigation and management is required.

Social

A Social Impact Assessment (SIA) was undertaken to assess the likely social consequences of the Project and work with A-CAES NSW to develop options to improve outcomes for people.

SIA involves understanding impacts from the perspectives of those involved in a personal, community, social or cultural sense.

A stakeholder engagement program was implemented for the Project to gain input from the community and other stakeholders and understand their perspectives on the Project.

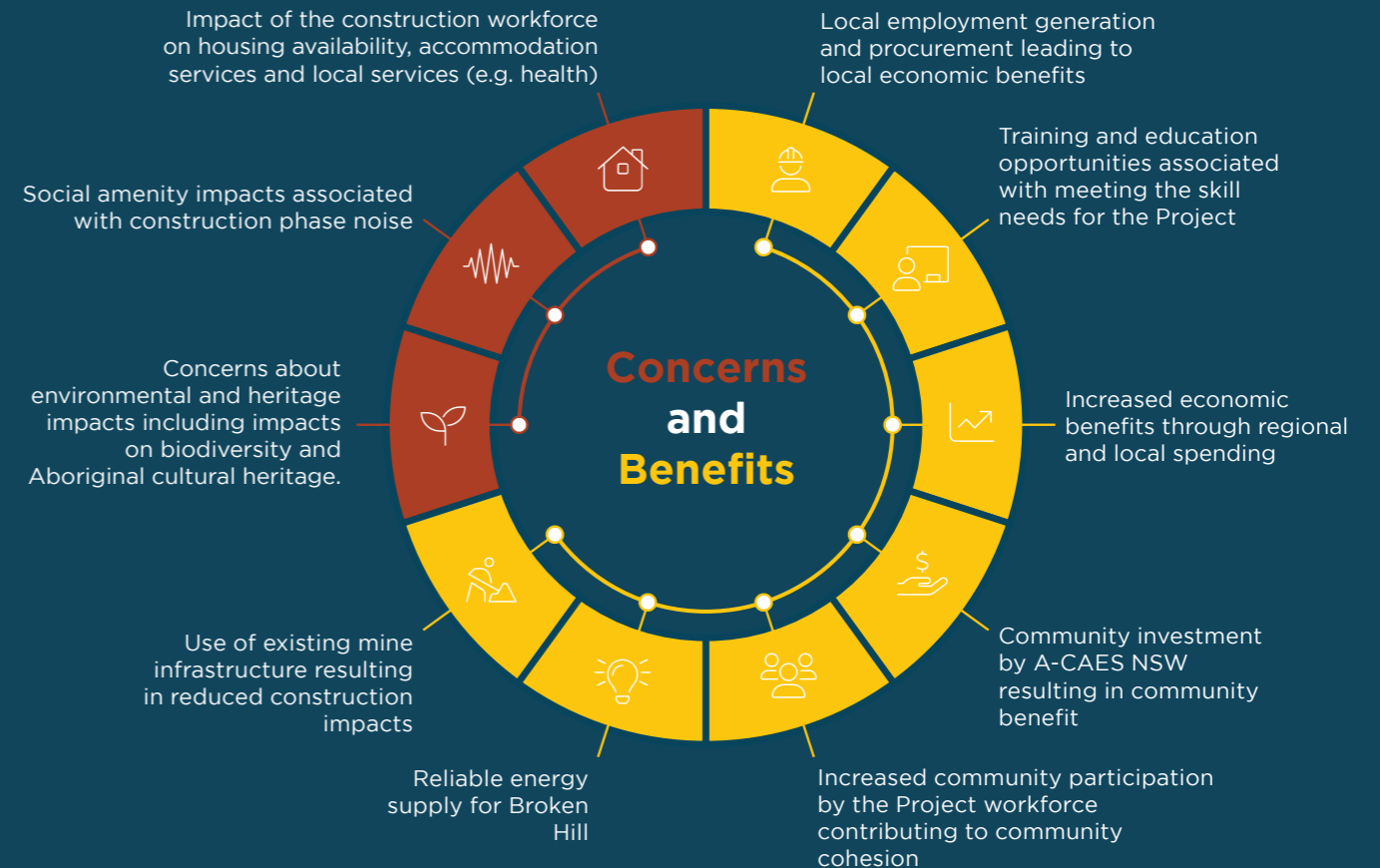
Despite contacting the broader Broken Hill township, and using media communications in the region, there was limited participation by various stakeholders, particularly the broader community, potentially suggesting a lack of interest or concern relating to the Project given the number of opportunities provided to provide feedback to the engagement process.

