



Statement of Environmental Effects to Accompany a Section 4.55(1A) Modification for Development Application 18-2020-2021

**Electricity Generating Works (Solar Farm & Battery Energy Storage
System)**

Gawnes Road, Grong Grong

Prepared for
Komo Energy Pty Ltd

Lodged with
Narrandera Shire Council

March 2022

Claire Johnstone Planning & Development
'Woburn Park' 144 Walli Road, WOODSTOCK NSW 2793
Mobile 0499 518 868
Email claire.johnstone05@gmail.com

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1 INTRODUCTION

This Statement of Environmental Effects has been prepared by Claire Johnstone Planning & Development on behalf of Komo Energy Pty Ltd. It accompanies a Section 4.55(1A) Modification for Development Application 18-2020-2021 seeking approval from Narrandera Shire Council to include/amend the following:

- Increase in the site area from 4.79HA to 5.27HA;
- The entire 1.5MW Solar Farm will be dedicated to Haystacks Solar Garden;
- Decrease in the total number of Solar Panels as well as the total capacity installed, now a total of 3192 (3x1064);
- Amend the Tracker to include approximately 95 metres in length and 42 panels each;
- Substituting string inverters for one (1) central inverter;
- Inclusion of a three (3) DC converter (in a cabinet) and Battery Energy Storage System (20ft container);
- Substituting a 3x500kW transformer to a 1x1500 kW transformer integrated into the transformer/inverter skid;
- Increase from three (3) power poles to four (4) power poles for the grid connection;
- Include a 10 metre setback from the boundary to Gawnes Road to protect Essential Energy access to existing 11kV line; and
- Inclusion of one (1) firefighting tank.

The proposed Grong Grong Solar Farm is a private electricity generating works facility with a capital investment value less than \$5 million. As such, the proposed development is to be assessed and approved under delegated authority in accordance with *State Environmental Planning Policy (State and Regional Development) 2011*, the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*, *State Environmental Planning Policy (Infrastructure) 2007* and *Local Government Act 1993*.

The proposed development is consistent with the *Narrandera Local Environmental Plan 2013*, the *Narrandera Development Control Plan 2013* and all relevant State Environmental Planning Policies. The subject property is zoned RU1 Primary Production under the *Narrandera Local Environmental Plan 2013* which prohibits the Electricity Generating Works; however the development is not inconsistent with the objectives of the RU1 Primary Production zone, and is permitted with consent under the *State Environmental Planning Policy (Infrastructure) 2007*.

1.1 Applicant

Komo Energy Pty Ltd
53 Dunsmore Street
KELVIN GROVE QLD 4059

1.2 Owner

Reiner Alfred Purcell & Gemma Francis Purcell
337 Gawnes Road
GRONG GRONG NSW 2652

1.3 Documentation

This Development Application consists of the following documents:

- Amended Statement of Environmental Effects, completed by Claire Johnstone Planning and Development;
- Site Survey Plans, completed by Leslie & Thompson Surveyors;
- Revised Site and Elevation Plans, completed by NGE;

- Product Brochure, completed by Fimer;
- Product Brochure, completed by Zimmerman; and
- Preliminary Geotechnical Investigations, prepared by Douglas Partners.

2 SITE DESCRIPTION AND LOCATION

2.1 Site Description

The site is legally described as Lot 15 in Deposited Plan No. DP 750851 and is known as Gawnes Road, Grong Grong (subject property) and has an approximate area of 94.841 hectares.

The subject property is located approximately 4 km west from the village of Grong Grong and 23 km east from the town of Narrandera in the Riverina region of New South Wales. The subject property is located on the corner of Gawnes Road and the Newell Highway.

The proposed development site will occupy approximately 5.27 hectares (340m x 155m), take up approximately 2% of the subject property and be located approximately 500m from the Newell Highway, as identified in Figure 1 (below) and on the accompanying Plans supporting this application.

2.2 The Existing Built Form and Building Layout

The subject property is primarily used for agricultural purposes (dryland cropping and livestock grazing) and is vacant of all built structures; however, includes a farm dam and rural boundary fencing.

The subject property is characterised by relatively flat and open land with minimal vegetation scattered throughout the subject property, as outlined in Figure 1.

