

Project Overview

500 MW Advanced Compressed Air Energy Storage Facility

Capacity of up to 8,000 MWh (equivalent to 16 hours at full output)

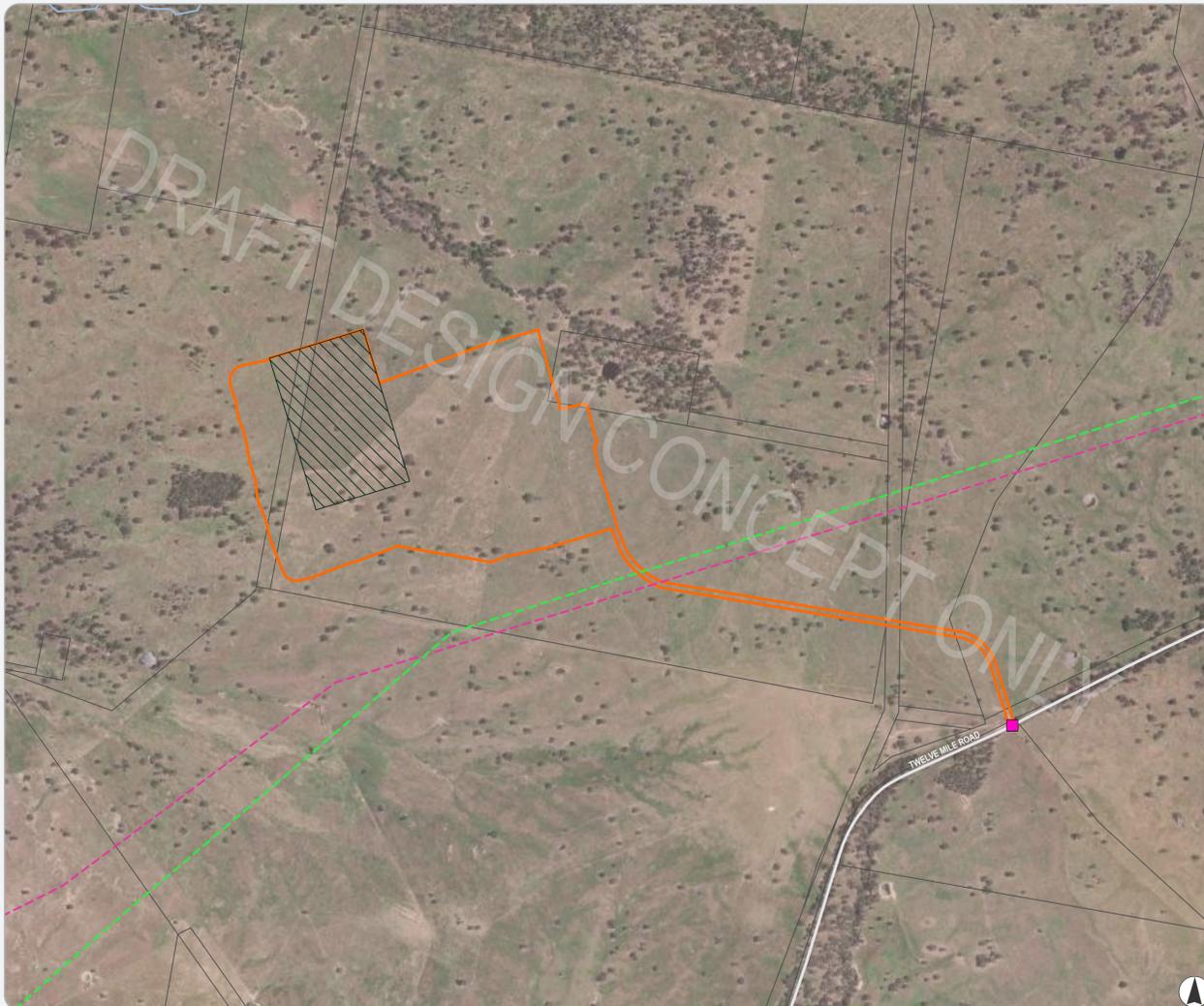
PROJECT COMPONENTS	DESCRIPTION
A-CAES Surface Facility	Comprised of compressor/generator trains, turbines, administrative buildings (office and store shed), and a substation (for connection to the electrical network)
Water Reservoir	1 water reservoir up to 1.5GL capacity
Underground Cavern	Underground cavern 600-900m depth from ground level with associated air and water subsurface shafts to connect to surface facility
Linear Infrastructure	Water supply pipeline

Project Benefits

- Provides the firming required to meet the rising contribution of renewables in the transitioning energy mix.
- Large-scale, long-duration energy storage option that supports other renewable energy projects in the region (the Central West Orana Renewable Energy Zone).
- Improve grid reliability by enabling dispatchable electricity when renewable generation is limited.
- Energy storage solution that does not rely on fossil fuels or hazardous materials.
- Generate hundreds of employment opportunities in the construction phase, and continue to support up to 25-40 full time employees during the operational phase.
- Investment in local region through local procurement.



