Decommissioning Plan

Denman Road, Muswellbrook NSW

DA No. 2020/49 – Lot 400 DP 791860

Dated: 23 November 2020

1. Introduction

DPI Australia Pty. Ltd. is proposing to construct, own and operate a photovoltaic (PV) solar generating facility (the Project) of up to 36 megawatts (MW) of electricity. The current use of the site is for Agricultural activities, specifically grazing. The Muswellbrook Shire Council have requested further information in respect of the end use and rehabilitation of the site following cessation of operations.

2 Objectives

The objectives of this Plan are to describe how project infrastructure will be removed after operations cease, and to establish the methodology by which the post-development soil conditions at the project site are capable of being returned to agricultural activities consistent with the present use.

3. Solar PV Equipment

The proposed PV Facility has been designed in a similar manner to other utility scale solar facilities constructed in Australia and abroad. It comprises of a number of interlinked and integral components for the operation of the equipment and generation of electricity from solar radiation. These components include: solar modules, steel mounts for the modules, electrical transformers and inverters, electrical wiring, telecommunication equipment, electrical control enclosures and battery/electrical storage enclosure, which would include batteries.

The panels utilised in the facility are similar to those used for domestic power generation purposes and will be supported on steel frames. The frames will operate under a sophisticated solar tracking system to increase power generation through tracking the movement of the sun. The electricity generated will be converted from Direct Current, (DC) to Alternating Current, (AC), using in field inverters and Step up Transformers taking the voltage to 33kilovolts, (kV). An underground reticulation system will be used to collect the power to an internal substation which will transform the power voltage to 66 kV, compatible with the nearby Ausgrid Powerlines. Power will be connected to the grid by a new substation on the property that will connected to the existing Ausgrid Powerlines.

The solar panel arrays will be surrounded by informal grassed internal access ways which are designed to provide access to the inverter/transformer equipment pads located at the centre of the array blocks.

The facility will be managed from a control building, located adjacent to the substation which will be accessed off Denman Road.

The PV Facility has been designed in such as manner as to minimise the extent of civil works required to occur on the site. The existing soil will be retained and re-seeded with an appropriate blend of

pasture grass species, to provide vegetation coverage over the site. Grasses will be maintained through periodic slashing and potential grazing opportunities.

4. Operational Life

The terms of the land owner agreement for this project provides for a construction period and foresees the use as a PV Solar facility for up to 30 years.

The facility consists of numerous recyclable materials, including glass, semiconductor material, steel, concrete, wood, aluminium, copper, and plastics. When the facility reaches the end of its operational life, the component parts will be dismantled and recycled. The facility will be dismantled and removed using minimal impact conventional construction equipment and recycled or disposed of safely in accordance with all applicable laws and regulations at the time of decommissioning.

5. Decommissioning and Rehabilitation Actions

Decommissioning, reclamation, and restoration activities will adhere to the requirements of appropriate governing authorities.

The reclamation and restoration process comprises removal of above ground structures; removal of below ground foundations and infrastructure; and restoration of topsoil, re-vegetation, and seeding.

Appropriate temporary erosion and sedimentation control practices will be used during the reclamation phase of the Project. The control practices will be inspected on a regular basis to ensure their function.

5.1 Timing of Removal

Reclamation of the Project will begin within six (6) months from the cessation of operations. The duration of infrastructure removal is estimated to be 3 months, followed by a soil reclamation and pasture planting phase which will occur over a further 3 month period.

5.2 Retention of Infrastructure

Certain aspects of the development may be retained by mutual agreement with the landowner at the time of decommissioning as they may be of value to the ongoing agricultural activities at this location. This may include but not be limited to;

- Site Fencing
- Vegetation Buffer to a portion of the development area
- Control Building including the crossover and parking area, which would be repurposed for storage of agricultural equipment.

5.3 Decommissioning and Removal Procedure

Typically, the reclamation of the Project proceeds in reverse order of the installation;

- The Solar PV facility will be disconnected from the utility power grid at the substation gantry.
- Solar PV modules will be disconnected, collected, and either shipped to another project, salvaged, or submitted to a collection and recycling program.
- Aboveground and underground electrical connection and distribution cables that are no longer deemed necessary will be removed and recycled off-site by an approved recycling facility.

