Appendix A Consolidated updated Project description

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1.1. Aim of this document

This document updates the Project description set out in the Mulwala Solar Farm Environmental Impact Statement and subsequent Modification 1 report. 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 approval of the EIS.

1.2. Project overview

The Project is a utility scale renewable energy development that will generate up to 80 MW(AC) of clean and renewable electricity. Mulwala has been chosen due to the relatively high solar irradiance in the region, and the available capacity on the Essential Energy and TransGrid electricity networks.

The solar farm operation will comprise up to 300,000 solar photovoltaic modules, known more commonly as 'PV Modules' or 'solar panels'. The solar panels use the same type of technology as commonly used in residential scale solar installations throughout Australia but are larger in size to those used residential applications.

The solar farm is a large infrastructure project that is expected to create up to 130 jobs during construction, and up to four full-time and eight part-time positions when operational.

The solar panels will generate direct current (DC) electricity that will be inverted to alternating current (AC) via Power Conversion Units (PCUs). Output from the solar farm would then be connected to the existing electricity network by underground or above ground high voltage cable to the Mulwala 132kV substation. Details of the site layout, ecological constraints, access roads, easements, and closest receivers are shown in Figure A-5.

1.3. Infrastructure design and site layout

The Project would be built as a utility scale solar PV plant, with the solar panels mounted in rows on horizontal tracking or fixed tilt systems.

The rows of solar panels are electrically connected into arrays before being inverted from DC to AC electricity, which is the standard form of electricity used throughout Australia. Electricity is then fed via an onsite high voltage ~~power reticulation system~~ **switchyard and substation, then** into the local electricity network through the Essential Energy Mulwala 132kV substation. Infrastructure design and site layout aspects are discussed further below.

1.3.1. Key project components

The following section provides an overview of the key infrastructure items to be established for the Project. These include:

- Installation of up to 300,000 solar panels in regular arrays.
- Each solar panel would be fixed to a metal mounting structure secured with ground piles.
- Above ground and underground DC cabling.
- Central inverters, step up transformers, and switchgear (known as PCUs).
- Underground AC cabling would run from the PCUs to the solar substation.

- A main step up transformer and associated equipment.
- Internal vehicle access tracks.
- Perimeter safety fencing and security system.
- Supervisory control and data acquisition (SCADA) control systems.
- Site office and staff amenities and maintenance shed
- A permanent staff and contractor car parking area.
- A permanent all-weather access and access road.
- Temporary site compound, lay-down area, and equipment storage areas during construction.
- Battery **Energy Storage System** ~~storage area~~

The above components are discussed in further detail in the following sections.

1.3.2. Solar arrays and ground mounts

The solar array would comprise up to 300,000 individual solar panels which would either be multicrystalline, monocrystalline, or thin film technology. Each solar panel would be fixed to a metal mounting structure that would be piled or screwed into the ground without the need for any excavation work or use of concrete. This technique is used to minimise ground disturbance. The PV mounting structure would slowly track (in a single axis) the horizontal movement of the sun through the use of an automated tracker unit. Alternatively, fixed tilt mounting structures may also be used. Under both scenarios the height of the fixing systems and modules would not exceed four metres in height.

Figure A-1 below shows typical PV panels at a solar farm groups into solar arrays.

Source: Array Technologies

Figure A-1 PV modules and solar arrays

1.3.3. DC cabling

Direct current (DC) cabling will be utilised to connect each PV module in a string (up to 300,000 modules) to field combiner boxes mounted underneath the solar panels. The combiner boxes will be located approximately one metre off the ground between the PV arrays. DC cabling will be installed underground at a minimum depth of one metre between the DC boxes and the PCUs. DC cabling will be installed in accordance with Australian Standards and also with the requirements of *Primefact 1063: Infrastructure Proposals on Rural Land* (DPI 2013).

Underground DC cabling will run from the combiner boxes to the central inverters.