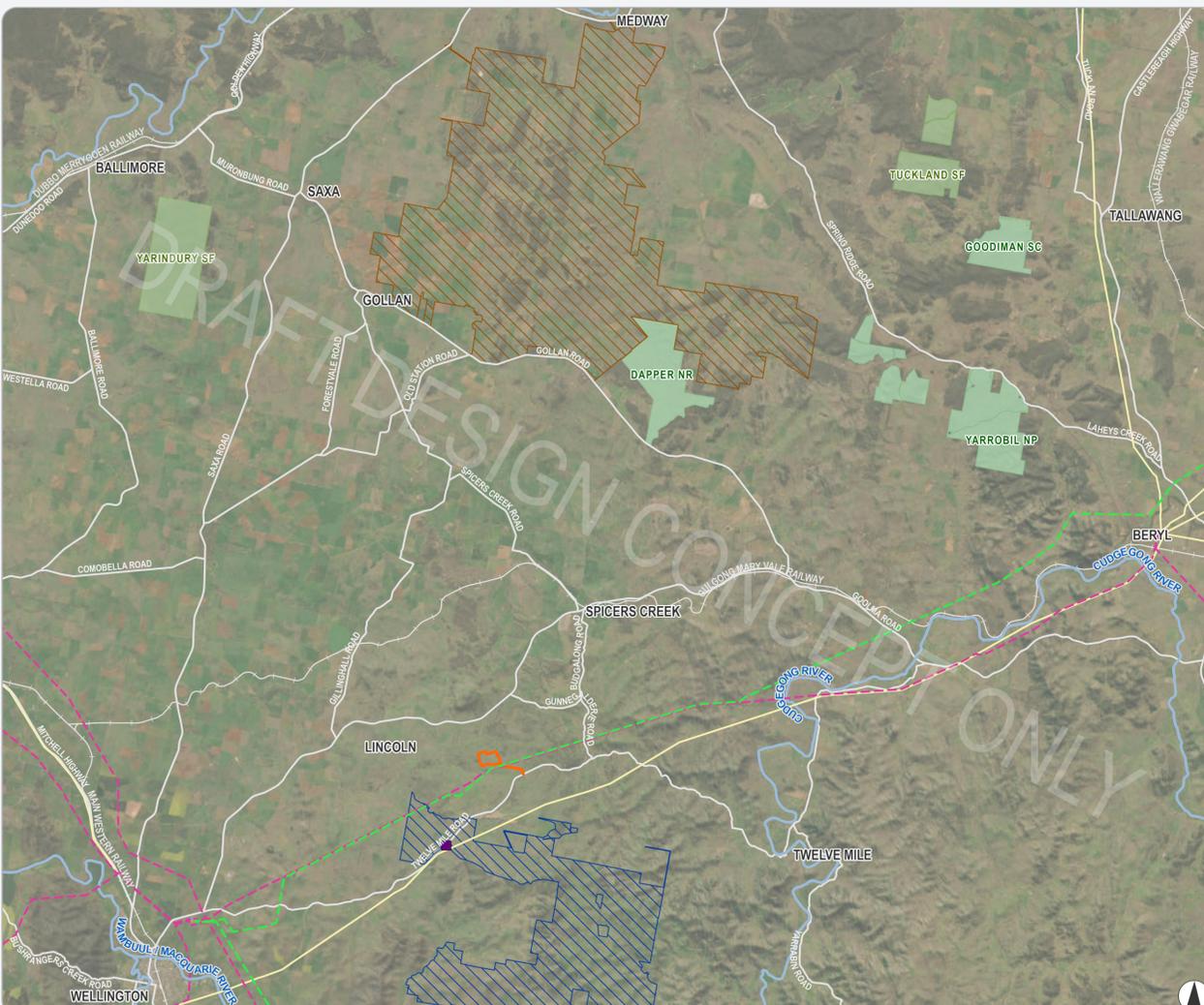
Local Map



Legend

- Indicative Development Footprint
- Indicative Underground Cavern
- Site Entrance Point
- 132kV Transmission Line
- 330kV Transmission Line
- Road
- Creek/River
- Cadastre Lot Boundary

