

Scoping Report

Whittingham Solar Farm

Prepared for: RES Australia Pty Ltd



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Prepared By	NG / EC
Reviewed By	EC
Released By	EC
Date	20/04/2020
Job Number	19-050
Document Name	19-050 – PEA Report – Whittingham SF
Version	Version 3 DRAFT – Client FINAL Review

DOCUMENT REVISION HISTORY

Version	Revision History
1 DRAFT	Client Review
2 DRAFT	Client Review
3 DRAFT	Client FINAL Review
1.0	SEARs Issue
1.1	SEARs Issue – Planning Items Updated

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30/04/2020

STATEMENT OF LIMITATION

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Abbreviations and Conventions

ABS	Australian Bureau of Statistics
AC	Alternating Current
ACHA	Aboriginal Cultural Heritage Assessment
AEMO	Australian Energy Market Operator
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
BC Act	Biodiversity Conservation Act 2016 (NSW)
CEMP	Construction Environment Management Plan
DECCW	Department of Environment Climate Change and Water
DPIE	Department of Planning, Industry, and Environment
DOEE	Department of Energy and Environment
DPI	Department of Primary Industries
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
GW	Gigawatt
ha	hectares
ISEPP	State Environmental Planning Policy (Infrastructure) 2007 (NSW)
km	kilometres
kV	kilovolt
LEP	Local Environment Plan
LGA	Local Government Area
LLS Act	Local Land Services Act 2013
m	Metres
MNES	Matters of National Environmental Significance under the EPBC Act
MW	Megawatts
NEM	National Energy Market
NSW	New South Wales
OEH (NSW)	Office of Environment and Heritage
PAC	Independent Planning Commission
PV	Photovoltaics
RAPs	Registered Aboriginal Parties
RET	Renewable Energy Target
RMS	Roads and Maritime Services
SEARs	Secretary's Environmental Assessment Requirements
SMCS	Stakeholder Management and Communication Strategy
SSD	State Significant Development
TMP	Traffic Management Plan
%	Per cent

Executive Summary

SITE DETAILS	
ADDRESS	1 New England Highway and 3670 New England Highway, Whittingham NSW 2330
LOT ON PLAN	Lot 1 DP1248572; Lot 1 DP33992; Lot 2 DP1248572; Lot 11 DP825903.
INDICATIVE PROJECT AREA	309 ha
APPLICANT	RES Australia Pty Ltd
LOCAL COUNCIL AUTHORITIES	Singleton Council
RELEVANT LOCAL ENVIRONMENTAL PLANS	Singleton Local Environmental Plan 2013
ZONE	RU1- Primary Production IN3- Heavy Industrial E2- Environmental Conservation
DEVELOPMENT PROPOSAL DETAILS	
CURRENT USE	Rural Activities
PROPOSAL	Solar Farm (90MW AC)
DEFINED USE UNDER LEPs / SEPPs	Electricity generating works means a building or place used for the purpose of making or generating electricity as defined within the <i>State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)</i> . Electricity generating works by Solar power as defined within the <i>State Environmental Planning Policy (State and Regional) 2011 (SRD SEPP)</i> .
PLANNING APPROVAL PATHWAY	State Significant Development in accordance with the Environmental Planning and Assessment Act 1979 (EP&A Act)
APPLICATION TYPE	State Significant Development (SSD)
PUBLIC NOTIFICATION	Required
CONTACT	c/- Elizabeth Cruice P – 07 3870 8888 i ³ Consulting Pty Ltd PO Box 878, TOOWONG QLD 4066

1 Introduction

1.1 The Project

icubed consulting has been commissioned by RES Australia Pty Ltd (RES) to undertake a scoping report for the proposed Whittingham Solar Farm (Project), a large-scale solar photovoltaic (PV) generation facility (90MW AC) and associated infrastructure, within the jurisdiction of Singleton Council, over land situated at New England Highway and New Freugh Lane, Whittingham (the Project). The site would be accessed from New Freugh Lane via New England Highway, on the western boundary of the site. Whittingham Solar Farm is proposed to connect to an existing overhead transmission line, which runs through the northern portion of the subject site. The proposed development layout is provided within **Appendix A**.

General information regarding the Whittingham Solar Farm project has been further detailed within Table 1 below;

Table 1 – Project Details

Project Name	Whittingham Solar Farm
Address	1 New England Highway and 3670 New England Highway, Whittingham NSW 2330
Real Property Description	Lot 1 DP1248572; Lot 1 DP33992; Lot 2 DP1248572; Lot 11 DP825903.
Applicant	RES Australia Pty Ltd C/- icubed consulting
Local Council Authority	Singleton Council
Total Project Area	339ha
Capacity – Solar	90MW AC Generation 111MW DC Generation
Capacity - Battery	30MW Storage 60MWh Transfer
Connection	66kV Line (AusGrid)
Current Land Use	Rural Activities

Whittingham Solar Farm is considered to be a state significant development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)* and will generate a capital cost of more than \$30 million. This scoping report will provide information regarding the preliminary solar farm layout and associated environmental and management impacts, that will assist the NSW Department of Planning, Industry and Environment (DIPE) in the assessment and issuing of Secretary’s Environmental Assessment Requirements (SEARs) for compilation of a future Environmental Impact Statement (EIS) in accordance with Part 4, Division 4.1 of the *NSW Environmental Planning and Assessment Act 1979 (EP&A Act)*.

Preliminary assessment studies have been undertaken by qualified consultants for specific matters that will form part of the EIS, and many cover the requirements for the standard SEARs for Solar Farms. We trust that this detailed information will assist the DPE when considering appropriate SEARs by providing a more conclusive representation of the likely environmental impacts associated with the development.

The *Large-Scale Solar Energy Guideline for State Significant Development* (NSW Government, 2018) provides guidance on the planning framework for the assessment and determination of state significant large-scale solar energy projects, such as the Whittingham Solar Farm. This scoping report satisfies the requirements outlined within this Guideline.

This scoping report will provide the following information in accordance with the *NSW Government Large-Scale Solar Energy Guideline for State Significant Development*;

- An outline of the solar farm project details and its construction, operation and decommissioning;
- An outline of the proposal justification in relation to a national, state and regional context and alternative sites considered;
- An overview of the relevant planning legislation and approvals process associated to the project;
- An outline of the preliminary environmental assessment and identification of key issues;
- An outline of the environmental assessment requirements for incorporation into the SEAR's; and
- An outline of stakeholder and community engagement.

1.2 Report Limitations

The above tasks have been carried out based on information supplied by members of the *RES Australia Pty Ltd* project team. These items have been detailed within the report.

Whilst *icubed consulting* has taken care in the preparation of this scoping report, it neither accepts liability nor responsibility whatsoever in respect of;

- Any use of this report by any third party; and
- Any third party whose interests may be affected by any decision made regarding the contents of this report.

1.3 Proponent Details

The applicant, *RES Australia Pty Ltd* (RES), is the world's largest independent renewable energy company with over 16 GW of utility scale wind, solar, battery energy storage and transmission and distribution projects (RES 2019).

RES has operations in Europe, the Americas, Turkey and Australia and has been developing significant renewable energy projects in Australia since 2004, with over 350MW of renewable energy installed or currently under construction across Australia.

RES actively involves the local community in every project, through the implementation of various activities such as public meetings, information brochures, site visits, and direct contact with residents, charities and schools; and (where possible) use local businesses and suppliers on projects.

RES contact details for this Project are further outlined within Table 2 below;

Table 2 – Proponent Contact Details

CONTACT DETAILS	
Proponent	RES Australia Pty Ltd
Address	Suite 6.01, Level 6, 165 Walker Street, North Sydney, NSW 2060
ABN	55 106 637 754
Key Contact	Andrew Douglas (Development Project Manager – Solar)
Telephone	02 8440 7400
Email	andrew.douglas@res-group.com

2 Subject Site

2.1 Site Location Details and Surrounds

The 'subject site' for the proposed Solar Farm is situated approximately 14km South-East from the township of Singleton and 12km West from the township of Braxton, and is located on the eastern side of the New England Highway, Whittingham. The subject site consists of 365 hectares and four (4) contiguous land parcels. The land parcels have been described below as;

- Lot 1 DP1248572;
- Lot 1 DP33992;
- Lot 2 DP1248572;
- Lot 11 DP825903.

Refer to Figure 1 and Figure 2 and Figure 3, which depicts the extent of the subject site, respectfully. Figure 3 below depicts the extent of the proposed solar farm (the Project) area over the subject site.

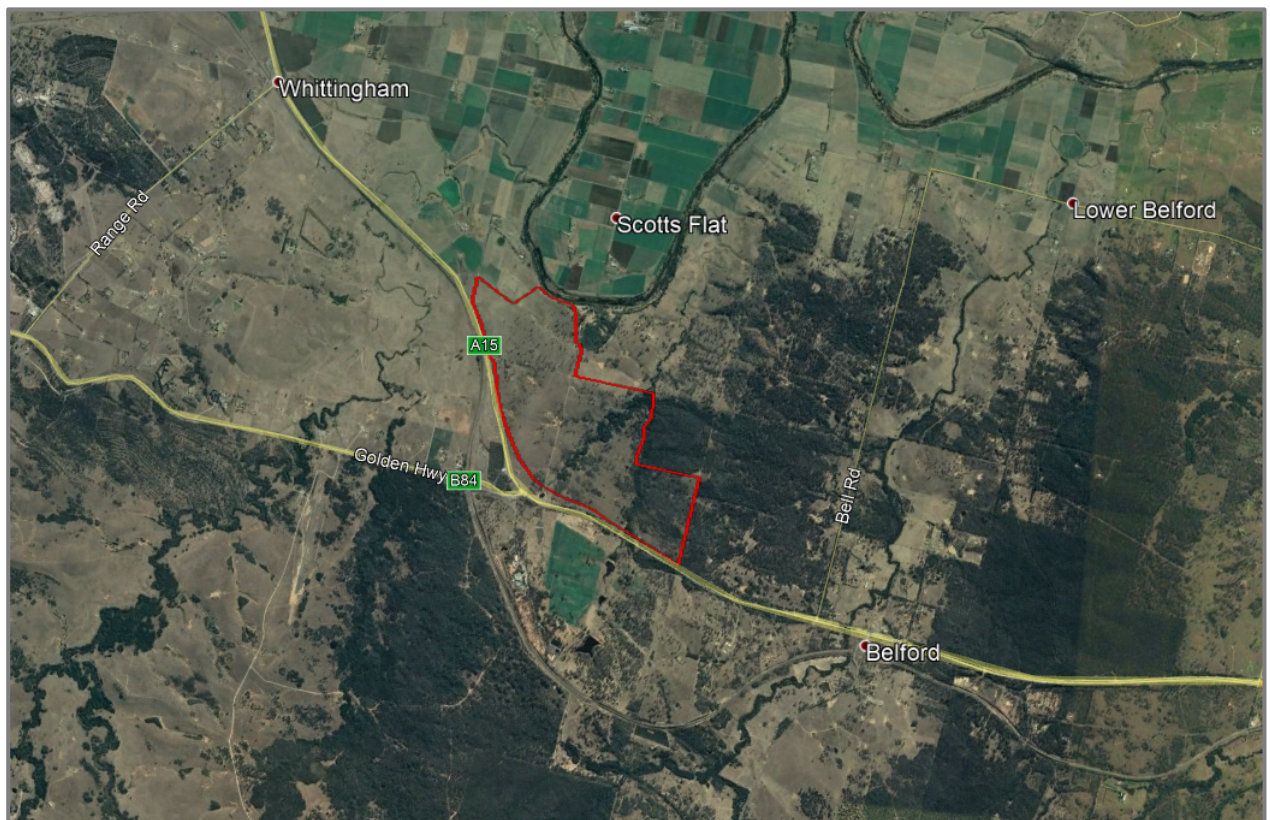


Figure 1 – Aerial Photo showing locality of subject site (the Project area boundary is depicted in red)
Source: Google Earth, 2020

The subject site is located wholly within the jurisdiction of the Singleton Council Local Government Area. Under the Singleton Local Environmental Plan 2013 (LEP, the site incorporates three (3) zones, which largely comprised of Heavy Industrial (IN3). Primary Production (RU1) is located towards the northern portion of the subject site and Environmental Conservation (E2) is apparent towards the east where dense vegetation is present.



Figure 2 – Aerial Photo showing subject site (the Project area boundary is depicted in red)
Source: Google Earth, 2020

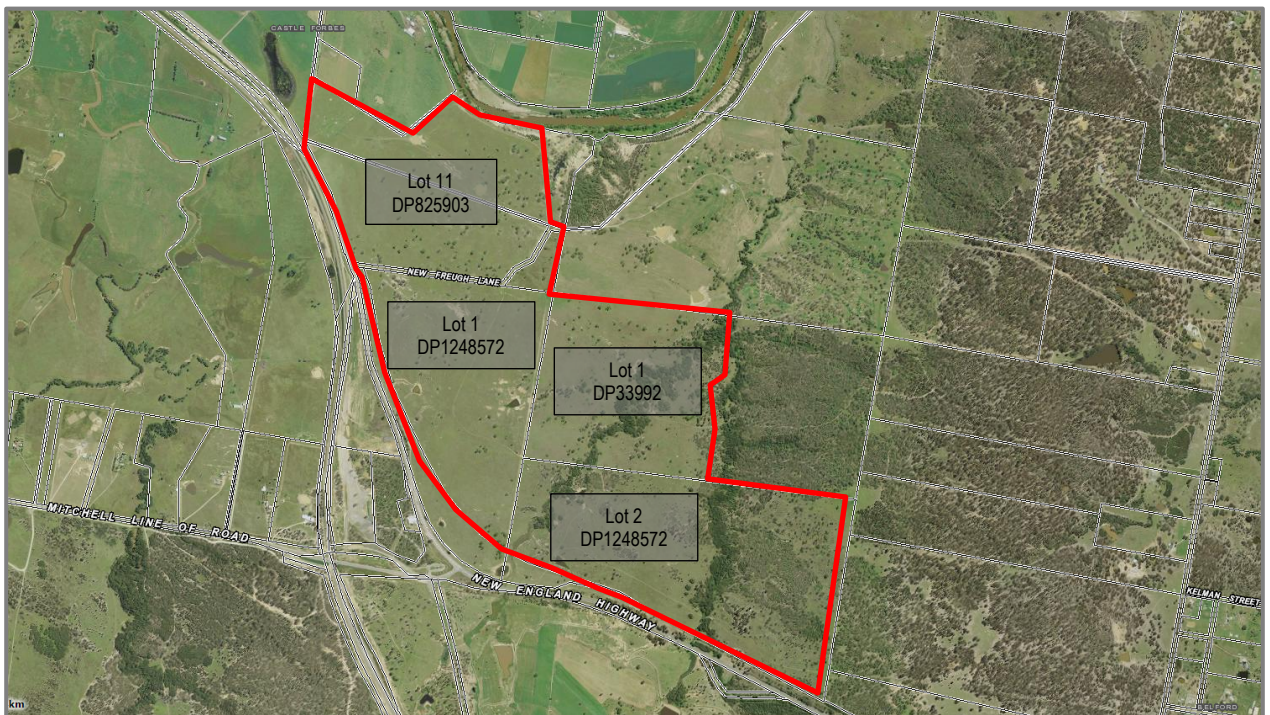


Figure 3 – Land Parcels located within subject site (the Project area boundary is depicted in red)
Source: SIX Maps, NSW Government, 2020

Figure 4, Figure 5 and Figure 6 illustrate the general condition of the site.



Figure 4 – General Condition of the Subject Site viewing southwards from New Freugh Lane
Source: icubed consulting, 2019



Figure 5 – General Condition of the Subject Site
Source: icubed consulting, 2019



Figure 6 – General Condition of the Subject Site viewing northwards from New England Highway
Source: icubed consulting, 2019

The subject lands are currently utilised for agricultural purposes, being predominantly for the grazing of livestock, with large areas cleared for this purpose and good access to a reliable water sources ie. Hunter River and several dams across the subject site.

2.1.1 Surrounding Land Use

Land uses in the surrounding locality of the subject site predominately consists of Rural, Industrial and Transport Activities, with residential uses being largely concentrated around the township of Whittington and Singleton, which are located approximately 10km and 14km north-west from the subject site, respectively. A brief description of the surrounding land uses has been tabulated below in Table 3, with reference to zoning in Figure 7.

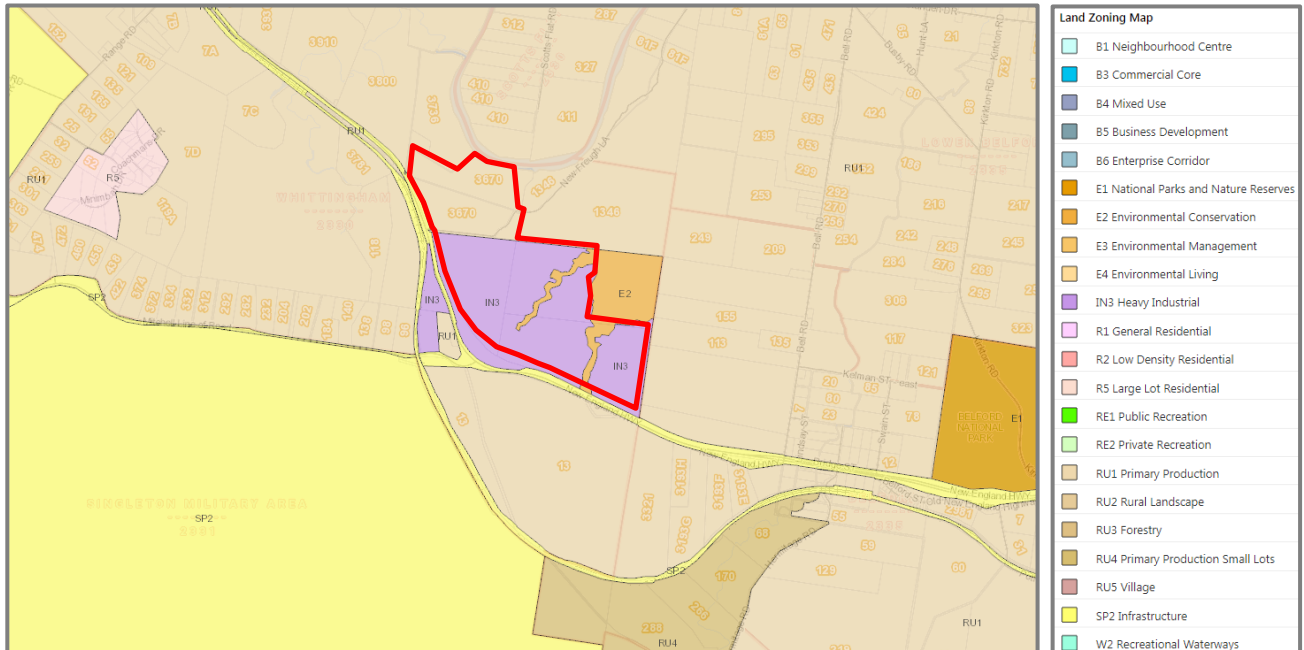


Figure 7 – Zoning Map in and around Project area (depicted by red border)
Source: Singleton LEP, 2013

Table 3 – Surrounding Land Uses Summary

East	<ul style="list-style-type: none"> • Rural Lots – Zoned RU1 Primary Production <ul style="list-style-type: none"> ○ Immediately to the East it is predominately dense vegetation. Further East is cleared agricultural land utilised for animal husbandry and/or cropping purposes with some scattered vegetation and waterholes. There are small rural residential lots located approximately 5km east of the site. The Anglican Church of the Good Shepard, Belford is located 2km to the east on Bell Road. ○ Seven (7) vacant allotments • Environmental Purpose- Zoned E1 National Parks and Nature Reserves and E2 Environmental Conservation <ul style="list-style-type: none"> ○ Dense native vegetation of high ecological value requiring conservation. ○ The Belford National Park is located approximately 5km to the east protects significant remnant vegetation and ecological communities and covers an area of 294 hectares.
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West	<ul style="list-style-type: none"> • Rural Lots – Zoned RU1 Primary Production <ul style="list-style-type: none"> ○ Predominately cleared agricultural land utilised for animal husbandry and/or cropping purposes with some scattered vegetation and waterholes. ○ There are small rural residential lots located approximately 1km to the east on the Golden Highway. ○ Three (3) vacant allotments • Industrial Purposes- Zoned IN3 Heavy Industrial <ul style="list-style-type: none"> ○ United Petrol Station and Vehicle rest area located approximately 50m to the south-west of the site adjacent the New England Highway. • Military Area- Zoned SP2 Infrastructure <ul style="list-style-type: none"> ○ Singleton Military Training Area is a 14,000 hectare site located to the south-west of the site is used by the Australian Defence Force and other government agencies for military training. ○ Dochra Airfield (YDOC) is the Australian Army airbase located approximately 2km to the south-west which supports the operations of the Australian Defence Force. • Transport Infrastructure- Zoned SP2 Infrastructure <ul style="list-style-type: none"> ○ Main North Railway Line runs on the western frontage connecting Whittingham Railway station to Belford Railway station. ○ Singleton Airport (YSGT) is located approximately 4km to the north-west of the site in Whittingham • Residential Lots- Zoned R5 Large Lot Residential <ul style="list-style-type: none"> ○ Large Residential allotments located at Minimbah Drive, located approximately 3km to the west of the site.
North	<ul style="list-style-type: none"> • Rural Lots – Zoned RU1 Primary Production <ul style="list-style-type: none"> ○ Adjoining the subject site, Lot 1 DP1096830, has been granted a permit by Singleton Council to subdivide the land into three (3) lots on the 22 August 2019 (expiring by 22/08/2024). ○ Predominately cleared agricultural land utilised for animal husbandry and/or cropping purposes with some scattered vegetation. It is noted the Hunter River runs through northern allotments from the adjoining subject site. There are small rural residential lots located approximately over 1km to the north of the site on Scotts Flat. ○ Archaeological site- “New Freugh” ruin is located within a rural parcel north of the site (Lot 4 DP956769). ○ Six (6) vacant allotments
South	<ul style="list-style-type: none"> • Rural Lots – Zoned RU1 Primary Production <ul style="list-style-type: none"> ○ Predominately cleared agricultural land utilised for animal husbandry and/or cropping purposes with some scattered vegetation. • Transport infrastructure- Zoned SP2 Infrastructure <ul style="list-style-type: none"> ○ Main North Railway Line runs on the southern frontage connecting Whittingham Railway station (north of site) to Belford Railway station (south-west of site). ○ Dochra Airfield (YDOC) is the Australian Army airbase located approximately 2km to the south-west of the site, supporting the operations of the Australian Defence Force. ○ Singleton Military Training Area is a 14,000 hectare site located to the south-west of the site is used by the Australian Defence Force and other government agencies for military training ○ Five (5) vacant allotments

2.2 Historical Land Use

The subject site has been highly modified and is predominately clear of natural vegetation, due to the extensive historical clearing that has occurred overtime to enable agricultural activities. Remaining native vegetation is scattered in an unsystematic manner, with a clumping of vegetation being apparent towards the eastern boundary of the site. Refer Figure 2.