2.3 Access

The subject property is located approx. 500 North of the corner of Gawnes Road and the Newell Highway, approximately 4 km west from the village of Grong Grong and 23 km east from the town of Narrandera. Existing access locations services the subject property off Gawnes Road which is a two (2) lane bitumen sealed rural road.

2.4 Services

The site is not serviced by reticulated sewer or water services.

Existing electricity local poles and wires are located in Gawnes Road adjacent to the subject property (Essential Energy's 11,000 Volt Power System).

2.5 Surrounding Land Use(s)

The subject allotment is located 4km west of the village of Grong Grong, located on Gawnes Road off the Newell Highway. The land is zoned RU1 Primary Production Zone, as is land directly surrounding the site to the north, east, south and west.

The subject property is primarily used for agricultural purposes (dryland cropping and livestock grazing) and adjoining land is similarly characterised as farming land, with broad-acre agricultural land-use activities and associated dwellings (the nearest dwelling house is 2.7km), except for the land to the south which is a rural industry land use, 'Grainflow', a storage center for grain and oilseeds.

3 DESCRIPTION OF THE PROPOSAL

3.1 Proposed Modification Electricity Generating Works (Solar Farm & Battery Energy Storage System)

Komo Energy Pty Ltd proposes to construct and operate a 1.5MW photovoltaic solar farm facility called the Grong Grong Solar Farm, at Gawnes Road, Grong Grong. The solar farm will be "battery ready" and Komo Energy Pty Ltd seeks to deploy the battery energy storage system (BESS) at about the same time or shortly after the deployment of solar farm. This modification seeks to include the BESS component. The proposed development site will occupy approximately 5.27 hectares (340m x 155m) and take up approximately 2% of the subject property.

After restructuring the original "Haystacks Solar Garden", the full 1.5 MW (rather than the original 1 MW) of the proposed Grong Grong Solar Farm will support the "Haystacks Solar Garden" being established by Haystacks Solar Garden Co-operative Limited and facilitated by Pingala – Community Renewables for Sydney Inc. and Community Power Agency (CPA). The nature of the interaction between the "Haystacks Solar Garden" and the project is a loan from the Haystacks Solar Garden Co-operative Limited to the project company Grong Grong Solar Pty Ltd.

The Solar Garden structure invites households to purchase a 'virtual plot' of 3kW and get the electricity generated from their plot credited on their home electricity bill. A solar garden is a centrally-located grid-connected solar PV array where solar gardeners receive a credit on their electricity bill for the solar generation of the panels – similar to if the panels were on their own roof.

Grong Grong Solar Pty Ltd will be seeking additional equity investment into the project through a crowd-sourced funding (CSF) which gives private investors an opportunity to participate in the project. The CSF raise will give priority to local investors from Grong Grong, Narrandera and the wider Riverina community.

3.2 Site Layout and Structures/Infrastructure

The solar farm will consist of three (3) unit areas of 1,064 solar panel modules in each unit area (total solar panel modules is 3,192 for the proposed development site). Refer to the submitted plan titled, 'Site Layout Drawing'.

The site structures and infrastructure will include the following:

- **Boundary Fencing** will be a 1.8 high fence, including two (2) levels of barbed wire to ensure safety and security;
- **Gates, Vehicle Access, Car Parking and Hard Stand Areas;**
- **High Voltage Electrical Infrastructure** (including, one (1) transformer);
- **Low Voltage Electrical Infrastructure** (including, cables);
- **Solar Infrastructure** (including mounting system, solar panels, one (1) inverter and cables); and
- **BESS Infrastructure** (DC-DC converters and containerised BESS).

Transformer

The Transformer forms part of the Fimer skid-mounted transformer/inverter solution and is placed on concrete slabs at ground level, its role is to step up the solar generation of 415 Volts to 11,000 Volts to suit the local grid. It also contains metering and power quality metering along with other electrical and communications infrastructure.

Solar Inverter

Solar panels produce Direct Current or DC Electricity. The role of the solar inverter is to turn that DC electricity into AC electricity that can be used in the local grid. The Solar inverter forms part of the Fimer skid-mounted transformer/inverter solution. The Fimer solution contains only 1 (central) inverter.

