

CONSULTATION INFORMATION PACK

Application for authorisations under the *Aboriginal Heritage Act 1988* (SA)

Goyder South Hybrid Renewable Energy Project

- Applicant:** Neoen Australia Pty Ltd
- Application Type:** Sections 21 and 23 of the *Aboriginal Heritage Act 1988* (SA)
- Application Area:** An area of land comprising some 30,000 hectares (ha) located south of Burra and north of Robertstown in the Goyder Regional Council area of South Australia
- Proposed Activities:** Construction of wind turbine generators, two solar farms, two battery storage and grid connection facilities, three substations, underground cabling and overhead transmission lines, permanent operations and maintenance compounds, temporary construction compounds, access tracks and meteorological masts; landscaping; decommissioning of Project components; and other ancillary works that may be required to undertake, maintain, and decommission the Project

Figure 1 – Location of proposed south substation (image courtesy of the Applicant)



INTRODUCTION

The Premier of South Australia, who is responsible for the *Aboriginal Heritage Act 1988* (SA) (Act), has received an application for authorisations under sections 21 and 23 of the Act from Neoen Australia Pty Ltd (Applicant). The Applicant seeks to establish a large-scale hybrid renewable energy and storage project some 5 km south of Burra in South Australia (Project). The application area is shown on the map at Attachment 1 bounded in yellow (Application Area).

The Department of Premier and Cabinet – Aboriginal Affairs and Reconciliation (AAR) is aware of at least four Aboriginal sites of significance to Aboriginal archaeology, anthropology and tradition that intersect the Application Area.

The Project seeks to establish wind and solar farms and battery storage facilities. The Project would provide energy to the Applicant's industrial and electricity retail customers, and in emergency situations, feed power into the grid to ensure continuous power supply.

The Project would involve ground-disturbing works associated with: the construction of wind turbine generators, two solar farms, two battery storage and grid connection facilities, three substations, underground cabling and overhead transmission lines, permanent operations and maintenance compounds, temporary construction compounds, access tracks and meteorological masts, landscaping, decommissioning of Project components and other ancillary works that may be required to undertake, maintain, and decommission the Project.

An indicative layout of the Project is provided at Figure 2.

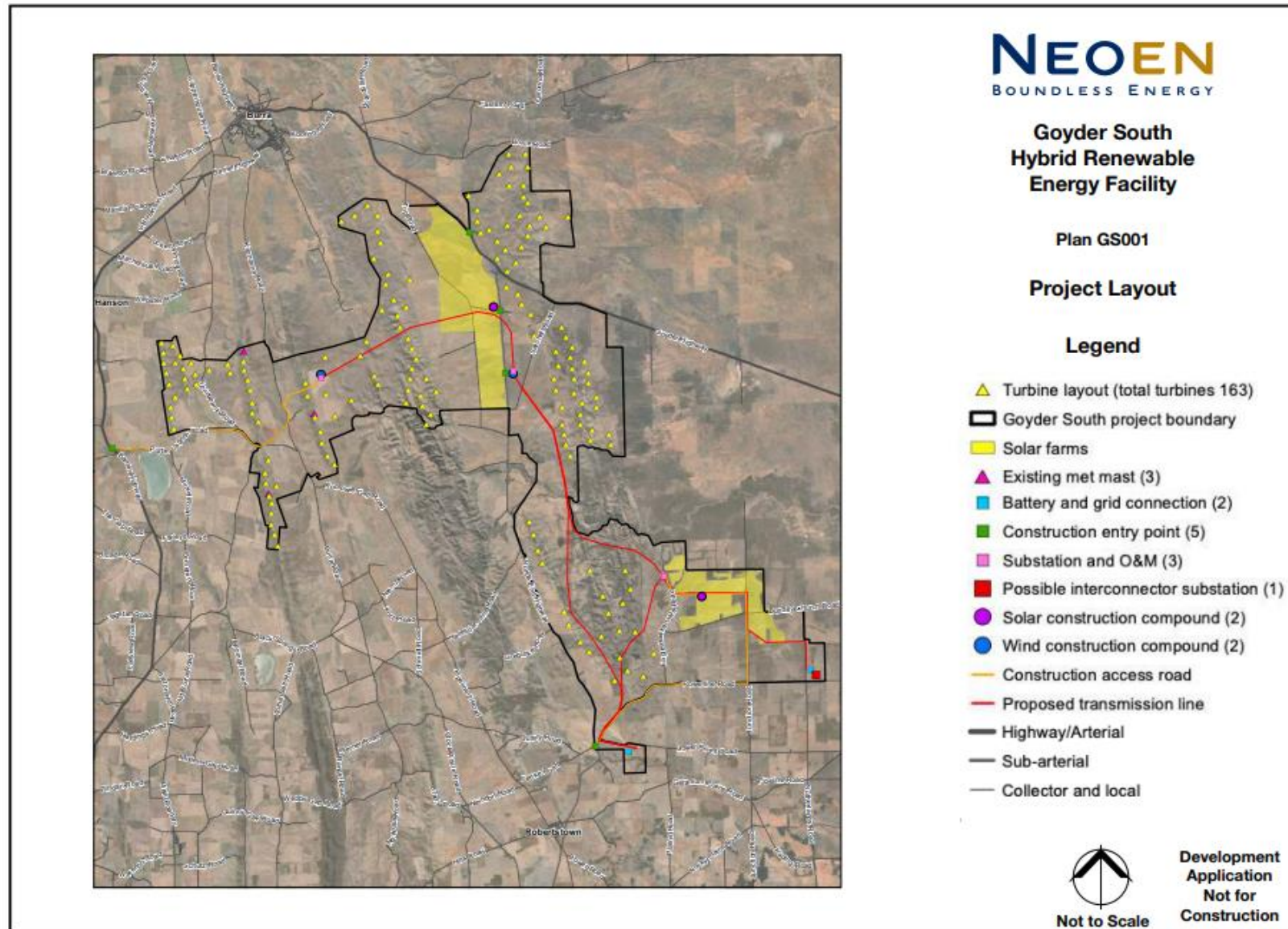
Section 21 of the Act makes it an offence to excavate land to uncover Aboriginal sites, objects and/or remains (heritage) without the Premier's authorisation, whilst section 23 of the Act makes it an offence to damage, disturb or interfere with Aboriginal heritage without the Premier's authorisation. The Applicant has sought the authorisations as the Project works may damage, disturb or interfere with Aboriginal heritage.

Prior to considering whether to grant an authorisation, section 13 of the Act requires the Premier to understand and consider the views of a range of interested Aboriginal parties. AAR conducts this consultation on the Premier's behalf, seeking the views of Traditional Owners, the State Aboriginal Heritage Committee (Committee) and other Aboriginal parties that the Premier considers may have an interest in the matter.

The information in this consultation information pack is based on information provided to AAR by the Applicant.

Figure 2 – Indicative Project layout (image courtesy of the Applicant)

The Applicant advises that the layout is subject to change as detailed plans for construction purposes are finalised



PROJECT OVERVIEW

The Applicant

The Applicant is headed by a Paris-based business that was founded in 2008. It has constructed and operates renewable energy facilities including solar, wind and storage in Europe, Central America, Africa, the Middle East and Australia. The Applicant's largest branch outside of France is in Australia, with offices in Sydney and Canberra, as well as part-time offices in Adelaide and Burra. The Applicant's South Australian projects include the Hornsdale Wind Farm and Power Reserve, more commonly known as the 'Tesla big battery', which was built in 2017 and expanded in 2020.

Goyder Renewables Zone (GRZ)

The Applicant seeks to establish renewable energy facilities in the Goyder region of South Australia, some 100 km south-east of the Tesla battery at Hornsdale. It intends to construct these facilities with a view to supplying continuous green energy to its industrial customers and electricity retailers as well as into the South Australian grid, if required. Given the scale of the GRZ, it is proposed to be constructed in multiple stages and substages.

The Project is part of the Applicant's broader GRZ, which includes another future project north of Burra (known as the Goyder North project). The Goyder North project is the second half of the GRZ and does not form part of this application for authorisations. The Applicant intends to pursue separate approvals for the Goyder North project in the future.

For a more detailed overview of the GRZ, refer to the Applicant's Community Information Booklet, which can be accessed via: dpc.sa.gov.au/heritage-applications.

Application Area

The Application Area consists of natural landscape (including outcrops, creeks, gorges and woodland) as well as land used for grazing and cropping. The Application Area is located within the Goyder Regional Council's Primary Production Zone, which permits wind farms and ancillary development.

The Application Area falls primarily within the boundaries of the Ngadjuri Nation #2 native title claim being made by Ngadjuri Nation Aboriginal Corporation (NNAC).

Most of the Application Area is privately-owned agricultural land but includes some parcels of Crown land. While Project components would cross Crown land (e.g. unmade roads), no Project components would be built on Crown land.

Although the Application Area covers a total area of approximately 30,000 ha, the actual total Project footprint is expected to be around 3,300 ha.

The Applicant has chosen the Application Area for the Project because of:

- the region's high-quality supply of wind and sunshine
- the landscape is well-suited for wind and solar infrastructure
- its proximity to the Robertstown grid substations

- its proximity to the future SA-NSW interconnector
- the low density of dwellings
- its ability to provide adequate setbacks from residences and sensitive ecological areas.

Anticipated Project benefits

The Project is described as a ‘hybrid’ renewable energy project because it combines wind, solar and battery storage. The Applicant says that “hybrid projects such as this are the natural ‘next step’ in the transition to a cleaner, cheaper, renewable economy.”

The Applicant’s total investment in the Project is expected to be around \$3 billion across all stages.

At its peak, the Project is expected to produce up to 4,800,000 MW hours per year of low-cost renewable energy and provide battery storage that can support the grid. The Applicant advises that the Project’s output would ultimately help drive down the price of electricity. According to the Applicant, the Project’s expected renewable energy output would be equivalent to displacing over 2.5 m tonnes of CO² emissions, powering 1.1 m homes, removing 1 m cars from the road and planting 41 m trees.

The Project is also expected to support the state reach its goal of net 100% renewables by 2030. At full capacity, the Project’s renewable energy output would represent around 33% of the state’s overall energy production and around 86% of the state’s renewable energy production.

Project benefits anticipated throughout the 25-year life of the Project include:

- 300 staff during construction
- up to 20 ongoing staff once operational
- up to \$600,000 per year of funding to community benefits scheme for community-based projects.

The Applicant has set a 3% Aboriginal and Torres Strait Islander employment target for all Project engineering, procurement, construction, operations and management labour, excluding turbine construction and installation.

PROJECT DETAILS

Staging and timeframes

Given the scale of the Project, the Applicant proposes to construct it in multiple stages, subject to customer demand. The Applicant has allowed a 12-years for the Project to be completed, which allows for unforeseen delays.