A permit (DA246/2016) for clearing native vegetation was granted by Singleton Council on the 3rd March 2017 to clear vegetation over the subject site, for which the majority to vegetation has been cleared to date, with some remaining vegetation to the Eastern portion of Lot 2 DP1248572 still to be removed under this permit.

A master planned area for industrial activities (Whittingham Industrial Estate) was approved over part of the subject site, which has altered the zoning of the land and for which further planning approval would require assessment against the parameters embedded in the Singleton LEP. Refer to section 5.2.7.7 Urban release areas of this report.

A land acquisition (dealing no. AN998007) was obtained over part of the subject site by the NSW Roads Transport, Roads and Maritime Services under section 11 of the *Land Acquisition Act 1991* on the 10th January 2019, which then became Lot 3 and 4 on DP1248572. Refer to Figure 8. This acquisition was required to enable future transportation activities along New England Highway, including a major change to the intersection of Golden Highway and the New England Highway, with works expected to be complete by 2021. Works involve the provision of two carriageways (lanes) in each direction and a flyover for vehicles turning right from the Golden Highway. The upgrade works are needed to improve traffic flow, travel times and safety for motorists of the New England Highway (Roads and Maritime Services, 2018).

As part of the land acquisition process, a gas main was identified aligning the New England Highway closest to southern boundary of the subject site (ie DP1044189). Refer to Appendix A for approximate location.

Part of Lot 11 DP825903 has been previously utilised as a dumping ground along the northern boundary edge near the Hunter River. This activity is not required, nor is it within the Project area necessary to operate the proposed Solar Farm.

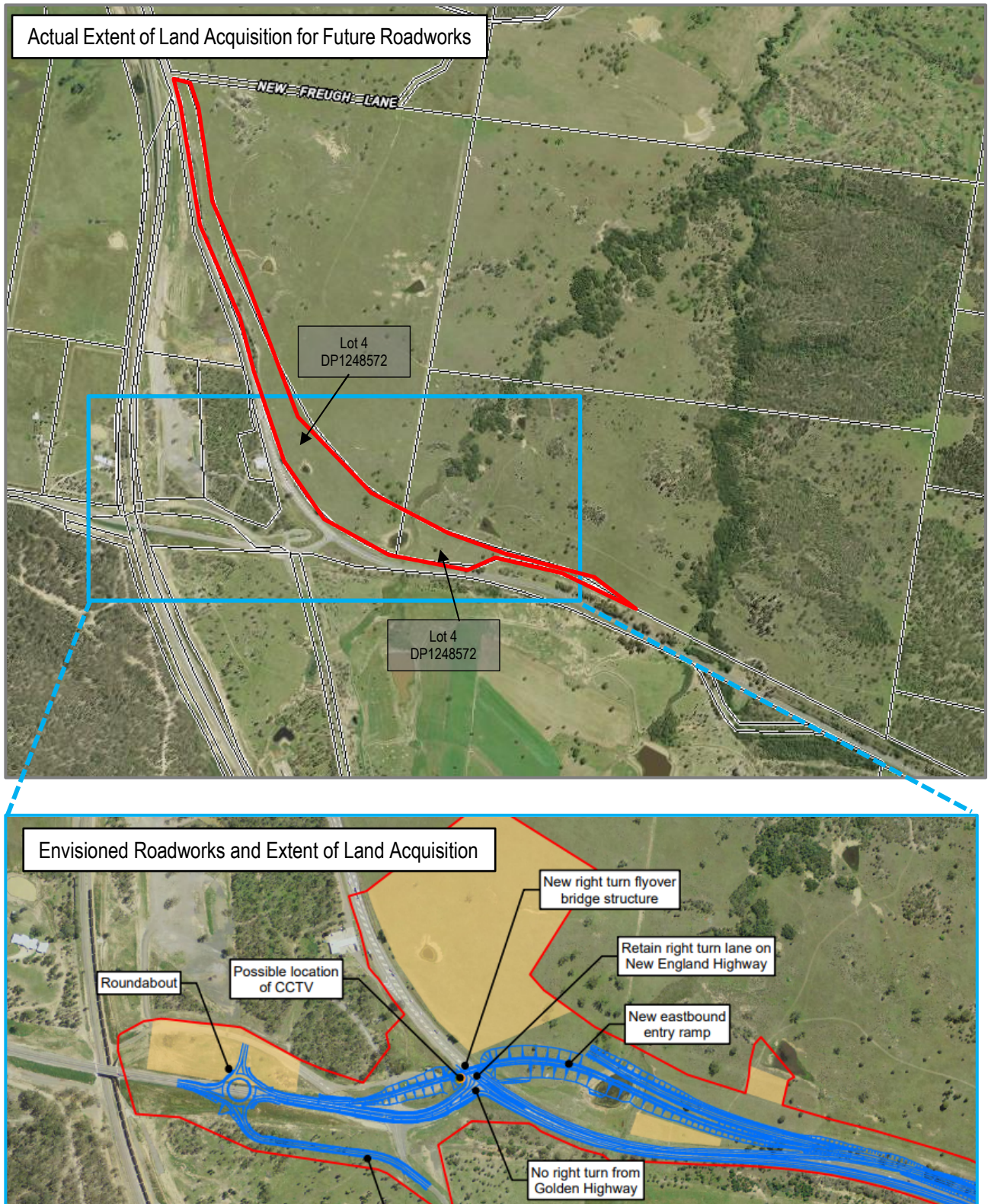


Figure 8 – Envisioned versus actual land acquisition for Roadworks Upgrade to New England Highway
Source: SIX Maps, 2020; and Roads and Maritime Services NSW, 2018

2.3 Topography

The topography of the land is characterised as generally flat with a gentle ridgeline dividing the land from south to north. This translates to a fall in natural ground level either side of the ridgeline from 84m AHD in the south to 40m AHD in the north and of approximately forty-four (44) metres. The land naturally drains to the east and west boundaries where it is collected by natural tributaries before being discharged in a northern direction towards the Hunter River which is located approximately 300 metres north of the subject land and comprises the primary drainage feature for this catchment. Any additional discharge of waters west towards the New England Highway would need to consider appropriate mitigation of impacts to this infrastructure.

2.4 Waterways

Several agricultural dams exist on the site, with erosion and degradation evident along the affiliated drainage paths, particularly on the eastern boundary where a watercourse tributary of Hunter River lies. A preliminary desktop flood risk assessment based on the interactive mapping data available from Singleton Council for the subject site indicates that there is no mapped known hazard over the site from flood.

2.5 Solar Resource

Climate data from the Bureau of Meteorology (BoM) indicates that the site's mean monthly solar exposure for 2018 ranged between 9.3-24.9 megajoules/m² (MJ/m²), with an annual average of 17.1 MJ/m², with an average of 8-9 hours of sunshine per day (BoM, 2019). Annual cloud cover statistics over a 34-year period indicate that the site receives an average of 105.3 cloudy days per annum (Paterson Station, 37 km from the site, BoM 2019). The Hunter Valley experiences a consistently high availability of solar radiation and is therefore ideal for large-scale solar development.

2.6 Road Accessibility

Access to all four (4) lots have vehicular access to New England Highway via New Freugh Lane which is the primary access point to the road network and is current an unsealed gravel road. Refer to Figure 9 and Figure 10. A paper road also exists over Lot 11 on DP825903. Refer to **Error! Reference source not found.**Figure 24.



Figure 9 – New Freugh Lane intersection with New England Highway; New England Highway southward direction adjoining subject site
Source: Google Maps, 2019



Figure 10 – Existing Access Point from New Freugh Lane via the New England Highway
Source: Google Earth Pro, 2019

2.7 Title Encumbrances

As per a title search undertaken in April 2020 through CITEC Confirm, a range of legal encumbrances were identified over the subject site which have been tabulated within Table 4 and illustrated in Figure 11;

Table 4 – Legal Encumbrances Over the Site

Encumbrance Purpose	Lot Affected	Dealing No.	Description
Electricity Transmission	Lot 11 on DP825903	F822762	Easement 20.115m wide for Transmission Line
		Y300094	Easement Variable width for Transmission Line
		Y300094	Easement Variable width for Transmission Line
Water / Irrigation	Lot 11 on DP825903	P475499	Easement for Pipeline 3m wide
		5917712	Easement for Pipeline 3m wide
		5917713	Easement for Pipeline 3m wide
		DP10003160	Easement for Pipeline 3m wide
	Lot 1 DP1248572	P475500	Easement for Pipeline 3m wide
		V877332	Easement for Pipeline 3m wide
Right of Way	Lot 1 DP33992	466198	Access to land locked parcel via 10m Easement which was replaced by the creation of New Freugh Lane.
		A110081	Access to land locked parcel via 10m Easement to New Freugh Lane.
Covenant	Lot 1 DP33992	AD624947	Restricted from creating a fence between this burdened Lot and adjoining Eastern Lot 1 on DP520135, unless consent is obtained, and consent will not be withheld if fence is constructed by owner of burdened Lot.

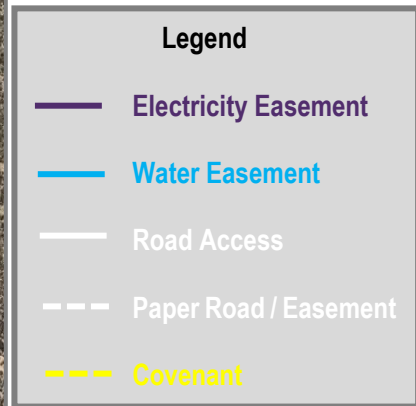
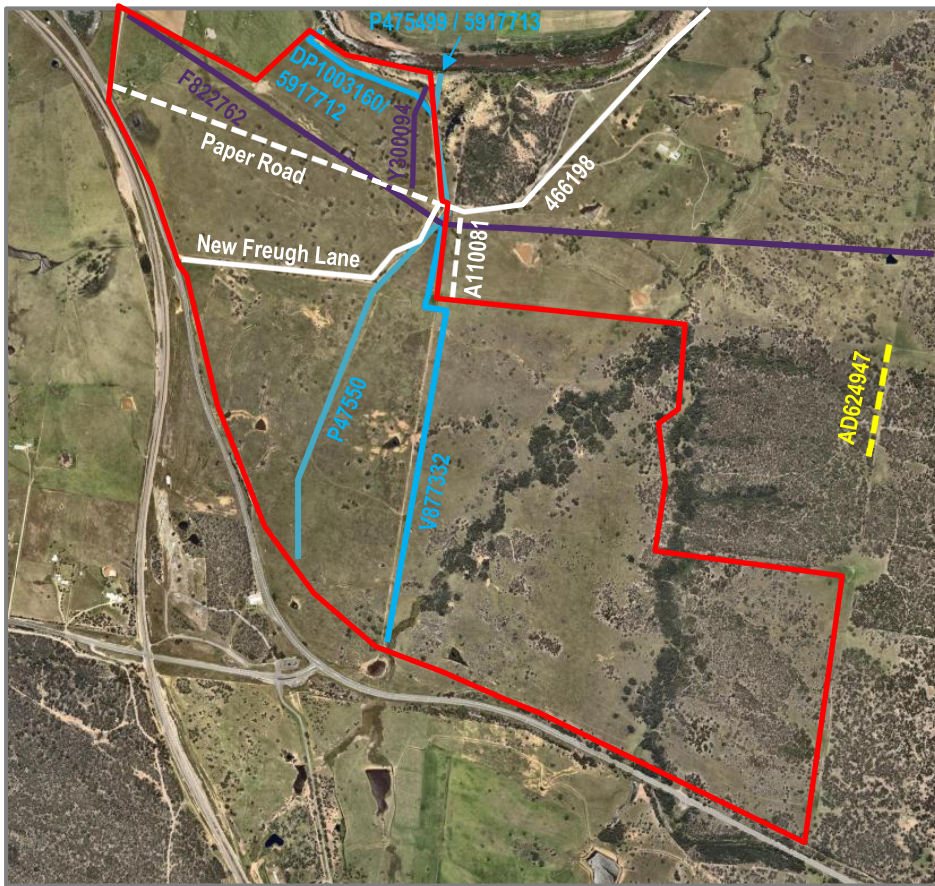


Figure 11 – Indicative location of easements over the site (the Project area boundary is depicted in red)
Source: Google Earth Pro, 2020 & CITEC, 2020

3 Solar Farm Project Details

3.1 Project Overview

The project includes the development, construction and operation of a utility scale solar PV renewable energy facility comprising of up to approximately 265,456 solar photovoltaic modules that will generate 90MW AC of clean renewable electricity.

An indicative Whittingham Solar Farm layout is illustrated within **Appendix A** and . It can be noted that a more precise development area and layout will be completed following further detailed site investigations and assessments. As shown within **Appendix A**, the project will connect to the existing 66-kV overhead electricity distribution line and the solar farm substation will be located within the site boundaries towards the northern portion of the subject site.

The exact extent of the solar farm, and in particular the northwest and southeast sections, may be amended pending the outcome of further studies as part of the EIS.

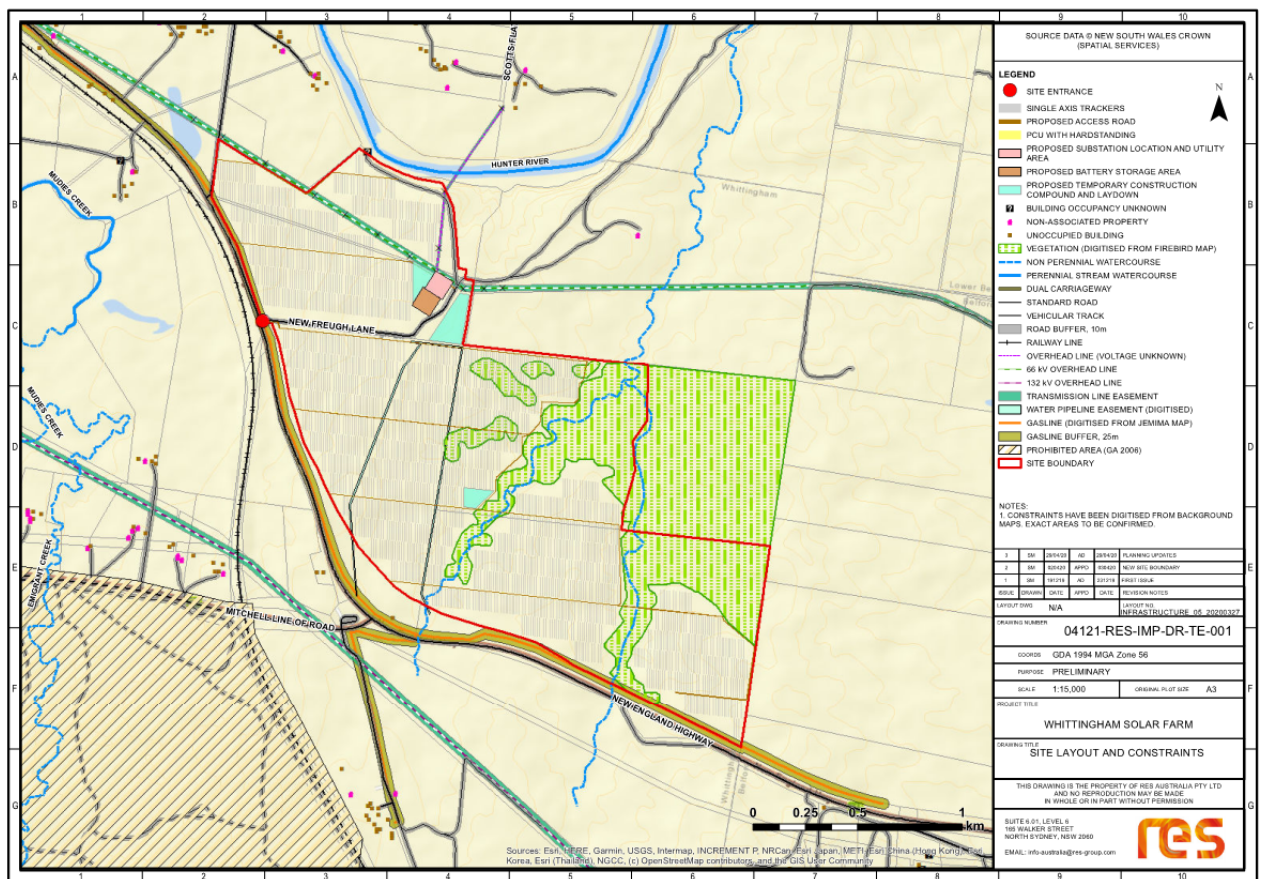


Figure 12 – Proposed Whittingham Solar Farm layout
Source: RES Australia, 2020

3.2 Project Components

The Whittingham Solar Farm will comprise of a number of key components, which include;

- Photovoltaic (PV) modules in a fixed or tracking arrangement;
- Proposed Battery Energy Storage System (30MW AC, 60MWh) encompassing a site area of approximately 1 hectare;
- Electrical collection systems, switchyard and control room;
- Construction of connection infrastructure to deliver electricity produced at the site to the electricity grid;
- Energy storage and network support devices;
- Internal vehicle access tracks for maintenance purposes within the site;
- Parking and internal access roads.

3.2.1 Design Configuration

The solar panels are proposed to be mounted in rows that would be electrically connected into arrays before being converted from direct current (DC) to alternating current (AC) electricity via containerised power conversion units. The electricity would then be fed, via an underground high voltage power reticulation system into the local electricity grid.

3.2.2 PV Solar Power Generation

The solar panels are proposed to be installed in arrays consisting of linear string of mounted modules organised into blocks, generally as shown within the preliminary plans provided within **Appendix A**. The solar panels are to be positioned 1.2 to 1.5 metres above ground level and mounted on monopole structures. These monopole structures are connected in strings of approximately 100 metres. The monopole structures will be supported by steel screw piles, or steel driven piles or fibre-reinforced plastic composite driven piles, to an approximate depth of between 2 – 3 metres below the existing ground surface level. These foundations will be readily removable at the end of life of the facility to enable the land to be restored to cultivated agricultural activities. The overall maximum height of the solar panel array will be 4.2m, which is dependent on the fall of the site's topography.