Solar Power Mounting System

The preferred design for the solar farm is called a 'Single Axis Tracking' solar mounting structure. This mounting system has the advantage of rotating the orientation of the solar panel so they face East in the morning and West in the afternoon. This increases production by the solar panels by up to 30% across the year, and helps meet afternoon, early evening and morning peak demands. The rotating horizontal poles are approximately 49 meters long and hold 42 solar panel modules each. The vertical piles are piled into the ground. The trackers are spaced apart to minimise cross-shading the morning and evening. During the middle of the day, the solar panels face upwards (are horizontal).

Solar Panels

The solar panels capture the sunlight to generate electricity.

DC Cabling

The DC cabling conveys the DC electricity from the solar panel modules to the inverters. The cabling runs in DC trenches to the central inverter, where the electricity is converted to AC electricity suitable for the Transformer.

BESS

The BESS will be charged by diverting DC electricity away from the inverter to the BESS, passing through a DC-DC converter that conditions the DC electricity suitable for the BESS. The BESS will be discharged back through the DC-DC converters and use the inverter on the Fimer transformer/inverter skid to convert the DC electricity into AC electricity. This will allow the solar farm to shift daytime generation into the evening peak period and thereby help to reduce energy cost in the NEM.

The BESS requires minimal additional infrastructure, namely the DC-DC converters installed in a shed and the BESS (being a 20 ft containerised solution).

3.3 Connection to Electricity Grid

The solar farm will connect to and supply electricity into the Essential Energy grid via the local poles and wires in Gawnes Road, adjacent to the subject property (this line is Essential Energy 11,000 Volt power system). Four (4) poles will be constructed within the proposed development site and will take a new line from the Essential Energy line to the solar farm. This will be connected to the adjacent Fimer transformer/inverter skid via a cable trench.

3.4 During the Construction Phase

Construction is estimated to take up to 5 months, with a maximum of 20 persons onsite during the construction phase. The site is expected to require minimal preparation in advance of installing the solar farm as it is flat and largely devoid of vegetation.

Construction will require the use of pile drivers, graders, flatbed trucks, front end loaders, roller compactors, trenchers, backhoes and gravel trucks. Deliveries of modules and other equipment will be made via flatbed trucks or in containers on the approved route and via the site entrance.

Steel piles will be driven into the soil to support the module racking system. A galvanized metal racking assembly will be attached to the piles according to the manufacturer's guidelines. Once the panels have been installed on the racking system, the DC collection cabling is laid out on the structure and connected to the panels. The underground AC and DC cables will then be laid using trenching techniques and connected. The electrical transformer/inverter skid is then placed on a concrete foundation structure.

The transformer will require construction of a secure fencing, laying of foundations and installation of the transformer, switch gear, protection and cable support structures. Once all modules, the transformer/inverter skid and electrical collection systems have been installed, commissioning will occur. Commissioning will include testing, calibration of equipment, and troubleshooting.

When commissioning is completed, the facility becomes operational and will largely be un-attended. Annual maintenance activities will include control of weeds and grass; maintaining site tracks and fences; maintaining security systems; checking of electrical, communications and mechanical components and cleaning panels if required.

4 STATUTORY PLANNING FRAMEWORK

4.1 Environmental Planning and Assessment Act 1979

In accordance with Section 4.15 (Section 79C) of the *Environmental Planning & Assessment Act 1979 No 203* in determining a development application a consent authority is to take into consideration the relevant matters listed in Section 4.15 (Section 79C(1)). The provisions of this Section are addressed further in section 5 of this Statement.

4.2 Environmental Planning Instruments

4.2.1 Environmental Planning & Assessment Act 1979 (No 203)

Section 4.55 (1A) Modification of Consents applies to the subject application and seeks an amendment to:

- Increase in the site area from 4.79HA to 5.27HA;
- The entire 1.5MW Solar Farm will be dedicated to Haystacks Solar Garden;
- Decrease in the total number of Solar Panels as well as the total capacity installed, now a total of 3192 (3x1064);
- Amend the Tracker to include approximately 95 metres in length and 42 panels each;
- Substituting string inverters for one (1) central inverter;
- Inclusion of a three (3) DC converter (in a cabinet) and Battery Energy Storage System (20ft container);
- Substituting a 3x500kW transformer to a 1x1500 kW transformer integrated into the transformer/inverter skid;
- Increase from three (3) power poles to four (4) power poles for the grid connection;
- Include a 10 metre setback from the boundary to Gawnes Road to protect Essential Energy access to existing 11kV line; and
- Inclusion of one (1) firefighting tank.