1.3.4. Power conversion unit

Within each array block is a PCU which contains the central inverters, step-up transformers, and switchgear which convert DC electricity collected from the PV panels into 33kV electricity for connection and distribution via the Mulwala 132kV substation. The PCU (and associated equipment) is typically designed to be housed within a shipping container for easy transport and installation onsite. A PCU is typically 13 metres long, 2.5 metres wide, and three metres high. Figure A-2 below illustrates the appearance of a typical PCU with the relevant power conversion equipment installed. There are estimated to be 20 PCUs for the project.

Source: SMA Solar Technology

Figure A-2 Typical Power Conversion Unit

1.3.5. AC cabling

From the PCUs within each array block, underground or above ground AC cabling will be installed to a minimum depth of one metre (if underground) and connect with the step-up transformer in the solar substation. AC cabling would be installed in accordance with Australian Standards and also with the requirements of *Primefact 1063: Infrastructure Proposals on Rural Land* (DPI 2013).

1.3.6. Step-up transformer and substation

A main step-up transformer and associated equipment in a solar substation would convert the on-site AC reticulated 33kV electricity to 132kV electricity. The up-converted 132kV supply would then be connected via high voltage cable to the nearby Mulwala 132kV substation where it would enter the local electricity network. High voltage cabling would be installed in accordance with Australian standards.

1.3.7. Local transmission network

The proposed connection point for the solar farm to the Transmission Network Service Provider (TNSP) is the 132kV Mulwala substation owned and operated by Essential Energy. From the Essential Energy substation power will be distributed to the national electricity grid via the Essential Energy local power network.

1.3.8. Battery storage

The Project will also include **a battery energy storage system (BESS). The BESS location is shown in green within Figure A-5.** ~~the potential for battery storage to be installed onsite. If batteries form part of the Project they will be located within the facilities area shown in pink within **Figure 10**~~

Solar farms are an intermittent source of energy. Battery storage systems can be used either to smooth the fluctuating energy produced by the solar farm or to store the excess energy during low demand periods for subsequent use during higher demand periods or when solar energy is unavailable (e.g. at night).

Batteries can also compensate for frequency variations in the electricity grid that can be caused by intermittent renewable generators, power plant outages or fluctuations in consumption. Batteries can store electricity from the grid or feed electricity into the grid in a matter of seconds to compensate for such variations.

In addition to the shifting of electricity output, energy storage on the site can contribute to:

- Increased reliability of the electricity network and reduced electricity costs associated with grid upgrades to deal with peak energy demand.
- Sustainable outcomes by combining clean energy generation with clean energy storage.

Lithium ~~ion~~ **iron phosphate (LFP)** batteries in containerised packs would be installed, as illustrated in Figure A-3 and Figure A-4. The chosen battery will be identified in the procurement phase along with the modules and inverters. Any battery will have undergone the required hazard assessment to ensure the product meets Australian Standards and legislated safety requirements.

Source: steag.

Figure A-3 Example of containerised packs

Source: Tesla.

Figure A-4 Powerpack system

1.3.9. System monitoring

The entire solar farm will be monitored through a supervisory control and data acquisition (SCADA) system that will monitor the performance of all the solar equipment onsite. The SCADA system will also be capable of notifying staff onsite and remotely of system issues and failures.

1.3.10. Internal roads

Internal vehicle access tracks would be constructed to each PCU**, the BESS** and to the solar substation to allow for site maintenance. Onsite tracks would be constructed of compacted gravel and, where required, geotextile fabric would be laid between the soil and the gravel. Internal access tracks would be up to five metres wide to allow for the safe delivery, unloading and installation of key components such as the PCUs, PV panels, and switch equipment. The exact position of access tracks would be determined during the

detailed design phase when the solar array design is finalised. Internal access tracks are private roads designed and constructed only for construction, operation and maintenance purposes. Internal roads are shown in Figure A-5.