Stages 1A and 1B of the Project

The first stages of the Project, known as ‘Stages 1A and 1B’, are expected to commence in 2022 and be completed in 2024. Stages 1A and 1B would involve the construction of 38 and 37 wind turbines respectively, and a substation in the north-western part of the Application Area (Substation West). Substation West would incorporate an operations and maintenance compound.

An overhead transmission line some 40 km long is also proposed as part of the first tranche of Project works. The overhead transmission line would extend beyond the footprint of Stages 1A and 1B.

Other Project works contemplated in the first tranche of works include access tracks and temporary construction compounds, trenching for cabling and the installation of meteorological masts.

The nature of these activities is detailed in Attachment 3. Attachment 2 shows a map of Stages 1A and 1B and the proposed overhead transmission line.

Subsequent stages

The Applicant advises that it is not yet possible to determine the exact size and composition of each subsequent stage because this will depend on the demand from its electricity customers. Each stage would likely take between 18 and 24 months to complete, with stages commencing as others end.

Project components

The Project components can broadly be classified as either permanent or temporary.

Permanent structures

Wind turbines

The Applicant proposes to construct wind turbines across the Application Area, starting within the footprint of Stages 1A and 1B. The combined footprint of the turbines is expected to account for approximately 0.1% of the total Application Area. Figure 3, showing wind turbines and battery facility at Hornsdale, is provided for illustrative purposes.

Figure 3 – Wind turbines and battery facility at Hornsdale (image courtesy of the Applicant)



Solar farms

Two solar farms are proposed within the Application Area – referred to as ‘Bright Solar Farm’ and ‘Worlds End Solar Farm’. The solar farm footprints are approximately 1,342 ha and 2,097 ha respectively. This area was previously heavily used for cropping and/or grazing.

The Bright Solar Farm would be located toward the south of the Application Area and the Worlds End Solar in the north – see Figure 2.

The Applicant says that it would establish a permanent vegetation cover beneath the solar panels, with controlled sheep grazing to assist with vegetation management.

The Applicant says that it may use one or both solar farms, depending upon landowner negotiations, ecological surveys and other technical investigations.

Substations including Operations and Maintenance (O&M) facilities

The Project wishes to create three substations – one adjacent to each of the solar farms and a third in the north-western part of the Application Area – see Figure 2.

These substations would include a range of electrical equipment that manages and controls the supply of electricity, such as a control/switch room and ancillary equipment. Substations would be connected to each other and to the grid by overhead transmission lines.

Each substation would include a separate area designated for O&M facilities, which would provide a base to support maintenance and repair activities across the Project. These would include an office with staff amenities, car park, workshop/shed and laydown/temporary storage.

Batteries and Grid Connections (BGC)

The Applicant proposes to construct two battery and grid connection facilities – one adjacent to the existing grid substation at Robertstown (Robertstown BGC Facility) and the other at or near to the future SA-NSW interconnector grid substation (Interconnector BGC Facility). The interconnector substation is part of a separate project being led by ElectraNet (SA) and TransGrid (NSW). See Figure 2 for indicative locations of the BGC Facilities.

The Applicant wishes to construct the BGC Facilities close to the grid connection substations so that they can reliably and stably support the electricity network. They would each include O&M areas, construction laydown areas, switchyards and ancillary infrastructure.

As well as proximity to a substation, the Applicant says the Robertstown BGC Facility location would allow it to use existing transmission and distribution lines, and reduce the need to clear vegetation. The Applicant notes that this location is already impacted by energy infrastructure.

The Applicant says BGC Facilities would have substantially similar layouts, subject to any modifications required by the SA-NSW interconnector project.

Overhead transmission lines

The Applicant advises that a double-circuit 275 kV or 330 kV overhead transmission line would connect the three substations and the Robertstown BGC Facility, and later, the Interconnector

BGC Facility. This would require the construction of approximately 97 transmission towers.

Additional high voltage overhead transmission lines would be required to connect the various elements of the Project – see Figure 2.

The transmission lines proposed for the Project would be similar to national grid transmission lines and be roughly 56 km long in total. Figure 4 shows a typical example of transmission towers and lines.

Figure 4 - Typical example of transmission lines and towers (image courtesy of the Applicant)



Temporary structures

In addition to permanent structures, the Applicant proposes ground-disturbing works for temporary facilities to enable construction of the Project. These include:

- two wind construction compounds within the western and eastern substations. These may include temporary batching plants to make concrete for turbine foundations
- a solar construction compound within each solar farm
- construction compounds for offices, staff amenities, carparking, storage and laydown areas.

Further details are provided at Attachment 3.

The Applicant advises that the temporary facilities would be decommissioned and the affected land rehabilitated, once the relevant construction stage concluded.

Additional works and Project flexibility

The Applicant notes that exact scope of Project works, including the full extent of excavation activities that may be required, would only be confirmed as the Project design for each stage

was finalised.

Additional works may therefore also be required to finalise Project, including:

- trenching for cabling and connections
- piling for security fencing and signage
- approved vegetation clearing
- upgrading and maintaining roads and entry points
- landscaping
- rehabilitation and re-vegetation
- importation of fill material sourced from local quarries
- installation of repeater infrastructure, which may be required to reduce interference to local television, radar, radio transmission and/or reception services.

The Applicant advises that the maximum excavation depths associated with ancillary works are unlikely to exceed 2 metres.

Changes to the Project layout may also be required after detailed site investigations, approvals, licences, permits and negotiations with landowners.

The Applicant has requested a 200 m 'micro-siting allowance' for all Project works. This means that Project components could be re-positioned, where necessary and practical, to avoid or address on-ground matters, including the presence of Aboriginal archaeological heritage. The Applicant notes that micro-siting is critical for large projects and is generally used after approvals have been obtained and construction designs finalised.

Other approvals and consents

The Applicant advises that prior to commencing construction, it must satisfy several assessment and approvals, some of which are legislated. An Environmental Impact Statement is not required for the Project.

Nonetheless, the Applicant has commissioned a range of specialist reports, including a flora and fauna assessment, a landscape and visual impact assessment, a shadow flicker and blade glint assessment, an environmental noise assessment, a traffic impact assessment, an electromagnetic interference assessment, an aeronautical impact assessment (including aviation and obstacle lighting impact assessments), and cultural heritage assessments – both Aboriginal and non-Aboriginal.

The Applicant says these studies have changed the Project design, including the reduction of wind turbines, the implementation of buffers and setbacks, and the relocation of other infrastructure. The studies also identified mitigation practices, which the Applicant is prepared to make allowances for to further reduce Project impacts to the Application Area.

Full copies of these reports, as well as the Applicant's Development Application, which includes key report findings and the Applicant's responses to them, can be accessed via: dpc.sa.gov.au/heritage-applications.

In addition to satisfying the *Development Act 1993* (SA), the Applicant says it is also addressing requirements under other legislation, including:

- the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), which regulates the protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places. The Applicant says that it will commence the assessment process under this Act in the near future, noting its expectation that any impacts from the Project are likely to be minimal and manageable
- the *Native Vegetation Act 1991* (SA), which protects native vegetation. The Applicant advises that it is preparing for an application to the Native Vegetation Council to clear some native vegetation in the Application Area. The Applicant has undertaken to ensure all reasonable efforts to minimise clearing, and notes that the area has a long history of grazing and cropping and as a result is already somewhat degraded.

The Applicant says that approvals to remove native vegetation typically includes a requirement to provide a 'Significant Environmental Benefit' as an offset for the vegetation removal. The Applicant intends to meet this requirement by developing around 955 ha of land south of the Application Area as a permanent conservation reserve in consultation with government and non-government stakeholders.

In relation to landholder consent, the Applicant advises that it is liaising with the Department for Environment and Water about Project components that may intersect Crown land within the Application Area. The Applicant is also working over 40 other landholders to enter into agreements to use their land for the Project.

Decommissioning and rehabilitation

The Project infrastructure is expected to have an economic life of 25 to 30 years. After this, infrastructure will either be decommissioned or replaced.

The Applicant says that if it chooses to decommission the Project, it would prepare and implement a decommissioning plan that would include: removal of above-ground buildings, foundations and equipment, rehabilitation of disturbed land and recycling of all recyclable materials, including batteries. The Applicant estimates that over 60% of materials in the batteries could be recovered for re-use.

To avoid additional soil disturbance, decommissioning would not typically include the removal of infrastructure located more than 0.6 m below ground level. The Applicant advises that infrastructure remaining underground would not cause harm to the environment or disrupt agricultural activities. Other infrastructure may also remain when the Project ceases to operate, such as access tracks, if requested by landowners.

ABORIGINAL ENGAGEMENT

The Applicant advises that it is working with the Ngadjuri people on the Project, noting it already had an existing relationship with them through the Hornsdale Wind Farm and Power Reserve, also on Ngadjuri traditional lands.

The Applicant says that to date, consultation with NNAC about the Project has focused on:

- the avoidance and preservation of any Ngadjuri cultural heritage
- broad benefit-sharing arrangements through training and employment opportunities for Aboriginal people, especially for NNAC members.

The Applicant advises that it intends to set binding best-practice Aboriginal participation targets for the Project. To help achieve this, the Applicant says that it has engaged RAW Recruitment, an Adelaide-based firm that specialises in helping companies recruit Aboriginal people for construction projects.

The Applicant engaged NNAC's nominated heritage consultant, Blackwood Heritage Consulting (BHC), to undertake an anthropological heritage survey of the footprint for Stages 1A and 1B. The Applicant says it is committed to working with NNAC to achieve additional surveys before the commencement of any additional stages.

KNOWN ABORIGINAL HERITAGE WITHIN THE APPLICATION AREA

Most of the Application Area is the traditional land of the Ngadjuri people.

AAR's central archives do not contain any records relating to the Application Area; however, there are three sites of significance recorded within 1 km of it. The closest is some 460 m from the Application Area's northern boundary. AAR's central archives also contain reports about Aboriginal sites and culturally sensitive landscapes within the broader local region.

As the central archives are a non-exhaustive record of Aboriginal heritage across the state, it is possible that unrecorded Aboriginal heritage exists within the Application Area.

HERITAGE ASSESSMENTS UNDERTAKEN BY THE APPLICANT

To date, the Applicant has commissioned three Aboriginal heritage assessments for the Project. A brief overview of these follows.

Blackwood Heritage Consulting – surveys for Stages 1A and 1B – May and June 2020

In 2020, the Applicant engaged BHC to deliver anthropological surveys over most of the Stage 1A and 1B Project footprints with Ngadjuri representatives. BHC's report identified three sites of significance to Aboriginal anthropology, archaeology and tradition respectively.

Independent Heritage Consultants – desktop assessment – May 2020

The Applicant engaged Independent Heritage Consultants (IHC) to deliver a desktop heritage assessment of the entire Application Area. The report also provides a history of the Ngadjuri people, and their cultural associations with the region.