(1A) Modifications involving minimal environmental impact

A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if—

- (a) it is satisfied that the proposed modification is of minimal environmental impact, and*
- (b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and*
- (c) it has notified the application in accordance with—*
 - (i) the regulations, if the regulations so require, or*
 - (ii) a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and*
 - (d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.*

Subsections (1), (2) and (5) do not apply to such a modification.

The proposed modification is of minimal environmental impact and is substantially the same development.

4.2.2 Biodiversity Conservation Act 2016 & Biodiversity Conservation Regulation 2017

The *Biodiversity Conservation Act 2016* (BC Act), together with the *Biodiversity Conservation Regulation 2017* (BC Regulation), outlines the framework for addressing impacts on biodiversity from development and clearing. It establishes a framework to avoid, minimise and offset impacts on biodiversity from development through the Biodiversity Offsets Scheme (BOS).

The subject property is generally clear of any vegetation due to the agricultural use of the land, being for dryland cropping and grazing purposes. The proposed development does not propose any clearing of vegetation and the search of the online Protected Matters Search Tool (PMST) identified no matters of national environmental significance or other matters likely to occur at or near the subject property.

4.2.3 State Environmental Planning Policy (Biodiversity & Conservation) 2021

State Environmental Planning Policy (Biodiversity & Conservation) 2021 applies to the site given that it exceeds 1ha in size and is located within the Narrandera Local Government Area to which the Policy applies. The SEPP requires Council to consider whether the land, the subject of the application retains potential and subsequently core koala habitat.

There are not enough feed trees in the area as listed in Schedule 2 of the Policy, to be considered a potential habitat for koalas. There were no signs of the presence of koalas in the immediate area and is therefore considered unnecessary to proceed further with a SEPP assessment.

4.2.4 State Environmental Planning Policy (Resilience & Hazards) 2021

State Environmental Planning Policy (Resilience and Hazards) 2021 applies to all land and aims to provide for a State-wide planning approach to the remediation of contaminated land.

The Policy requires the consent authority to consider whether land is contaminated prior to granting consent to carrying out of any development on that land, and if the land is contaminated, it is satisfied that the land is suitable in its current state or will be suitable after remediation for the purpose for which the development is proposed to be carried out.

The use of the site has been historically used for agricultural purposes, therefore it is considered unlikely that any form of land contamination would have occurred that would warrant any further investigation.

4.2.5 State Environmental Planning Policy (Transport & Infrastructure) 2021

State Environmental Planning Policy (Transport & Infrastructure) 2021 applies to the proposed development and Clause 34 of the Policy states development for the purpose of electricity generating works (via PV Solar Panel) may be carried out by any person with consent on land in a prescribed rural, industrial or special use zone.

The SEPP requires a consent authority to consider any development application (or an application for modification of consent) for any development carried out:

- *Within or immediately adjacent to an easement for electricity purposes (whether or not the electricity infrastructure exists).*
- *Immediately adjacent to an electricity substation.*
- *Within 5m of an overhead power line.*
- *Includes installation of a swimming pool any part of which is: within 30m of a structure supporting an overhead electricity transmission line and/or within 5m of an overhead electricity power line.*

- *Placement of power lines underground.*

The proposed solar farm will be located within 5m of an overhead power line, therefore, is required to be referred to Essential Energy (EE) for comment to satisfy the requirements of Clause 45(2) of this Policy.

The revised site layout allows for a 10 m setback of the solar farm security from the existing EE 11 kV line along Gawnes Rd. While EE has not registered an easement in relation to this power line, the 10 m set back is the width of the easement that would be expected if it was registered. The only area that comes within 5 meters of an overhead powerline is the connection of the solar farm to that power line (which will be subject matter of contractual arrangements with EE) and the site access crossing from Gawnes Rd into the solar farm.

Since submission of the application for the original Development Approval, the Applicant has progressed the grid connection process with Essential Energy. This project has Essential Energy reference number ATC-01174 "Grong Grong SF". The status of the grid connection process is as follows:

Item	Status
Steady State Study	Submitted 2 September 2021 Approved 2 December 2021
Frequency Injection Study	Submitted 16 December 2021 Approved 19 January 2022
Protection Study	Submitted 16 December 2021 Approved 16 March 2022
Application to Connect	To be submitted as soon as possible.

