Appendix A Updated Project description

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Consolidated detailed Project description

1.1. Aim of this document

This document updates the Project description set out in the Panorama BESS Environmental Impact Statement (EIS, Section 3, SLR 2024). All additions / changes are shown in **bold**. Strikethrough elements show elements no longer part of the Project. It is intended to make clear the changes since exhibition of the EIS.

1.2. Project overview

The Project will involve the development, construction, operation, and eventual decommissioning of a BESS with a capacity of 100MW, 200MWh adjacent to the existing 132kV substation operated by Transgrid. The BESS will consist of SolBank BESS containers (or enclosures), with each SolBank container having dimensions of 6058mm by 2438mm by 2896mm, with an approximate weight of 30,000kg. The BESS will be supported by inverters which will convert the electricity from the BESS and connect to the existing Transgrid substation via approximately 100m of 132kV underground cable. The key elements of the Project include the following:

- Installation and operation of a SolBank BESS including battery enclosures, inverters, and transformers on a concrete pad and benching of the site to level the foundation for each Project component;
- Associated ancillary infrastructure including:
    - A 132kV underground cable connecting a 33/132kV switch building to the existing substation;
    - Formalisation of existing access from Mid-Western Highway and existing access road within Lot 2 DP 864272 to accommodate heavy vehicles;
    - Proposed access road from the BESS to connect to the existing access road within Lot 2 DP 864272;
    - O&M building; o Stormwater management infrastructure, lighting, and security fencing;
    - **3.0m high perforated screen panels along the northern, western and southern perimeter of the BESS Facility;** and
    - Construction laydown areas.
- Decommissioning of the SolBank BESS at the EOL include disassembly and removal of associated infrastructure from the site, to be returned as close as possible to its existing condition.

Construction of the Project is anticipated to take approximately 14 to 15 months. It is expected that the operational life of the Project would be approximately 20 years, after which the BESS would be decommissioned and the infrastructure removed, returning the site to its original use.

The key aspects of the project are summarised in Table A1-1 below.

Table A1-1 Project Summary

Project Element	Description
Key features	• Construction, operation, and eventual decommissioning of a Battery Energy Storage System (BESS) with a capacity of 100 Megawatts (MW) 200 Megawatt Hours (MWh) and associated ancillary infrastructure adjacent to an existing 132kV substation operated by Transgrid in Evans Plains, NSW (henceforth referred to as 'the Project'). • Connection of the BESS via a new underground transmission line (132kV) to the existing Transgrid substation.
Proposed Development	The Project would generally involve the following components: • Transport of construction personnel, associated heavy and light vehicles, and materials to and from site on a day-to-day basis, dependent on construction schedule; • Site establishment works including vegetation clearing, bulk earthworks, and temporary construction compound; • Road works to formalise internal site access road to accommodate heavy vehicles, construction of new access road from the BESS to connect to the existing access road within Lot 2 DP 864272, and construction of an upgrade to the Mid-Western Highway site entry to provide a Basic Left Turn (BAL) treatment at the access driveway crossover; • Construction of concrete pad and installation of operations and maintenance (O&M) building, battery enclosures, and inverter stations; • Construction of underground 132kV transmission cable and switch building to facilitate connection to the existing Transgrid 132kV substation in the north eastern portion of the site; • Construction of ancillary works including stormwater management infrastructure, emergency night lighting, and security fencing; • Removal of grassland composed of exotic pasture species within BESS fencing boundary; and • Removal of temporary construction facilities, and rehabilitation of disturbed areas following completion of construction of the Project.
Site Description	The Project would be constructed on Lot 2 DP 864272 at 800 Mid-Western Highway, Evans Plains NSW. The existing Transgrid substation that the BESS would be connected to

Project Element	Description
	via underground cabling is located on Lot 521 DP 603541 at 749 Mid-Western Highway, Evans Plains NSW. The overall site has an area of approximately 113.2 hectares.
Development Footprint	• All areas that may be disturbed by the Project during construction, operation and decommissioning, as depicted in ~~Figure 2~~ **Figure 3-1 of Amendment Report**. The area of the development footprint is ~~3.47~~ **5.18** hectares.
Site Access	• Access to the site would be via the existing site crossover on Mid-Western Highway that services the TransGrid substation on Lot 521 DP 603541 via the construction of an upgrade to the Mid-Western Highway site entry to provide a Basic Left Turn (BAL) treatment at the access driveway crossover. The internal access road is planned to be formalised to accommodate heavy vehicles associated with the construction of the BESS. • An additional connection road will be constructed from the existing internal road to the BESS.
Grid connection	A new underground transmission line (132kV) will be constructed to connect the BESS substation switch building, to the existing Transgrid substation to the immediate north-east.
Construction duration	Construction of the Project is anticipated to take approximately 14 to 15 months.
Operation Life Expectancy	The operational life of the Project is anticipated to be approximately 20 years.
Decommissioning	The Project would be decommissioned, and the infrastructure removed, returning the site to its original use following the approximate 20 year life expectancy.