During consultation stakeholders were most concerned about:

- Impact of the construction workforce on local housing, health care and retail services

Perceived positive impacts associated with the Project included:

- Reliable energy supply for Broken Hill
- Opportunity for local employment and procurement of businesses/services
- Investment through a community benefit fund for Broken Hill



A-CAES NSW is in the process of developing Community Benefit Agreements (CBAs) with a number of stakeholders and has identified a number of initiatives in collaboration with relevant stakeholders that are currently being explored:

The Broken Hill Local Aboriginal Land Council (BHLALC)

A long-term program of tertiary scholarships (TAFE and University) for Aboriginal students; a cultural heritage awareness training program (internal and external); a social housing program and co-development of shared facilities.

The Broken Hill City Council (BHCC)

Support for community energy via development of commercial models, implementation of preferred models and supply of energy assets; identification and restoration of a Council-owned heritage listed building or structure for shared and community use.

Landcare Broken Hill (LBC)

Support of the establishment of a native seedling nursery for environmental restoration, revegetation and offset projects; development and installation of an educational and interactive display on renewable energy and energy storage; environmental restoration of Wilya Willalong; creek drainage from Imperial Lake and creation of a recreational nature walk.

A-CAES NSW has also committed to the development and implementation of:

- Community Engagement Strategy
- Indigenous Participation Plan; and
- Accommodation, Employment and Procurement Strategy

The SIA concludes that the identified negative social impacts of the Project can be reasonably mitigated or managed to reduce their significance, with positive impacts having the potential to be enhanced if appropriate strategies are put in place.



Economic

The Economic Impact Assessment concludes the Project will provide the following:



Increase the real economic output of Broken Hill by a cumulative total of **\$3.5 billion** (with a net present value of \$728 million, using a 7% real discount rate) and NSW as a whole by a cumulative total of **\$1.7 billion** (with a net present value of \$601 million, using a 7% real discount rate)



Generation of **780 FTE job years** (over three years) with an average of 260 FTE workers per year and peak of 400 FTE workers



Generation of approximately **36 enduring jobs** (26 direct and 10 indirect) during the operation and maintenance phase



Increase the real income of Broken Hill by a cumulative total of **\$642 million** (with a net present value of \$192 million, using a 7% real discount rate) and NSW as a whole by a cumulative total of **\$1.0 billion** (with a net present value of \$662 million, using a 7% real discount rate)



Figure 5 - Rendered model of proposed SCES Facility

Visual

A-CAES NSW has reduced the visual impact of the Project as far as practical through siting and Project design. Given the scale of the proposed infrastructure and expanse of the Project Area, some parts of the Project (primarily the transmission line) will be visible.

Overall, the visual assessment concluded that the Project will result in a low visual impact and is not predicted to impact on the existing visual character, given that in the areas where the Project will occur, the landscape is dominated by existing mining/industrial land use. Due to surrounding topography and distance, views of the proposed SCES facility from sensitive receivers are restricted and therefore no material visual impacts are predicted associated with the SCES Facility. Views of the proposed transmission line will vary along the alignment, however, as indicated in the photomontages, will be generally consistent with the existing visual character with existing transmission infrastructure and other mining/industrial infrastructure within the existing viewshed.

Views of the transmission line are largely restricted from the closest residential areas and the majority of views along the alignment will be from public viewpoints, particularly roadways.