IHC found that the Aboriginal site types most likely to exist within the Application Area include stone cairns, culturally modified trees, quarries, and to a lesser extent, stone artefact scatters, campsites, engravings, paintings and burials. IHC advises that these sites are more likely to be located along ridgelines and creeks.

The IHC report made a number of heritage management recommendations, which the Applicant has committed to observing.

Independent Heritage Consultants – Stage 1A survey – November 2021

In October 2021, IHC undertook an archaeological field survey of the Stage 1A footprint. The survey focused on potential Project asset locations (e.g. turbines and access tracks) and siting them away from Aboriginal heritage.

IHC's survey identified one Aboriginal site of archaeological significance, a small, low-density stone artefact assemblage. The Applicant advises it can avoid this site through micro-siting.

IHC's draft survey report provides a number of recommendations, which are supported by the Applicant.

The Applicant advises that it intends to undertake a further archaeological field survey of the Stage 1B footprint and the overhead transmission line route in January 2022.

PROPOSED HERITAGE MANAGEMENT

The Applicant proposes to implement measures aimed at avoiding impacts to Aboriginal heritage throughout Project works. The key measures are outlined below.

Cultural heritage management plan (CHMP)

The Applicant intends to manage any Aboriginal heritage in the Stage 1A and 1B footprints in accordance with a CHMP, which it is currently developing with NNAC. Similar CHMPs would also be developed for subsequent stages. Generally, CHMPs would:

- contain provisions for managing Aboriginal heritage discovered during the Project
- address the engagement of heritage monitors for targeted ground-disturbing works
- propose methods for recording and salvaging heritage where it cannot be avoided.

Additional cultural heritage surveys and assessments

The Applicant has committed to undertake additional cultural heritage surveys as it moves to subsequent stages of the Project. The Applicant says it will:

- commission additional detailed on-ground archaeological surveys for all asset locations once detailed Project design is finalised. This would occur on a rolling basis as subsequent stages are readied for construction
- commission additional anthropological surveys in consultation with NNAC before any turbines, solar, battery or substation assets are built beyond the footprint of Stages 1A and 1B.

Other heritage management measures

The Applicant advises that micro-siting should allow it to avoid most Aboriginal archaeology identified through any surveys. The Applicant is also prepared to:

- consult with NNAC to mitigate against impacts to an asserted site of anthropological significance recorded by BHC in 2020
- ensure that all contractors and workers have site inductions addressing culturally and legally appropriate Aboriginal heritage management
- implement a site discovery procedure to manage any Aboriginal heritage discovered

- keep an archaeologist on call to assist with heritage discoveries and management.

The Applicant is committed to adhering to AAR's *Aboriginal Heritage Discovery Protocols* (Attachment 4) during Project works. These protocols have been incorporated into the draft CHMP. AAR's protocols provide a general process for the management and reporting of Aboriginal heritage discoveries and ensure that ancestral remains are managed in accordance with the *Coroners Act 2003* (SA). AAR will recommend that compliance with its protocols is a condition of any authorisations the Premier decides to grant.

Traffic management

The Applicant recognises traffic movement during the Project's construction poses a risk to Aboriginal heritage. To mitigate this risk, the Applicant has committed to developing a Construction Traffic Management Plan prior to construction commencing. The selection of appropriate routes for light and heavy construction vehicles would consider any known or potential heritage located along haul routes. Areas for parking would be created away from areas of known or potential heritage.

SCOPE OF AUTHORISATIONS SOUGHT

The Applicant seeks that the authorisations extend to:

- itself
- its subsidiaries and related corporate entities
- future owners
- permitted assigns, employees, agents, contractors and sub-contractors of the above categories,

in each case where reasonably undertaking works in connection with the Project. If the authorisations sought are granted, the authorised activities would be permitted only to the extent reasonably necessary while constructing, maintaining and/or decommissioning the Project.

SECTION 13 CONSULTATION

Prior to considering whether to grant any authorisations under the Act, section 13 requires the Premier to take all reasonable steps to consult with the Committee, Traditional Owners and any other Aboriginal parties that he considers may have an interest in the matter.

Invitation for submissions from interested Aboriginal parties

Verbal and written submissions are now invited from all such interested Aboriginal parties. Consultees may make a submission to AAR in person, by phone, letter or email.

Anyone in receipt of this consultation information pack is encouraged to share it with other Aboriginal parties who may also have an interest in the Application Area.

Electronic copies are available online at: dpc.sa.gov.au/heritage-applications.

CONSULTATION CLOSES ON THURSDAY 27 JANUARY 2022

In order to minimise the potential spread of COVID-19, no public meeting is proposed for this application. AAR will work with the Applicant to facilitate teleconferences with consultees upon request. AAR will also endeavour to contact known Traditional Owners and Aboriginal parties with an interest in the Application Area prior to the closure of the consultation period. If you do not receive a call, or wish to learn more about the Project and/or lodge a submission, please call AAR on (08) 8226 8900, or write to:

Mr Peter Kapisir
Senior Project Officer (Heritage)
Aboriginal Affairs and Reconciliation
GPO Box 2343
ADELAIDE SA 5001
DPC-AAR.CIR@sa.gov.au

When making a submission, consultees should consider and provide responses on the following key questions:

- 1. Should the authorisations sought be granted to the Applicant? Why or why not?**
- 2. If granted, what conditions, if any, should be put on them?**
- 3. Are there any other matters that the Premier should consider in this application?**

Unless otherwise requested, consultees' submissions will be forwarded to the Applicant for comment. Once the public consultation has closed, consultee submissions and the Applicant's comments about them will be forwarded to the Committee, and the Committee's own views will then be sought.

AAR will collate all submissions, the Applicant's responses to them, the Committee's advice, and its own recommendations to the Premier to assist him to make a final decision about the application.

AAR is available to answer questions or provide information about the Project at any time prior to consultation closing on 27 January 2022.

Thank you for taking the time to consider this document. If you are an interested Aboriginal party, AAR strongly encourages you to make a submission about the Project.

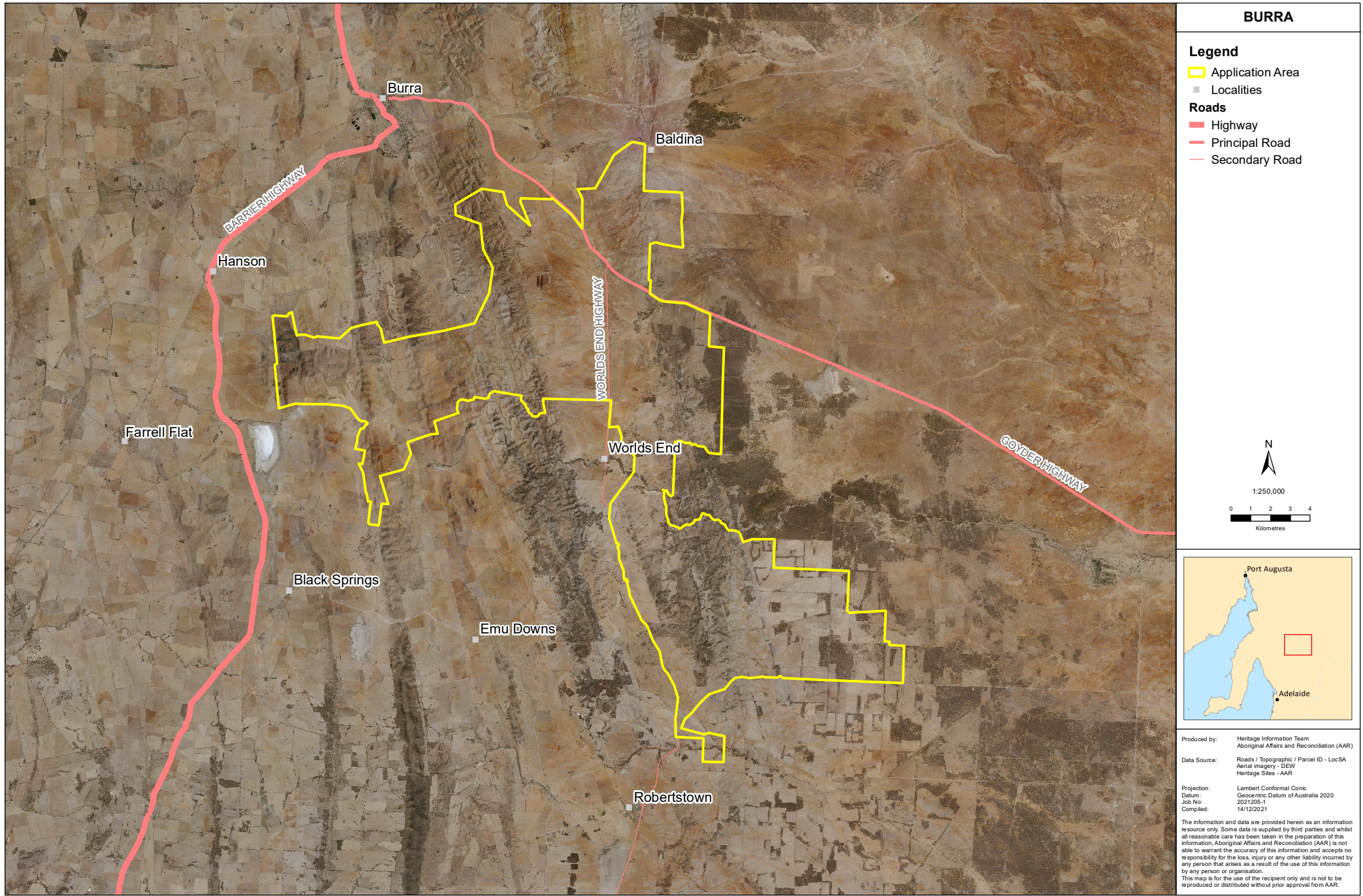
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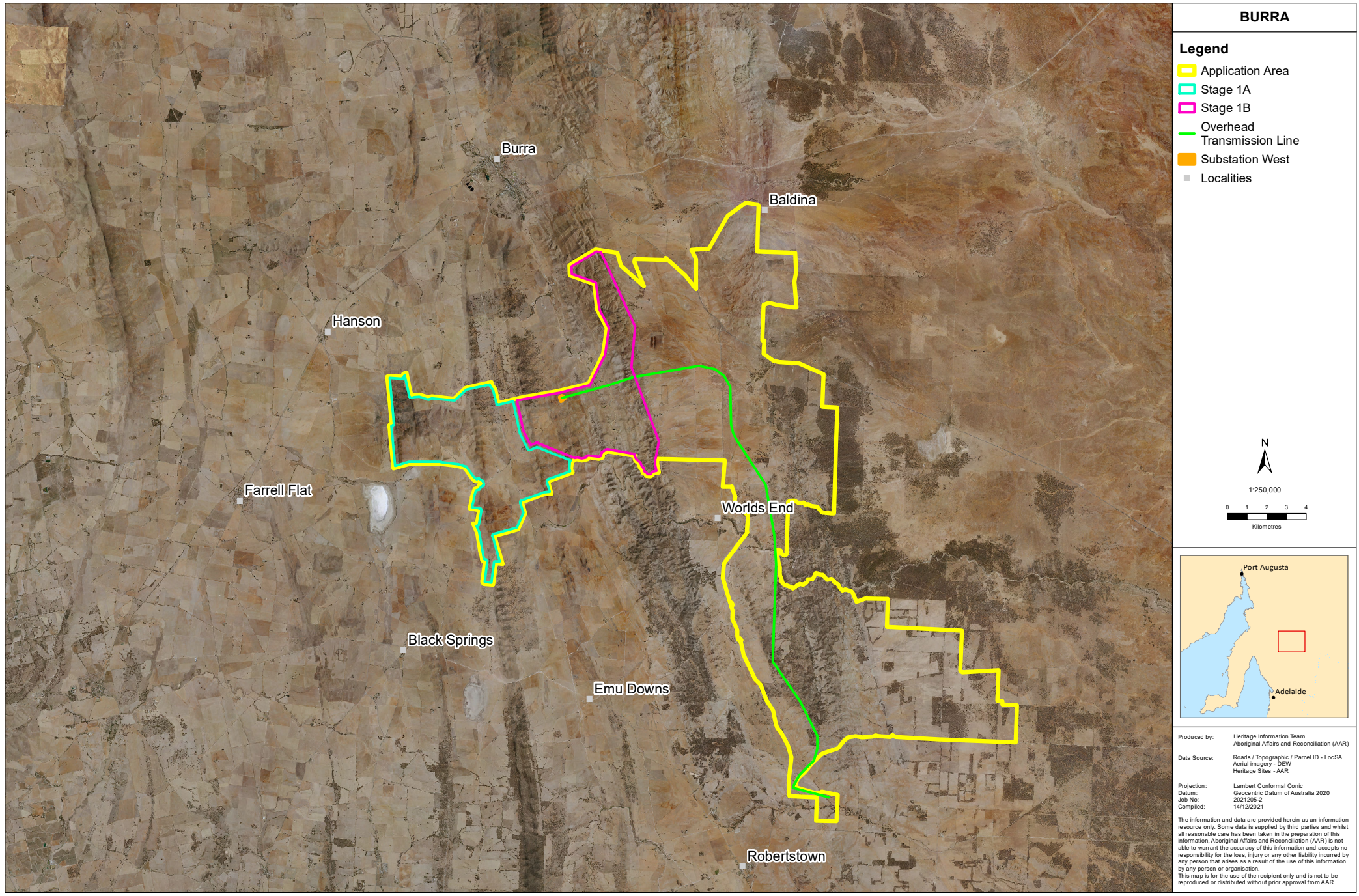
Attachment 1: Map of the Application Area