1.3.11. Site office and staff amenities

A site office and staff amenities building will be constructed or installed at the site. The dimensions of the building are expected to be approximately 16 metres long, 10 metres wide and three metres high. All visitors and contractors will be required to report to the site office upon entry to the site. Office features will include staff offices and a control room. Staff amenities will include toilets, showers, a lunch room, and a first aid room. The location of the site office for operations is shown in Figure A-5.

1.3.12. Maintenance building

A maintenance building will be established adjacent to the site office and will provide storage for spare parts and maintenance equipment and will include a workshop. The maintenance shed will be approximately 25 metres long, 15 metres wide, and six metres high. The workshop building will be approximately 15 metres long and 10 metres wide (refer Figure A-5).

1.3.13. Site access and parking

Internal vehicle access tracks would be constructed to each PCU**, BESS** and to the solar substation to allow for site maintenance. Onsite tracks would be constructed of compacted gravel and, where required, geotextile fabric would be laid between the soil and the gravel. Internal access tracks would be up to four metres wide to allow for safe delivery, unloading and installation of key components such as the PCUs, **BESS,** PV panels, and switch equipment.

The main access to the project area is via Savernake Road into Lambruck Lane with a minor access to the switching yard from Tocumwal Road. All primary transportation roads are classified as designated B-double routes and they meet the Austroads standards for road capacity. Infrastructure and road access is shown on Figure A-5.

A vehicle parking area will be located at the north-eastern corner of the development site adjacent to the site office, with 10 parking spaces provided for operational and maintenance staff. Parking for construction vehicles will be either at designated laydown areas, storage locations, or where construction activities are concentrated at any given time.