Approximately 265,456 solar panels would be accommodated at the site, providing an estimated capacity of 90MW AC. The final number of PV solar panels within the development footprint will be refined upon further detailed assessments and investigations undertaken throughout the EIS phase.

3.2.3 Power Conversion Units (PCU's)

Each solar panel 'block' is to include a central skid mounted power conversion unit (PCU) that will convert the power from direct current (DC) energy into grid-compatible alternating current (AC) energy. Foundations for the inverter stations shall be similar screw pile, or driven pile technology to the solar panel supports, and are removable at the end of the project. The medium voltage, (33kV), collector system shall be installed by direct burying to a depth of 1.0 m below ground level. At the end of the project the cable metals will be recovered for recycling.

3.2.4 Utility Connections

The project will connect to the 66kV overhead electricity distribution line. The solar farm substation will be located within the site boundaries towards the northern portion of the Project area. It is proposed to install an overhead line from the solar farm to the proposed substation to the north of the Project area generally as illustrated in **Appendix A**. The final route of the transmission line is to be finalised prior to construction, however will be designed to accommodate flexibility in the final electrical design.

Telecommunication connection is required for the proposed development and may adjoin the infrastructure on the proposed overhead transmission cable.

Water for drinking purposes will be bought into the site via trucks and stored onsite. Due to the small number of people operating the solar farm this arrangement provides adequate service.

Sewerage disposal is onsite in the form of an on-site treatment and disposal system.

3.2.5 Utility Areas

Collection, storage and distribution of the electricity generated from the solar farm is centrally located from the internal access track of the Project area and will be located within the Facility Laydown Area, which is located within the northern portion of the Project area as illustrated within **Appendix A**. The following buildings and functions will be located within this area;

- Control Room and Backup Generation;
- Storage Shed;
- Switching Yards.

The exact location of these buildings and structures will be confirmed within the detailed design phase of the project.

3.2.6 Operation Management

The project will include the development of a management area, from which operation of the infrastructure will be managed accordingly. Structures will include a demountable office control building, which includes staff amenities.

3.2.7 Laydown Area for Construction

A construction laydown area will be established within the designated Construction Compound and Laydown Area illustrated within **Appendix A**. These elements are temporary and will be replaced/relocated for future solar operations.

3.2.8 Landscaping

Appropriate landscaping may be provided around the proposed infrastructure where landscape is significantly disturbed, or where technical assessment finds merit in its provision.

3.3 Construction

The construction process for Whittingham Solar Farm will comprise of the following activities;

- Site access and establishment;
- Civil Works comprising of earthworks, compaction, stormwater drainage and sediment and erosion control;
- Installation of the solar panels, mounting structures and associated infrastructure/ grid connection works.

Construction of the project will take approximately nine (9) to twelve (12) months from the commencement of site works. During the peak construction period, the proposed Whittingham Solar Farm is expected to generate an estimated two hundred (200) jobs.

Construction activities would be undertaken during standard hours for construction works, being Monday to Sunday 6am to 7pm. Any construction activities outside of the standard working hours would require approval from relevant authorities. Any affected local residences would be informed of the timing and duration of the proposed activities, prior to the commencement of any works, where appropriate.

3.3.1 Vegetation Clearing

Clearing of vegetation under Singleton Council's Development Consent DA246/2016, is expected to continue to occur separate to the proposed Project, and will result in the removal of the remaining vegetation stands that intersect with the proposed solar farm infrastructure on Lot 2 DP1248572. This area is noted as being moderately constrained given the clearing permit in place which enables its imminent removal (independent of any application for, and granting of, consent for the Project). Further clearing of vegetation is required over Lot 11 DP825903 which consists of sparsely placed *Eucalyptus crebra* trees as detailed in the ecological assessment in Section 6.2 of this scoping report.

3.4 Operation

Whittingham Solar Farm is anticipated to operate for up to thirty-two (32) years. Once operational, the project will require around two (2) staff members. The primary operational activities conducted onsite will comprise of routine operations and the monitoring of equipment, maintenance of infrastructure, and general site maintenance and security.

3.5 Staging and Timing

The proposed solar farm development is to be completed in one (1) stage.

Timing of this development is critical, and it is currently projected that the construction phase of the project will take approximately twelve (12) months.

3.6 Decommissioning

At the end of the project's operational life, the solar farm will be decommissioned, and the site will be rehabilitated with the aim of returning it to a similar condition as exists now for the purposes of rural agriculture use. All above-ground and underground infrastructure will be removed as part of the decommissioning process, allowing the pre-existing rural land use activities to resume, or new land uses in the area to be established.

The following actions will be taken to decommission the solar farm and return the land to its former agriculture use;

- Solar panels and central inverters, including any foundations, will be removed
- Removal of underground cabling used by central inverters
- Removal of substation and ancillary buildings
- All areas are to be returned to agricultural purposes by way of appropriate earthworks

Possible removal of the following solar farm items pending agreement with landowners who may wish to have these retained;

- Fencing
- Repurposing buildings for agricultural activities
- Driveway crossovers
- Stormwater improvements
- Septic disposal unit

3.7 Battery Storage

The project will include the installation of a battery energy storage system within the northern portion of the development footprint. Refer to **Appendix A**. The proposed battery energy storage will have an indicative capacity of 30MW AC, with 60MWh energy transfer capacity, encompassing an approximate site area of 1 hectare.

Coupling batteries with renewable energy generation allows the energy to be stored during times of low demand and released (or dispatched) at times of peak demand. The battery and energy storage system will also provide a number of network services, including frequency control integration and energy arbitrage, as well as improved reliability of electricity provision from the project.

Battery storage for renewable energy is increasingly used in a variety of design, purposes, sizes and locations. Battery Energy Storage Facilities are particularly valuable given that they provide flexibility and respond faster than other energy storage or generation technologies and help maintain grid stability.

3.8 Land Rights Arrangement

The Project will lease part of the subject site for the purpose of operating the Whittingham Solar Farm (the Project), leaving the remaining areas for the continuation of rural activities.

The Project has, where practical, avoided area of encumbrances that could be potentially impacted by this Project;

- 25m buffer from gas line to project infrastructure.
- Excluded land where land acquisition to occur along New England Highway, except for the creation on internal access tracks.
- Excluded use of land where Water Pipelines exist, except for the creation on internal access tracks.
- Excluded transmission line except where intersecting for the purposes of connection to this infrastructure, and creation on internal access track.

Commentary from third parties with interest in the land activities are identified in Table 4 and will be contacted as part of the initial community consultation process. Refer to Section 7.0 of the Scoping Report.

4 Proposal Justification and Alternatives

4.1 Project Justification

4.1.1 National Context

The Australian Government ratified the Kyoto Protocol in 2007 with a commitment to cut greenhouse gas emissions. In addition, the Australian Government in 2016, endorsed the Paris Agreement by committing to a target to reduce emissions by 26 to 28 per cent below 2005 levels by 2030, in addition to the previously agreed 2020 target to reduce emissions by five per cent below 2000 levels.

Affirming Australia's commitments under these agreements, a Renewable Energy Target (RET) was ratified by the Federal Parliament in 2009 under the *Renewable Energy (Electricity) Amendment Act 2009* (formerly the Renewable Energy (Electricity) Act 2000), which instigated an target of 41,000 gigawatt hours (GWh) by 2020 for large scale renewable energy projects. To meet the RET approximately 6,000MW of new renewable energy capacity is required to be built and connected to the National Electricity Market by 2020.

The NSW Government has endorsed the Paris Agreement commitments through the development of the NSW Climate Change Policy Framework, which aims to maximise the economic, social and environmental wellbeing of NSW by addressing climate change. To achieve this, the NSW Government has set two objectives including, to achieve net-zero emissions by 2050 and to be more resilient to a changing climate. This includes investing in emerging industries such as advanced energy and removing market regulatory and governance barriers to the private sector. The proposed Whittingham Solar Farm will assist in achieving the larger national and international goals surrounding the support for renewable energy and the need to reduce emissions and tackle climate change.

4.1.2 State Context

The *NSW Renewable Energy Action Plan (REAP)* supports the achievement of the national target of 20% renewable energy by 2020. The proposal would further support the three goals of the Action Plan, which efficiently grows renewable energy generation in NSW;

1. Attract renewable energy investment and projects;
2. Build community support for renewable energy; and
3. Attract and grow expertise in renewable energy technology.

The need to switch to renewable energy resource is paramount to the wider global movement of reducing the amount of airborne CO₂. The Whittingham Solar Farm project contributes to the above goals and assists in shifting Queensland's energy dependence from coal fired electricity generation.

4.1.3 Regional Context

At a regional level, the proposal is consistent with the *Hunter Regional Plan 2036* where the plan supports further diversification and growth of the energy sector, particularly an acceleration of energy efficient and renewable energy technologies. The plan outlines the need to enhance inter-regional linkages in the region to support economic growth and leverage opportunities by managing land uses surrounding important transport corridors. Industry clusters close to the inter-regional transport networks such as the New England Highway are identified as important opportunities for investment and efficiency in the region. Community consultation in the New England region for the *New England North West Regional Plan 2036* found broad support for the promotion of renewable energy production, particularly wind and solar energy.

4.2 Local Context

As outlined within the *Singleton Economic Development Strategy*, Singleton Council is committed to working with the business community and other tiers of government to improve economic outcomes across the Singleton local government area. The *Singleton Community Strategic Plan (2017-2027)* and *Singleton Economic Development Strategy* identified the demand to diversify the economic base of the region to increase its resilience to the fluctuating cycles that characterise their key industries comprising of agriculture and mining.

Whittingham Solar Farm allows to build and diversify the local economy by targeting new business and economic activities. The direct economic impacts arising from the project will consist of the following;

- During the 9-12-month construction period, the proponent will spend approximately \$100 million on project construction labour, materials, and related services, with approximately half of this to be in wage related
- Employment is expected to peak at approximately 200 workers during the project's construction
- Typical workers will be construction managers, electricians, engineers and other skilled labour
- Over 32 years, the ongoing operation of the proposed project will directly employ approximately 2 employees, with up to 6 indirect positions supported over the left of the project.

4.3 Alternatives to the Proposal

4.3.1 Site Selection

RES Australia have selected the “project site” for the development of a solar farm given that it demonstrates a number of commercial and environmental advantages that lend itself to such a major development, whilst also minimising social, ecological and economic impacts.

Minimising environmental impacts and maximising efficiency over the site were major considerations in the evaluation of alternatives with the subject site. Additionally, the site area proposed for the location of Whittingham Solar Farm and its associated infrastructure was selected on a number of contributing factors, including its close proximity to an existing electricity transmission network (66kV Transmission Line) with sufficient network capacity. Suitability of the land in terms of factors that affect solar yield and construction costs were also considered throughout the evaluation of alternative sites.

The key advantages of the proposed subject site for Whittingham Solar Farm have been further detailed within Table 5 below:

Table 5 – Key Advantages of Subject Site

Electricity Grid	The site is located in close proximity to transmission infrastructure including the 66kV Transmission Line, with sufficient capacity to accommodate the electricity generated by the Whittingham Solar Farm project.
Topography	The topography of the land is characterised as generally flat with a gentle ridgeline dividing the land from south to north. This translates to a fall in natural ground level either side of the ridgeline from 84m AHD in the south to 40m AHD in the north and of approximately forty-four (44) metres. Accordingly, the project site is of suitable topography to accommodate for the proposed Whittingham Solar Farm and there is no mapped known hazard over the site from flooding according to Singleton Council’s overlay mapping.
Environment	The site has been highly disturbed as a result of the past land uses (i.e. cropping) and is largely cleared of native vegetation. As per the Development Plans within Appendix A , the proposed footprint largely avoids development within areas identified as highly ecologically constrained.
Agriculture	While the development will result in a temporary reduction of agricultural land use, the proposal would allow for diversification of rural land use, and being largely reversible upon decommissioning as well as involving limited ground disturbance, the solar farm development will not impact on the surrounding agricultural operations of the future productivity of the land.
Zoning	<p>As identified within the Singleton LEP Mapping, the subject site is situated predominantly within Heavy Industrial Zone, with minor portions of the site being zoned as Environmental Conservation to the east and Rural ‘Primary Production’ to the north.</p> <p>Due to the lack of water infrastructure provisions available to the site, it is unlikely that the land will be utilised by industrial activities in the medium long-term future.</p> <p>Additionally, the solar farm design has considered excluding development within the Environmental Conservation zone as a precautionary measure for industry best practice.</p> <p>Whilst the development of the project will impact the availability of land for other primary production, it will encourage diversity in the area’s land use and provide economic stimulus and support to rural communities.</p>
Road Access	The site is well situated for access to the regional road network being bounded by New England Highway and therefore providing an ease of access for construction and maintenance. Access to the site shall be obtained via New Freugh Lane, and therefore will not impact upon traffic flow along the New England Highway.
Population	Located within close proximity to the regional towns of Singleton and Whittingham providing direct and indirect investment to these communities. The subject site is located a sufficient distance between the site and populated areas to minimise visual amenity issues and possible noise constraints throughout the construction period.

5 Legislative Planning Framework

5.1 Commonwealth Legislation

5.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act (EPBC Act) 1999*, administered by the Commonwealth Department of the Environment (DOE), provides for Commonwealth assessment and approval of proposals that have a significant impact on 'matters of national environmental significance' (MNES).

The act aims to protect matters of MNES, which includes the following;

- World heritage properties;
- National heritage places;
- Ramsar Wetlands of international importance;
- Nationally threatened species and ecological communities;
- Migratory Species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park;
- Nuclear actions (including uranium mining); and
- A water resource, in relation to coal seam gas development and large coal mining development.

A search of the Commonwealth Protected Matters Search Tool (1.0km buffer, undertaken on 23rd January, 2020) indicated five (5) listed threatened ecological communities, thirty-three (33) listed threatened species and fifteen (15) listed migratory species. The search also indicated one (1) wetland of international importance located 40-50km upstream. The results obtained from the Commonwealth Protected Matters Search Tool have been provided within **Appendix B**.

If 'significant impacts' are considered likely as part of the Whittingham Solar Farm project, a referral will be required to the DoEE to determine whether the action is deemed to be a 'controlled action' in accordance with the *EPBC Act*, which includes;

- Actions that have a significant impact upon MNES;
- Actions that indirectly or directly have a significant impact on Commonwealth land; or
- Actions carried out by the Commonwealth Government.

NGH completed a preliminary investigation into the biodiversity impacts from the proposed solar farm, which included a site inspection and desktop review, and resulted in two (2) threaten ecological communities (TECs), two (2) flora species, four (4) avifauna species, one (1) reptile, and three (3) mammals as either occurring or potentially occurring on the site. Refer to Section 6.2 of this report. Thus, it is likely that a referral under the *EPBC Act* will be required for the proposed solar farm.

The EIS will consider the requirement for an *EPBC Act* Referral and this will be further assessed throughout the EIS process.

5.1.2 Native Title Act 1997

The *Native Title Act 1993* provides a legislative framework that administers processes relating to the recognition, protection and determination of native title and dealings with native title land. Native Title is the recognition that Aboriginal and Torres Strait Islander people hold rights and interests to their land and waters which derives from their traditional laws and customs.

The Act recognises the ownership of land or waters by Aboriginal and Torres Strait Island groups and provides a mechanism for determining where native title exists. People who hold native title have the right to consult or continue practise of their law and customs over traditional lands and waters. Where native title exists, a Native Title Claimant application is registered by the National Native Title Tribunal, and the people seeking native title recognition gain a right to consult with anyone who wants to undertake a certain types of activities on the area claimed.

An online search of the Native Title Register held by the National Native Title Tribunal was undertaken over the subject site and identifies that the proposed development site falls into the native title claim, NC2013/006- Scott Franks and Anor on behalf of the Plains Clans of the Wonnarua People as shown in Figure 13.

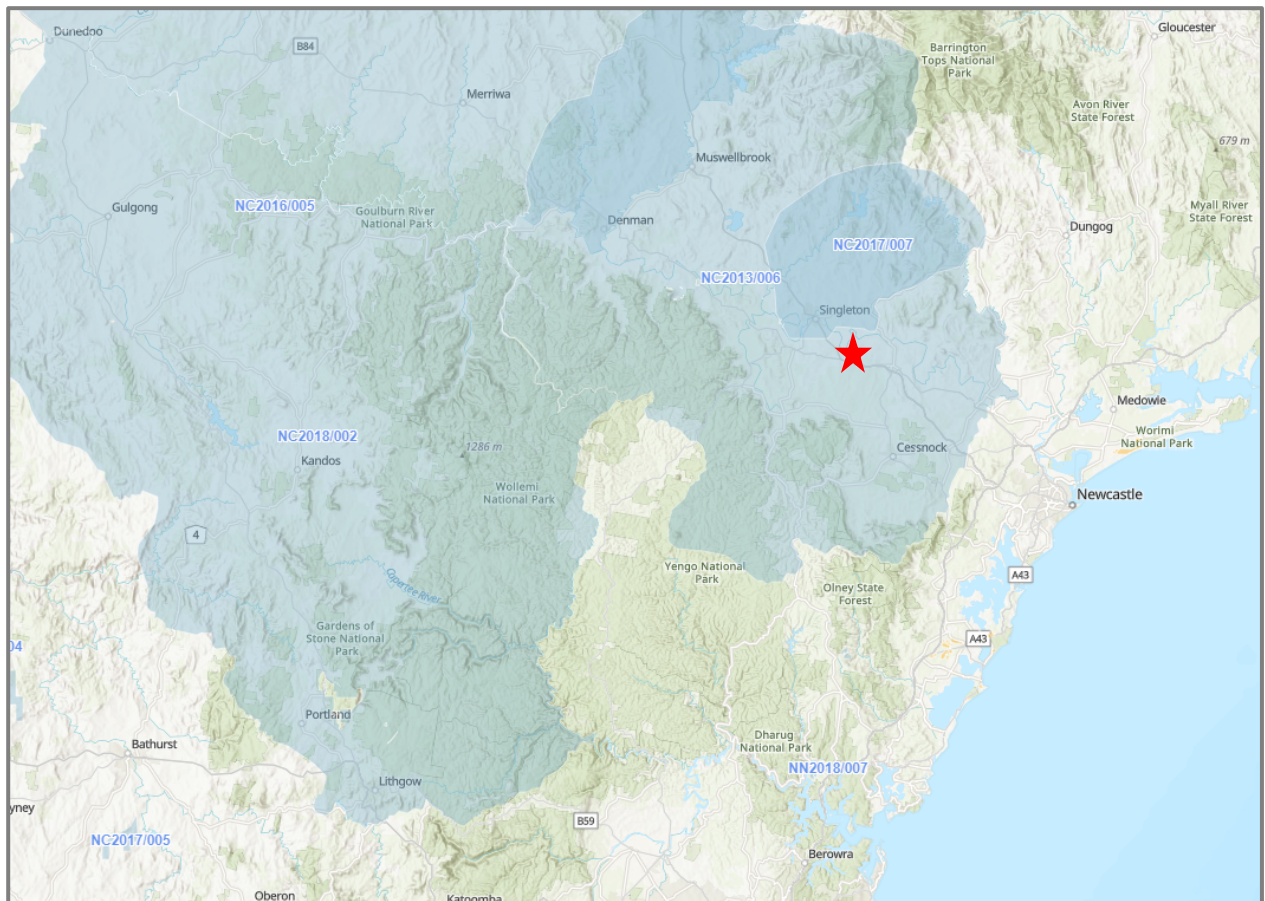


Figure 13 – Native Title Claims surrounding subject site (subject site indicatively depicted by red star)

Source: NSW Native TitleVision (NTV)

This scoping report recognises the presence of native title within the proposed project area and this will be further assessed during the EIS process.

5.1.3 Commonwealth Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSHP Act)* can protect areas and objects that are of particular significance to Aboriginal people. The *ATSHP Act* allows the Environment Minister, on the application of an Aboriginal person or group of persons, to make a declaration to protect an area, object or class of objects from a threat of injury or desecration.

A search was undertaken over the subject site using the Aboriginal Heritage Information Management System (AHIMS); **Appendix E**, which confirmed the following;

- Six (6) aboriginal sites recorded in or near Lot 11 DP825903;
- Eleven (11) aboriginal sites recorded in or near Lot 4 DP621020;
- Sixteen (16) aboriginal sites recorded in or near Lot 1 DP653039; and
- Twelve (12) aboriginal sites recorded in or near Lot 1 DP33992.