Attachment 2: Map of Stages 1A and 1B footprint and overhead transmission line

Attachment 3: Project component details and indicative concept plans

Attachment 4: AAR's *Aboriginal Heritage Discovery Protocols*





Attachment 3 – Consultation Information Pack – Goyder South Hybrid Renewable Energy Project

Project component details and indicative concept plans

Permanent structures

Component	Description	Maximum depths of ground-disturbing works	Concept plan no.
Wind turbines	- Up to 163 wind turbines - Maximum turbine tip height of 240 m (200 m for those closest to Burra to minimise visual impact) - Wind turbines would generally be around 500 to 1000 m apart - Blades would be up to 80 m in length and would have non-reflective coating - Turbine tower base diameter would be 4.8 m - Foundation would be up to 26 m in diameter and may be either concrete footings, pile-type rock anchors or a combination of both and would mostly be buried - Hardstand and laydown area at base of each turbine would be up to 70 m wide by 180 m long.	- Per foundation: 8 m (including rock anchors, if required) - Per hardstand and laydown area: up to 5 m (noting that in hilly areas a substantial volume of cut and fill may be required) <i>N.B.: rock anchors are unlikely to be used on the Project. If required, maximum diameter would be 15 cm diameter sunk vertically in a circular shape around the turbine tower base</i>	GS001 and GS017
Substations incl. O&M facilities	- Substation West: a fenced compound 350 by 420 m. Access would be via Koonoona Road. It is proposed to be located in the north-west part of the Application Area behind a small ridgeline and in an enclosed valley that has been selected to minimise its visual impact from public roads. N.B. This substation would be built as part of Stages 1A and 1B - Substation East: a fenced compound 350 by 420 m. Screen planting around the boundaries using indigenous plant species. Access would be via Worlds End Highway. It is proposed to be set back as much as possible to minimise its visual impact from the highway - Substation South: a fenced compound 150 by 420 m. Access would be via Junction Road.	Excavations expected to be up to 5 m	- Substation West: GS002 and GS003 - Substation East: GS004 - Substation South: GS005

Component	Description	Maximum depths of ground-disturbing works	Concept plan no.
	- O&M facilities – fenced compounds 420 by 100 m co-located within Substations East and West. Separate fenced compound 420 by 100 m adjacent to Substation South. O&M facilities would comprise buildings (office and staff amenities), car park, workshop and laydown area - Supporting services would be small scale and involve standard electricity supply, water connection (where available) or water tanks and wastewater disposal.		
Solar panels/farms	For each solar farm: 800,000 to 1,000,000 panels to be installed (panels are typically 1 by 2 m in size) - Panels to be spaced up to 10 m and mounted on single-axis trackers to height of 1.5 to 3 m - At maximum tilt, the height of the solar panels would be between 2.3 to 2.9 m - Approximately 160 to 200 photovoltaic boxes or skids (inverters and transformers) to be installed - Photovoltaic boxes or skids would be around 10 by 5 m in size - Internal access tracks to be created - Underground cabling, connections and associated infrastructure to be installed - Stormwater management infrastructure to be created to address runoff - Vegetation screening to be planted along boundaries with public roads.	- Piling single-axis trackers supporting solar panels: 2 m - For associated components (e.g. photovoltaic boxes or skids): 2 m - For stormwater management (e.g. drainage lines and swales): 1 m depth by 2 m width - For underground cabling, connections and associated infrastructure: 1.2 m depth by 0.5 m width (per cable run)	GS011 and GS012
BGC Facilities	- Robertstown BGC Facility: a compound of approximately 8 ha with a 3.5 m high fence, containing batteries, switchyard and associated equipment, underground cabling, overhead transmission lines, security CCTV cameras, lighting and an O&M facility. - The Robertstown BGC Facility would be positioned so that it achieves minimum setbacks, such as 50 m from the creek line	Excavations expected to be up to 5 m (although anticipated to be less)	GS013

Component	Description	Maximum depths of ground-disturbing works	Concept plan no.
	Interconnector BGC Facility: this facility is expected to have the same layout as the Robertstown BGC Facility; however, its layout and composition may vary to ensure compatibility with the SA-NSW interconnector grid substation (once that project/substation is finalised).		
Transmission lines/towers	- Approximately 97 transmission line lattice towers up to 47 m height, each with a footprint of 10 by 10 m - Each transmission tower would have 4 footings, each approximately 2 by 2 m - Towers to be spaced approximately 200 to 300 m apart.	Per footing: 3 m	NA
Meteorological masts	8 met masts may be required, each with a base footing and anchored with guy wires - Each met mast would have up to 9 footings, each approximately 1 by 1 m and spaced at a radius of up to 120m from the centre pole - The specific locations are yet to be identified as their location would depend on final micro-siting of wind turbines and Project staging	Per footing: 2 m	NA
Access tracks (incl. any kerbing, drainage, runoff, bridges and culverts etc.)	- Access tracks during the construction phase would be up to 10 m wide - Following construction, these tracks would be rehabilitated and reduced to the minimum widths requested by the Country Fire Service (around 7 m) - Upgrades to existing construction entry point intersections to enable access for heavy vehicles	- For access tracks within solar areas: 2 m - For access tracks within wind areas: up to 10 m where heavy cut into the hills would be required - For access points/intersections: 2 m - For construction entry points: 2 m	NA
Underground cabling	- Underground cabling for transmission and communications to be installed - These would generally be located adjacent to access tracks and primarily within the solar and battery facilities - Trenches could be up to 6 m wide where multiple cables are accommodated.	Trenching: 1.2 m	NA
Other associated works	- Security fencing - Landscaping and vegetation screening	- Piling for fencing: 1m - Piling for signage/landscaping/irrigation: 0.5 m	

Component	Description	Maximum depths of ground-disturbing works	Concept plan no.
	- Repeater infrastructure (if required) with footprint around 10 by 10 m - Water tanks placed on circular pads around 10 m in diameter.	- Installation of repeater infrastructure: 2 m - Installation of water tanks: 0.5 m	

Temporary structures

Component	Description	Maximum depths of ground-disturbing works	Concept plan no.
Wind construction compounds	- Fenced compounds located within the proposed footprints of the substations - Approximately 200 by 400 m in size and include (but not limited to) site office and staff facilities, staff toilets and change rooms, workshops, car park and laydown area - Area available for batch plants, if required (see below).	Minimal excavation is contemplated as the compound areas would simply be hardstand laid over existing ground, or in a few cases (such as demountable buildings) with shallow footings up to 1 m depth. The compound areas would be returned to their former land use after completion of works.	GS002, GS003, GS004 and GS018
Solar construction compounds	- Fenced compounds approximately 150 by 800 m in size - Include (but not limited to) laydown and storage area approximately 650 by 150 m and site office, amenities and car park (150 by 150 m).		GS011, GS012 and GS019
Laydown areas for BGC Facilities	A laydown area of 50m by 100m to be located within the proposed BGC Facilities		GS013 and GS014
Batch plants	- Area of 100 by 100 m including (but not limited to) mobile batch plant, office, lab, staff amenities, washdown area, storage and materials stockpile bays - The areas would be located within the wind construction compounds - Batch plants would be at least 100 m from a watercourse.	Excavations expected to be up to 0.5 m	GS002, GS003, GS004, GS018 and GS020

While the above tables attempt to capture most of the intended Project works, ancillary works not listed above may be required to deliver the Project. Concept plans are indicative only and may change as a result of detailed site investigations, approvals, licences, permits, negotiations with landholders and micro-siting.