4.2.6 State Environmental Planning Policy (Planning Systems) 2021

The proposal does not meet the criterion for regionally significant development under the SEPP in that the development is private infrastructure development with a Capital Investment Value (CIV) of \$2.652 Million (for the solar farm) plus \$1 million (for the BESS) which is below the prescribed \$5 million. As such, this assessment report is to be determined under delegated authority in accordance with the SEPP, the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*.

4.2.7 State Environmental Planning Policy (Primary Production) 2021

The subject land is not identified under SEPP as being of State significance. Lands surrounding the subject property are predominately on cleared land used for agricultural purposes, such as dryland cropping and grazing, with some ancillary residential development.

The proposed development will have a limited impact on the predominant land-use in the locality, broad-acre agriculture, due to the location of the isolated dwelling-houses (the nearest dwelling house is 2.7km). Care has been taken to ensure only a small area of land is used and the boundary of the site area is perpendicular to Gawnes Road to ensure that the balance of the land can continue to be used for agricultural purpose and machinery guided by electronic systems (which are programmed to follow Gawnes Road).

The primary views of dwellings within proximity of the proposed solar farm are assessed to not be adversely impacted or incompatible. It is assessed the development is not incompatible with the adjoining agricultural uses due to the constraints in the locality, including the isolated dwellings, proximity of the land to the village of Grong Grong and adjoining agriculture operations.

4.2.8 Narrandera Local Environmental Plan 2013

The proposed development is subject to the provisions of *Narrandera Local Environmental Plan 2013* (NLEP) and the subject property is located within the RU1 Primary Production zone pursuant to NLEP.

The NLEP applies to all land within the Narrandera Local Government Area. The site of the proposed development is zoned RU1 Primary Production under the NLEP. The Land Use Table for the RU1 Primary Production Zone prohibits an electricity generating works facility.

Part 3, Division 4, Clause 34 of the *State Environmental Planning Policy (Infrastructure) 2007* permits with consent, development for the purpose of electricity generating works by any persons with consent on land in a prescribed rural zone, being the RU1 Primary Production Zone.

Clause 2.3(2) of NLEP provides that the consent authority shall have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.

The objectives of the R1 Primary Production zone are:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*

A review of the proposed development against the objectives of the zone reveals the development will not lead to significant impacts on the natural resource base, existing farm businesses and potential diversity of the primary industry base in the area. The development of the solar farm will occupy approximately 5.27 hectares of the 94.841 hectares allotment and will have an operational lifespan of 35 years after which it can be returned to agricultural production. As only part of the subject land will be used for the proposed solar farm, the balance of the land will continue to be available for primary production purposes.

The proposal is located in close proximity to existing infrastructure by Essential Energy and therefore maximises the use of infrastructure within the locality for the development of a non-agricultural use that will provide electricity for a large portion of the village of Grong Grong and surrounding area. The proposal will not fragment or alienate this parcel of rural land from other resource land zoned RU1 Primary Production and no subdivision is proposed. The potential for land-use conflict is low given the opportunities for intensive agricultural activities are limited due to the site constraints including isolated dwelling-houses and the village of Grong Grong.

The proposed development supports the primary production purposes of the RU1 Primary Production zone, by providing electricity generating and supply opportunities for the nearby agricultural properties and residences. The proposed development will provide jobs and may encourage other employment-generating developments to the area in and around the surrounding locality. It is assessed the proposal is consistent with the objectives of the RU1 Primary Production zone.

Clause 6.1 Earthworks

Before granting development consent for earthworks, the consent authority must take the following into consideration:

- a) *the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development,*
- b) *the effect of the development on the likely future use or redevelopment of the land,*
- c) *the quality of the fill or the soil to be excavated, or both,*
- d) *the effect of the development on the existing and likely amenity of adjoining properties,*
- e) *the source of any fill material and the destination of any excavated material,*

- f) *the likelihood of disturbing relics,*
- g) *the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area,*
- h) *any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.*

The proposal is expected to involve minor earthworks for the installation of the solar panels, associated cabling and onsite structures to render the site suitable for the development. There are no major waterways or drainage lines that will be disrupted as part of the proposed development. The management of drainage and soil movement and stability will be managed via conditions of consent requiring Erosion and Sediment Control Plan and an Operations Environmental Management Plan.