This Scoping Report recognises the presence of Aboriginal heritage within the proposed project area and this will be further assessed throughout the EIS process.

5.2 New South Wales Legislation

5.2.1 Planning Legislative Instruments

5.2.1.1 Environmental Planning and Assessment Act 1979

The *EP&A Act* is the principle legislation regulating land use in NSW and is administered by the DPIE. The *EP&A Act* sets a framework for approval of developments within NSW and requires relevant planning authorities to assess potential environment and social impacts of proposed development or land-use change.

This Project is to be assessed under Part 4 'State Significant Development' of the *EP&A Act*. The *EP&A Act* integrates the planning and assessment regime that requires approval from the minister for planning and incorporates approval and authorisations required under other NSW Legislation.

It can be noted that Whittingham Solar Farm supports a number of objects of the *EP&A Act* by promoting and encouraging social, economic and environmental wellbeing through the provisioning of land for power generation using renewable energy sources. Specifically, the Whittingham Solar Farm project supports the following objects of the *EP&A Act*;

- *to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*
- *to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*
- *to promote the orderly and economic use and development of land,*
- *to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
- *to promote good design and amenity of the built environment,*
- *to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,*

- to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,
- to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State.

Relevant sections of the *EP&A Act* include the following;

Section 4.43 allows for all provisions under this Division, with respect to a SSD Project, to prevail over any inconsistency found in any provisions made under this Act eg SEPPs, LEPs.

Section 4.41 advises that the provision of this Division exempts the following activities, should development consent be granted to the proposed SSD Project;

- a permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*
- an approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*
- an Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*
- a bush fire safety authority under section 100B of the *Rural Fires Act 1997*
- a water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the *Water Management Act 2000*
- Division 8 of Part 6 of the *Heritage Act 1977* does not apply to prevent or interfere with the carrying out of an approved SSD
- Any reference to section 4.41 where under a development consent activities are for the purpose of complying with any environmental assessment requirements.

Section 4.15 outlines the provisions by which the proposed SSD Project is to be evaluated under the *EP&A Act*.

Development of the Whittingham Solar Farm shall be assessed against Part 4 'Development Assessment' of the *EP&A Act*.

5.2.1.2 Environmental Planning and Assessment Regulation 2000

The *Environmental Planning and Assessment Regulation 2000 (EP&A Regs)* identifies the standard requirements for the preparation of an EIS and factors that are required to be taken into account when considering the impact of a Project's activities on the environment.

Schedule 2 of the *EP&A Regs* sets out the processing requirements for the preparation of an EIS, including Part 2, section 3(1) and (2) which directs the proponent to lodge a written request (ie. Scoping Report) for SEARs.

The *NSW Planning Guidelines for State Significant Development: Large-Scale Solar Energy Guideline (Dec 2018)*, sets out matters to be consideration in a Solar Farm SSD application, including the scoping report, being:

- Land use conflicts
- Traffic Generation and Transportation
- Batteries
- Biodiversity (Flora and Fauna)
- Heritage
- Landscape and Visual Amenity
- Water
- Hazards and Risks

- Health
- Waste
- Noise
- Cumulative Impacts
- Social and Economic Impacts
- Public Interest

Section 5 of this report further outlines the key matters and identifies preliminary risks and compliance in regard to the proposed Project.

This Scoping Report is therefore a preliminary assessment of these matters to determine the Secretary's Environmental Assessment Requirements (SEARs) requirements for compilation of an EIS.

5.2.2 State Environment Planning Policy (State and Regional Development) 2011

The *State Environmental Planning Policy (State and Regional Development) 2011* aims to identify development that is of State Significance and confer functions on joint regional planning panels to determine development applications.

Clause 20 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011*, defines State Significant Development to include 'Electricity Generating Works and Heat or Co-Generation, which is defined as thus;

Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that;

- (a) *has a capital investment value of more than \$30 million, or*
- (b) *has a capital investment value of more than \$10 million and is located in an environmentally sensitive area of State significance.*

The Whittingham Solar Farm Project will have a capital investment, which exceeds \$30 million, and thus the proposal is classified as a State Significant Development and shall be assessed in accordance with the provisions outlined within Part 4 of the *EP&A Act*.

All applications to carry out State Significant Development (SSD) are required to be accompanied by an EIS prepared in accordance with the Secretary's Environmental Assessment Requirements (SEAR's).

This Scoping Report has been submitted as a request to determine appropriate SEARs for this Project, to which the Minister will consult with relevant public authorities and have regard to key issues raised by those public authorities prior to making a determination on SEARs.

Once the final EIS Application is lodged for this SSD Project, approval is generally gained from the Minister for Planning under the *EP&A Act*, however the Independent Planning Commission (IPC) will determine any SSD application where:

- There have been twenty-five (25) or more objections to the application; or
- The local council has objected; or
- There has been a disclosure of a reportable political donation or gift, made in connection with the application or a previous related application.

Under limited circumstances, senior officers of the Department may have the delegated authority to determine an application.

5.2.3 State Environmental Planning Policy (Infrastructure) 2007

The *State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)* aims to facilitate the effective delivery of infrastructure across the State by providing for the development of electricity generating works on any land in a prescribed rural, industrial or special use zone for which there is consent, including large-scale solar energy systems.

Division 4, Clause 34(1) of the *State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)* states that development for the purpose of 'Electricity Generating Works' may be carried out by any person with consent on land, situated within a prescribed rural, industrial or special use zone. Additionally, Clause 34(7) of the *ISEPP*, development for the purpose of a solar energy system may be carried out by a person with development consent on any land.

As per the *ISEPP*, Electricity Generating Works is defined as thus;

Electricity Generating Works means a building or place used for the purpose of making or generating electricity.

The Whittingham Solar Farm Project is located within a Primary Production Zone (RU1), Heavy Industrial Zone (IN3), and an Environmental Conservation Zone (E2) and is deemed permissible with consent against Clause 34(1) and 34(7) of the *ISEPP*, which is as follows;

(1) Development for the purpose of electricity generating works may be carried out by any person with consent on the following land:

- (a) in the case of electricity generating works comprising a building or place used for the purpose of making or generating electricity using waves, tides or aquatic thermal as the relevant fuel source—on any land,
- (b) in any other case—any land in a prescribed rural, industrial or special use zone.

Clause 34(7) of the *State Environmental Planning Policy (Infrastructure) 2007*, allows development for the purpose of a solar energy system to be carried out by any person with consent on any land (except land in a prescribed residential zone).

Whilst the proposed Whittingham Solar Farm is permissible over the site, the detailed design of the large-scale solar development shall ensure that the design is compatible with local land use objectives such as those outlined in the *Singleton Local Environmental Plan (Singleton LEP) 2013*.

5.2.4 State Environmental Planning Policy (Rural Lands) 2008

The purpose of *State Environmental Planning Policy (Rural Lands) (SEPP Rural Lands) 2008* is to facilitate the orderly and economic use and development of rural land and to implement measures to reduce land use conflicts. The Project, being an electricity generating facility (solar farm), meets the rural planning principles of Section 7 of *SEPP (Rural Lands) 2008* given that it will introduce a sustainable economic activity to the wider locality.

The Rural Planning Principles also require consistency with applicable regional strategies, such as Regional Plans and Policies endorsed by the NSW government. Compliance with these are further detailed in the following sections.

The Project is also consistent with the *NSW Renewable Energy Action Plan (2013)*, which guides renewable energy development, in that it will contribute to the national RET target of 41,000 gigawatt hours (GWh) by 2020 for large scale renewable energy projects.

5.2.5 State Environment Planning Policy No. 55 – Remediation of Land

The *State Environmental Planning Policy No.55 – Remediation of Land* aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment.

Under Clause 7(1), requires a consent authority to which a development application applies, to not consent to the carrying out of any development on land unless:

- (a) *“it has considered whether the land is contaminated, and*
- (b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
- (c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose”.*

A search has been undertaken against the NSW EPA Contaminated Land register, which confirmed that the subject site, has not been identified as contaminated land. It can be noted that two (2) sites within the Singleton Local Government Area are declared as significantly contaminated land under the EPA register, which comprise of the Putty Saw Mill being located approximately 7.9km from the northern boundary of the subject site and Singleton Gasworks, which is located approximately 8.3km from the northern boundary of the subject site.

No information has been sought from Singleton Council that may suggest activities approved onsite would cause contamination. Due to historical rural uses over the site, areas of contamination may be of potential risk. High risk rural activities for soil contamination may include chemical and fuel storage areas, vehicle maintenance areas or livestock dip areas.

A Stage 1 Preliminary Site Investigation desktop assessment has been prepared for the project, which has identified that risk associated with contamination within the project area is considered low. From the results of this desktop assessment, it has been determined that no detailed investigation is likely to be required within the EIS. Mitigation measures regarding possible contamination within the project area will be captured within a CEMP, which will manage any contamination identified or created during construction.

5.2.6 State Environment Planning Policy No. 44 – Koala Habitat Protection

SEPP 44 provides for the protection of habitat and core habitat for koala *Phascolarctos cinereus*. The site is located within a generally cleared agricultural landscape with limited areas of vegetation remaining. The largest area of intact vegetation and koala habitat is located within Belford National Park, approximately 4 km to the east of the site. There is a partly vegetated connection between the national park and the site. Given that the dominant PCTs are dominated by *Casuarina* or *Allocasuarina* species, which are not koala feed species, it is unlikely that the site contains koala habitat.

The EIS will further consider the presence of koala habitat within the subject site, and confirm whether habitat is present and where a management plan is required to be implemented.

5.2.7 Singleton Local Environmental Plan 2013

The site is situated within the Singleton Council Local Government Area (LGA) and the operative planning instrument is the *Singleton Local Environmental Plan (Singleton LEP) 2013*, with its current version commencing on 10th February 2019.

The land over which the proposed Solar Farm project is located is zoned Primary Production (RU1), Heavy Industrial (IN3) and Environmental Conservation (E2) under the *Singleton LEP*. Refer to Figure 14.

Electrical Generation is not listed among developments which are permitted with consent for the zone; however, the *ISEPP* takes precedence over the *Singleton LEP* and permits (with consent) Electricity Generating Development such as the proposed Whittingham Solar Farm within these zones.

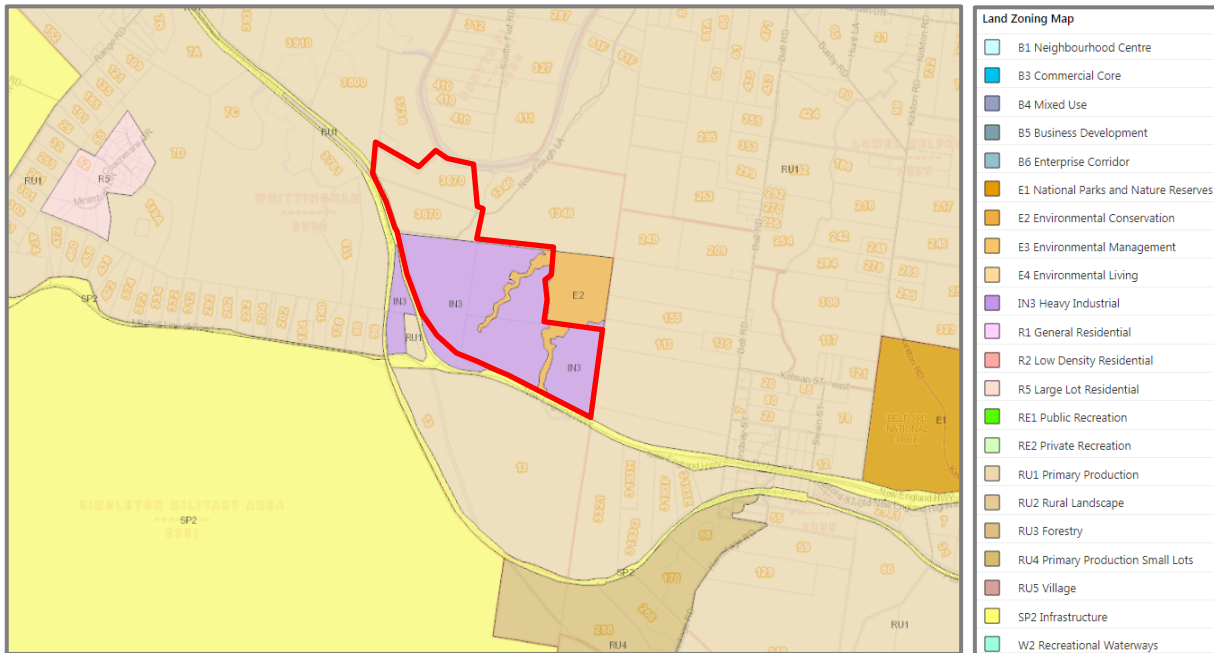


Figure 14 – Zoning Map of Surrounding Land Uses (the Project area boundary is depicted in red)
Source: Singleton LEP, 2013

5.2.7.1 Aims of the Singleton Local Environmental Plan 2013

The *Singleton Local Environmental Plan 2013* aims to make local environmental provisions for land in Singleton in accordance with the relevant environmental planning instruments under section 33A of the *EP&A Act*.

The particular aims of this Plan are as follows;

- to provide a framework for regulating development within Singleton
- to promote the use of rural resources for agriculture and primary production, including forestry and open cut mining, and major infrastructure providers
- to encourage the sustainable management, development and conservation of natural resources
- to protect and conserve the environmental and cultural heritage of Singleton
- to ensure that a range of housing choice is provided for all residents of Singleton throughout all life stages
- to promote and coordinate the orderly and economic use and development of land in Singleton
- to provide adequate protection for, and minimise risk to, the community, as far as is practicable, from environmental hazards, including flooding and bush fire
- to protect and enhance watercourses, riparian habitats and water quality in Singleton

5.2.7.2 RU1 Primary Production

The *Singleton LEP* states that the consent authority must have regard to the objectives for development in a zone when determining a development application.

The objectives of the *Singleton LEP* Primary Production (RU1) Zone are as follows:

- *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.*

The outcome for the Primary Production zone is considered to be reflective of the sustainable nature and low impact activities of the proposed Project. While the development will result in a temporary reduction of agricultural land use, the proposal would allow for diversification of rural land use, and is capable of reverting back to rural land uses on decommissioning given its low operational impacts. Consideration of impacts, such as noise and construction operations, in context of nearby rural dwellings will also need to be taken into account through the preparation of specialised detailed assessments to meet the overall objectives of the RU1 zone.

Ultimately, the project will harness a natural resource, namely solar energy. Whilst the development of this project will impact upon the availability of rural production, it will allow for and encourage diversity in the locality and will provide economic stimulus and support to rural communities.

5.2.7.3 IN3 Heavy Industrial

The objectives of the *Singleton LEP* Heavy Industrial (IN3) Zone are as follows:

- *To provide suitable areas for those industries that need to be separated from other land uses*
- *To encourage employment opportunities.*
- *To minimise any adverse effect of heavy industry on other land uses.*
- *To support and protect industrial land for industrial uses.*

The proposal is generally compliant with these objectives, as the proposed development is industrial in nature, and will encourage employment opportunities and provide direct and indirect economic benefits to the local rural community in the construction and operational phases of the project. As the development is temporary and will be decommissioned after a period of time, it will not restrict the long-term use of the site for industrial purposes.

5.2.7.4 E2 Environmental Conservation

The objectives of the *Singleton LEP* Environmental Conservation (E2) Zone are as follows:

- *To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.*
- *To prevent development that could destroy, damage or otherwise have an adverse effect on those values.*

The objectives of the E2 Environmental Conservation Zone are considered to be reflective of the sustainable nature of the proposed Project, which is to harness the production of a natural and renewable resource base. In order to meet the overall objectives of the E2 Zone, the environmental sensitivity and ecological values of the locality will need to be taken into account through the preparation of specialised detailed ecological assessments. It is therefore recommended that pending further ecological studies the project design considers excluding development within the E2 Zone to preserve the environmental values as much as practicable.

5.2.7.5 Riparian Lands and Watercourses

Under the *Singleton LEP* mapping, Riparian Lands and Watercourses features have been identified over the project area. Refer to Figure 15.

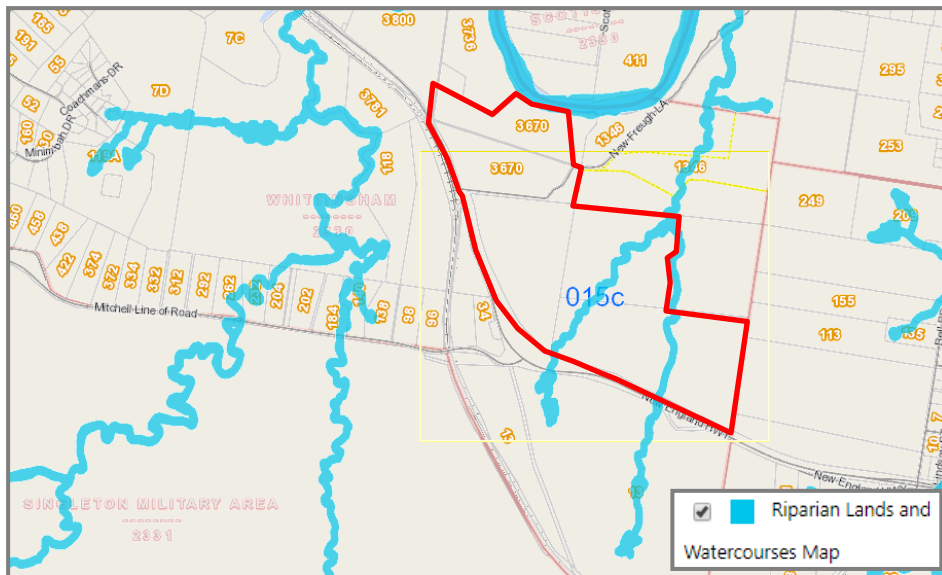


Figure 15 – Map of Riparian Lands and Watercourses (the Project area boundary is depicted in red)
Source: Singleton LEP, 2013

The objective of the Terrestrial Biodiversity Overlay is to protect and maintain the following;

- *water quality within watercourses*
- *the stability of the bed and banks of watercourses*
- *aquatic and riparian habitats*
- *ecological processes within watercourses and riparian areas*

The riparian and watercourse areas have been avoided by the Project where possible, by placement of most infrastructure outside these areas. Appropriate sediment and erosion controls will be enacted stabilise areas of the watercourse where required.

5.2.7.6 Land Reservation Acquisition

Under the *Singleton LEP* mapping, an area of Land Reservation Acquisition has been identified adjacent to the project area within the New England Highway, and partly within Lot 11 DP825903. Refer to Figure 16. The project has avoided this land acquisition area as illustrated in **Appendix A – Development Plans**.

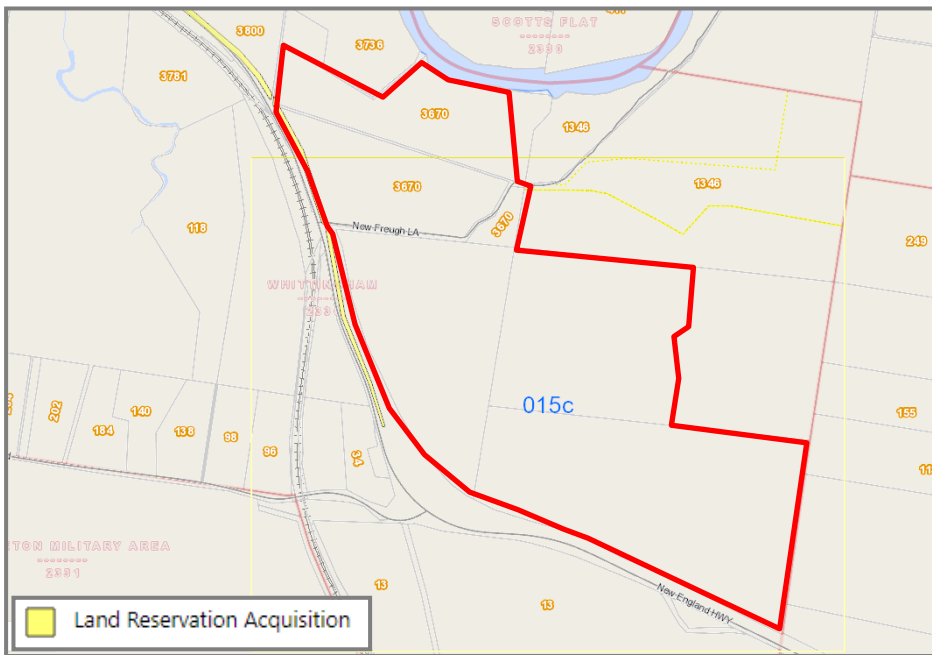


Figure 16 – Map of Land Reservation Acquisition (the Project area boundary is depicted in red)
Source: Singleton LEP, 2013

5.2.7.7 Urban release areas (Master Planned Site)

Under the *Singleton LEP* mapping, an Urban release area (Master Planned Site) has been identified over part of the project area, within the *Singleton LEP*, and is identified as M16- Whittingham Industrial site. Refer to Figure 17 and Figure 18.