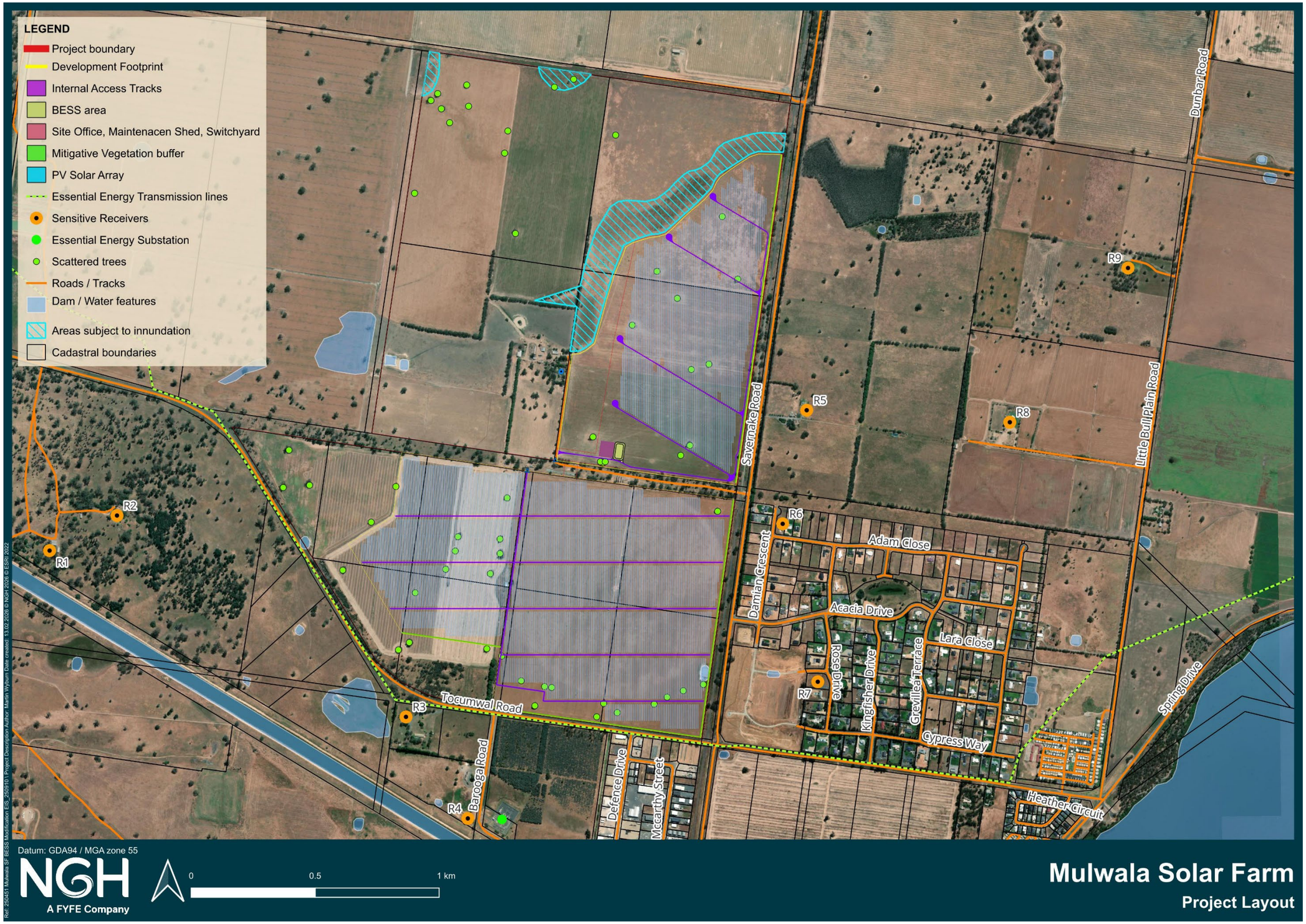

Figure A-5 Project Layout

1.4. Site services and utilities

1.4.1. Site power

Diesel generators will be available for power supply through the construction period. Should low voltage power be available in the vicinity, the Project may utilise power from the existing network.

Once operational, it is anticipated that the Project will utilise power generated from the solar farm rather than a grid connected service.

1.4.2. Water and sewerage supply

Temporary toilets will be available throughout the construction period for use by contractors. These toilets will be pumped out by a local licenced waste contractor.

Once operational, it is anticipated that the development will collect water from building roofs and utilise onsite water storage tanks (2 x 35,000L tanks). It is anticipated that 500 kilolitres (kL) of water would be used during operations each year for cleaning, maintenance, and staff amenities. Water would be trucked in during periods when there is insufficient rainfall to fill onsite water tanks.

Sewage generated during operations will be treated by an onsite bio-cycle system, installed to comply with Federation Council regulations and Building Code of Australia (BCA) requirements.

1.4.3. Communications

It is anticipated that the development will use both the mobile and fixed line networks for communication purposes. Where a connection is made to the fixed line network cabling will follow existing access tracks and road reserves to minimise ground disturbance

1.5. Construction

1.5.1. Construction materials

The majority of the construction materials and components are likely to be sourced from overseas due to the specialised nature of the equipment. Materials will be transported by road from port facilities in either Sydney or Melbourne in 12 metre shipping containers. Civil materials such as aggregates, and concrete will be sourced from local suppliers. The main construction materials will include:

- Aggregates, road base, and concrete.
- Steel fencing materials.
- Steel piles and ground screws.
- Steel mounts and bolts.
- Cabling, conduit, and weather proof junction boxes.
- PV modules and mounting structures.
- Shipping containers to house central inverters.
- Weatherproof DC boxes and steel posts.
- Steel framing and Colorbond sheeting for maintenance shed and site office.

- Timber and fixtures for building fit-out.

1.5.2. Site preparation

Site preparation will commence immediately across the project area to allow for the timely installation of roads, drainage, solar equipment, cabling, and infrastructure. Site preparation activities will generally involve the following:

- Slashing and/or removal of areas of vegetation approved for removal.
- Removal of existing fencing and establishment of boundary fencing.
- Establishment of access points and main entry roads for delivery of machinery and equipment.
- Undertaking land survey, geotechnical and other preliminary investigations.
- Establishment of ancillary facilities including the site compound, laydown areas, and temporary contractor facilities.