Regional Map



Legend

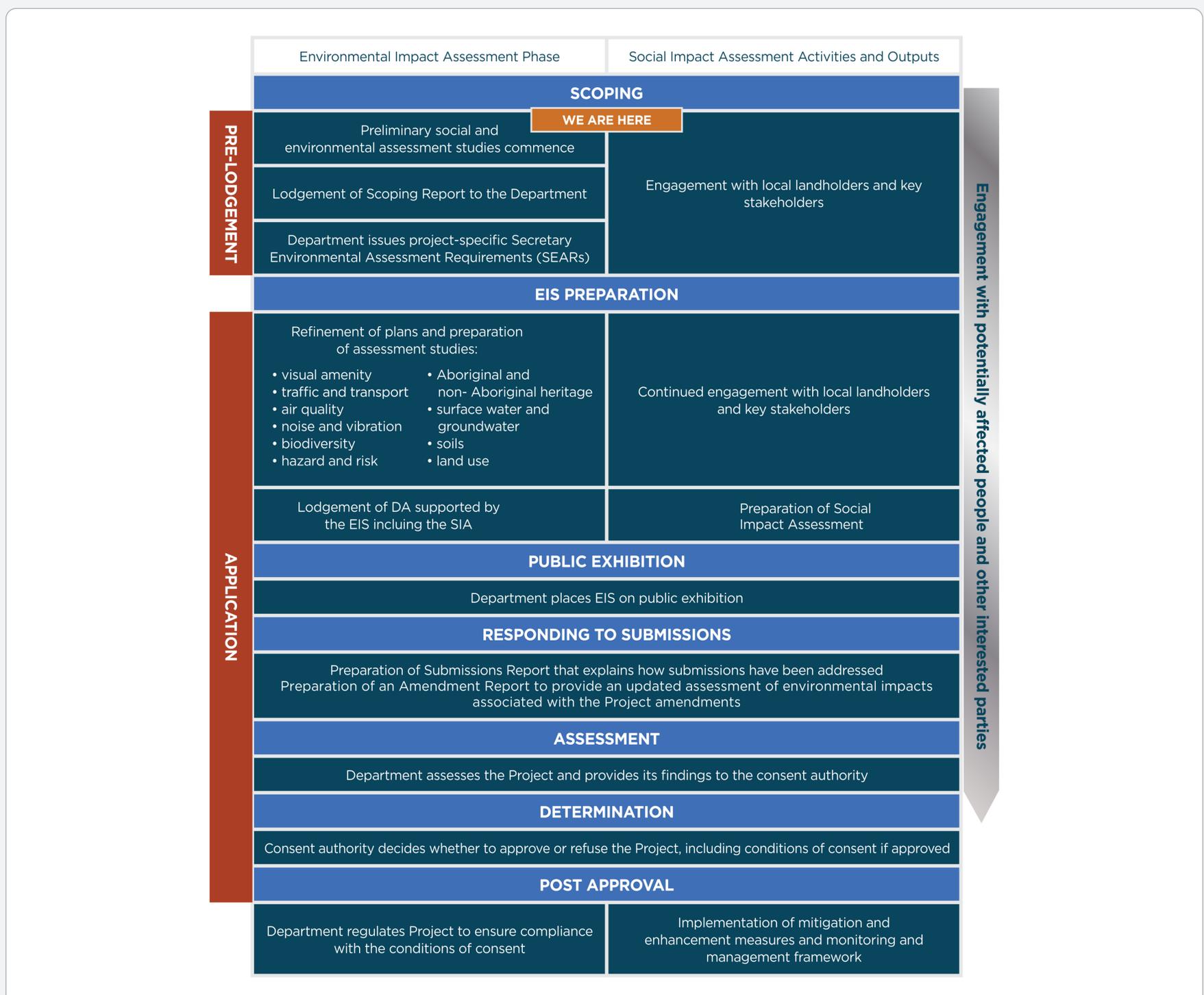
- Indicative Development Footprint
- Spicers Creek Wind Farm Project
- Ungula Wind Farm Project
- Ungula Wind Farm Site Entrance
- 66kV Transmission Line
- 132kV Transmission Line
- 330kV Transmission Line
- NPWS Reserve
- State Forest
- Railway
- Road
- Creek/River

NSW Planning and Assessment Process

The project is a State Significant Development (SSD) and requires development consent under the NSW Environment Planning and Assessment Act 1979. The planning and assessment process for applying for development consent for the Project is summarised in the figure below. Hydrostor is at the Scoping phase, which includes preliminary environmental and social studies and the preparation of a Scoping Report for the Project.

Once the Scoping Report is complete it will be submitted to the NSW Department of Planning, Housing and Infrastructure (DPHI) to inform the preparation of the Project specific Secretary’s Environmental Assessment Requirements (SEARs). The SEARs will inform the preparation of detailed environmental assessment and the Environmental Impact Statement.

A copy of the Scoping Report will be available on the Major Projects website (www.majorprojects.planning.nsw.gov.au).



Consultation and Engagement

We acknowledge the Wiradjuri people as the traditional custodians of the land where the Project Area is located and that they have a deep spiritual connection to the land and water/sea. We recognise that there are important cultural meanings and heritage present throughout the landscape and consultation with the traditional owners is both important to us and necessary for the project.

We are committed to ensuring that all of those impacted by the Project are given the opportunity to participate in a meaningful way and feel heard by us. To do this, we are preparing an engagement program that is designed to deliver authentic, open, responsive, and respectful engagement with the community, Council, government, and all of the stakeholders to the project. Our program will enable us to obtain stakeholder input into the identification, management, and enhancement of the impacts of our project, as well as obtain a comprehensive understanding of local community values, needs, and aspirations.