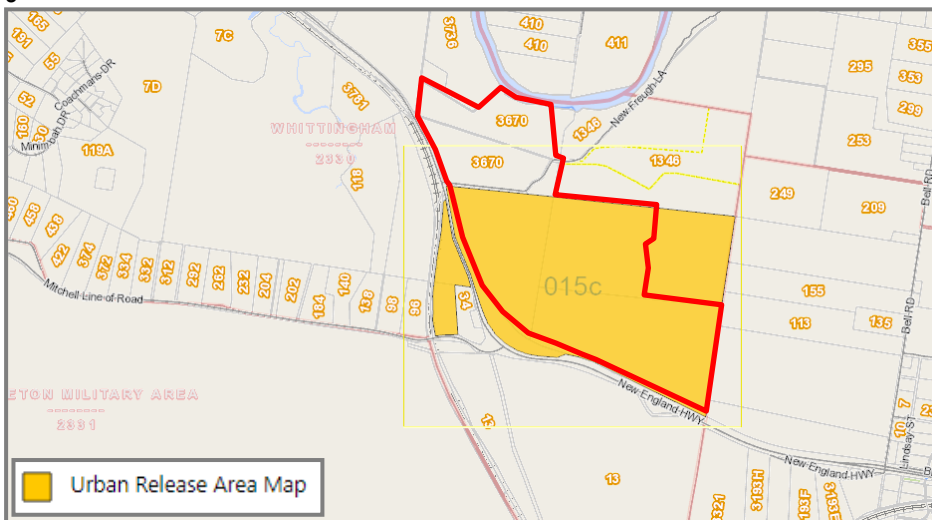


Figure 17 – Map of Urban release areas (the Project area boundary is depicted in red)
Source: Singleton LEP, 2013

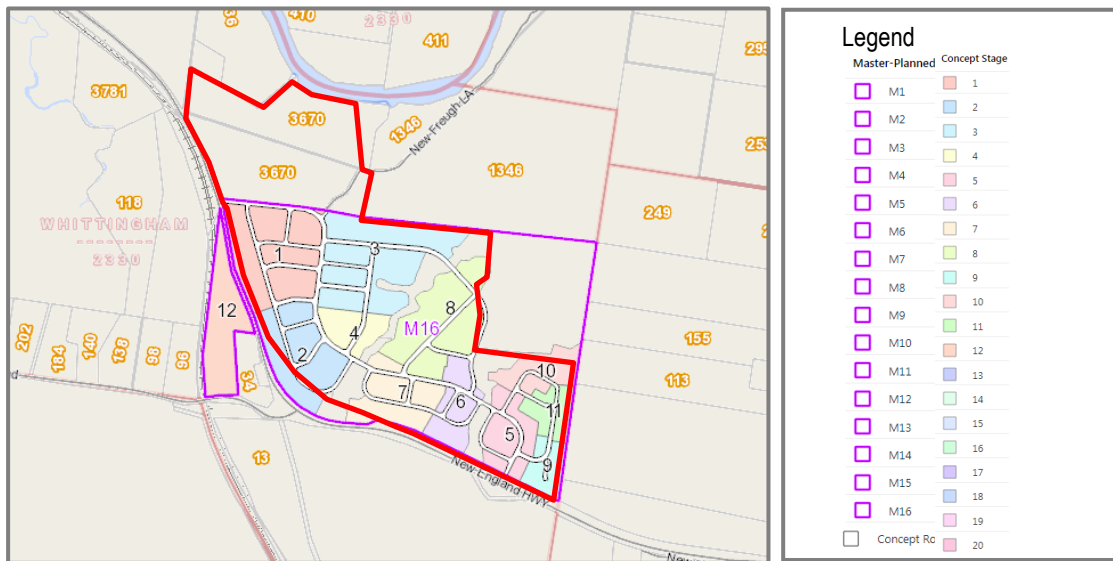


Figure 18 – Master Planned Site Overlay Map (the Project area boundary is depicted in red)
Source: Singleton LEP, 2013

In accordance with the *Singleton LEP 2013*, the objective of the Urban Release Area Overlay is to:

‘require satisfactory arrangements to be made for the provision of designated State public infrastructure before the subdivision of land in an urban release area to satisfy needs that arise from development on the land, but only if the land is developed intensively for urban purposes’.

The consenting authority must not grant consent for a development on land in an urban release area unless a development control plan has been prepared for the land.

Under subsection 6.3, subclause (3) of the *Singleton Environmental Local Plan 2013*, a development plan must provide:

- (a) a staging plan for the timely and efficient release of urban land, making provision for necessary infrastructure and sequencing,
- (b) an overall transport movement hierarchy showing the major circulation routes and connections to achieve a simple and safe movement system for private vehicles, public transport, pedestrians and cyclists,
- (c) an overall landscaping strategy for the protection and enhancement of riparian areas and remnant vegetation, including visually prominent locations, and detailed landscaping requirements for both the public and private domain,
- (d) a network of active and passive recreation areas,
- (e) stormwater and water quality management controls,
- (f) amelioration of natural and environmental hazards, including bush fire, flooding and site contamination and, in relation to natural hazards, the safe occupation of, and the evacuation from, any land so affected,
- (g) detailed urban design controls for significant development sites,
- (h) measures to encourage higher density living around transport, open space and service nodes,
- (i) measures to accommodate and control appropriate neighbourhood commercial and retail uses,
- (j) suitably located public facilities and services, including provision for appropriate traffic management facilities and parking,
- (k) in relation to land at Whittingham—appropriate development controls to ensure that development does not adversely affect access to the Great Northern Railway Line, including any future railway siding.

The objectives of the Master-Planned Site provisions within the *Singleton DCP* are;

- (a) *To ensure that development of master-planned sites occur in a timely and efficient manner, making provision for necessary infrastructure and sequencing.*
- (b) *To ensure that road and utility infrastructure connectivity is maintained across development stages and estates.*

In accordance with the *Singleton DCP*, the 'Special requirements for certain heavy industrial zoned land at Whittingham' are outlined as follows;

- (1) *The objective of this clause is to retain opportunities for industrial land at Whittingham to access the Great Northern Railway for goods transportation.*
- (2) *This clause applies to the land within Zone IN3 Heavy Industrial known as Lot 1, DP33992, Lot 1 DP653039, Lot 4 DP621020, Lot 23 DP1128978 and Lot 24 DP1128978, New England Highway, Whittingham and marked "m16" on the Master-Planned Site Map.*
- (3) *Development consent should not be granted for the subdivision of land to which this clause applies, unless the consent authority is satisfied that opportunities to provide access to the Great Northern Railway (including any potential for a railway sliding) are retained.*
- (4) *Development consent should not be granted to development on land to which this clause applies, unless the consent authority is satisfied that:*
 - (a) *The development will not hinder opportunities to provide access to the Great Northern Railway, and*
 - (b) *If the development is visible from the New England Highway or Golden Highway, the development has a positive and high-quality visual interface with the highway.*

Although electricity generating works are permitted within the lands zoning under *SEPP (Infrastructure) 2007* early consultation with Singleton Council and NSW Roads and Maritime Service was undertaken and confirmed that there was no concerns regarding the proposed solar farm proceeding in-lieu of this master plan, given that there was currently a lack of services (immediately available to support the intended industrial development for the foreseeable future. Refer to Section 7 Community and Stakeholder Engagement of this report.

5.2.7.8 Designated Buffer Area

A Designated Buffer Area has been identified over the subject site within the *Singleton LEP* in relation to the Singleton Military Area (Base). Refer to Figure 19.

The objectives of this Designated Buffer Area within the *Singleton LEP*, is to protect the Singleton Military Area from impacts to its operations. The Singleton Military Area covers approximately 14,000ha and is primarily used as military training facility and air base (Dochra Airport) for all units of the Australian Defence Force and other government agencies. The consenting authority must consider if the Development is achieving the following Designated Buffer Area outcomes prior to determining the application;

- (a) *the impact that any noise and other emissions associated with existing land uses may have on the proposed development,*
- (b) *any proposed measures incorporated into the development that limit the impact of such noise and other emissions associated with the existing land use*
- (c) *any opportunities to relocate the proposed development outside the land to which this clause applies,*
- (d) *whether the proposed development is likely to adversely affect the operational environment of any existing development on the land to which this clause applies.*

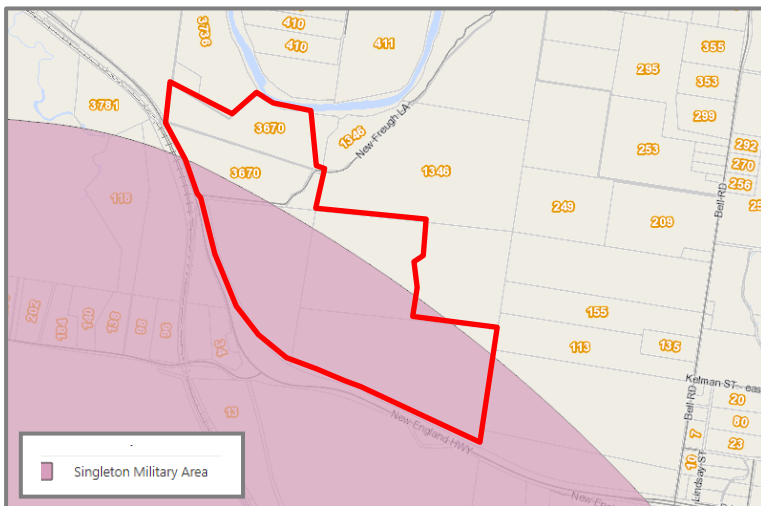


Figure 19 – Map of Buffer Area (the Project area boundary is depicted in red)
Source: Singleton LEP, 2013

A search of the Department of Defence online mapping, found no unexploded ordnance within or adjacent to the subject site. Refer to Figure 20.

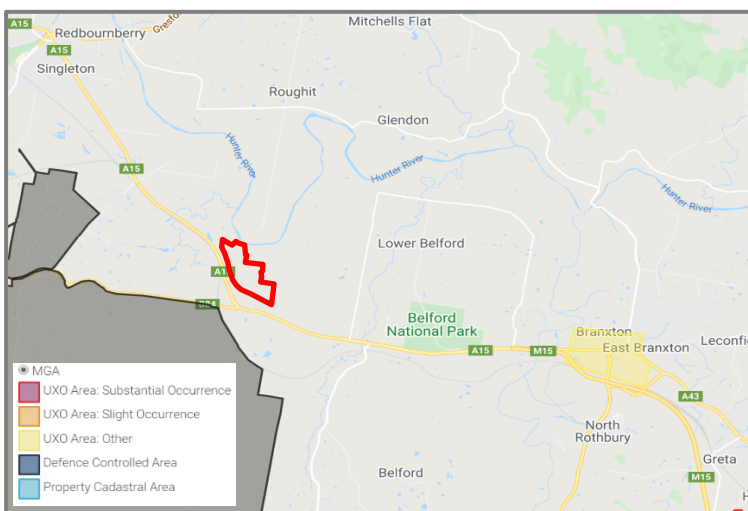


Figure 20 – Map of Unexploded Ordnance near Project area boundary which is depicted in red outline
Source: Department of Defence, 2020

A response from the Department of Defence and Singleton Council were sought regarding this matter, and advice from the Department of Defence’s External Land Planning & Regulation section provided the following advice on the 10th September 2019;

“...Defence has no objections to the proposal subject to any potential glare impacts being addressed and monitored during and following installation to confirm that the level of risk is acceptably low and with post-installation modifications to the solar farm made, where necessary, to ensure that aircraft safety is not compromised for any activities undertaken at the Singleton Training Area.

Singleton Council advised that they would add advice to the consent which would allow for post installation modifications be made (i.e. change in angle of panels) if significant aircraft safety issues arise, which was an appropriate approach based on their locality and size. This would not be an appropriate approach if the proposed development was deemed a risk.”

Thus, further assessment will be required to determine specific concerns and potential future expansion infrastructure that may influence the glint and glare assessment. It is proposed to undertake a preliminary glint and glare impact assessment to determine the impact (if any) to the Singleton army and airbase operations which will feed into the overall community consultation process.

5.2.7.9 Minimum Lot Size

The subject site has been identified as being located partially within the Minimum Lot Size of 40ha and 500ha within the *Singleton LEP*; refer to Figure 21. The southern portion of the site is not identified within the Minimum Lot Size Overlay as subdivision does not apply to land within the Heavy Industrial (IN3) Zone.

During the EIS phase, further assessment against the Minimum Lot Size Overlay provisions within the *Singleton LEP* may be required, given the likelihood that a lease (greater than 5 years) will be entered into with the landowners for operation of the Project.

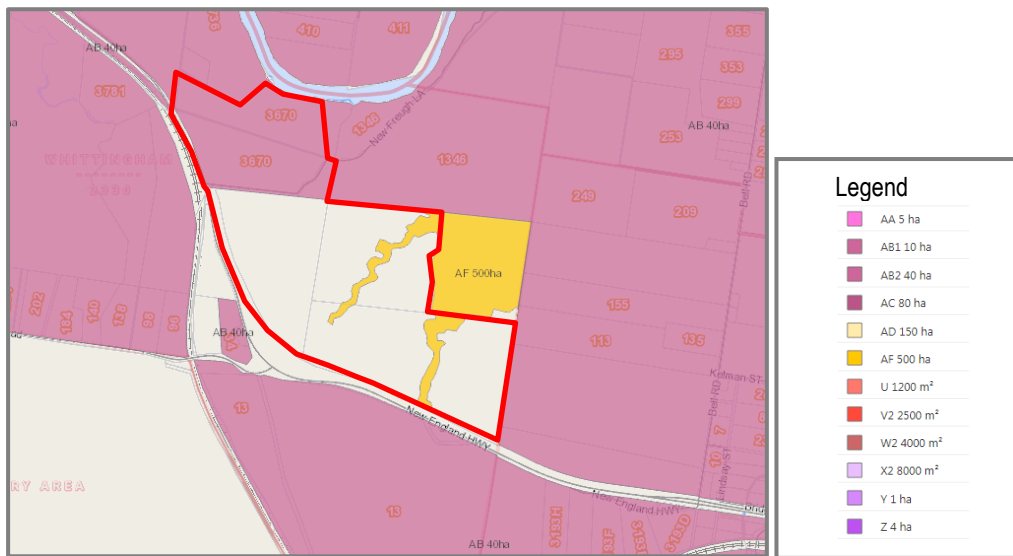


Figure 21 – Minimum Lot Size Overlay Map
Source: Singleton LEP, 2013

5.2.8 Hunter Regional Plan 2036

The *Hunter Regional Plan 2036* is an overarching framework for guiding NSW Government’s land use planning priorities and decisions for the Hunter region over the next 20 years. The Hunter region consists of ten local government areas including Port Stephens, Newcastle, Lake Macquarie, Cessnock, Maitland, Dungog, MidCoast, Singleton, Muswellbrook and the Upper Hunter.

The regional plan sets out four goals for the Hunter Region including:

- The leading regional economy in Australia
- A biodiversity-rich natural environment
- Thriving communities
- Greater Housing choice and jobs.

The first goal of the *Hunter Regional Plan 2036* outlines the need to strengthen the region’s economic resilience, protect its well-established economic and employment bases and build on its existing strengths to foster greater market and industry diversification. In particular, the plan supports further diversification and growth of the energy sector particularly

an acceleration of energy efficient and renewable energy technologies in the region to enable long term sustainable economic and employment growth. The project is consisted with the strategic regional direction no. 12, which aims to 'Diversity and grow the energy sector' to 'enable opportunities for renewable energy industries' and has identified the Singleton locality as being of high solar potential at 17MJ/m². Refer to Figure 22.

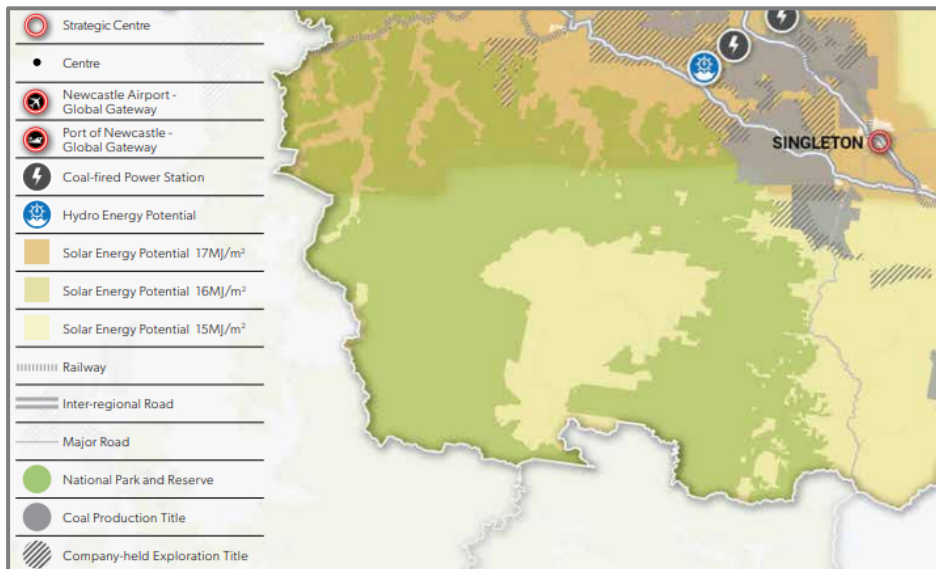


Figure 22 – Energy resources in Hunter Regional around Singleton

Source: Hunter Regional Plan 2036, DPE

The plan also outlines the need to enhance the inter-regional linkages in the region to support economic growth and leverage opportunities by managing land uses surrounding the important transport corridors. Industry clusters close to the inter-regional transport networks are identified as important opportunities for investment and efficiency in the region. In terms of the proposal, the New England Highway along the south and western boundaries of the subject site is identified as an important inter-regional connection for the region. Access to this infrastructure is to be via the existing local road network of New Freugh Lane, and no significant impact on function of the New England Highway will occur as a result of the proposed Solar Farm project as detailed further in Section 6.10 of this report.

Given the above, the proposed Solar Farm project is deemed a compatible land use in accordance with the intent sought within the *Hunter Regional Plan 2036*, particularly in relation to the development of diverse and growing economy within the energy sector. The compatibility of the Whittingham Solar Farm with the objectives outlined within the *Hunter Regional Plan 2036* will be further investigated throughout the EIS process.

5.3 Other New South Wales Legislation

5.3.1 Water Management Act 2000

The *Water Management Act 2000* is a key piece of water legislation in NSW ensuring ecologically sustainable and integrated management of the State's water for future and current generations. The *Hunter Unregulated and Alluvial Water Sharing Plan (WSP)* under the provisions of the *Water Management Act 2000* applies over the subject site and will be further discussed in the EIS.

Under section 89J of the *EP&A Act*, SSD projects do not require some approvals for water-related impacts including a water use approval under section 89, water management work approval under section 90 or a controlled activity approval

under section 91 of the *Water Management Act 2000*. The proposed development will hence not require approval under this Act.

5.3.2 Biodiversity Conservation Act 2016

The *NSW Biodiversity Conservation Act 2016* (BC Act) in conjunction with the *Local Land Services Amendment Act 2013* (LLSA Act) provides a framework for biodiversity conservation and land management in NSW. The primary purpose of the BC Act is to; “maintain a healthy, productive and resilient environment...now and into the future, consistent with the principles of ecologically sustainable development”.

According to the provisions under section 7.9 of the Act, an SSD application for development consent is required to be accompanied by a Biodiversity Development Assessment Report (BDAR). A preliminary assessment of potential biodiversity impacts over the proposed development site has been undertaken by NGH and is included within **Appendix D**.

5.3.3 Biosecurity Act 2015

The *Biosecurity Act 2015* is a guide for Local Government Authorities (LGAs) to prevent the establishment, and reduce the risk of spreading noxious weeds. The Project area has the potential to become a place where noxious species could be introduced through the activities of the proposed Project ie. introduction of seeds via equipment entering the site, which would need to be managed during the construction and operation of the Project through the implementation of an CMP and Operational Management Plan (OMP).