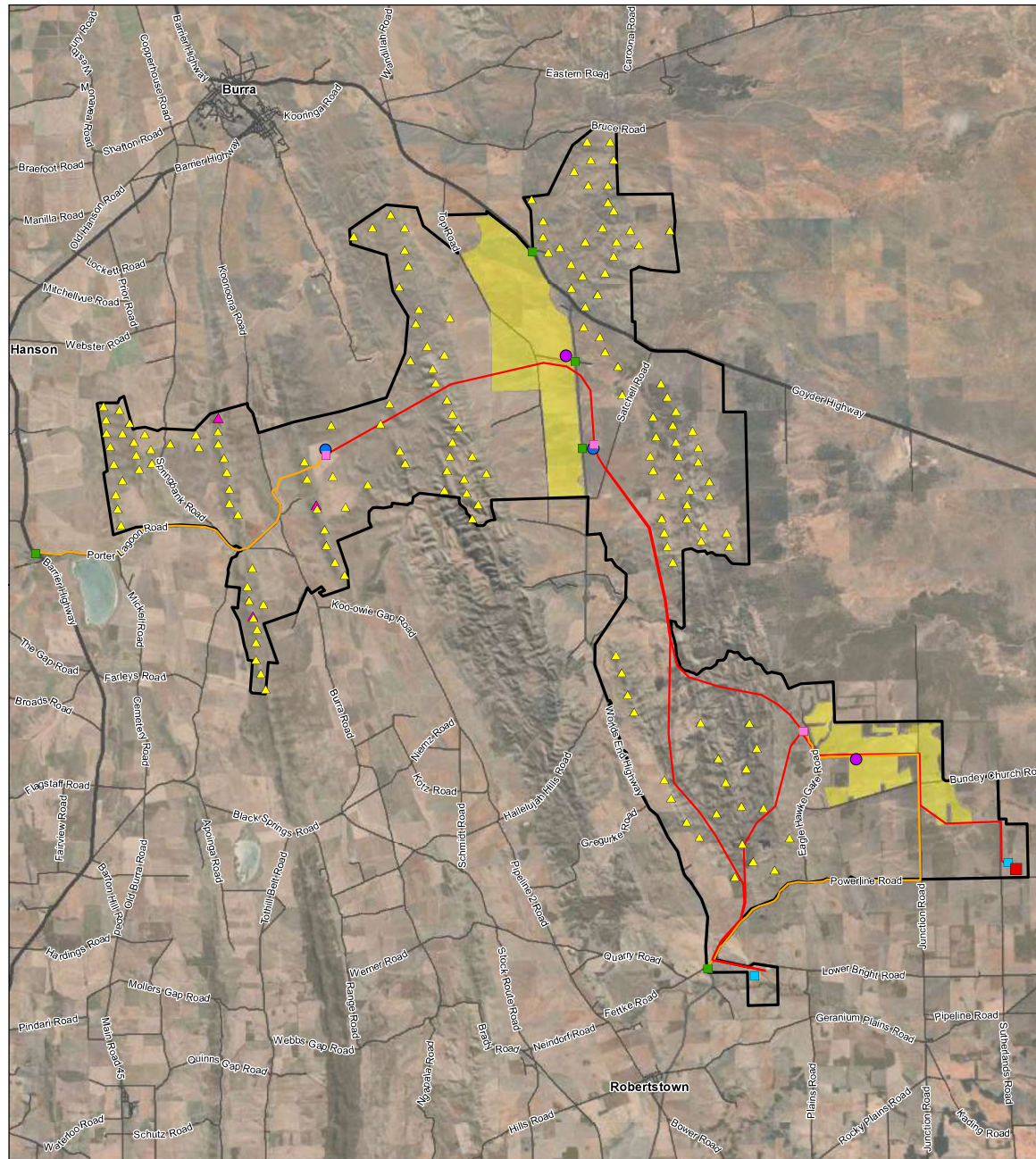
Goyder South Hybrid Renewable Energy Facility

Plan GS001

Project Layout

Legend

-  Turbine layout (total turbines 163)
-  Goyder South project boundary
-  Solar farms
-  Existing met mast (3)
-  Battery and grid connection (2)
-  Construction entry point (5)
-  Substation and O&M (3)
-  Possible interconnector substation (1)
-  Solar construction compound (2)
-  Wind construction compound (2)
-  Construction access road
-  Proposed transmission line
-  Highway/Arterial
-  Sub-arterial
-  Collector and local



Not to Scale

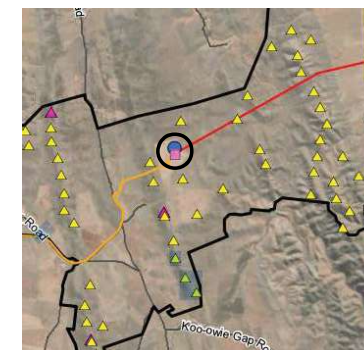
Development
Application
Not for
Construction

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS002

**Substation West
Layout**

 Parcel Cadastre



Map base source: Location SA



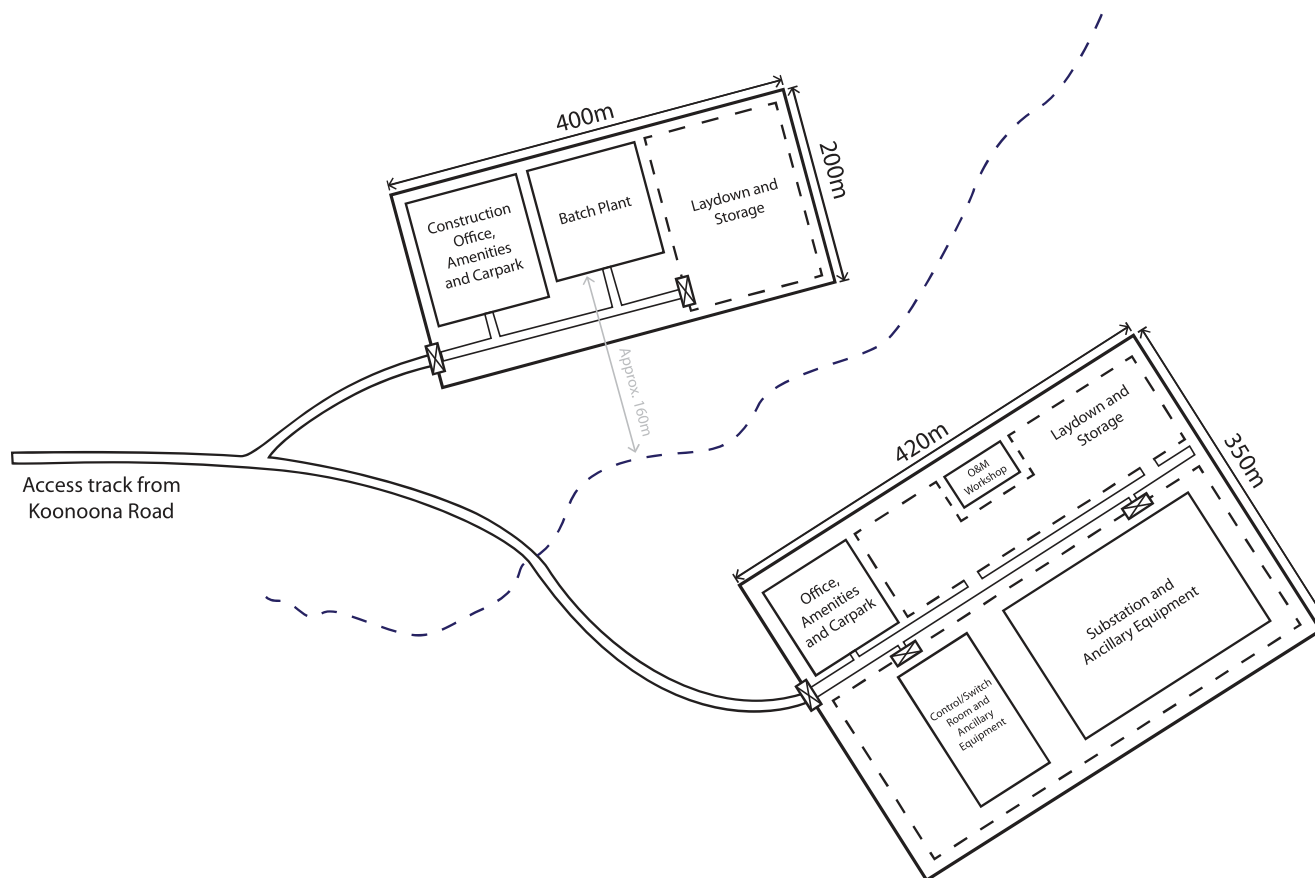
Not to Scale

**Development
Application
Not for
Construction**

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS003

**Substation West
Layout & Wind
Construction
Compound Layout**



Not to Scale

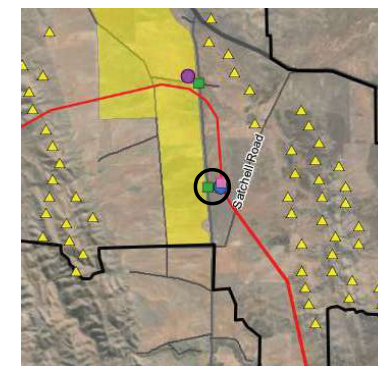
Development
Application
Not for
Construction

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS004

**Substation East
Layout**

 Parcel Cadastre



Map base source: Location SA

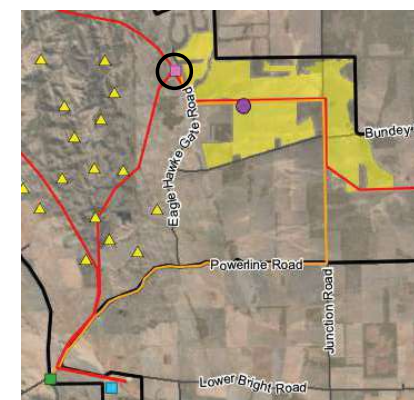
Not to Scale
Development
Application
Not for
Construction