The alignment of the transmission line around the southern boundary of Broken Hill, has been designed to avoid visually sensitive receptors (heritage listed items, dense residential development, and scenic tourist areas). While parts of the transmission line will be visible from multiple locations, the majority of views from sensitive locations will be restricted.

The underground operations associated with the construction of the SCES Facility will operate during the night, however, construction of the surface facility will occur during daytime construction hours only. Surface lighting associated with the underground works will be minimal and relevant management and mitigation measures including appropriate directional lighting will be implemented to avoid any potential impact to residences.

Operational and security lighting required for the SCES Facility, will be minimal low-level lighting. The detailed design process for lighting will be undertaken in accordance with AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting requirements.



Photomontage Viewpoint 2 - After



Photomontage Viewpoint 6 - After

Land Resources and Land Use Conflict

Project will modify the existing land use within the Project Area by adding energy generation land use to the existing mining land use that will continue, with the two land uses coexisting.

A land use conflict risk assessment (LUCRA) has been completed for the Project following the relevant NSW government guideline. The key potential land use conflict risks include those associated with traffic (during construction and decommissioning), air quality, noise and lighting. These issues have been subject to assessment as part of the EIS and A-CAES NSW has committed to implement appropriate management and mitigation measures as part of the Project. With the implementation of these measures, the LUCRA found that these risks will be mitigated to low risks and that the potential impact of the Project on the surrounding land and land users will be minimal.

The Project will also provide a diversified post-mining land use for the Potosi Mine site and will provide a long-term land use solution of this land whilst also co-existing with the existing mining operations for their operational life.

Waste

Waste management as part of the Project will be carried out in accordance with relevant legislation and guidelines and based on the principles of the waste hierarchy (prevent, reduce, reuse, recycle, recover, dispose). A-CAES NSW will develop and implement a waste management plan to guide management of waste.

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.

Conclusion and Justification for the Project

A-CAES NSW has proceeded with the Project as a direct response to the reliability supply issues in Broken Hill and as the preferred option identified by Transgrid through the RIT-T process. The proposed co-location of the SCES Facility within the Potosi Mine site was selected due to favourable geological conditions, utilisation of the existing underground mine development for access to the right depth, utilisation of the existing mine support infrastructure to support construction and ability to effectively manage environmental and social impacts. The Project will also provide a diversified post-mining land use for the Potosi Mine site that leverages existing mining investment.

An iterative approach to Project design has been applied to the Project design and throughout the preparation of this EIS. The conceptual layout for the SCES Facility and transmission line corridor has been subject to ongoing refinement with the aim of minimising associated environmental, cultural and social impacts.

The Project will provide long-term, strategic benefits to Broken Hill and the State of NSW, including:



Providing innovative technology to achieve a long-duration grid-scale energy storage solution that aligns with the State of NSW's transition to a renewable energy-based system, contributing to reducing greenhouse gas emissions and the impacts of climate change



Contributing to maintaining reliability and security of the electricity network assisting with meeting current load demand



Supporting provision of the firming required to meet the rising contribution of renewables in the transitioning energy mix



Providing enhanced energy security for Broken Hill whilst providing low emission energy replacement for the existing diesel-fired turbines which are approaching the end of their operational life



Infrastructure investment of approximately \$638 million



Providing ongoing financial assistance through the Community Benefit Agreements that provide direct benefit to the local community, with a focus on: skills, training and education; community energy; local heritage; enhancement of the environment; social housing and cultural heritage awareness. Generation of employment through both the construction and operation phase and providing significant benefit to the regional and State economy

The EIS concluded that through the implementation of appropriate best practice management, the potential environmental and social impacts associated with the Project can be appropriately avoided or managed.

Given the identified need for the Project, the net benefit and commitment from A-CAES NSW to appropriately manage the potential environmental and social impacts associated with the Project, it is considered the Project would result in a net benefit to Broken Hill, the Far West Region and the broader NSW community.



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