5.3.4 Soil Conservation Act 1938

The *Soil Conservation Act 1938* allows for conservation of soil resources and erosion management, where notices can be issued under Section 15A for control of soil erosion or land degradation. Construction of the Project will involve earthworks throughout the subject site for the installation of infrastructure, which have the potential to create impacts on waterways through sedimentation erosion. These activities and the control of sediment erosion movements can be managed by a CMP.

5.3.5 Dangerous Good (Road and Rail Transport Act) 2008

Under the *Dangerous Good (Road and Rail Transport) Act 2008*, the transported of dangerous goods via the road network are covered. In the unlikely event that dangerous goods are required for the construction of the Project, an appropriate license will be obtained under separate application.

5.3.6 Environmentally Hazardous Chemicals Act 1985

The *Environmentally Hazardous Chemicals Act 1985* regulates the use and storage (control) of environmentally hazardous chemicals or declared chemical waste. In the unlikely event that dangerous goods are required for the construction of the Project, an appropriate license will be obtained under separate application.

5.3.7 Fisheries Management Act 1994

The *Fisheries Management Act 1994* (FM Act) aim is to conserve habitats and threatened species, populations and communities, to preserve fishery resources for future generations. Section 4.41 of the *EP&A Act* exempts proposed SSD development from requiring permits under Section 201, 205 and 219 of the FM Act, however, the proposed track alignment

will a waterway, which has the potential to affect fish movements and thus a referral to the Department of Primary Industries (DPI) and OEHL may be required.

5.3.8 Electricity Network Assets (Authorised Transactions) Act 2015

The *Electricity Network Assets (Authorised Transactions) Act 2015* provides regulation around the function of the electricity network for NSW. The Project will need to connect to the electricity transmission grid (AusGrid network) to enable the distribution of the generated electricity. The transmission lines connecting the Project to the grid could be considered as a separate development and therefore trigger approval under Part 5 of the *EP&A Act* through *State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)* provisions. This is due to the linear nature of transmission lines, and the fact that they are usually owned and operated by an electricity transmission operator or distributor under the *Electricity Supply Act 1995*, or as an 'authorised network operator' under the *Electricity Network Assets (Authorised Transactions) Act 2015*, rather than a private developer.

Given that connection to the AusGrid transmission grid is located within the Project's area, it is likely that the transmission lines for the Project may not be constructed by or on behalf of AusGrid and thus will be considered as part of the SSD Project governed by Part 4 of the *EP&A Act*.

It is recommended that further consultation occurs with AusGrid to clarify if separate approval pathways are necessary for the transmission infrastructure yet to be defined. The current assessment is that development approval under Part 4 and Part 5 of the *EP&A Act* will be required.

5.3.9 Roads Act 1993

The *Roads Act 1993* (Roads Act) regulates roads in NSW in terms of their classification and the types of activities in, on and over public roads and for the declaration and functions of the Roads and Maritime Services (RMS) and other public authorities.

Under section 138 of the Roads Act, approval will be required to impact or carry out work on or over a classified road, whether public or private. According to section 89K of the *EP&A Act*, an approval under section 138 of the Roads Act cannot be refused if it is necessary for carrying out SSD that is authorised by development consent.

Further consultation with the RMS and Singleton Council will be undertaken to determine the proposed access arrangements from the New Freugh Lane to the proposed development site.

Closure of a paper road which traverses the project area is required for this Project as shown in **Appendix A** and Figure 24. There is only one Lot affected by this closure, being Lot 11 on DP825903, which is part of this Project. It also appears that the 'paper road' has been previously closed, and there may be an Enclosure Permit in place. This matter will be further assessed as part of the EIS application process.

5.3.10 Local Land Services Amendment Act 2016

The *Local Land Services Act 2013 (LLS Act)* was amended on 25th August 2017 to provide a new regulatory framework for local land services in NSW which includes native vegetation clearing and land management activities.

Under the Native Vegetation Regulatory Map, the majority of the site (Lot 1 DP1248572, Lot 1 DP33992 and Lot 2 DP1248572) is exempt land (Category 1) outside of the land management framework and therefore native vegetation clearing is allowed without approval from the Local Land Services. Refer to

Figure 23.

The balance of the site is not mapped as containing any vegetation protected under the *Local Land Services Act 2013*. Under the Act, clearing is permitted if it is authorised under other legislation, including development consent under Part 4 of the *EP&A Act*.

The local land services, specifically relating to native vegetation clearance on rural land will be further addressed within the EIS.

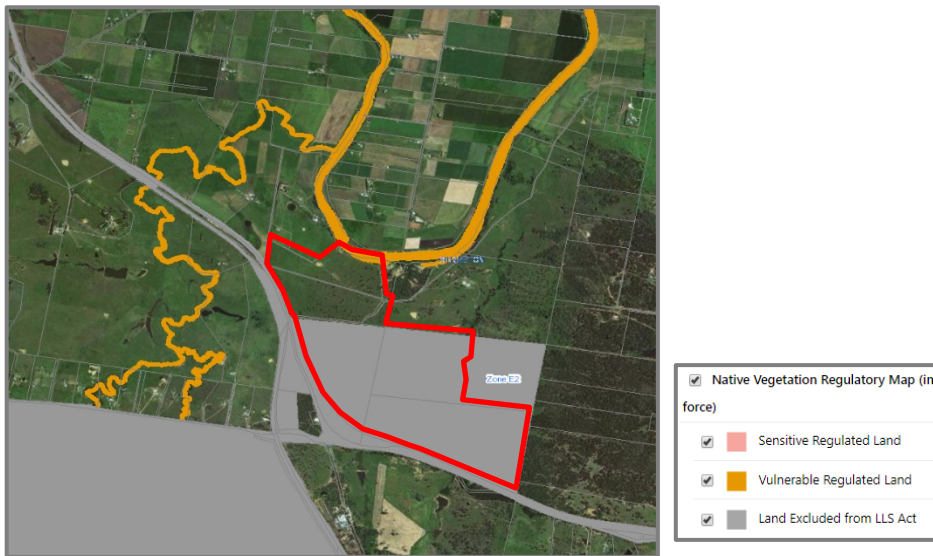


Figure 23 – Native Vegetation Regulatory Map (the Project area boundary is depicted in red)
Source – NSW Government, 2019

5.3.11 Rural Fires Act 1997

The *NSW Rural Fires Act 1997 (RF Act)* provides for the prevention, mitigation and suspensions of bush and other fires in the local government areas in NSW.

Under section 63(2) of the *RF Act*, owners of land are to take notified and practicable steps to prevent the ignition and spread of bushfires on land. Under Part 4.41 of the *EP&A Act*, a bush fire safety authority as described in Section 100B of the *RF Act* is not required for SSD that is authorised by development consent.

The NSW Rural Fire Service (RFS) Bush Fire Prone land online mapping tool indicates that the site is within bushfire prone land. Accordingly, bushfire impacts will be assessed in further detail throughout the EIS process.

5.3.12 Contaminated Land Management Act 1997

The *Contaminated Land Management Act 1997 (CLM Act)* provides a regulatory framework for contaminated land in NSW by providing a process for investigating and remediating land that the EPA considers contaminated.

Under Section 60 of the *CLM Act*, a duty is imposed on landowners and polluters to notify the Environment Protection Authority (EPA), and potentially investigate and remediate land if contamination is above levels set by the EPA. State Environmental Planning Policy no 55 – Remediation of Land is also relevant to the grant of development consent.

A Stage 1 Preliminary Site Investigation desktop assessment has been prepared for the project, which has identified that risk associated with contamination within the designated project area is considered low. From the results of this desktop assessment, it has been determined that no detailed investigation is likely to be required within the EIS. Mitigation measures regarding possible contamination within the project area will be captured within a CEMP, which will manage any contamination identified or created during construction.

5.3.13 Crown Land Management Act 2016 No 58

The *Crown Land Management Act 2016 (CLM Act)* commenced on 1 July 2018 and is administrated by the Minister for Crown Lands to govern the management of Crown Land in NSW.

Under Division 2.5(2.18) of the Act, the Minister for Crown Lands must be satisfied that the land has been assessed prior to any allocation action, i.e. reservation, dedication, sale, lease, licence or permit. The purpose of a land assessment is to ensure that decisions made in relation to Crown land are in accordance with the principles of Crown land management including an assessment of the capabilities of Crown land and the identification of suitable land uses.

An initial search of NSW Seed Mapping has confirmed that Crown Land exists within the subject site boundaries; refer to Figure 24.

In accordance with Part of the Act, a land assessment is required to be undertaken for any matters affecting Crown Land. The potential impacts of the Whittingham Solar Farm on crown land is the presence of a paper road from New England Highway which traverses the Project areas as illustrated in Figure 24. This paper road is listed as closed under current titles, is unformed, and is not required for access given New Freugh Lane provides this service to the affected Lots being Lot 11 on DP825903. This matter will be further addressed as part of the EIS application.

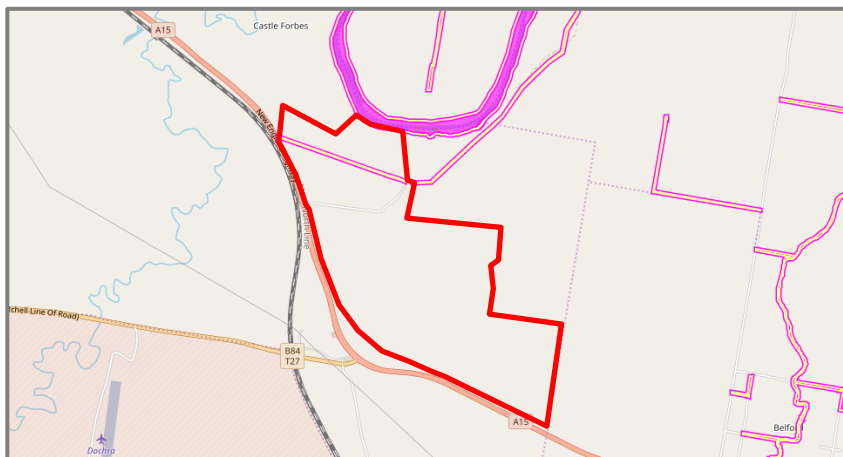


Figure 24 – Crown Land (the Project area boundary is depicted in red)
Source – NSW Government SEED, 2020

5.3.14 Heritage Act 1977

The *Heritage Act 1977 (Heritage Act)* provides a legal framework to conserve and protect the State's environmental heritage. The Heritage Act provides this through the identification and registration of items of State Heritage significance (State Heritage Register and Local Environmental Plan) and Interim Heritage Orders.



Under section 89J of the *EP&A Act*, an approval under Part 4 or a permit under Section 139 of the *Heritage Act* is not required for a State Significant Development, such as Whittingham Solar Farm.

A preliminary assessment of historical cultural heritage is detailed within **Section 6** of the Scoping Report and will be addressed further throughout the EIS process. Further consultation with OEH and the Aboriginal representatives for this locality is required to confirm whether further investigations and / or approvals are required.

5.3.15 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974 (NPW Act)* is administrated by the Office of Environment and Heritage (OEH) and regulates the establishment, preservation and management of national parks, historic sites and the protection of certain Aboriginal objects. Animal and plant provisions of the *NPW Act* have been repealed and replaced by the *Biodiversity Conservation Act 2016* that commenced on the 25th of August 2017.

The NPW Act gives the Chief Executive of OEH responsibility for the proper care, preservation and protection of 'Aboriginal objects' and 'Aboriginal places'. The Chief Executive can give permission to disturb damage or destroy Aboriginal heritage through the issuing of an Aboriginal Heritage Impact Permit under Section 90 of the NPW Act. Under Section 89J of the *EP&A Act*, an Aboriginal Heritage Impact Permit would not be required for an SSD.

The Project site does not include any national park or nature reserve, and has considered the presence of Aboriginal cultural heritage in a preliminary manner in Section 6 of this report.

6 Preliminary Environmental Impact Assessment Identification and Issues

6.1 Issues Identification

An initial review of environmental and social constraints throughout the construction and operation phase of Whittingham Solar Farm has been undertaken to identify the issues which would require detailed assessment as part of the project design process and technical studies supporting the EIS.

The nature and extent of the potential impacts outlined within **Section 6** of this report will require further assessment throughout the EIS phase, in order to ensure effective mitigation measures can be implemented within the project design, construction, operation and decommissioning.

An initial assessment has confirmed that the following environmental risks are considered key aspects, which will require particular focus throughout the EIS process (refer **Section 6.2 – 6.6**);

- Biodiversity
- Visual Amenity
- Land Use
- Aboriginal Cultural Heritage
- Bushfire Hazard

A number of environmental and social risks were identified as lower priority impacts, which included the following (refer **Section 6.7 – 6.17**);

- Preliminary Soil/ Climate
- Waste Management
- Water Resource Management
- Traffic
- Air Quality
- Noise and Vibration
- Battery Storage Hazard
- Socio-Economic
- Health
- Contamination
- Cumulative Impacts

It is probable that further refinement of the Project layout may occur as a result of further investigations and consultation with relevant parties. Recommendations for further assessment provisions are identified in the following sections.

6.2 Biodiversity

6.2.1 Existing Environment

The site is located within a largely cleared agricultural landscape with few areas of vegetation remaining. The site is located to the south of a bend in the Hunter River and is located approximately 4km to the west of Belford National Park. Areas of vegetation occur between the site and the national park along a line of low hills.

Relevant databases and reports were interrogated to gain an appreciation of the significant ecological values mapped within the site in accordance with the NSW *Biodiversity Conservation Act 2018* and *EPBC Act*:

- BioNet Atlas, 10 km buffer search;
- State Vegetation Type Map (to determine mapped Plant Community Types [PCT]);
- Biodiversity Values Map and Threshold Tool;
- Flora and fauna species previously recorded in the Atlas of Living Australia (ALA); and
- Department of the Environment and Energy Protected Matters Search Tool (PMST), 10 km buffer search.

6.2.2 Land Categorisation

As the Native Vegetation regulatory (NVR) maps are not publicly available, during the transitional period (until the entire Native Vegetation Regulatory map is released), accredited assessors may establish the categorisation of land for the consent authority to consider by approximating the method used to make the NVR map under the provisions of the BC Act and the LLS Act. This is done via;

- Historic aerial imagery;
- Landuse mapping:
 - o A land use layer contributes to identifying land for inclusion in category 1 in the NVR map. Chapter 4 of the NVR map method statement describes the process for identifying and mapping existing and historical agricultural land use since 1 January 1990. Mapping existing and historical land use focuses on identifying patterns or evidence of agricultural land uses according to high resolution aerial or satellite imagery and classifying land under a national land use classification system.
 - o The 2017 land use dataset is available from SEED portal.
- Woody extent layer:
 - o Contributes to identifying areas for inclusion in category 2 in the NVR map (including individual trees).
 - o Latest publicly available is NSW Woody Vegetation Extent & FPC 2011 and 2017 update
- Boundaries of sensitive regulated and vulnerable regulated land available on the NVR map portal.

To meet the cat 1 exempt land requirement under the *Local Land Services Act 2013*, land must be:

- Legally cleared at or since 1 Jan 1990 (Woody vegetation only)
- Significantly disturbed or modified since 1990 (Non-woody vegetation)

As the Land Category Assessment is preliminary and would need to be approved by the Department of Planning, Industry and Environment (DPIE), the results have not been incorporated into the constraints mapping for the proposal, however, will be completed during the EIS phase of the project and incorporated into the Biodiversity Development Assessment Report (BDAR) where relevant to do so and following consultation with DPIE (NGH, 2020)

6.2.3 Database Searches

Ecological values of the proposal were investigated at a high level. This has included the following information sources:

- Existing threatened species listings under the BC Act and EPBC Act;
- Existing records of threatened species sightings in the subject land, as recorded in the BioNet Database (OEH);
- EPBC Protected Matters Search Tool (nationally threatened species listed under the EPBC Act);
- Threatened species and communities identified as potentially occurring through the Biodiversity Assessment Methodology Calculator (BAM-C,OEH);
- Areas of outstanding biodiversity value declared under the BC Act 2016.

A search of the OEH BioNet Atlas database (BioNet) was conducted on the 14th October 2019, for an area including the proposal site and a 10km buffer around the proposal site. This search identified the following within the Proposal area;

- 20 Threatened Ecological Communities (TECs)
- 5 threatened flora species
- 25 threatened fauna species

These searches are undertaken on a broad scale to capture all entities that may be of interest.

Additionally, a search of the EPBC Protected Matters Search Tool (PMST) was conducted on the 14th October 2019 and identified the following species that are likely to occur within 10km of the site;

- 5 potential TECs
- 15 migratory species
- 33 threatened species

Detailed site investigations would consider those which are relevant to the site. BioNet and PMST search results are included as **Appendix G** and **Appendix B** respectively (NGH, 2020).

A search of the DPI WeedWise database identified approximately 130 priority weeds for the Singleton LGA.

6.2.4 Site Inspection

A preliminary site inspection was undertaken by a Senior Ecologist of NGH Consulting on the 15th August 2019. The methodology included a site walkover, rapid assessment points identifying the dominant plant species and observations of habitat features such as large stick nests and hollow bearing trees when encountered.

The site inspection focused on dominant canopy species and midstorey when present, however, persistent severe drought conditions in the Hunter Region and elsewhere in NSW in conjunction with grazing did not allow for groundcover to be readily identifiable at that time.

Following the initial site inspection, site surveys were conducted in October 2019 to undertake representative Vegetation Integrity Plot data in accordance with the BAM and in conjunction with targeted threatened fauna and flora surveys for those identifiable in during their optimal survey periods (NGH, 2020).

6.2.5 Potential Impacts

6.2.5.1 Vegetation Communities and Threatened Ecological Communities

A desktop assessment, preliminary site inspection and collection of floristic plots all confirmed that the majority of the proposal site has been subject to historical clearing that has occurred along existing fence lines, for the establishment of farm access tracks and within areas approved under the conditions of a previous consent granted by Singleton Shire Council to the landowners in 2017.. Refer to Section 2.2 of this scoping report.

An initial site inspection and collection of rapid assessment points and vegetation integrity plots, identified three (3) Plant Community Types, as occurring throughout the proposal site in various conditions states, being;

- PCT 1601
- PCT1604
- PCT 1731

The proposal site is located within the Hunter Interim Biogeographic Regionalisation for Australia (IBRA) sub-regions. Majority of the woody vegetation within the proposal site has been cleared under the previously development consent, however, remains as large scattered individuals to the north of the proposal site, and as remnant intact vegetation within riparian areas and remnant forest and regrowth to the east of the proposal site.

Generally, vegetation is dominated by Narrow-leaved Ironbark *Eucalyptus crebra*, Grey Box *Eucalyptus moluccana* and occasional Spotted Gum *Corymbia maculata*. Forest Red Gum *Eucalyptus tereticornis*, Rough-barked Apple and occasional Slaty Gum *Eucalyptus glaucina* occur in lower lying areas and minor drainage lines. Swamp Oak *Casuarina glauca* dominates the more permanent drainage lines within the proposal site.

Midstorey when present was inclusive of largely dominated by exotic species such as by African Olive *Olea europaea* subsp. *africana* and Lantana *Lantana camara* with scattered individuals of Needle bush *Hakea sericea*, *Acacia falcata*, Silver-stemmed Wattle *Acacia parvipinnula* and Blackthorn *Bursaria spinosa*.

Groundcover present included Barbed Wire Grass *Cymbopogon refractus*, Rock Fern *Cheilanthes sieberi* subsp. *sieberi* and Purple wiregrass *Aristida ramosa* with exotic species such as Fireweed *Senecio madagascariensis* and *Paspalum dilatatum* common.

Two TECs occur within the proposal site and consist of;

- Central Hunter Grey Box—Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions; and
- Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (NGH, 2020)

6.2.5.2 Threatened Flora and Fauna Habitat

The following observations were made during the survey assessment;

- One (1) threatened flora species was observed.
- Numerous individuals of Slaty Gum *Eucalyptus glaucina* were observed. This species is also known to be locally common in the broader locality, with 186 known records within the 10km of the proposal site. It is not anticipated that these individuals would be impacted by the development.

- *E.glaucina* is occurring in conjunction with *E.tereticornis*, and thus it is likely that hybridisation between the species is occurring.
- Numerous Grey-crowned babbler, listed threatened under the BC Act, were observed within the proposal site, with evidence of breeding occurring within the small ephemeral drainage lines that occur within the site.
- One (1) Pale-headed snake, listed threatened under the BC Act, was also observed during surveys within a drainage line to the south east of the site (NGH, 2020).