There are a range of ways you can get involved, including by filling out the survey (copies available here and by following the QR code below), attending future community information sessions, or reaching out to our project team or our advisors (please ask for details).



www.research.net/r/wellington_acaes

Social Impact Scoping and Assessment

A key part of the planning process for a State Significant Development project is the preparation of a Social Impact Assessment (SIA). A SIA is designed to identify, predict, and evaluate the likely social impacts arising from a project and propose responses to the predicted impacts. The SIA is integrated with the Scoping and EIS process.

The SIA will assess the Project from the perspective of people, including the wider community so as to understand what consequences people may experience from the change our Project will deliver. Identifying and understanding social impacts early-on assists us to avoid or reduce negative impacts and enhance positive impacts.

<p>WAY OF LIFE Including how people live, how they get around, how they work, how they play, and how they interact each day</p>	<p>COMMUNITY Including composition, cohesion, character, how the community functions, resilience, and people's sense of place</p>	<p>ACCESSIBILITY Including how people access and use infrastructure, services and facilities, whether provided by a public, private, or not-for-profit organisation</p>
<p>CULTURE Both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings</p>	<p>HEALTH & WELLBEING Including physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health</p>	<p>SURROUNDINGS Including ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity</p>
<p>LIVELIHOODS Including people's capacity to sustain themselves through employment or business</p>	<p>DECISION-MAKING SYSTEMS Including the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.</p>	

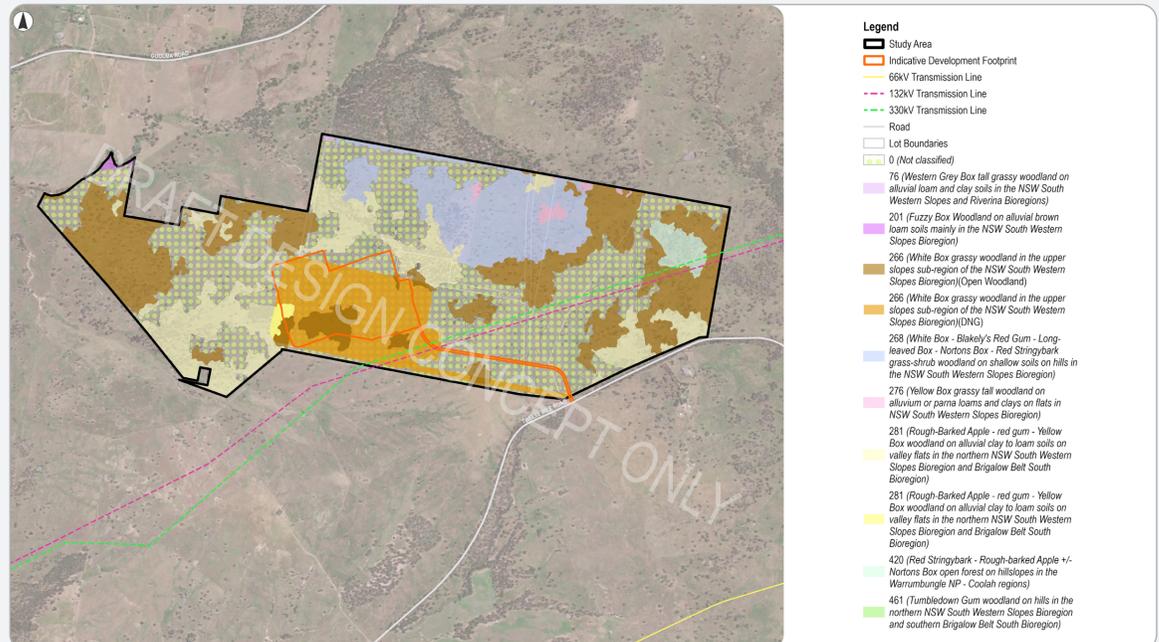
Biodiversity

The Project site and surrounding area include native vegetation and habitats that support threatened species. Protecting biodiversity is a key priority during planning and design.

The Project site has historically been used for grazing in modified pastures and native vegetation grazing for domestic stock. The area is in the Bioregion or Interim Biogeographic Regionalisation for Australia (IBRA) of the NSW South Western Slopes.

Ecologists have completed a preliminary assessment of the site which found the following Plant Community Types (PCTs) within the indicative development footprint:

- Rough-Barked Apple – red gum – Yellow Box woodland (PCT 281)
- White Box grassy woodland and Derived Native Grasslands (PCT 266)



These Plant Community Types have the potential to conform with the following Threatened Ecological Communities:

- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland -Critically Endangered listed as critically endangered under the Environment Protection and Biodiversity Conservation Act 1999.
- White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions listed as critically endangered under the Biodiversity Conservation Act 2016.

Superb parrots (*Polytelis swainsonii*) were observed at the site. Superb Parrots are listed as Vulnerable under both the Biodiversity Conservation Act 2016 and the Environment Protection and Biodiversity Conservation Act 1999. Habitat features such as hollow Bearing trees, large trees, stick nests, and rocky outcrops.



Male and female superb parrots (*Polytelis swainsonii*) observed north of the Project area.