1.5.3. Infrastructure installation

The installation of infrastructure will commence directly after site preparation works are finalised. The key infrastructure activities will include:

- Installation of internal roads and access tracks.
- Installation of drainage works and regrading of surface features (where required).
- Construction of the permanent site office, maintenance shed, and switch yard.
- Installation of the mounting structures foundations by driving steel piles pneumatically into the ground using specialist equipment (dependant on ground conditions ground screws may be used).
- Attachment of steel mounting structures to the ground piles.
- Installation of the solar panels onto the mounting structures, including tracker units.
- Installation and connection of the solar panels to the DC boxes with aboveground cabling.
- **Installation of the BESS**
- Installation of the PCUs.
- Connection of the DC boxes to the PCUs by trenching and underground cabling, and connection of the PCUs to the onsite power reticulation system and step-up transformer.
- Grid connection through the installation of underground mains from the step-up transformer to the Mulwala 132kV substation.
- Commissioning and testing of PV strings, central inverters, switch equipment, step-up transformer, monitoring systems, and electrical protection systems

1.5.4. Construction equipment

Construction equipment required for the establishment of the solar farm will be limited to heavy machinery and plant generally used across the wider construction industry. It is envisaged that all of this machinery and plant will be able to be sourced locally. Construction equipment to be utilised onsite will include:

- 1 x truck and dog for civil works.
- 1 x D6 dozer or equivalent for levelling and road development.
- 1 x 24 tonne excavator for earthworks.
- 1 x grader for road development and levelling activities.

- 1 x mulcher for the mulching and re-use of vegetation material onsite.
- 1 x 7 tonne vibrating roller for road construction.
- 1 x front end loader for the movement and loading of soil and aggregate materials.
- 1 x water cart for road construction and dust suppression.
- 1 x piling rig for installing PV piles.
- 1 x Franna crane for the lifting of loads, erection of steel, and movement of heavy plant.
- 2 x trenchers for the installation of underground conduits and cabling.
- 1 x portable generator for temporary site power.
- Hand power tools and equipment

1.5.5. Construction schedule

The construction schedule of the Project would be conducted in stages, being:

- **Stage 1a road upgrades at the intersection of Lumbruck Lane and Savernake Road and site access points**
- **Stage 1b construction and operation of the solar arrays within the approved Development Footprint, north of Lambruck Lane**
- **Stage 2 construction and operation of the solar arrays within the approved Development Footprint, south of Lambruck Lane**
- **Stage 3 decommissioning of the Mulwala Solar Farm.**

The construction of the proposed Mulwala Solar Farm is expected to take up to eight months~~, with each construction aspect and duration detailed below in Table 5~~

1.6. Commissioning and operations

1.6.1. Commissioning activities

Commissioning of the solar farm **and BESS** is undertaken once equipment is installed to ensure that the PV panels and associated infrastructure is structurally and electrically safe. Commissioning also ensures that the solar plant is operating within its design and performance parameters.

Commissioning of the solar farm will involve the testing of the following components:

- PV module strings.
- Central inverters.
- **Battery units**
- Transformers.
- Switching equipment. Lightning protection systems.
- Earthing protection systems.
- Electrical protection systems.
- Grid connection compliance protection and disconnection systems.
- SCADA system (including meteorological stations).
- Support structures.
- Security systems.

The above components of the solar farm will be subject to a maintenance and inspection regime for the life of the development.

1.6.2. Operational activities

The Project is anticipated to have an operational life up to 40 years. A minimal number of personnel would be required for the operation and maintenance of the project.