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS005

**Substation South
Layout**

 Parcel Cadastre



Map base source: Location SA



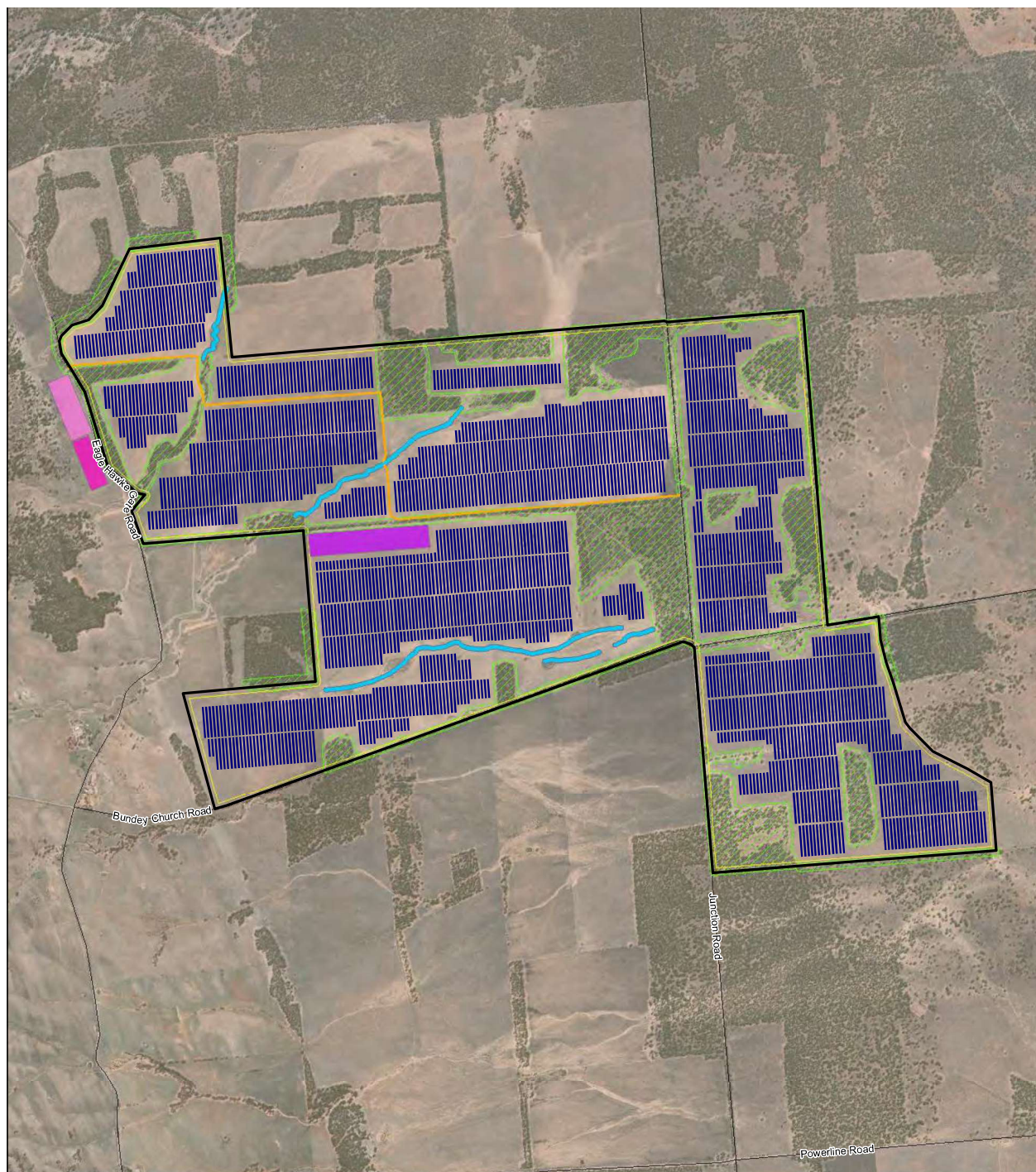
Not to Scale

**Development
Application
Not for
Construction**

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS011

**Bright Solar
Layout**



Legend

- Solar boundary
- Infrastructure access roads
- 30m boundary buffer
- Drainage lines (inc. 15m buffer)
- Vegetation exclusion zone (inc. 15m buffer)
- Operations and maintenance
- Solar construction compound
- Substation
- Collector and local



Not to Scale

**Development
Application
Not for
Construction**

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS012

**Worlds End Solar
Layout**

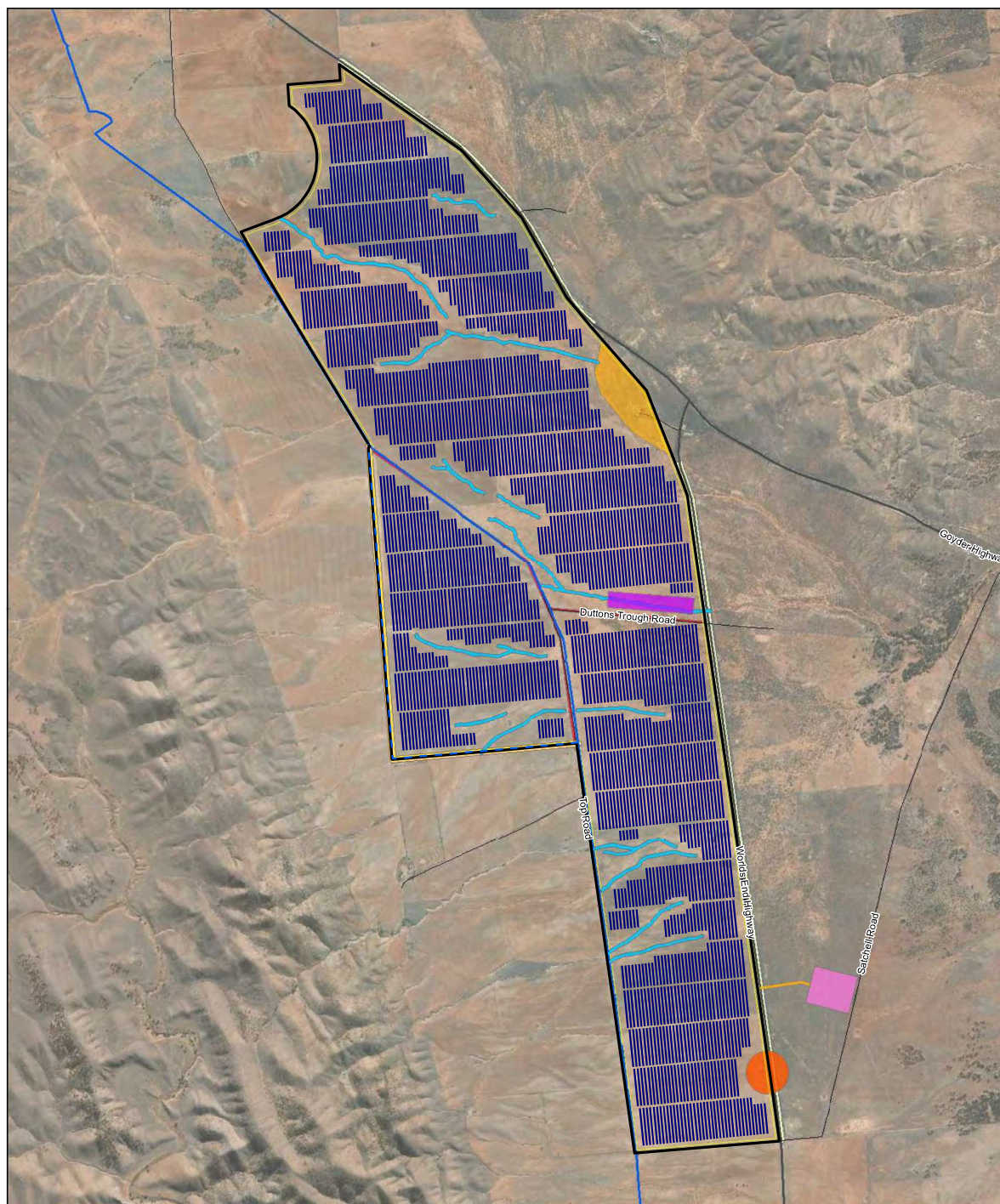
Legend

-  Solar boundary
-  Infrastructure access roads
-  Heysen trail
-  Heysen trail relocation
-  30m boundary buffer
-  Road easement exclusion
-  Church ruin 200m buffer
-  No-go zone (buildings, topography)
-  Drainage lines (inc. 15m buffer)
-  Heysen Trail relocation 30m buffer
-  Highway 30m buffer
-  Solar construction compound
-  Substation
-  Collector and local
-  Arterial / Sub Arterial



Not to Scale

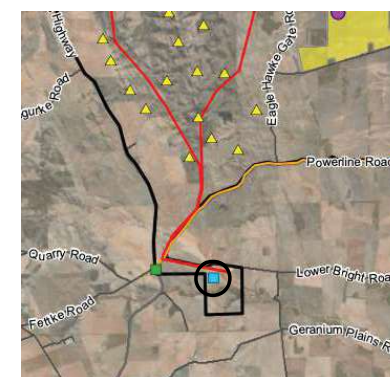
**Development
Application
Not for
Construction**



**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS013

**Battery and Grid
Connection (BGC)
Typical Plan**



Map base source: Location SA



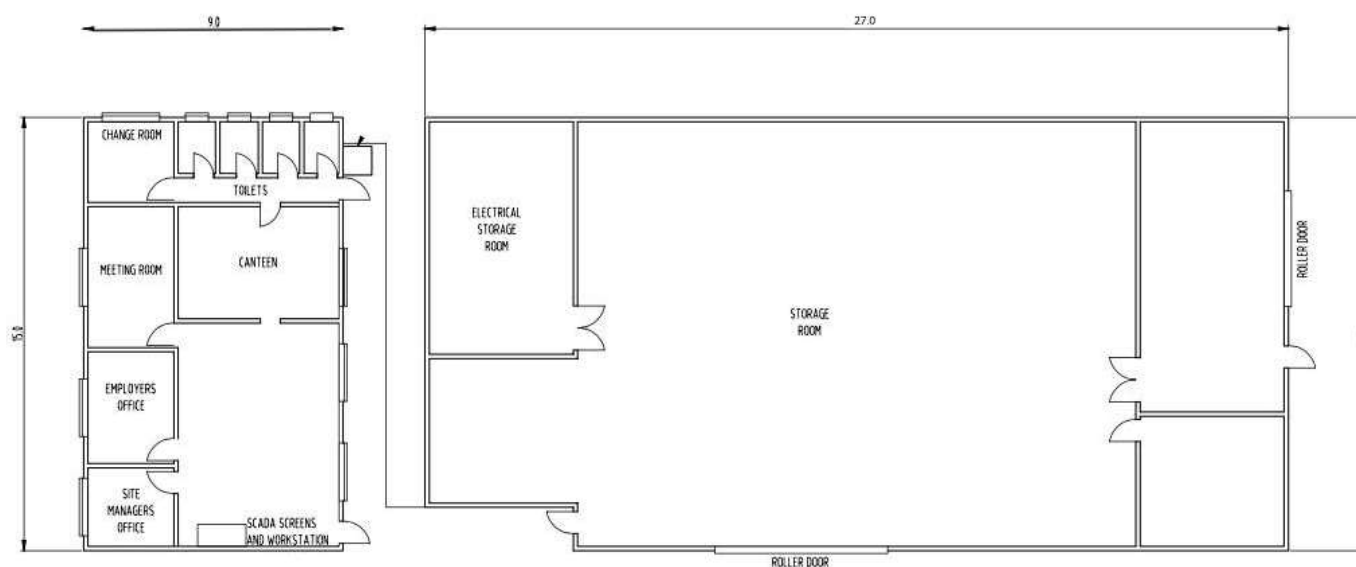
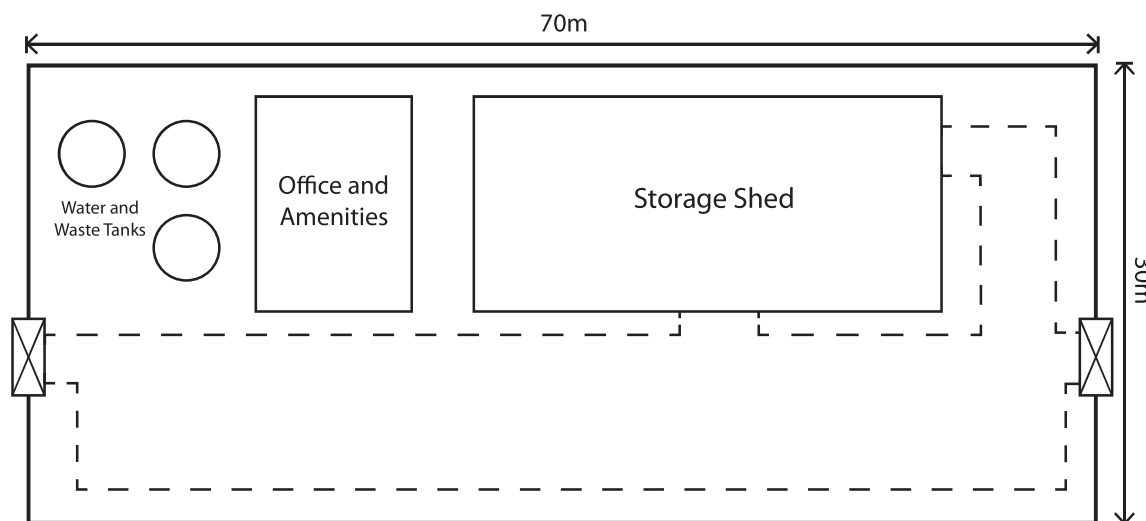
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**Development
Application
Not for
Construction**