Social Impact Scoping and Assessment

Detailed biodiversity assessment is proposed to support the EIS for the Project, including:

- Seasonal Biodiversity Survey
- Detailed Vegetation Mapping
- Threatened Ecological Community Delineation
- Targeted Threatened Flora Transect Searches
- Species Specific Fauna Surveys

What happens next?

- Commonwealth EPBC Act referral to assess potential impacts on Matters of National Environmental Significance (Threatened Ecological Species and Flora Communities).
- Seasonal biodiversity survey for flora and fauna.
- Detailed Biodiversity Development Assessment Report (BDAR) under the Biodiversity Conservation Act 2016.
- Design refinements to avoid and minimise impacts where possible.

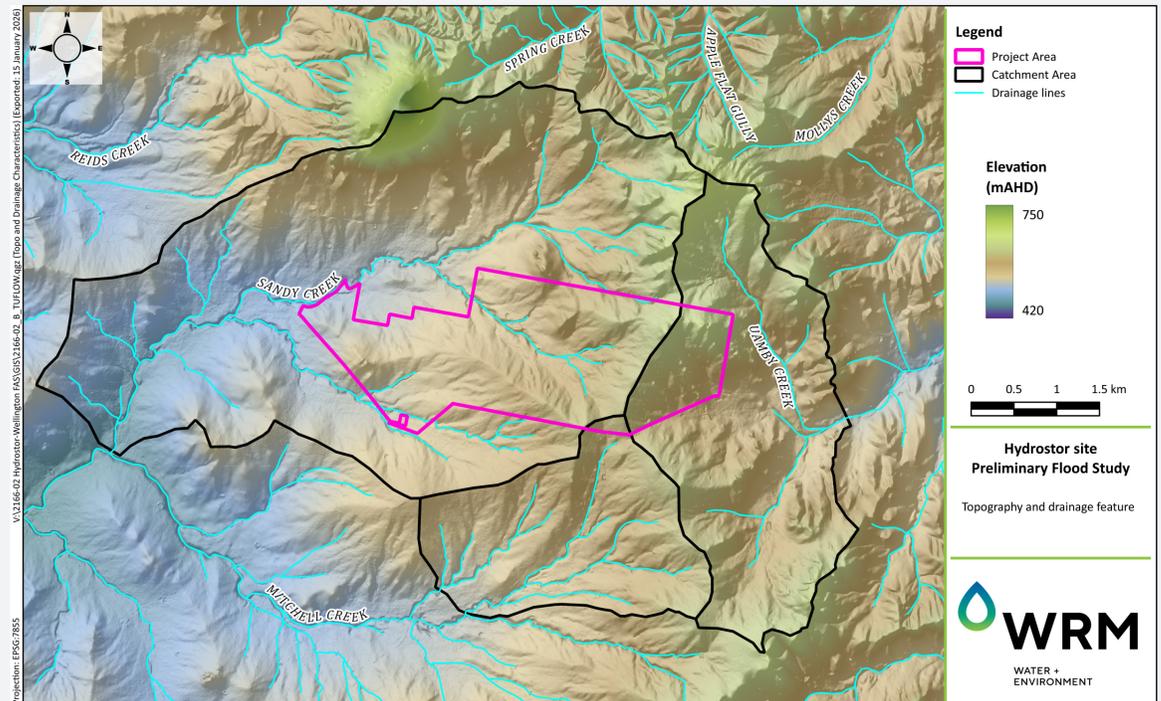
How impacts to biodiversity can be managed:

- Avoid clearing high-value vegetation through project design where possible.
- Implement habitat protection and offset strategies.
- Implementation of ongoing management and monitoring during construction and operation.