Known or potential threatened flora species that may assessment, as are known to occur, are indicated from the databases searches or that have potential habitat present are demonstrated in **Appendix D** (Table 2, pages 10 to 14 of NGH, 2020)

6.2.5.3 Fauna Habitat Impacts

Vegetation within the proposal site forms part of a semi-contiguous patch of vegetation that links Pokolbin State Forest, the Singleton Military Area, and Belford National Park. Remnant native vegetation in generally moderate to good condition and contains suitable habitat for a number of native fauna to occupy or move through the landscape. A number of hollow bearing trees and other habitat features such as large stick nests were observed, particularly within the northern portion of the proposal site, within scattered *Eucalyptus crebra* individuals. Grey-crowned Babbler nests were observed along the minor ephemeral drainage lines.

Conversely, within the majority of cleared areas, there is limited value in terms of fauna habitat, other than foraging opportunities for species such granivorous avifauna, raptors and macropod grazing. The high levels of disturbance and introduction or invasion of exotic species in some areas has substantially diminished the habitat values in these areas.

Waterways and riparian corridors provide aquatic habitat for species and fauna movement corridors and have high potential to transport sediments and other pollutants. Several ephemeral tributaries flow through the property north towards the Hunter River and may provide habitat for a number of amphibians and turtle species. These are therefore regarded as a moderate to high constraint (NGH, 2020).

6.2.6 Assessment Approach

Based on the ecological assessments carried out to date the following constraints mapping was created to guide the Project's overall layout. Refer to Figure 25.

High Constraint (Red dotted areas) – These are areas that should be avoided if possible and justification will be provided within the Biodiversity Development Assessment Report (BDAR) if they cannot be avoided. These include areas of;

- TEC with an intact overstorey and/or native dominated understorey
- Non-TEC Plant Community Types (PCTs) in good condition
- High potential candidate species credits habitat (i.e. Pale-headed Snake)
- Grey-crowned Babbler nesting and breeding areas;
- Permanent riparian areas in moderate to good condition.
- Areas identified to be retained within the Whittingham Estate Plan of Management

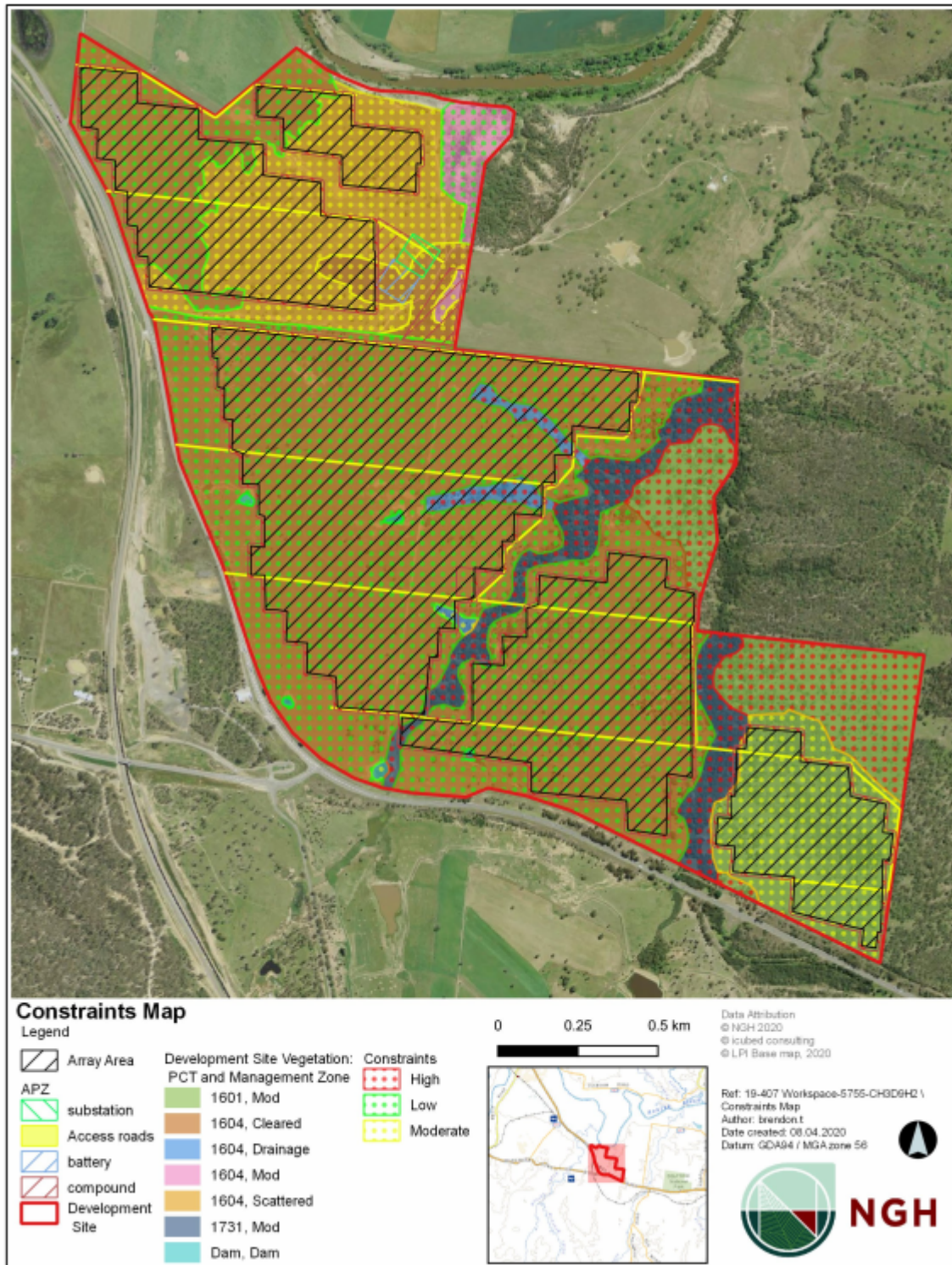


Figure 25 – Constraints Assessment Map (Project Area depicted by red border)
Source: NGH, 2020

Moderate Constraint (Yellow dotted areas) – These areas do not necessarily need to be avoided but siting of infrastructure in these areas should focus on cleared areas where woody vegetation is absent/minimal if possible (ie canopy species is not present). These include areas of;

- Degraded TEC (inclusive of TEC associated PCTs dominated by stringybark species)
- TEC associated Derived Native Grasslands

- Non-TEC PCTs in moderate condition (moderate ecosystem credit species habitat)
- Planted native vegetation consistent with that of a known TEC
- Ephemeral riparian areas and farm dams in moderate condition with or without evidence of fringing riparian vegetation
- Areas approved for vegetation clearing within the Whittingham Industrial Estate under development consent DA246/2016 but has not yet been undertaken at the time of the field surveys.

Low Constraint (Green dotted areas) – These areas have low biodiversity value and include;

- Areas potentially mapped as Category 1 – Exempt Land under the Local Land Services Amendment Act 2016
- Areas of clearing subject to previous development consent and where removal of all woody vegetation has occurred
- Degraded TEC derived grasslands (that are unlikely to meet the criteria for TEC determination)
- Non-TEC PCTs in low or poor condition
- Ephemeral riparian areas and farm dams in low condition with no evidence of fringing riparian vegetation
- Non-native vegetation (Exotic vegetation)

As per the ecological assessments undertaken over the project area; Refer **Appendix D**, the design of the development footprint avoids potential impacts to biodiversity, largely by avoiding development within areas identified as having a potential for higher biodiversity value, such as riparian lands. Refer to **Appendix A**. The Project's impact on the biodiversity values of the subject site will be considered in the EIS and will take into consideration the clearing of vegetation already approved under with Singleton Council development consent DA246/2016.

As part of the EIS, the detailed ecological surveys and further investigation and assessment will be undertaken including a biodiversity development assessment report (BDAR) prepared in accordance with the reporting requirements of the Biodiversity Assessment Method (BAM).

The BDAR will include relevant target surveys to be undertaken along with constraints mapping to demonstrate the biodiversity values over the project area and will demonstrate how potential impacts to biodiversity will be managed and mitigated appropriately, as well as offset strategies where applicable. The Project's potential impact to Matters of National Environmental Significance (MNES) will also be considered under the *EPBC Act* (NGH, 2020).

6.3 Indigenous and European Heritage

6.3.1 Existing Environment

Extensive Searches were undertaken over the subject site using the Aboriginal Heritage Information Management System (AHIMS) on the 18th February 2020, which confirmed that one-hundred (100) aboriginal sites and aboriginal objects are identified within a 1km radius of the subject site; see **Appendix E** and Figure 27 below.

Furthermore, the NSW Heritage Search within NSW Environment, Energy and Science database confirmed one (1) item listed under the *NSW Heritage Act* within the Singleton LGA, which is located approximately 3km from the northern boundary of the project area. Ten (10) records were listed by the Local Government and State Agencies within the Singleton LGA, the closest site being located 4.2km from the northern boundary of the project area; see **Appendix F**.

Additionally, it should be noted that according to Singleton Interactive Mapping, the archaeological site of 'New Freugh' ruin is located approximately 1km from the north-eastern boundary of the subject site. Refer to Figure 26 Figure 27.

As depicted within **Appendix A**, the proposed development footprint and associated infrastructure is proposed to be constructed in areas subject to a high level of modification from past agricultural activities. Unmodified areas near waterways, particularly within the eastern portion of the subject site, may contain aspects of cultural and aboriginal significance and archaeologically sensitive landforms and thus works have largely not been proposed within these locations.

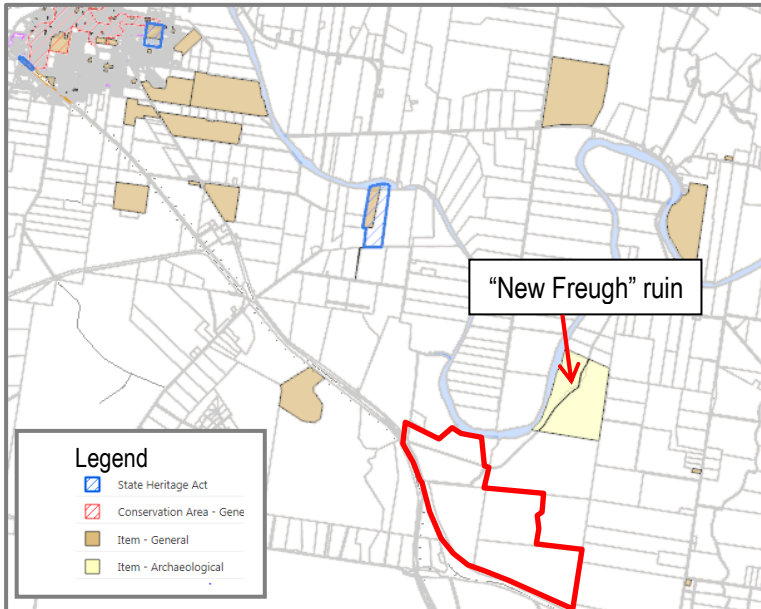


Figure 26 – Singleton Council Mapped Heritage and Conservation Areas near the ‘subject site’ (Project Area depicted by red border)

Source: Singleton Council LEP Interactive Mapping, 2019

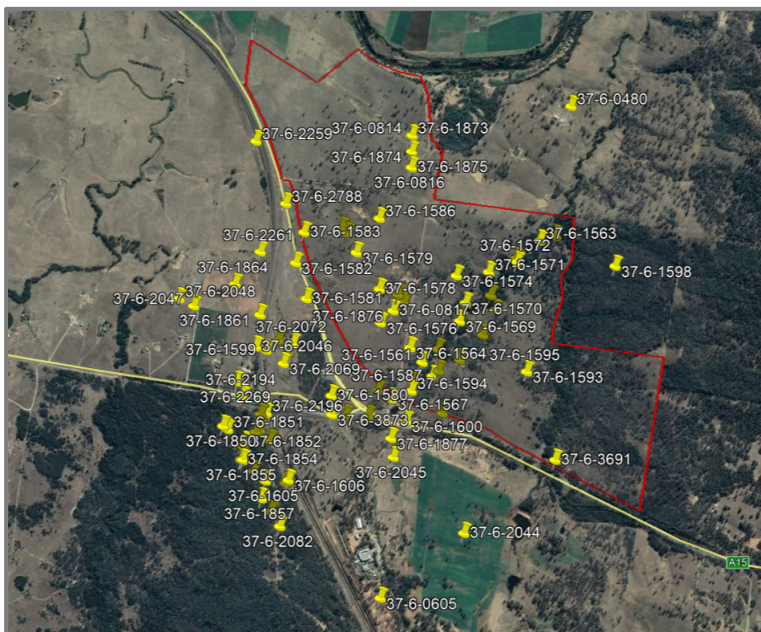


Figure 27 – AHIMS Extensive Search Heritage Sites (artefacts depicted by yellow pins)

Source – AHIMS 2020

6.3.2 Aboriginal Consultation

The requirement for Consultation will be confirmed throughout undertaking further detailed studies in the form of an Aboriginal Cultural Heritage Assessment (ACHA). Consultation with aboriginal stakeholders will be undertaken in accordance with the requirements sought within Clause 80c of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010* and OEH's *Aboriginal Community Consultation Requirements for Proponents (AHCRP) 2010*.

6.3.3 Assessment Approach

Given that the project is SSD, identification of cultural and archaeological values will be undertaken in the form of an ACHA throughout the EIS process. The AHCA will include the assessment of any aboriginal sites that may be impacted as part of the proposed development and will be completed in accordance with the requirements stipulated within the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011) and the *Burra Charter* (Australia ICOMOS, 2013).

Should any potential impacts to aboriginal heritage sites be identified throughout the AHCA, compliance against the requirements sought within the *NPW Act* and relevant consultation in accordance with OEH's *Aboriginal Community Consultation Requirements for Proponents (AHCRP) 2010* will be carried out.

6.4 Land Use

6.4.1 Existing Environment

The project is situated within the Singleton Local Government Area, which covers 4,893km² and is located approximately 200km north-west of Sydney and 80km inland from Newcastle. Singleton is located within the Hunter Valley Region. Singleton features broad valley floor areas and alluvial soils with a long history of cropping and grazing, with 29% (139,561 ha) of the Singleton Local Government Area being utilised for cropping and grazing purposes

The site is located within a largely cleared agricultural landscape with few areas of vegetation remaining. The site is located to the south of a bend in the Hunter River and is located approximately 4 km to the west of Belford National Park. Areas of vegetation occur between the site and the national park along a line of low hills.

The variety of landscapes and climates within the region support a diverse range of agricultural industries, all of which place a high value on the region's reliable water supplies. The primary industry within the Singleton Local Government Area fundamentally comprises of Mining (24.28%), and Agriculture, Forestry and Fisheries comprises of 3.85% (ABS 2016).

The northern portion of the subject site is partly mapped as Biophysical Strategic Agricultural Land (BSAL); refer to Figure 28, however this area is largely excluded from the Project area. The site has been highly modified by past disturbances associated with agricultural activities including land clearing and cropping. Surrounding land uses include both dryland and irrigated broad acre crop production and livestock grazing.

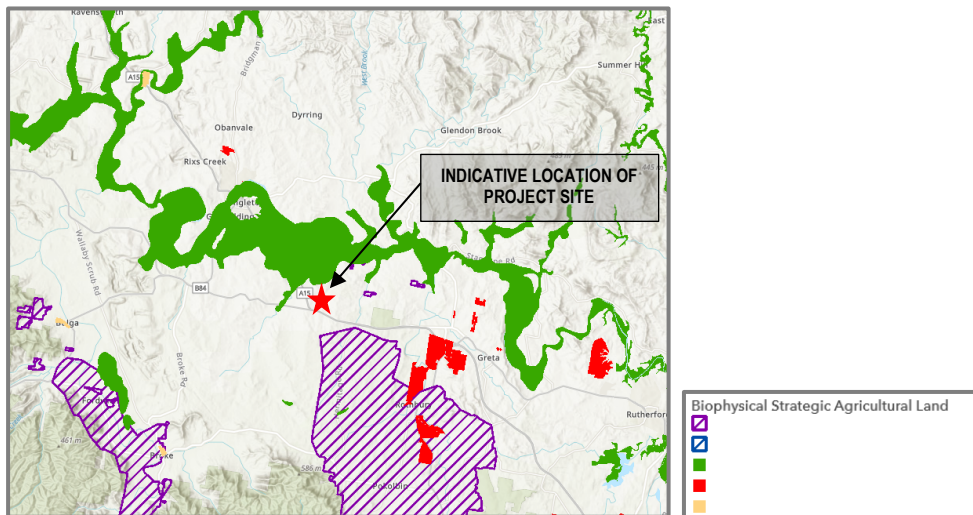


Figure 28 – Biophysical Strategic Agricultural Land
Source – ArcGIS, 2020

6.4.2 Assessment Approach

Whittingham Solar Farm will alter the current land use of the subject site, being primarily agricultural activities to electricity generation (solar farm). It is important to note that solar farms do not preclude the use of land for agricultural activities. Throughout post construction, it is proposed that the balance of land would continue to be utilised for agricultural purposes, which results in only minor net change to the state of the existing land use. The retention of agricultural activities onsite will enable the continuity of a rural link to fulfil the intent of the locality.

The degree of permanent land disturbance during the construction and operation of solar farms is deemed negligible due to the standardised design of solar farms which minimises the extent of civil works required over the site, and thus it is likely that agricultural activities that were occurring before the solar farm was constructed would be able to return once the solar farm is decommissioned.

A detailed assessment of the impacts of the project land throughout the construction, operation and decommissioning would be undertaken throughout the EIS. This assessment would not need to include assessment of potential impacts to the Biophysical Strategic Agricultural Land (BSAL), given the Project area for the project does not intersect this mapped area. However, assessment will be undertaken in relation to the compatibility of the development with the existing and adjoining land uses onsite during operation and decommissioning, with reference being made to the zoning provisioning applying within the Singleton LEP, using DPI's *Land Use Conflict Risk Assessment Guide* as the assessment tool.

6.5 Bushfire Hazard

6.5.1 Existing Environment

Singleton Council have mapped the eastern section of the subject site as containing Vegetation in Category 1 (High Risk) and Category 2 (Low Risk) and therefore the proposed development is considered to be on partly bushfire prone land. Refer to Figure 29. Furthermore, the NSW Rural Fire Service (RFS) Bush Fire Prone land online mapping tool indicates that the site is within bushfire prone land. This aligns with the existent vegetation along the waterway to the east of the Project site.

The topography of the site is characterised as gently undulating with a ridgeline running north-south dividing the land. This translates to a fall in natural ground level either side of the ridgeline from 84 m Australian Height Datum (AHD) in the south to 40 m AHD in the north and of approximately 44 m.

Bushfire risk for the locality is classified in accordance with Table 2.1 of AS 3959:2009, as having a Fire Danger Index (FDI) of 80. This figure has been provided by the Australasian Fire and Emergency Service Authorities Council.

Using the determination tables in AS 3959 the BAL for the site, being 5% in slope with 80 FDI is best defined as BAL 19, which is primarily concerned with protection from ember attack and radiant heat greater than 12.5kw/m² up to and including 19kw/m². We understand that international research has suggested that there is a low risk of fire hazard originating from operational solar farms due to the lack of flammable components utilised in the manufacturing of these panels (NC State University, 2017).

The proposed development is identified as a State significant developments (SSD) as per Schedule 1(20) of the *State Environmental Planning Policy (State and Regional Development) 2011*. SSD projects are exempt from requiring a Bush Fire Safety Authority (BFS) under section 4.41(f) of the *EP&A Act*.