- Solar PV module racking system will be removed and recycled off-site by an approved metals recycler.
- Electrical and electronic devices, including transformers and inverters will be removed and recycled off-site by an approved recycler.
- Concrete foundations will be removed and recycled off-site by a concrete recycler.
- Fencing will be removed and recycled off-site by an approved recycler, unless it is requested to be retained by mutual agreement with the landowner.
- Vegetation buffer will be cleared, grubbed, mulched, composed and respread on site to increase the organic matter in the soil structure.
- Removal of the Control Building by an approved demolition contractor, unless it is requested to be retained by mutual agreement with the landowner.
- Gravel pavement material to the perimeter access tracks will be recovered and recycled as general fill at an approved location.
- Areas subject to plant compaction such as access tracks, substation and vegetated buffer will be deep ripped and nourished using the composed organic matter from the removed vegetation buffer.

5.4 Removal of Electrical Equipment, Solar PV Modules and Infrastructure

Above ground electrical wiring, equipment on the inverter pads and the interconnection transformer pads, and other associated equipment will be removed as part of decommissioning. Prior to commencing electrical equipment removal activities, the system will be de-energised and all the external electrical lines feeding into or out of the project will be disconnected. The electrical components comprising the inverter pads and interconnection transformer pad will be salvaged and placed in appropriate shipping containers and secured in a truck transport trailer for shipment to the next location where it be will be reused or recycled. The equipment on the inverter pads include inverters, combiners, low voltage switch gear and medium voltage transformers. The equipment on the interconnection transformer pad includes medium and high voltage switchgear and a high voltage transformer. All of the equipment is modular and easily disassembled for removal.

The electrical connectors to each panel will be unfastened along with the combiner boxes and disconnect switches and the bolts and fasteners attaching each module to the racks will be removed. Each module will be removed from the rack and placed in secure transport crates and placed into a trailer for storage and ultimately for transportation to the next location where it be will be reused or recycled. The bolts and reusable fasteners will be saved for reuse also.

Once the solar modules have been removed, the racks will be disassembled and the piers supporting the racks removed. These components will require a tracked excavator to extract the beams by pulling them out vertically. The racks and pipe metals will be recovered and transported to a metal recycler for reuse. Underground electrical equipment, including electrical wiring, will be extracted and removed from the site. The wiring is either copper or aluminium (depending on the function/location) encapsulated in an insulating plastic material. Electrical materials consist primarily of recyclable commodities.

Unless the landowner requests that the buildings be repurposed for agricultural use, the Control buildings would be disassembled, and recycled or disposed of offsite. Concrete pads supporting inverters, transformers, and O&M buildings will be removed. All fences and gates will be maintained at all times until the equipment decommissioning and removal process is complete and the area is

ready to be demobilised. Unless the landowner requests that they remain, the fence and gates will be removed and all materials recycled to the greatest extent possible. The area will be thoroughly cleaned and all debris removed.

Gravel pavement material to the perimeter access tracks will be recovered and recycled as general fill at an approved location. Unless the landowner requests that they remain, the Vegetation buffer will be cleared, grubbed, mulched, composed and respread on site to increase the organic matter in the soil structure.

5.5 Reinstatement of Agricultural Use

Following removal of all solar equipment and related infrastructure, the site will undergo a series of steps to ensure successful return to agricultural use, that existed prior to development of the Solar PV facility. Portions of the site subject to compaction, such as access tracks, substation and the vegetated buffer will deep ripped to a depth of 600mm and nourished using the composed organic matter from the removed vegetation buffer. In the event that the landholder at the time intends to use the area for grazing of stock, the disturbed areas will be rehabilitated, by establishing pasture grasses consistent with the mix of grasses that will be planted over the majority of the site as part of the establishment of the Solar PV facility.

6. Rehabilitation Performance Criteria

The site rehabilitation activities shall be deemed successful if the following criteria are achieved;

- Decommission of solar farm occurs in one stage;
- All aboveground infrastructure is removed from the site and recycled or disposed of in an appropriate manner in accordance with all laws governing at the time of reclamation, with minimal disturbance to the land;
- All belowground infrastructure is removed to a minimum depth of 1 metre and reinstated so that subsoil material (>300mm deep) is not placed on the infilled land surface; or as approved by local authorities at the time of reclamation;
- After soil conditioning an appropriate pasture is capable of being maintained on the site for one season, subject to drought or other extenuating circumstances at the time of decommissioning.