Water Resources

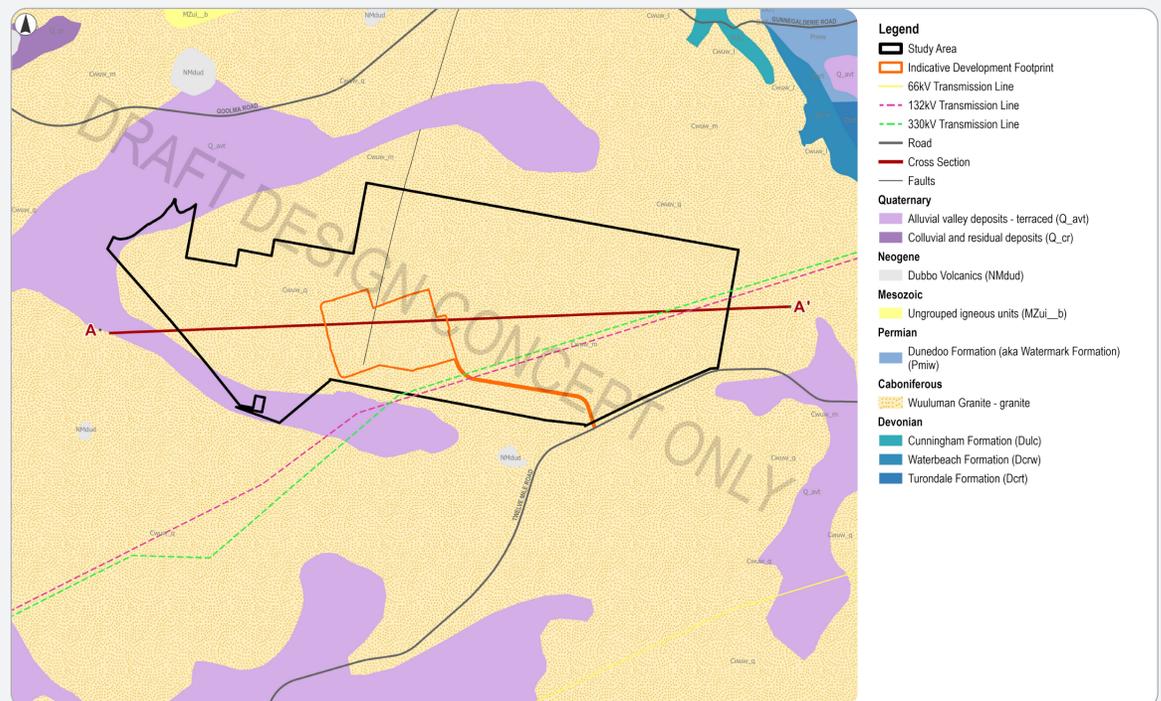
Surface Water:

- The site is within the Macquarie-Bogan catchment, near ephemeral creeks (Sandy Creek and Mitchell Creek). There are no major watercourses in the vicinity of the site.
- A Flood Appreciation Study has been undertaken to identify the potential flood risk associated with the site. The Study found the site has a low flood risk.



Groundwater and Geology:

- Based on regionally mapped geological conditions the site is well suited for the Project.
- The site consists of low hills with sodosol soils and underlying granite bedrock.
- Historic mining occurred nearby (Bodangora), with no mine workings within the site.
- Preliminary investigations indicate stable geological conditions suitable for underground cavern construction.
- Groundwater occurs in low-yield fractured rock aquifers. Potential groundwater inflows will be investigated through detailed assessment.
- No regionally significant aquifers or groundwater-dependent ecosystems identified during the preliminary investigations for groundwater, this will be confirmed through detailed assessment.



Project Water Demand

Water is essential for the A-CAES process, particularly for hydrostatic compensation in the underground cavern and for operational needs. Managing water responsibly is a key priority.

Water licensing and approvals under the Water Management Act 2000 will apply to the Project. Water licensing will be required for initial reservoir fill and ongoing operational needs.

Water supply: Options for supply are currently being explored in conjunction with government authorities.

Initial Fill: A one-time significant water volume will be required for the first fill (Up to 1.5 giga litres [GL]) (exact figures to be confirmed during EIS phase).

What happens next?

- Detailed surface water and groundwater assessment.
- Flood risk and drainage design.
- Consultation with relevant government authorities regarding water supply licensing and compliance.
- Detailed geotechnical investigation proposed to inform detailed design of the Project will also inform the detailed groundwater assessment.

Detailed surface water and groundwater assessments will be completed during the EIS phase.

These assessments will identify the potential impacts on local water users and local water resources. Hydrostor will undertake continued consultation with water regulators and landholders in relation to any potential impacts to water resources and water supply requirements for the Project.

Further consultation will be undertaken with the community during the preparation of the detailed specialist assessments to communicate the results and discuss the proposed management and mitigation measures.

Aboriginal Cultural Heritage and Historic Heritage

A preliminary heritage constraints assessment has been undertaken. The preliminary assessment included desktop assessment and a site inspection attended by an Umwelt Heritage Consultant and a representative of the Wellington Local Aboriginal Land Council (LALC). The preliminary assessment makes the following conclusions:

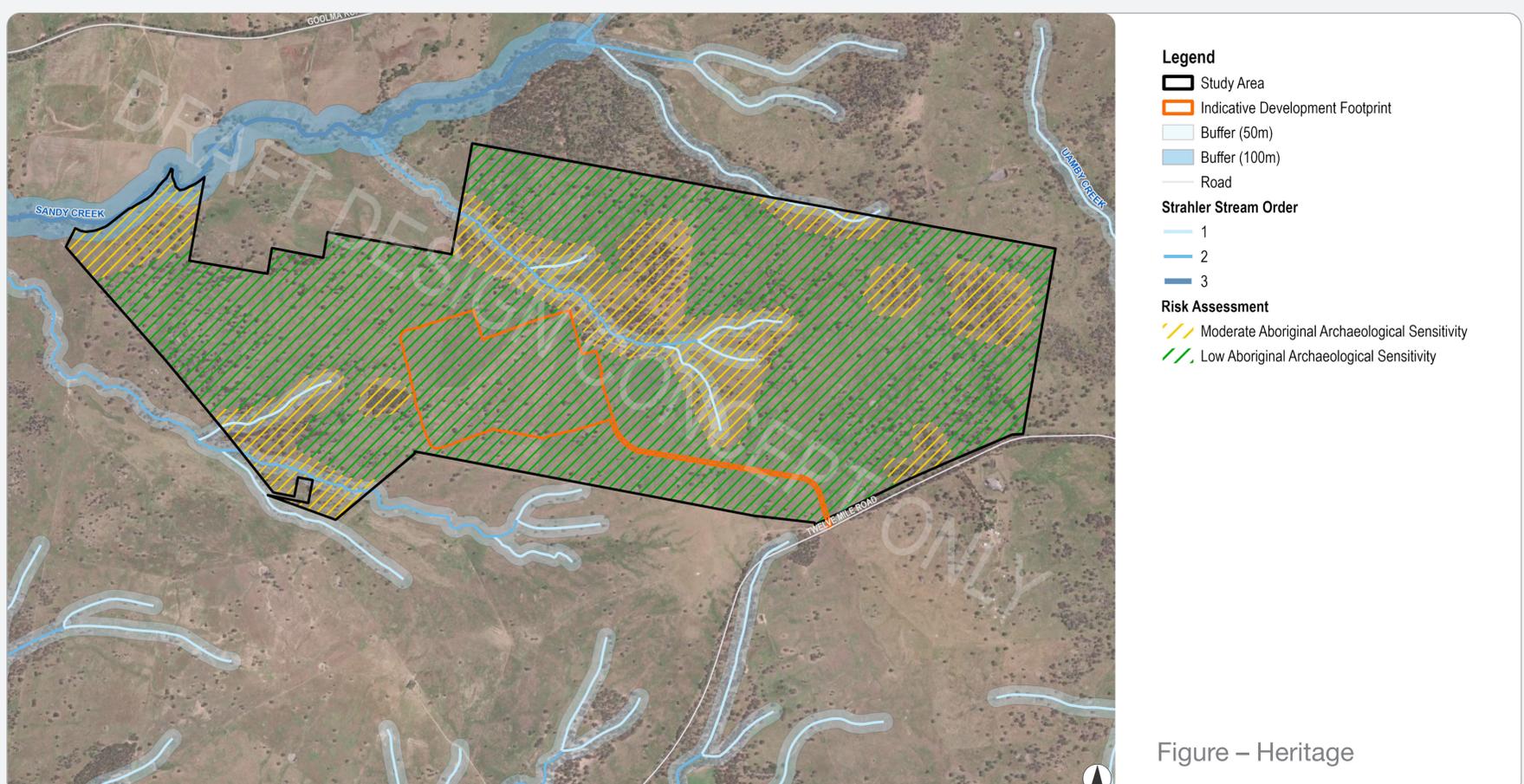
- Impact to Aboriginal objects and sites is considered low to moderate within the indicative development footprint, which avoids most moderate and all high sensitivity areas.
- The wider study area has areas that are moderate to high sensitivity for Aboriginal cultural heritage however the Project has been designed to avoid these areas.
- No historic heritage listings are located within the Study Area.

What happens next:

The EIS phase will include the preparation of an Aboriginal Cultural Heritage Assessment and a Statement of Heritage Impact.

The Aboriginal community will be formally consulted as part of the preparation of the Aboriginal Cultural Heritage Assessment in accordance with the NSW guideline Aboriginal Consultation Requirements for Proponents (DECCW 2010). The consultation requirements involve identifying and registering Aboriginal knowledge holders who are referred to as project Registered Aboriginal Parties (RAPs).

Further consultation will also be undertaken with the community during the preparation of the detailed specialist assessments to communicate the results and discuss the proposed management and mitigation measures.



Impact Assessments

Noise

Construction and Operation of the Project will generate noise.

A detailed assessment of the potential noise and vibration impacts associated with the construction and operation of the Project will be prepared to inform the EIS. This assessment will consider noise from the Project and the Project's contribution to cumulative noise impacts. The assessment will determine the required noise criteria applicable to the Project and the required measures to minimise or mitigate noise.

Construction activities will occur over a 4-6-year and include:

- Onsite earth works, cavern excavation, and construction of the water reservoir.
- Construction of the surface infrastructure will occur during this construction period.

The works will be subject to all reasonable and feasible noise management and mitigation measures. During the operation phase, noise sources include:

- The operation of compressors, turbines and water pumps.
- Maintenance work on the A-CAES facility components.

Risks and Hazard

Hazard and Risks associated with the Project will be assessed in detail during the EIS phase, this includes:

- Geotechnical Land Stability
- Bushfire
- Land Contamination Assessment
- General Hazard Assessment

These potential hazards and risks associated with the Project will be subject to detailed assessment during the EIS phase.

Detailed Assessment and Further Consultation:

Detailed assessment of the potential impacts associated with the construction and operation of the Project will consider both impact from the Project and the Project's contribution to cumulative impact.

The assessments will determine the required development consent criteria applicable to the Project and recommend measures to minimise or mitigate noise.