The site is characterised as cleared farmland. There have not been any known mining, quarrying or industrial activities carried out on the site. Investigation of past use and a site inspection reveals no signs of soil contamination.

The proposed development (including the associated earthworks) is unlikely to affect the existing and likely amenity of adjoining properties. Adjoining properties are primarily used for agricultural purposes and are well setback from the site. It is considered that the proposed development and associated earthworks will not detrimentally impact drainage lines, soil stability, amenity of adjoining properties or any environmental sensitive area.

Clause 6.7 Essential Services

The subject property is not serviced by reticulated sewer or water services.

The solar farm will connect to and supply electricity into the Essential Energy grid via the local poles and wires in Gawnes Road, adjacent to the subject property (this line is Essential Energy 11,000 Volt power system). Four (4) poles will be constructed within the proposed development site and will take a new line from the Essential Energy line to the solar farm. This will be connected to the Fimer transformer/inverter skid via underground cable within the development site.

Suitable vehicular accesses are proposed from the Gawnes Road with the property access to be upgraded to Council's standard via conditions of consent.

4.2.9 Narrandera Development Control Plan 2013

Narrandera Development Control Plan 2013 applies to the land. There are no specific controls applying to the development of Electricity Generating Works in the RU1 Primary Production Zone.

The proposal has been assessed against *Part B, Chapter 4 Strategic Land Use Planning for Grong Grong*. It is considered that the proposed Solar Farm is consistent with the strengths and opportunities of the village of Grong Grong and will provide additional industry, economic growth, employment during the construction phase and the opportunity for the community to be a part of the 'Solar Garden' concept, whilst protecting the character of the village and surrounding agricultural land.

5 SECTION 4.15 (SECTION 79C) CONSIDERATIONS

The following matters are to be taken into consideration when assessing an application pursuant to Section 4.15 (section 79C) of the *Environmental Planning and Assessment Act 1979 No 203*.

5.1 The provisions of any planning instrument, draft environmental planning instrument, development control plan or regulations

The proposal is permissible pursuant to *Narrandera Local Environmental Plan 2013* and is generally in conformity with the controls contained within the *Narrandera Development Control Plan 2013* as detailed in section 4 of this Statement.

There are no planning agreements relating to the site and the applicant has not requested Council to enter into any form of planning agreement.

Division 8 of Part 6 of the *Environmental Planning and Assessment Regulation 2000* specifies additional matters that must be taken into consideration by a consent authority in determining a development application. There are no relevant matters applicable to the proposed development.

5.2 The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality

5.2.1 Context and Setting

The subject allotment is located 4km west of the village of Grong Grong, located on Gawnes Road off the Newell Highway. The land is zoned RU1 Primary Production Zone, as is land directly surrounding the site to the north, east, south and west.

The subject property is primarily used for agricultural purposes (dryland cropping and livestock grazing) and is vacant of all built structures; however, includes a farm dam and rural boundary fencing. The subject property is characterised by relatively flat and open land with minimal mature native vegetation scattered throughout the subject property. Adjoining land is similarly characterised as farming land, with broad-acre agricultural land-use activities and associated dwellings, except for the land to the east which contains a rural industry.

5.2.2 Land Use Conflict

The land, the subject of the development proposal, is zoned RU1 Primary Production Zone, as is land directly surrounding the site to the north, south, east and west.

Photovoltaic solar panels are designed to reduce solar reflection and maximise absorption to prevent the loss of energy. The solar farm will be constructed using single axis tracking system solar panels which track east to west with the sun, reducing the angle of incidence and glare when contrasted to a fixed-axis system. The proposed development is assessed not to create any land-use conflicts regarding visual appearance or glare.

It is considered that the proposed solar farm can be constructed and operated without causing significant impacts on nearby activities, which are predominantly farming / agricultural operations and their associated dwellings.

5.2.3 Access, Transport and Traffic

The proposed solar farm will generate a negligible traffic impact throughout construction phase with no staff to be permanently based onsite. Throughout operation of the solar farm visitation to the site will be restricted to scheduled maintenance.

Traffic movements will be most significant during construction and decommission of the solar farm. Construction of the solar farm will be completed over a five (5) month period. During peak construction it is assessed that 2 heavy vehicle movements and 8 light vehicle movements will occur per day.