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS014

**BGC O&M Facility
Layout**



**Office and
Storage Shed
Layout**



Not to Scale

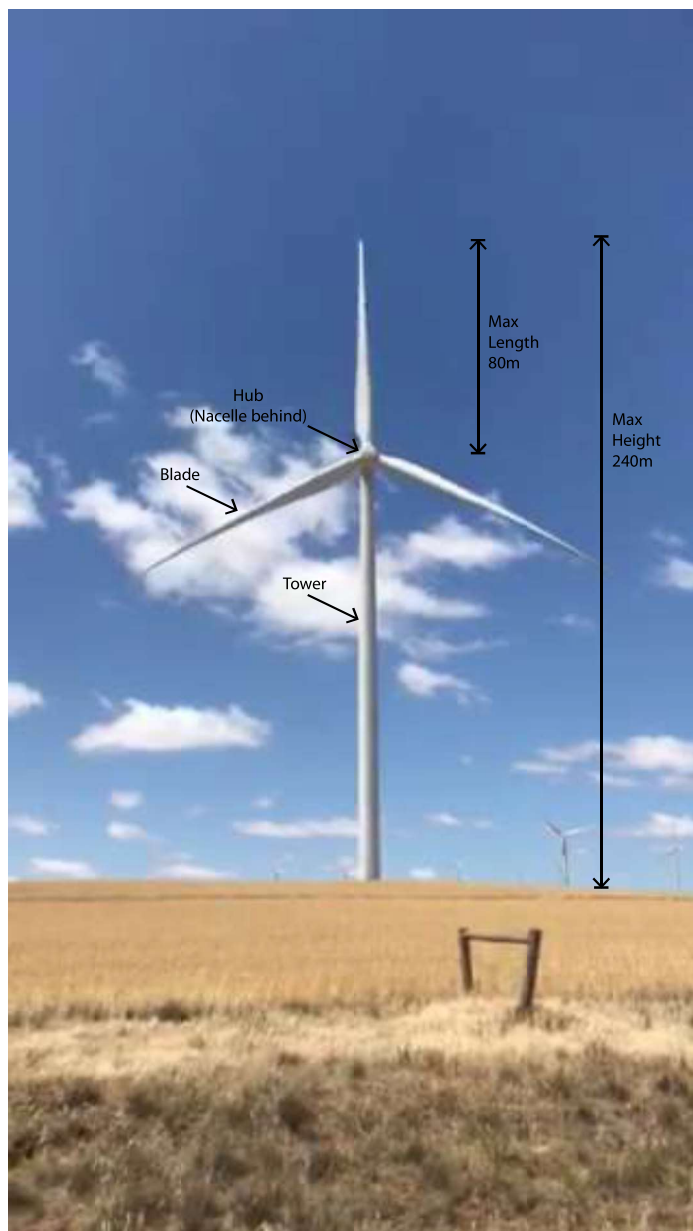
**Development
Application
Not for
Construction**

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS017

**Typical Turbine
Maximum
Dimensions**

**Tower
Construction
Stages**



Not to Scale

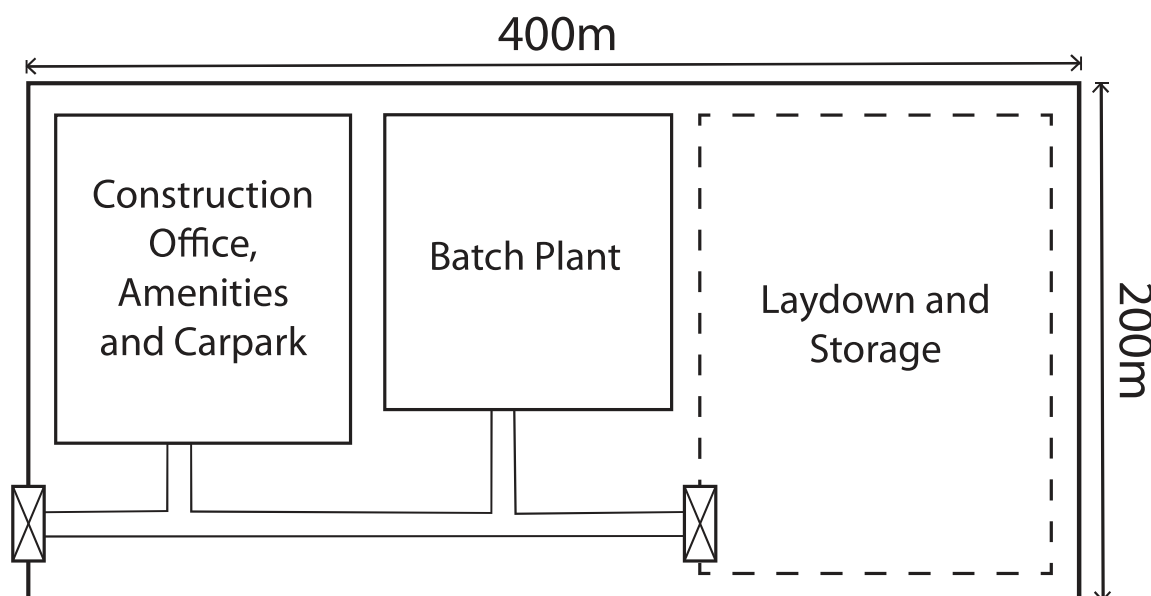
Development
Application
Not for
Construction

**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS018

Temporary

**Typical Wind
Construction
Compound
Layout**



Not to Scale

Development
Application
Not for
Construction

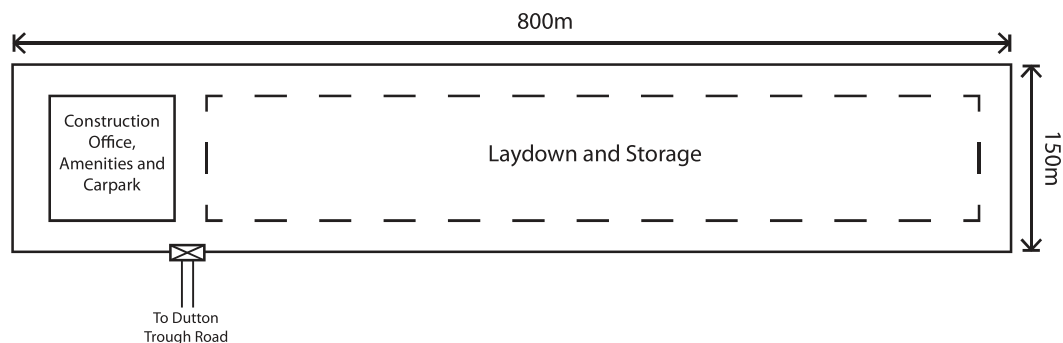
**Goyder South
Hybrid Renewable
Energy Facility**