During the preparation of these detailed assessments Hydrostor will undertake further consultation with the community to communicate the results of the assessments and discuss the proposed management and mitigation measures.

Air Quality

Construction activities can generate dust, though Hydrostor will work to mitigate these impacts as much as possible. Listed below are some examples of potential contributions to the local air quality:

- Drill and blasting for subsurface cavern and access shafts,
- Earthworks for excavation and surface infrastructure,
- Dust generation off stockpiled material, and
- Traffic associated with the Project.

Potential impacts associated with Air quality and Greenhouse Gas Emissions will be assessed in detail during the preparation of the EIS.

The EIS will consider dust and pollutant sources, air quality impacts during construction and operation, and the greenhouse gas emissions associated with the Project. The assessment will also determine the air quality and greenhouse gas management and mitigation measures required for the Project.

Visual

The site is a pastoral grazing paddock, typical of the surrounding landscape. The construction of the A-CAES facility and its associated linear infrastructure (e.g. transmission lines) will be visible from outside the site.

The nature of any potential visual impact will need to be further identified and assessed through a detailed Visual Impact Assessment.

This will include radial and viewshed analysis and the preparation of photomontages.



About Hydrostor

Hydrostor is a leading energy storage, technology, and infrastructure company dedicated to developing utility-scale long duration energy storage solutions.

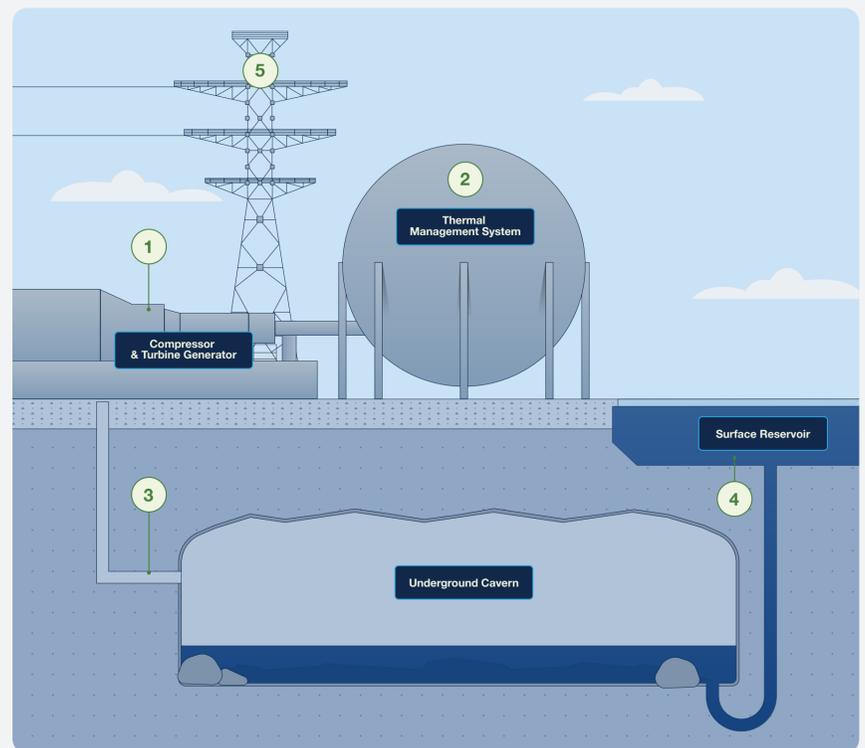
Improving upon a proven, commercially mature technology to store compressed air in underground caverns, Hydrostor's cost-effective solution delivers energy security and lasting reliability from a compact facility that can be strategically located to meet regional needs.

Integrating Proven Technology and Construction Approaches

- | | | |
|--|---|--|
|  Utility-Scale (500+ MW) |  Existing Supply Chains |  Using Air, Rock, & Water |
|  Long-Duration (8+ Hours) |  Warranty & Bonding |  Highly Scalable |
|  Cost Effective |  Customized System Design |  Patented Process |
|  Flexible Siting & Low Impact |  Zero Degradation |  50+ Year Period Asset Lifetime |
|  Emission Free Operation |  Effective, Unrestricted Cycling |  Synchronous Inertia |

The Closed Loop A-CAES Process

- 1 Compression**
Energy powers an air compressor, generating heat in the process.
- 2 Heat exchange**
Heat is extracted from the compression process and captured by a thermal management system for reuse.
- 3 Air storage**
Compressed air is pumped down and stored in a purpose-built, water-filled cavern.
- 4 Water displacement**
Compressed air displaces water, forcing it up the shaft to the surface reservoir.
- 5 Discharge**
When energy is needed, the process is reversed to generate electricity.



Other Projects



500 MW (4,000 MWh) project in Kern County to help meet California's requirement for utilities to procure long-duration storage resources and ensure reliability statewide.



Precedent setting project that is providing LDES capacity and transmission reliability service with a 200MW, 8-hour (1,600 MWh) long-duration storage project.

Our Investors



Asset Management