Conditions of consent will be imposed requiring the construction of a suitable vehicular accesses, utilisation of specific roads for access/egress to mitigate any potential traffic conflicts and requirements for the developer to rectify and damage to the road network as a result of the development.

The site is located within 500 metres North of the Newell Highway, therefore, the vehicles during the construction phase will utilise the Highway, without impacting on any surrounding residential buildings within the surrounding area.

5.2.4 Public Domain

The proposed development would not impact on the public domain within the surrounding area.

5.2.5 Utilities

The existing site is not connected to reticulated water or sewerage systems.

The solar farm will connect to and supply electricity into the Essential Energy grid via the local poles and wires in Gawnes Road, adjacent to the subject property (this line is Essential Energy 11,000 Volt power system).

During the construction period on-site self-contained portable amenities will be located the onsite.

5.2.6 Heritage

The site is not listed in Schedule 5 of the *Narrandera Local Environmental Plan 2013* as containing an item of environmental heritage. The site does not contain any items listed on the State Heritage Register.

The Aboriginal Heritage Information Management System (AHIMS) maintained by the Office of Environment & Heritage (OEH) indicates that there are no recorded objects on or near the vicinity of the site. Refer to the AHIMS web service reports from the OEH website accompanying this application.

5.2.7 Other Land Resources

The subject property is zoned RU1 Primary Production Zone, as is land directly surrounding the site to the north, east, west and south. The proposed solar farm will occupy approximately 5.27 hectares of the subject property; however, will not compromise routine agricultural operations on adjoining sites.

The site and surrounding land has been primarily used for agricultural purposes in the past, mainly dryland cropping and livestock grazing, except for the land to the south which is a rural industry.

The development is not likely to have detrimental effects on conserving and using valuable land resources and water supply catchments and will not lead to significant impacts on the natural resource base, existing farm businesses and potential diversity of the primary industry base in the area.

5.2.8 Water

The site is not identified on the groundwater vulnerable land map.

The proposed development does not require the extraction of any groundwater. The potential to impact groundwater systems is low, with minor earthworks required throughout construction and minor storm water seepage / infiltration throughout the operational phase of the development. It is considered that ongoing operations will pose less of a risk to surface waters than the undertaking of activities associated with primary production.

The proposed development will not significantly increase the impervious land area of the site and it is assessed there will be limited increases in the concentration of storm water as a result of the development. No adverse impacts are assessed.

5.2.9 Soils

Earthworks will be required during construction for the installation of the solar panels, associated cabling and onsite structures. The minor earthworks will not significantly change the natural drainage of the land and will not adversely affect soil quality or stability. Conditions of consent are included in the recommendation to require finalisation/implementation of an Erosion and Sediment Control Plan.

5.2.10 Air and Microclimate

Any disturbance to the localised air quality or microclimate is anticipated to be throughout the construction and decommissioning phases of the development. Throughout construction and decommissioning the proposal has potential to generate dust. It is assessed that potential dust impacts will largely be restricted to the development site, with adequate setbacks from roads, isolated dwellings and other sensitive land-uses.

A condition of consent is recommendation to require finalisation / implementation of an Erosion and Sediment Control Plan and Operational Environmental Management Plan to control dust. Throughout ongoing operation it is likely the proposed solar farm will create less particulates than the existing agricultural activities undertaken and the development will improve local air quality.

5.2.11 Flora and Fauna

The proposed solar farm does not include any clearing of native vegetation including native trees. The subject property has minimal non-native vegetation and is dominated by introduced pasture species associated with farming practices which have occurred on the land. The majority of the development will be located on the level grassed areas of the property that have been the subject of grazing and cropping activities over many years. No significant impacts on the native flora and fauna are assessed.

5.2.12 Waste

Waste generated from the proposed development will be largely restricted to the construction phase of the proposal with little ongoing waste throughout operation of the solar farm. Construction waste and ongoing operational waste will be disposed of at an approved waste landfill facility. Packaging will be recycled whenever possible. Decommissioning of the solar farm has the potential to be the greatest waste generator, however, the

mounting structure (steel) and cables (copper and aluminium) are likely to be recycled, as is the Fimer Skid and the BESS. For modules, industry is working on recycling solutions.

5.2.13 Noise and Vibration

It is considered that due to the nature of the proposed development and the surrounding land use being residential; it is unlikely that offensive noise pollution or vibration will be generated during the operational phase.