Plan GS019

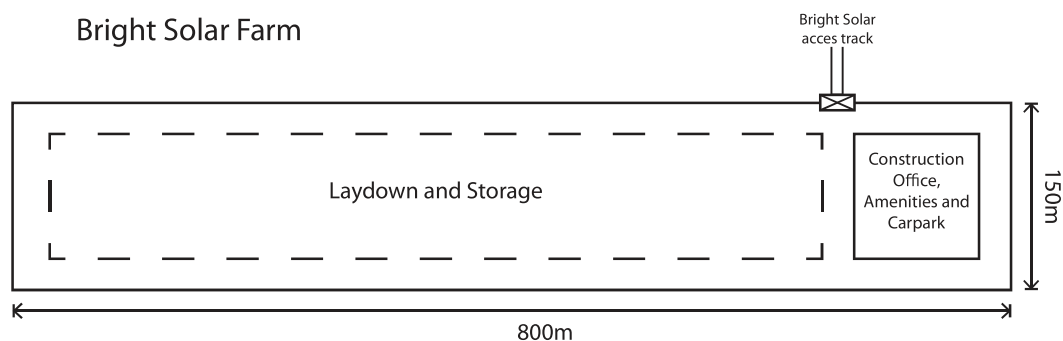
Temporary

**Typical Solar
Construction
Compound
Layout**

Worlds End Solar Farm



Bright Solar Farm



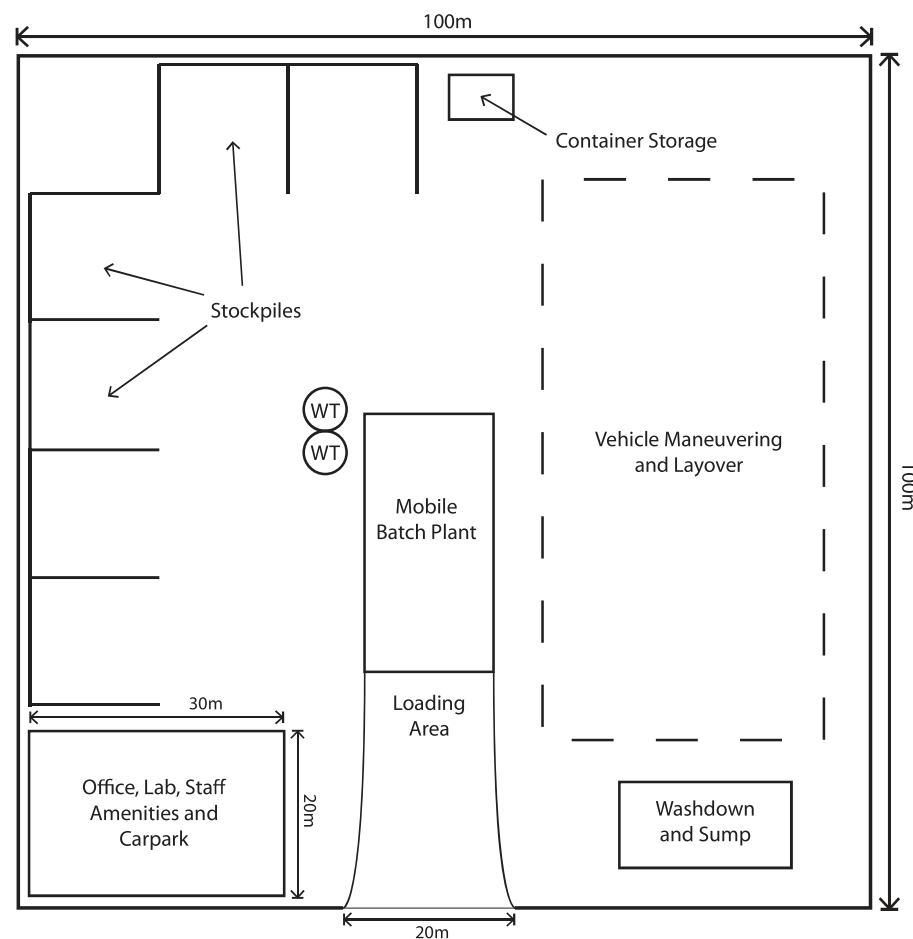
Not to Scale

**Development
Application
Not for
Construction**

**Goyder South
Hybrid Renewable
Energy Facility**

**Plan GS020
Temporary**

**Typical Batch
Plant Layout**



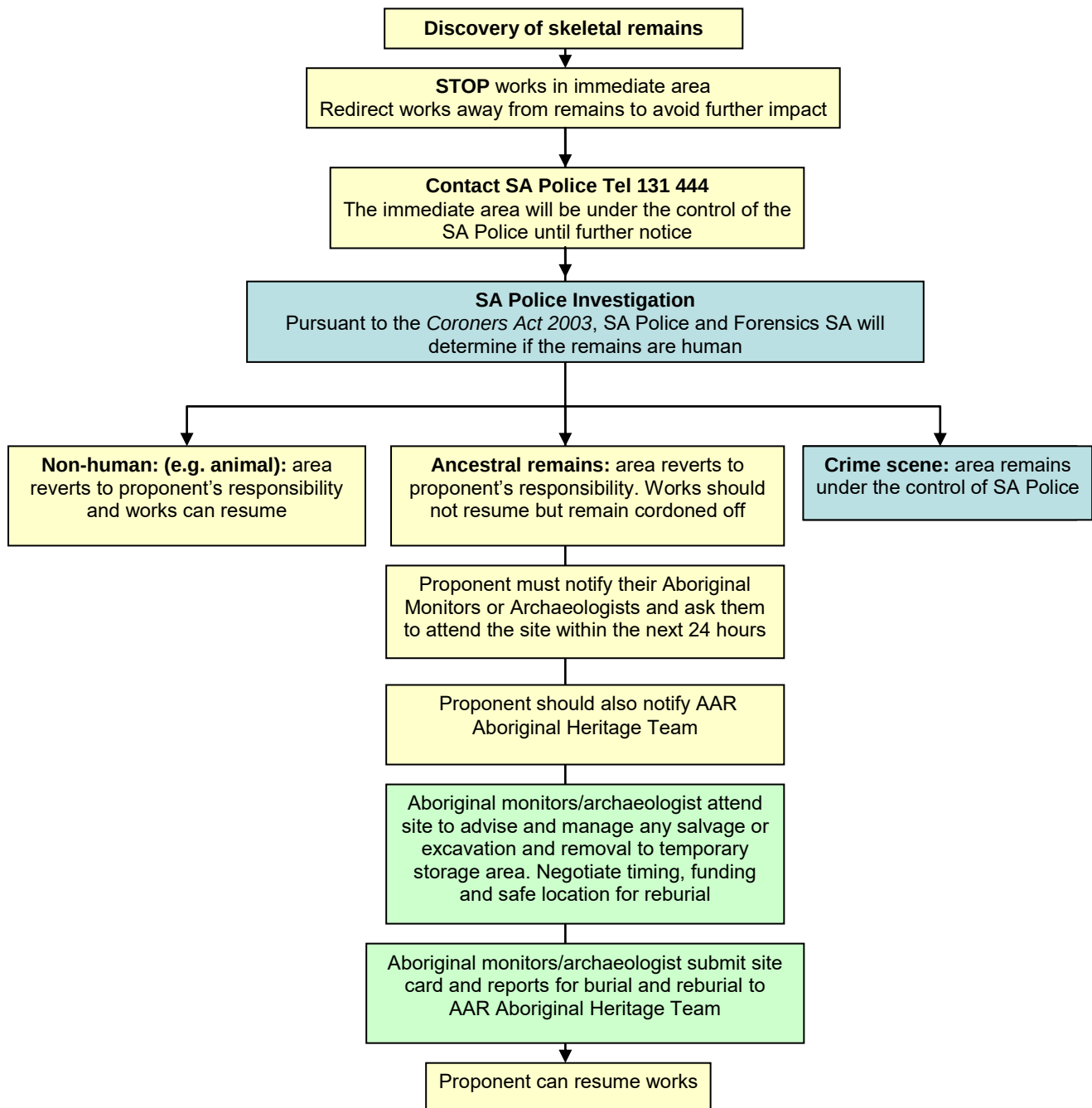
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**Development
Application
Not for
Construction**

ABORIGINAL HERITAGE DISCOVERY PROTOCOL
For proponents holding a section 23 Authorisation

Dealing with the discovery of skeletal remains

It is recommended that prior to beginning work, proponents undertaking ground disturbing works in high risk areas negotiate with the Aboriginal groups and an archaeologist a plan for managing the discovery of skeletal remains.



Key

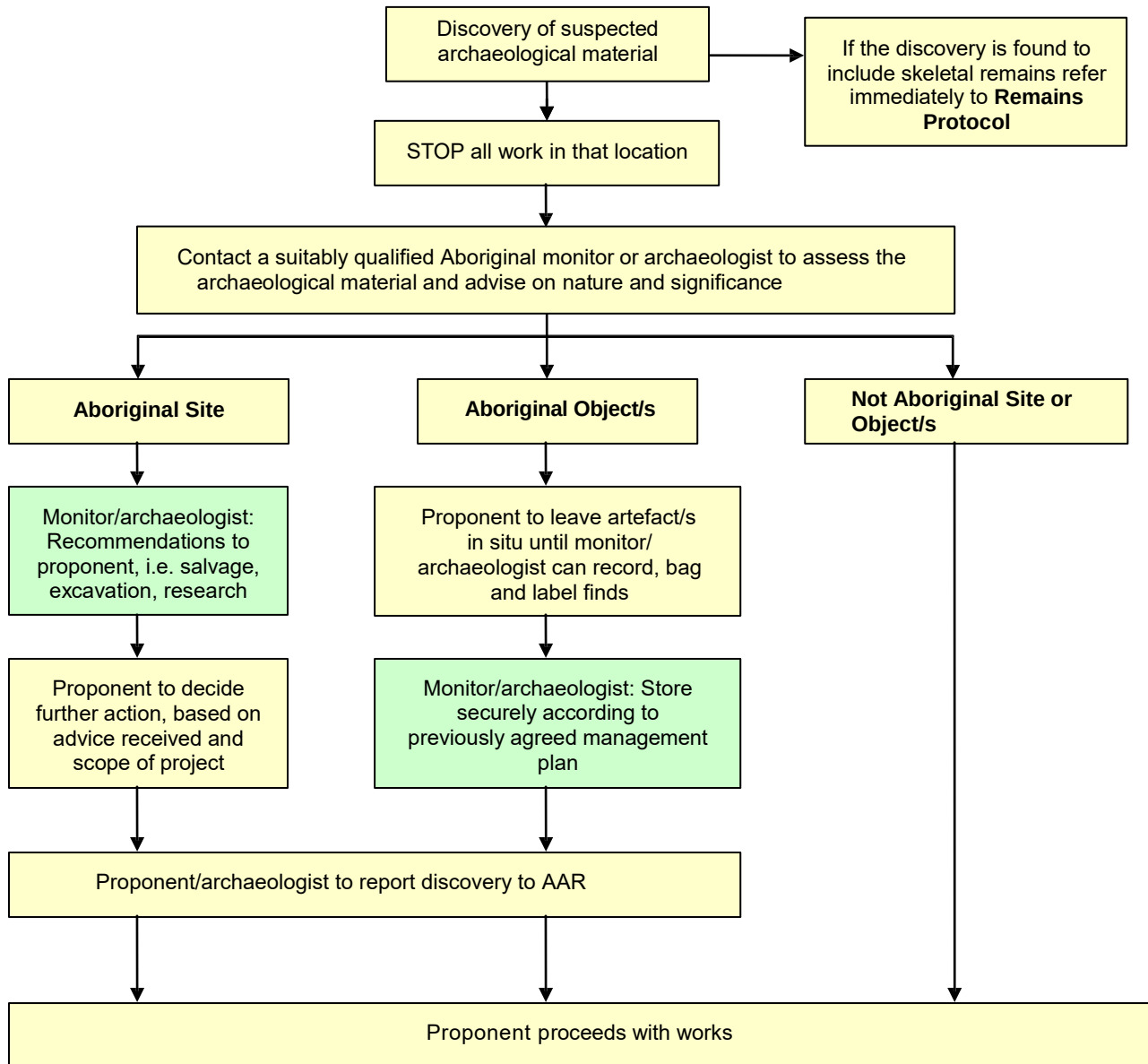
Proponent
SA Police
Aboriginal monitors/archaeologist

As part of project planning, proponents may allocate a secure on-site storage area for the temporary securing of remains, pending reburial.

ABORIGINAL HERITAGE DISCOVERY PROTOCOL
For proponents holding a section 23 Authorisation

Dealing with the discovery of Aboriginal sites and objects

It is recommended that prior to beginning works, proponents undertaking ground disturbing works in high risk areas negotiate with Aboriginal groups and an archaeologist a plan for managing the discovery of any Aboriginal sites and/or objects.



Key

Proponent
Monitor/archaeologist

As part of project planning, proponents may allocate a secure on-site storage area for the temporary securing of objects, pending repatriation.