Operational activities will involve monitoring of equipment on a daily basis, full servicing of inverters and substation equipment on an annual basis and cleaning of the solar panels at regular intervals depending on how the system performance is benchmarked to weather conditions. There will be no storage of hazardous or dangerous goods or materials onsite during the operation of the Project.

Generally, it is expected that the solar panels would need cleaning up to two times during any calendar year. Any water required for cleaning of the panels will be brought to the site in water trucks.

Land between the panels and along the boundary of the solar farm would require maintenance to control vegetation growth. Such maintenance will be undertaken either through the use of livestock (i.e. sheep) or by mowing with a slasher.

1.7. Workforce

1.7.1. Construction

The anticipated number of construction workers onsite will be approximately 130 staff. It is expected that the majority of the workforce will be sourced from the local area. Any non-local specialised contractors are likely

to come from across other areas of NSW and would utilise accommodation in Mulwala, Yarrawonga or Corowa. The majority of the construction staff movements will be made to/from site using mini buses from Mulwala.

1.7.2. Operations

It is proposed that there will be four operational staff posted at the solar facility to manage the site activities and to support routine plant operations and maintenance. It is envisaged that the majority of these operational staff would originate from Mulwala or the surrounding region.

1.8. Hours of operation

1.8.1. Construction

Construction activities at the site would occur from 7am to 6pm Monday to Friday and from 8am to 1pm on Saturdays. No construction activities would occur on Sundays or public holidays.

It is anticipated that construction activities would be staggered over an eight month period which will allow for the gradual development and commissioning of the facility.

1.8.2. Operations

As the solar farm only generates power during daylight hours, site staff would only be present during the daytime to provide operational and maintenance support. Except in response to any emergencies, staff would work 7:30am to 4:30pm, Monday to Saturday.

1.9. Traffic generation

1.9.1. Construction

It is anticipated that the average traffic generation during the construction phase will peak at 156 movements per week, or 39 movements per day. This comprises an average of 15 light vehicles (minivan and cars) and 9 heavy vehicles per day. Construction traffic will be generated from the following sources:

- Light vehicle movements for construction workers;
- Delivery of high voltage equipment, PV components, and related construction materials;
- Delivery of construction materials for the permanent site office, switch yard, and maintenance buildings;
- Delivery of temporary construction worker toilets, lunchrooms, and site office;
- Mobilisation and de-mobilisation of heavy plant and equipment; and
- Delivery of aggregates and concrete for civil works.

Further detail on construction traffic movements and impacts is discussed in Section 8.2 **of the EIS.** ~~below.~~

1.9.2. Operations

It is anticipated that the average traffic generation during operations will peak at 14 movements per week, or less than two movements per day. This comprises less than 1 heavy vehicle per week and less than 13 light vehicles per week. Operational traffic will be generated from the following sources:

- Electricians and operators;
- Water trucks;
- General delivery of replacement equipment and parts;
- Labour for PV module cleaning; and
- Labour for general maintenance.

Further detail on operational traffic movements and impacts is discussed in Section 8.2 **of the EIS.** ~~below.~~

1.9.3. Decommissioning

It is anticipated that the average traffic generation during decommissioning will peak at 156 movements per week, or 39 movements per day. This comprises an average of 15 light vehicles (minivan and cars) and 9 heavy vehicles per day. Decommissioning of the Project will comprise the following:

- Light vehicle movements for construction workers;
- Removal of high voltage equipment, PV components, and related construction materials;
- Removal of construction materials for the permanent site office, switch yard, and maintenance buildings;
- Removal of temporary construction worker toilets, lunchrooms, and site office; and
- Mobilisation and de-mobilisation of heavy plant and equipment;

Further detail on decommissioning traffic movements and impacts is discussed in Section **of the EIS.** ~~below.~~

1.10. Fire management

The project area is located within an existing highly modified and cleared environment, therefore there is no dense bushland and only limited vegetation in or surrounding the site. The site comprises a mixture of grazed and cropped paddocks.