The general layout of the Project can be seen in Appendix B. The development footprint of the Project can be seen in **Figure A1-1**.~~Figure 2 and Figure 3 in Section 1.2.3~~.

No subdivision is proposed as part of the development.

Figure A1-1 Panorama BESS Indicative Infrastructure Layout

1.3. Construction

Construction of the Project would require heavy vehicles, plant, and equipment for the transportation of components and installation of the components on the site. The Project is likely to require earth-moving equipment for civil and road works, cable trenching equipment, forklifts, and cranes subject to detailed design to install the BESS and complete ancillary works.

1.3.1. Construction activities

It is anticipated that the construction and commissioning phase will last approximately 14 to 15 months. Over that time, the main construction activities will include:

- Transport of construction personnel, associated heavy and light vehicles, and materials to and from site on a day-to-day basis, dependent on construction schedule;
- Site establishment works including vegetation clearing, bulk earthworks, and temporary construction compound;
- Road works to formalise internal site access road to accommodate heavy vehicles, construction of new access road from the BESS to connect to the existing access road within Lot 2 DP 864272, and construction of upgrade to the Mid-Western Highway site entry to provide a BAL treatment at the access driveway crossover;
- Construction of concrete pad and installation of O&M building, battery enclosures, and inverter stations;
- Construction of underground 132kV transmission cable and switch building to facilitate connection to the existing Transgrid 132kV substation in the north-eastern portion of the site;
- Construction of ancillary works including stormwater management infrastructure, emergency night lighting, and security fencing;
- Water use for dust suppression, brought to site in water tankers; and
- Removal of temporary construction facilities, and rehabilitation of disturbed areas following completion of construction of the Project.

1.3.2. Construction materials

The following materials will be transported to site to facilitate construction of the Project and ancillary facilities and infrastructure:

- BESS Enclosures;
- Inverters and Power Converters Stations (PCS);
- Concrete works (i.e. concrete pads) materials and equipment;
- Bulk earthworks materials and equipment;
- Piling;
- Cabling;
- Building structures (incl. temporary structures for construction crew and management);
- Internal roads;
- 33KV Switchgear;
- Main Control Room;
- Fence & Gates;

- **Perforated metal screening**
- Fire Safety System;
- 33/132kV Main Transformer; and
- 132kV Switchgear.

1.3.3. Construction hours and personnel

During construction, it is anticipated that approximately 20 full time equivalent (FTE) jobs will be required during the peak of site activity. The following standard construction hours are proposed for the Project:

- Monday to Friday - 7 am to 6 pm;
- Saturday – 8 am to 1 pm; and
- Sunday and Public Holidays - No works to be undertaken.

No works are proposed to be undertaken outside of the standard construction hours. In the event this is required, Out of Hours (OOH) approval would be sought, and all works would be undertaken in accordance with the appropriate OOH protocols and approval processes.

1.3.4. BESS components

The following specifications are provided for the proposed BESS below in Table A1-2, with an example of a Solbank BESS module shown in Figure A1-2.

Table A1-2 BESS Specifications

Specification	Detail
Type	SolBank **3.0** Energy Storage with Lithium Iron Phosphate (LFP) battery chemistry
Number of enclosures	Up to 112 battery enclosures **12 racks with** ~~69~~ **104 battery cells each battery rack consists of** ~~8~~ **6 battery packs.**
Dimensions	20-foot-~~high~~ **long** cube container (6058mm x 2438mm x 2896mm each)
Weight	30,000kg each
Inverters	19 Power Electronics HEMK Inverters (8800 Kilovolt-amps (kVA))
Integrators	9 Power Electronics double inverters skids, one (1) single inverter skid (10 skids total)
Additional systems	Each SolBank enclosure is fitted with a thermal management system, fire protection system, and explosion protection system

Figure A1-2 Solbank BESS Module

1.3.5. Site access

It is proposed that access to and from the Project site will be provided from the site's existing crossover from Mid-Western Highway which will remain a left-in and left-out entry and exit (LILO). This access already services the existing 132kV Transgrid substation on Lot 521 DP 603541. To provide direct access to the BESS and ancillary facilities, it is proposed that an additional connection road be constructed from the existing internal road which is planned to be formalised to accommodate heavy vehicles associated with the construction of the BESS. The heavy vehicle route to be utilised for the construction of the Project is detailed in Section 2.4.1 of the TIA (SLR Consulting, 2024) contained in Appendix I.

1.3.6. Ancillary infrastructure

Stormwater

~~Figure 8 illustrates an indicative strategy to manage stormwater at the Project, noting that the proposed design is conceptual only to provide context and further design specification will be required during the detailed design phase of the Project.~~ The proposed stormwater strategy includes:

- Culverts or pipes under site roads/access tracks;
- Table drains to direct runoff around the proposed BESS to the contour banks established at the Lot, and to control runoff within the BESS footprint;
- Compacted or lined sediment sump at the downslope end of the BESS to contain runoff, solids and any potential leakage from infrastructure at the BESS facility within the developed area; and
- Modification of the central and southern access tracks within the BESS to accommodate the sediment sump.