During the construction phase it is envisaged that noise levels will occur and be most significant during the ramming of foundations, which is likely to occur over a period of 15 days, however, this will be during times prescribed by Council and in accordance with the provisions of the *Protection of the Environment Operations Act 1997*.

5.2.14 Natural Hazards

The site is not identified on the Bushfire Prone or Flood Prone Mapping under the *Narrandera Local Environmental Plan 2013*.

5.2.15 Technological Hazards

The use of the site has been historically used for agricultural purposes, therefore it is considered unlikely that any form of land contamination would have occurred that would warrant any further investigation.

5.2.16 Safety, Security and Crime Prevention

The proposal does not pose a safety security or crime prevention risk. The development will include appropriate site boundary fencing. No adverse impacts are assessed.

5.2.17 Social Impact in the Locality

The proposed development will support the ongoing development of the Grong Grong surrounding area and therefore the proposal will provide a positive social and economic benefit to the area, with short and long-term employment in the area.

5.2.18 Economic Impact in the Locality

The proposed development will largely have a positive impact on the local economy throughout the construction phase and operational phase and will create contracting opportunities for local contractors.

Due to the type and scale of the proposed development, the economic benefits of the proposal are considered to be significant to the local economy. Minor impacts due to the loss of agricultural production are vastly outweighed by the significant / widespread positive benefits to the local economy as a result of the development of the solar farm at the site.

5.2.19 Site Design and Internal Design

The proposal is generally consistent with the *Narrandera Local Environmental Plan 2013* and the *Narrandera Development Control Plan 2013*. The design has taken into consideration the existing site features and context

of the locality. The development proposal has been designed to minimise impacts on the environment, adjoining land-uses, road, electricity supply infrastructure, as well as nearby isolated dwellings.

5.2.20 Construction Impacts

The development will be carried out in accordance with the provisions of the *Protection of the Environment Operations Act 1997*.

Normal site safety measures and procedures will ensure that no site safety or environmental impacts will arise during construction.

5.2.21 Cumulative Impacts

The proposal is generally consistent with the *Narrendera Local Environmental Plan 2013* and *Narrendera Development Control Plan 2013*. Adequate control measures are in place to manage noise, dust, traffic, storm water, soil erosion, and the like. It is assessed that the cumulative impacts of the proposed development are minimal and manageable.

5.3 The Suitability of the Site for the Development

The subject land is zoned RU1 Primary Production, with solar farms permitted with consent in the RU1 Primary Production zone under the *State Environmental Planning Policy (Infrastructure) 2007*. The proposed use is suitable at the location given its proximity to the existing infrastructure and isolated dwellings which prohibit the use of adjoining lands for intensive farming practices. It is assessed that the site has the capacity to support the proposal without creating adverse impacts on the site and adjoining land.

Komo Energy identified the subject property due to the location of existing infrastructure, the compatibility of the solar resource, minimal biodiversity and environmental constraints and minimal civil works required due to the topography of the land. Furthermore, the site is owned by landowners who are interested, are seeking to diversify their income streams and have committed to supporting the project.

5.4 Any Submissions made in accordance with the Act or Regulations

It is envisaged that any submissions made in relation to the proposed development will be appropriately assessed by Council.

5.5 The Public Interest

The proposed development is consistent with the *Narrendera Local Environmental Plan 2013*, the *Narrendera Development Control Plan 2013* and all relevant State Environmental Planning Policies. The subject property is zoned RU1 Primary Production under the *Narrendera Local Environmental Plan 2013* which prohibits the Electricity Generating Works; however the development is not inconsistent with the objectives of the RU1 Primary Production zone, and is permitted with consent under the *State Environmental Planning Policy (Infrastructure) 2007*.

It is considered that the proposed development has been sited and designed to mitigate any potential adverse impacts on any person with a private interest.

6 Conclusion

The relevant matters for consideration under section 4.15 (Section 79C) of the *Environmental Planning and Assessment Act 1979 No 203* have been addressed in this report and the proposed development has been found to be consistent with the objectives of all relevant planning provisions.

For reasons outlined in this Statement of Environmental Effects the proposed Electricity Generating Works (Solar Farm) at Lot 15 DP 750851, Gawnes Road, Grong Grong should be granted a modification to the original Development Application.