Once the solar farm is constructed and operational, the lands in and around the PV panels, PCUs, and site office will require maintenance to ensure that the potential for fire is kept low. Areas easy to access will be maintained by the use of a tractor mounted slasher. More difficult areas in between the PV panels would be maintained through the use of sheep to reduce grasses.

A 20,000 litre water tank, solely for fire protection purposes, will be located adjacent to the site office and will be fitted with a 65 millimetre storz fitting to allow for the attachment of Rural Fire Service (RFS) appliances. The tank will be located to ensure that there is suitable all-weather access for the RFS fire tankers and appliances.

An Emergency Response Plan (ERP) will also be prepared for the site which will detail an evacuation plan; fire response, location of fire services and contacts, and a site muster point.

Fire management is further discussed in Section 8.10.5.1 of **the EIS.** ~~this report.~~

1.11. External lighting

External lighting at the solar farm will be restricted to the area where the maintenance shed, permanent site office, and switch yard will be located. Lighting will be provided for security reasons and for staff and contractors utilising the site facilities during operations. All external lighting around buildings will be directed downwards and towards the facility to ensure there is no impact to neighbouring properties from lighting.

1.12. Site security

To ensure public safety, the solar farm will be fenced around the perimeter of the developable area. The security fence will be a height of 2.4 metres and will feature closed-circuit television (CCTV) security cameras mounted at regular intervals for monitoring purposes. The fence is expected to be constructed of cyclone fencing material with a strand of barbed wire at the top to deter intruders.

1.13. Landscaping

Landscaping will be undertaken at strategic locations along site boundaries to minimise visual impacts to the surrounding dwelling and home yard area of nearby residences. Based on the results of a Visual Impact Assessment undertaken for the development, and avoiding areas of biodiversity significance, landscaping is recommended along the development area boundaries as shown in Appendix G **of the EIS**. Proposed landscaping for visual screening purposes would involve the layered planting of three metre wide vegetation strips along those areas identified in Appendix G **of the EIS**. Development of the landscape plan has been undertaken in consultation with the affected surrounding landowners.

Further detail on the Visual Impact Assessment and mitigation measures are discussed below in Section 8.3 **of the EIS.**

1.14. Surface water management

The 420 hectare surveyed project area is located on property primarily used for dry land broadacre farming (cropping and grazing). The south-eastern corner of the property has been established for centre-pivot irrigation, supplied by a groundwater bore. The remaining land is naturally slightly undulating and has been extensively cultivated for many years. Various natural depressions are scattered across the property that typically become waterlogged when inundated. There is minimal off-site drainage with some discharge to local depressions or roadside table drains near property boundaries, meaning that most surface water on the property either infiltrates to groundwater or evaporates.

The site is not flood prone and the construction, operation and decommissioning of the proposed works do not impact the existing inundation characteristics that may arise from localised stormwater runoff events. The proposed works are minor in nature with respect to surface water movement and do not significantly alter the flow direction, intensity or volume of runoff arising from the property. The existing surface water conditions on the property will remain, with the areas subject to possible localised inundation excluded and buffered from development to maintain existing storage capacity of runoff waters. Despite no flooding or stormwater risk affecting the site, nuisance inundation has the potential to impact development infrastructure. This risk is mitigated by installation of critical infrastructure (such as substation and ancillary infrastructure) 300 millimetres minimum above natural surface levels.

The Project will not significantly alter the existing pattern and direction of surface water movement across the property, with no changes to the natural ground surface due to the foundations for the solar panels. The existing surface water characteristics will remain unchanged and will continue to discharge to the natural depressions on the site, which have been excluded and buffered from the development footprint.

Other pervious areas will be maintained with grass cover to maximise rainfall infiltration and limit risk of sediment movement off site. The small increases in runoff volumes and changes to runoff characteristics due to the increased imperviousness of the site (from access tracks, etc) are adequately managed through the implementation of the operational ESCP, which includes appropriate water control features (such as infiltration trenches, sediment capture devices, etc) to maximise infiltration and minimise the risks of sediment movement.