Earthworks

Whilst extensive earthworks are not proposed, some land forming (including localised cut and fill areas) may be undertaken to achieve more consistent gradients beneath the BESS enclosures as well as for trenching purposes. Primarily , irrigation channels and associated buffers will isolate areas of different levels negating the need for levelling. Ground disturbance, resulting from earthworks would be minimal and limited to:

- The installation of piles required to support the BESS enclosures, driven into the ground to a depth of approximately 2.5m to 4m (dependent on geological conditions);
- Concrete or steel pile foundations for the inverter stations, substation, and maintenance storage containers; Trenches up to 1.2m deep for the installation of cables;
- **Civil battering to improve the safety and landform stability**
- Disturbance within the construction laydown area including works to flatten the surface and covered with gravel;
- Establishment of temporary staff amenities for construction;
- Construction of perimeter security fencing; and
- Minor vegetation clearance.

The ground disturbance from pile foundations is estimated to equate to less than 1% of the total site area. Additional ground disturbance would result from trenches for cabling and footings for any other infrastructure.

Temporary Construction Facility

Temporary construction facilities including portable toilets and a portable site office would be required for the duration of the construction phase, or until the proposed permanent site buildings have been constructed. Toilet facilities will involve waterless toilets (or equivalent) that are emptied off-site.

Fencing and lighting

The Project site would be secured by up to 2.1 metre-tall chainmesh security fencing and access gates which would remain during operation. Lighting for the Project is limited to the installation of emergency flood lighting which will not be operated during construction as construction is limited to standard daylight hours as detailed in Section **1.3.3** ~~3.2.3~~. Emergency flood lighting would remain during operation.

Landscaping

A Visual Management Plan (VMP) is proposed to be prepared prior to construction of the Project which will document a range of mitigation measures relevant to visual amenity (as discussed in Section 6.5), including the **implementation of a 3.0m high perforated metal screening** ~~consideration of landscaping and plant screening~~ around the facility asset protection zone (APZ) (as discussed in Section 6.13.4). If required, species from the endemic Central Tableland Clay Apple Box Grassy Forest (PCT3366) will be planted around the existing stand of trees above the site and establishing new stands of trees below the site as recommended by the Landscape Character and Visual Impact Assessment (SLR Consulting, 2024) (LCVIA). Otherwise, colour-matching of visible infrastructure elements with natural elements is sufficient to appropriately screen the facility. To facilitate the transportation of the transformer to the site, some minor pruning of a tree at the driveway entrance may be required, in consultation with a qualified arborist.

Water use

Water will be required during the construction phase for dust suppression, general construction, and maintenance activities. This water will be brought to site in water tankers.

Construction water requirements for the Project are estimated between 10,000L to 20,000L per day. It is intended to source this water from the Bathurst Regional Council's bulk water supply which can be accessed through several water filling stations located in Hereford Street within the Bathurst township.

Wastewater during construction will be captured and appropriately removed from site/disposed in accordance with Council/water authority requirements. Potable water may be transported to site in bottles for use by the construction workforce. If utilised, toilet facilities will involve waterless toilets (or equivalent) that are emptied off-site.

During operation of the battery system, water will be utilised for potable water for site offices, cleaning of batteries and dust suppression on site access roads. Demands for non-potable water may be met by several methods which are under consideration, including small domestic scale water tanks collecting roof water or Supplementary water as required via water trucked to site and stored in a water tank. Operational water requirements for the Project have been estimated at 50L to 200L per day. Toilet facilities, if required, will involve waterless toilets.

The proposal will include a static water tank for fire-fighting purposes. This water would only be used for firefighting and not for potable water supply nor for general non-potable site water use. The size and location of the tank will be confirmed during the detailed design stage but will be a minimum of 20,000L dedicated water supply for firefighting purposes.

1.4. Operation

1.4.1. Operation activities and equipment

The operation of the Project would involve, but not be limited, to the following general activities:

- Maintenance and management of equipment, site buildings, and landscaping;
- General administrative activities;
- Receipt of equipment or goods; and
- Waste removal. Minimal plant and equipment will be required for operation of the facility, primarily for staff access and maintenance vehicles.

1.4.2. Operational hours and personnel

The Project is proposed to operate 24 hours a day 7 days a week, with operation and maintenance by site staff undertaken during the following standard working hours as required:

- Monday to Friday 7 am to 6 pm; and
- Saturday – 8 am to 1 pm.

Emergency responses and maintenance activities may be required to be undertaken out of hours. During operation, it is anticipated that approximately one (1) FTE job will be required.

1.5. Decommissioning

The Project is proposed to be decommissioned and the infrastructure removed following the EOL of the BESS, with works required to return the site as close as possible to its original state and use. All decommissioning and restoration activities would be in accordance with permits, approvals and regulatory requirements at the time.

The standard construction hours and heavy vehicles, plant, and equipment required for the construction of the Project would also apply to the decommissioning phase.

1.6. Estimated capital investment value

The Estimated Development Cost (EDC) of the Project is contained within the Estimate prepared by Hollis Partners Quantity Surveyors (2024) located in Appendix Q.