There is a minor risk of contamination related to unintended spillages of fuel, lubricants, herbicides, sewage and other chemicals however this risk is controlled through implementation of operational procedures regarding storage, use and emergency management.

It is noted that the reduction in irrigation volume on the property as a result of the change in land use to a solar farm presents a positive impact to surface water conditions by reducing the average soil moisture content across the property, meaning there is more potential to absorb rainfall (despite the slight increase in imperviousness of the site due to access tracks) and reduce runoff volumes discharging to the internal depressions or off-site.

Further detail on surface water management and design is discussed in the **Surface and Groundwater Assessmen**t included in **Appendix H** and in Section 8.6 of the EIS.

1.15. Environmental management

The Project will be constructed under a construction environmental management plan (CEMP) and operated under an operation environmental management plan (OEMP). The CEMP and OEMP will include the following key sections:

Introduction.

Environmental policy.

Organisational structure.

Description of activities.

Identification of environmental issues and impacts.

Environmental management and monitoring.

Contingency plans and emergency response.

Complaints management.

Auditing and reporting.

Continuous improvement.

The CEMP and OEMP will be formally developed during the post-approvals process in consultation with relevant government agencies. The OEMP will be a living document that is updated as necessary to

incorporate any key operational changes. A decommissioning management plan (DMP) will be prepared three years before the planned decommissioning of the Project (see Section 3.15.1 **of the EIS.** ~~below~~).

1.16. Site decommissioning

1.16.1. Decommissioning Management Plan

In alliance with the requirements of the SEARs, measures to remediate the land following decommissioning is required in accordance with State Environmental Planning Policy No 55 – Remediation of Land.

Three years prior to the commencement of decommissioning activities, a Decommissioning Management Plan (DMP) would be prepared in consultation with DPI Agriculture and the landholder, and submitted for approval by **DPHI** ~~DPE~~. The DMP would include the following key elements:

- Rehabilitation strategies and objectives.
- Rehabilitation design criteria.
- Productivity targets to ensure the reestablishment of agricultural production (if agreed as the final land use).
- Expected timeline for rehabilitation works.
- Mitigation measures and monitoring.

1.16.2. Infrastructure removal

At the end of Mulwala Solar Farm's operational life of 40 years, the development area would be decommissioned. During decommissioning, all above ground infrastructure would be removed. Key elements of project decommissioning are expected to include:

- Disconnection of the solar farm from the Essential Energy connection point at the Mulwala substation.
- Disconnection and removal of the PV modules, and removal of mounting posts, mounting frames and trackers. Materials would be sorted and packaged for removal from the site for recycling or reuse. Many of the solar array panels are expected to be recyclable.
- **Disconnection and removal of the BESS and associated infrastructure. Materials would be sorted and packaged for removal from the site for recycling or reuse**
- Removal of all buildings and equipment, with materials recycled wherever possible.
- Removal of steel columns and cabling for recycling.
- Recycling of fencing (unless requested otherwise by the landholder).
- Site rehabilitation, remediation (if required), and return to pre-existing land use (unless otherwise agreed with the landholder).

1.16.3. Site rehabilitation

Following infrastructure removal, the following would be undertaken to reinstate the site for agricultural activities:

- Removal of gravel from internal tracks and roads (unless requested otherwise by the landholder).
- Removal of any concrete and foundations.

- Deep ripping of any compacted areas to allow for the infiltration of water and to allow for cropping activities.
- Re-establishment of groundcover in any areas where cropping is not to occur to ensure the stabilisation of soil resources, using groundcover species that are compatible with the existing species composition.
- Establishment of suitable drainage and erosion and sediment control

1.16.4. Final land use

At the conclusion of the project, all site infrastructure will be removed and the site rehabilitated to enable agricultural activities to resume.