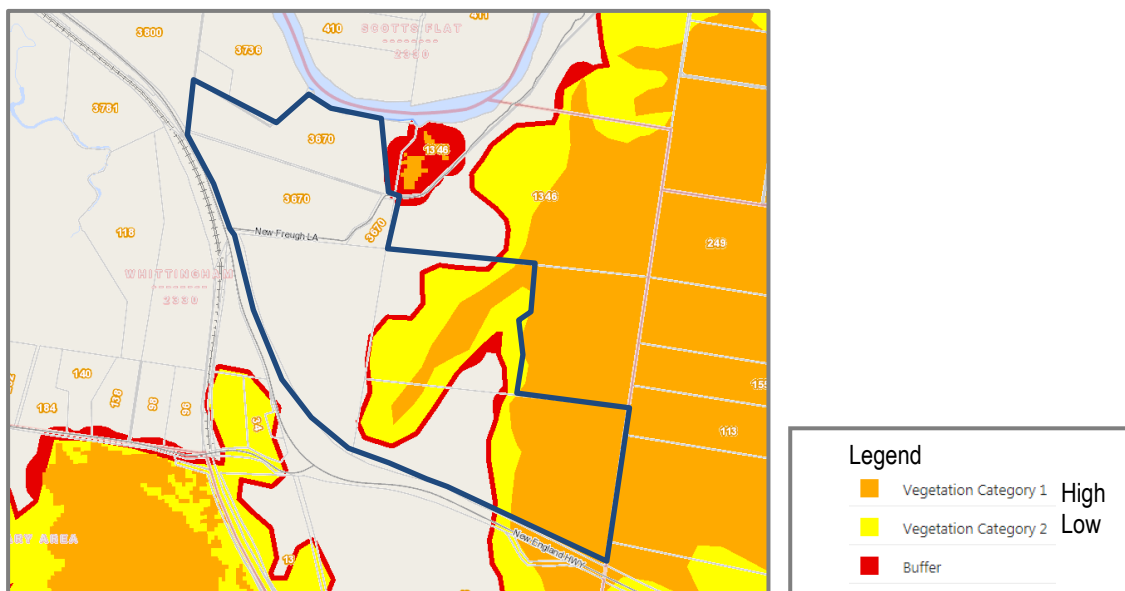


Figure 29 – Bushfire Prone Vegetation Land (project area depicted by blue border)
Source – Singleton Local Council Interactive Mapping, 2013

6.5.2 Assessment Approach

Bushfire impact and risk along with appropriate procedures and mitigation measures will be further assessed within the EIS and a Bushfire Management Plan will be developed within an OEMP. Note that we have assumed that, based on previous SEARs requirements for solar farm projects in NSW that an accredited bushfire assessor (accredited in Bushfire Planning and Design (BPAD), Fire Protection Association Australia) is not required to gain the subsequent EIS approval.

A Bushfire Hazard Assessment (BHA) will be prepared within the EIS, which will:

- identify the vegetation communities occurring within and adjacent to the site
- identify the topography and slope that influences bushfire hazard

- determine appropriate mitigation responses including project infrastructure setbacks from hazardous vegetation.

The methodology for assessing bushfire hazard will be in accordance with *Planning for Bush Fire Protection* prepared by the NSW Rural Fire Service (RFS).

It is assumed that the proposed development may result in the following mitigation measures:

- A water tank should be installed adjacent to the operations building to provide an adequate firefighting water supply. Other water tanks should be considered throughout the proposed development area to support bushfire suppression within retained vegetation areas
- A perimeter access track should be constructed to permit firefighting vehicles access to the entirety of the site.
- Grass underneath the solar PV panels and landscaping to be maintained appropriately

6.6 Visual Amenity

6.6.1 Existing Environment

The project is located within the Whittingham locality, which is predominantly rural and surrounded by large lot agricultural production and sparsely distributed rural residences. Areas of the proposal are typically concealed by the undulating topography of the land, however a desktop analysis of the site indicates that the proposed development will be visible from the New England Highway, which is identified as a significant road by the NSW Roads and Maritime Service.

Given that there is an assumed level of visual penetration (the view of the distance without obstruction), in a relatively simple landscape, there is a potential for visual impact to nearby sensitive land use receptors located north and west of the subject site. Visibility of project infrastructure from sensitive receptors in the surrounding landscape will be dependent on topography, distance and the presence of vegetation and/ or landscaping which would assist in screening views from these locations.

Figure 30 displays the potential dwellings within the vicinity of the site. There are thirteen (13) current dwellings identified within 1km of the Project area, and an additional twenty-eight (28) identified within 2km. A site visibility analysis was undertaken utilising contour data to assess the theoretical visibility of the project from surrounding dwellings. The site visibility analysis does not include consideration of visual barriers such as vegetation.

Within 1.5km of the Project area, there are a total of eighteen (18) existing vacant lots and two (2) vacant lots to be created as part of a recent subdivision approval (Refer to Section 2.2 of this Report), all of which have the potential to accommodate a place of residence being a sensitive land use. Figure 30 show the general location of the current vacant Lots that have been identified by a desktop search; the Lots to the north-east of the site have the highest theoretical visibility of the site. Through the use of landscaping, it is considered that the development will not materially impact any potential future use of these Lots for dwellings.

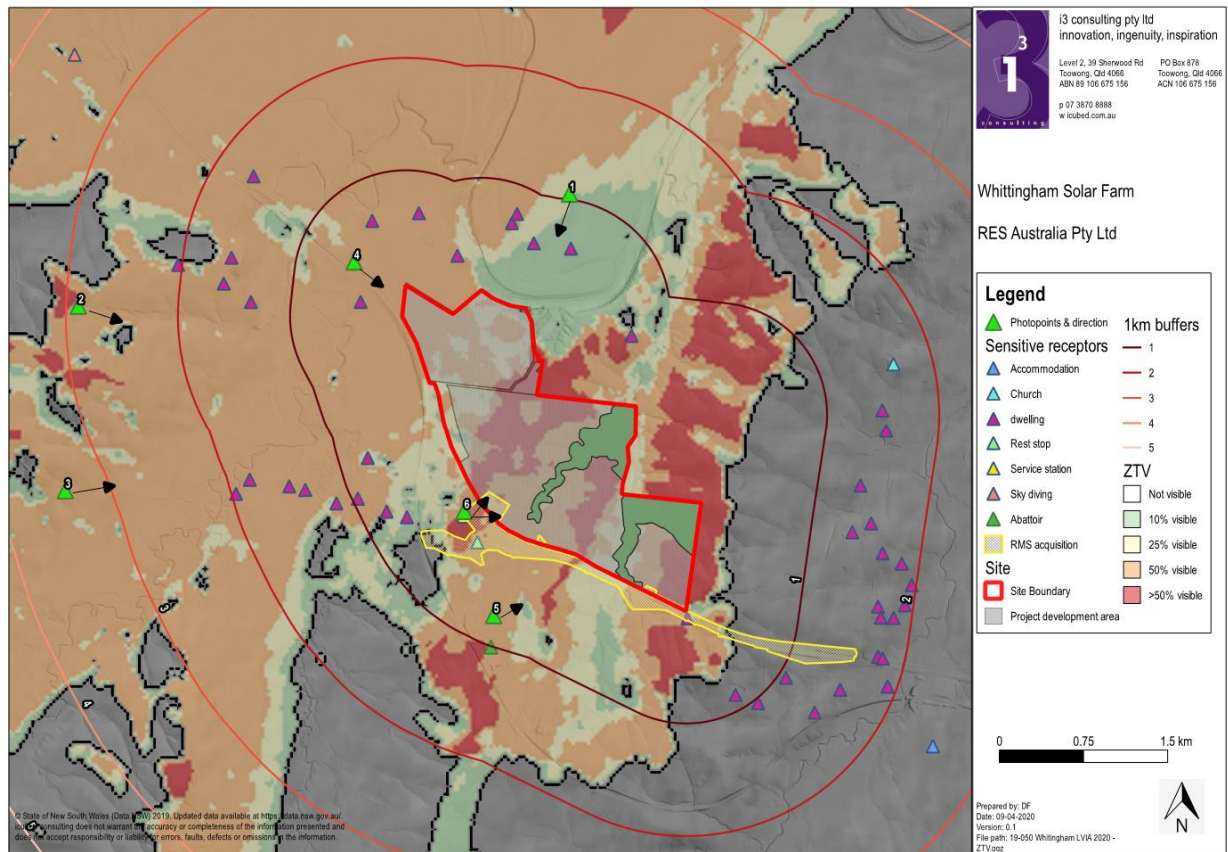


Figure 30 – Site Visibility Analysis
Source – icubed consulting, 2020

6.6.2 Assessment Approach

The proposal has the potential to impact upon the visual amenity and landscape character throughout the construction and operation phase of the project. Visual amenity of any development is anticipated to be of a concern for residents within the Singleton Local Government Area and thus, community consultation input has been sought at an early stage of the project and will occur throughout the EIS.

Solar farms are not considered to be highly reflective. PV panels are designed to absorb light, and on average only reflect around 2% of the light received, to maximise their efficiency (NSW Department of Industry, 2016). Potential glint and glare impacts to New England Highway and surrounding areas will be assessed throughout the EIS.

A visual impact assessment and glare impact assessment will be undertaken throughout the EIS phase to investigate potential visual impacts of the project and appropriate mitigation measures. The assessment will involve likely visual and glare impacts of the project from sensitive receptors, airspace, and nearby corridors through a viewshed analysis.

6.7 Soil and Climate

6.7.1 Existing Environment

Soils

The majority of the site occurs on the Dochra geology. The geology includes the Mulbring Siltstone (Maitland Group), comprising siltstone with minor claystone and thin sandstone lenses (Geological Survey of NSW, 2003). Soils include moderately deep and well-drained fertile, sodic brown sodosols, acidic-sodic, strongly weathered brown Dermosols, well-drained fertile, sodic red and brown sodosols and coloured, sodic red kurosols and haplic, sodic soloths. Due to the dominance of sodic soils, the soils are prone to erosion, including sheet and gully forms. Many of the subsoils are highly dispersible and erodible (Geological Survey of NSW, 2003) of which areas adjacent to the Hunter River show extensive erosion.

The far north-western portion of the site occurs on the Singleton Alluvial geology. This geology comprises Quaternary alluvium deposits along valleys associated with the Hunter River and tributaries. Soils are comprised of predominantly of clays and silts with minor sands and gravel. Soils vary depending upon how recently they have been deposited from alluvial processes. Alluvial soils are generally deep and moderately well-drained brown and black Dermosols and deep, well-drained red and brown kandosols.

The site is not located within an area at risk of Potential Acid Sulphate Soils.

Topography

The topography of the land is characterised as gently undulating with a gentle ridgeline dividing the land from south to north. This translates to a fall in natural ground level either side of the ridgeline from 94m AHD in the west to 40m AHD in the north, of approximately 54m. The land naturally drains to the east and west boundaries where it is collected by natural tributaries before being discharged in a northern direction towards the Hunter River which is located immediately adjacent to the north and comprises the primary drainage feature for this catchment.

Land and Soil Capability Class

Land and soil capability mapping for the site indicates that the biophysical characteristics of the site has moderate to severe (Level 4) and severe (Level 5) limitations for agricultural land uses (Figure 31). This is consistent with the soil mapping for the site, which shows potential for the presence of kurosols, which are highly acidic and often sodic. The land has limited capability to support high-impact agricultural land uses such as cropping, high-intensity grazing and horticulture.

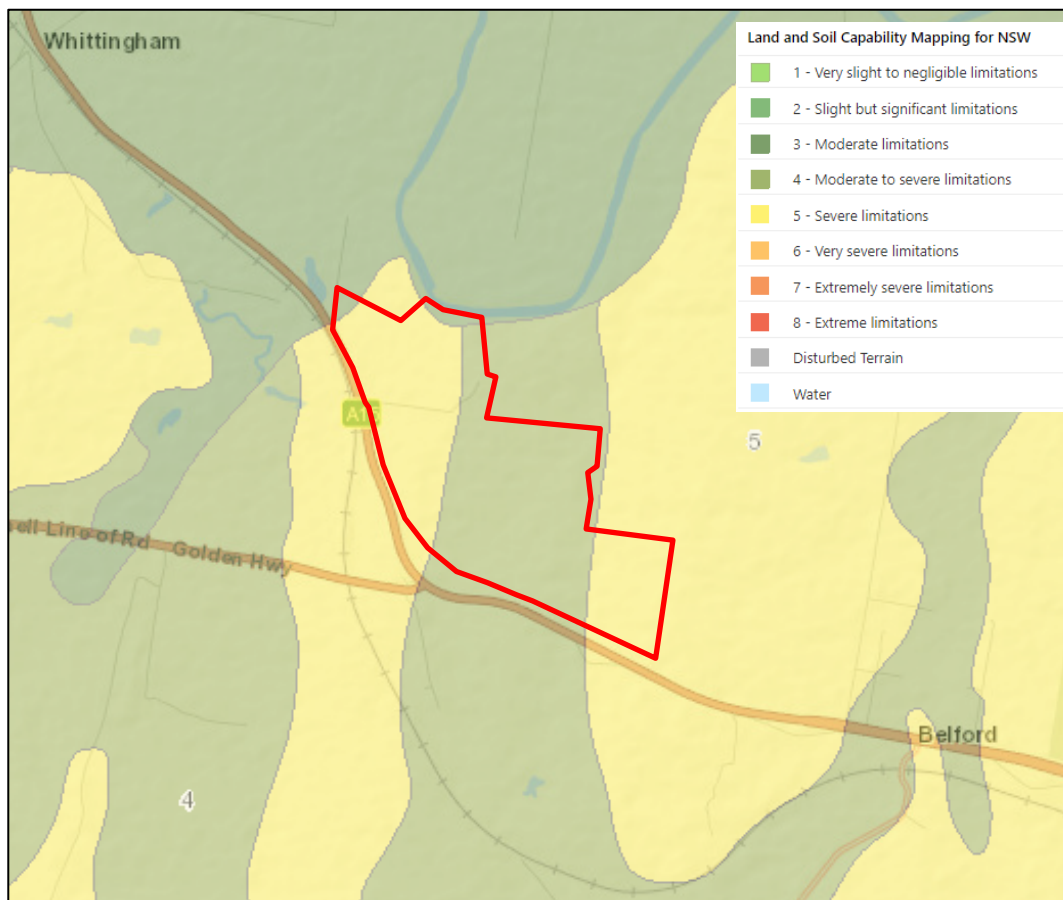


Figure 31 – Land and Soil Capability Mapping
Source – SEED Mapping, NSW Government, 2020

Climate

Climate data from the Bureau of Meteorology (BoM) indicates that the site’s mean monthly solar exposure for 2018 ranged between 9.3-24.9 megajoules/m² (MJ/m²), with an annual average of 17.1 MJ/m², with an average of 8-9 hours of sunshine per day (BoM, 2019). Annual cloud cover statistics over a 34-year period indicate that the site receives an average of 105.3 cloudy days per annum (Paterson Station, 37 km from the site, BoM 2019). The Hunter Valley experiences a consistently high availability of solar radiation and is therefore ideal for large-scale solar development.

Singleton Shire is classified as a Mild Temperate climate (Australian Building Codes Board, undated). Cessnock Airport is located approximately 23 km from the site and is the closest BoM station to the site. The airport receives between 26.6-96.2mm monthly rainfall with annual rainfall of 733.9mm. Highest rainfall occurs in the summer months (November – March) with an average of 72.2 days of rain annually. Temperatures range from an average of 4.0-30.5°C. Wind is generally from either the north-west or south-east (3pm wind speed, 1968-2019 data)(Figure 32).

The site lies within the Eastern Seaboard of Australia (ESA) region that is affected by East Coast Lows (ECL), which are low pressure systems that can generate severe storm activity and heavy rainfall (OEH 2016). ECLs occur from about Fraser Island in Queensland to East Gippsland in Victoria and can occur at any time of year and do not appear to be influenced *El Nino* events. ECLs are a significant weather event that can lead to flooding, infrastructure damage and exacerbate erosion.

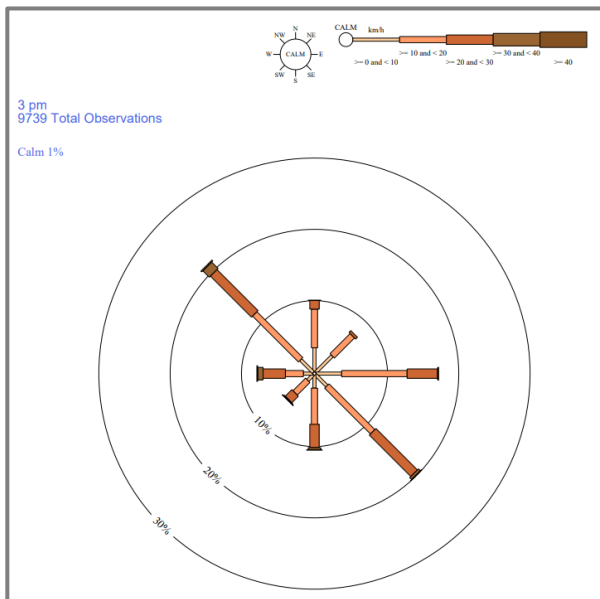


Figure 32 – 3pm wind rose for Cessnock Airport (1/10/1968-19/7/2019)

6.7.2 Assessment Approach

Construction of a solar farm generally does not require bulk earthworks or significant reshaping of the land's surface. Some levelling of the land will be required for installation of in-field inverters and hard stands for the site office, substation and laydown areas. Thus, a soil assessment will be completed for the subject site to confirm the soil types occurring within the site and identify any areas of high erosive potential. Mitigation measures will be incorporated within a future Erosion and Sediment Control Plan (ESC Plan).

6.8 Waste Management

6.8.1 Existing Environment

It is anticipated that that proposal would generate a number of waste streams and utilise a variety of materials throughout the construction phase of the project. Upon operation of the solar farm, it is likely that limited waste will be generated onsite.

The project will be managed in accordance with the *Protection of the Environment and Operations Act* and will aim to reduce the volume of waste produced, promote recycling and avoid storage and waste handling methods that may pose environmental or health risks.

6.8.2 Assessment Approach

A waste management plan will be captured within a future CEMP. It is assumed that a specific waste related assessment will not be required throughout the EIS process given that standard waste management practices will be implemented.

6.9 Water Resource Management

6.9.1 Existing Environment

Surface water, includes several small features traversing the site with man-made dams along them. An initial search of the Department of Primary Industries (Office of Water) found that the subject site falls within a surface water sharing plan known as the *Hunter Unregulated and Alluvial Water Sources 2009*. The closest regulated river is the Hunter River, which is located approximately 350m north of the site. The closest major reservoirs to the site is Lake St Clair located approximately 45 km north-east and Lake Liddell located 45km north-west of the subject Site area.

A preliminary desktop Flood Risk assessment for the subject site indicates that there is no mapped known hazard over the site from flood (according to the Singleton Council interactive mapping). Flood impacts to the site and Project are therefore considered low but possible given its close proximity to the Hunter River and its tributary on the eastern boundary that flooding impacts have not calculated as part of the Council mapping.

6.9.2 Assessment Approach

Construction and operation of the project is anticipated to result in minor earthworks, primarily associated to construction of access and maintenance roads within the project area. The risk of impacts to water quality within local waterways from erosion will be mitigated through the implementation of standard erosion and sediment control measures, which will be detailed within a CEMP.

The risk of groundwater impacts during construction is expected to be low given that significant excavation will not be required to erect the solar panels and trenches for underground cables will be shallow.

Impacts to waterways throughout construction and operation will be assessed throughout the EIS and will include the assessment of potential impacts on surface water and groundwater resources along with measures proposed to monitor and avoid impacts and appropriate sediment and control measures.

6.10 Traffic

6.10.1 Existing Environment

The major transport route is subject to further assessment, specialist input and consultation with the relevant road authorities (Newcastle City Council and New South Wales – Roads and Maritime Services), however it is likely that the major transport routes for haulage and site vehicles during construction and operation (Newcastle Road, Newcastle Link Road, Hunter Expressway, New England Highway) will be utilised. See Figure 33 below depicting a route planner generated from the National Heavy Vehicle Regulator (NHVR).

Site access will be obtained from New Freugh Lane, which intersects with the New England Highway. New Freugh Lane is an unsealed gravel road that connects to a number of 'paper roads' to the north of the subject site, which comprises of graded tracks or farmer tracks. Access design and location is indicative only, subject to further assessment and specialist input. It should be noted that internal access tracks would be constructed as part of these works.

New England Highway is a two (2) lane bitumen sealed carriageway that diverges into three (3) lanes on the northern and southern boundaries of the site. New England Highway is a state significant road under the jurisdiction of the NSW Roads and Maritime Services (RMS). Upgrade works on the New England Highway between Belford and the Golden

Highway are currently planned by the NSW Government, with works expected to be complete by 2021. The majority of the works are along the south and south-western frontage of the 'subject site' and involve a major change to the intersection of Golden Highway and the New England Highway. Works involve the provision of two carriageways (lanes) in each direction and a flyover for vehicles turning right from the Golden Highway. The upgrade works are needed to improve traffic flow, travel times and safety for motorists of the New England Highway (Roads and Maritime Services, 2017).

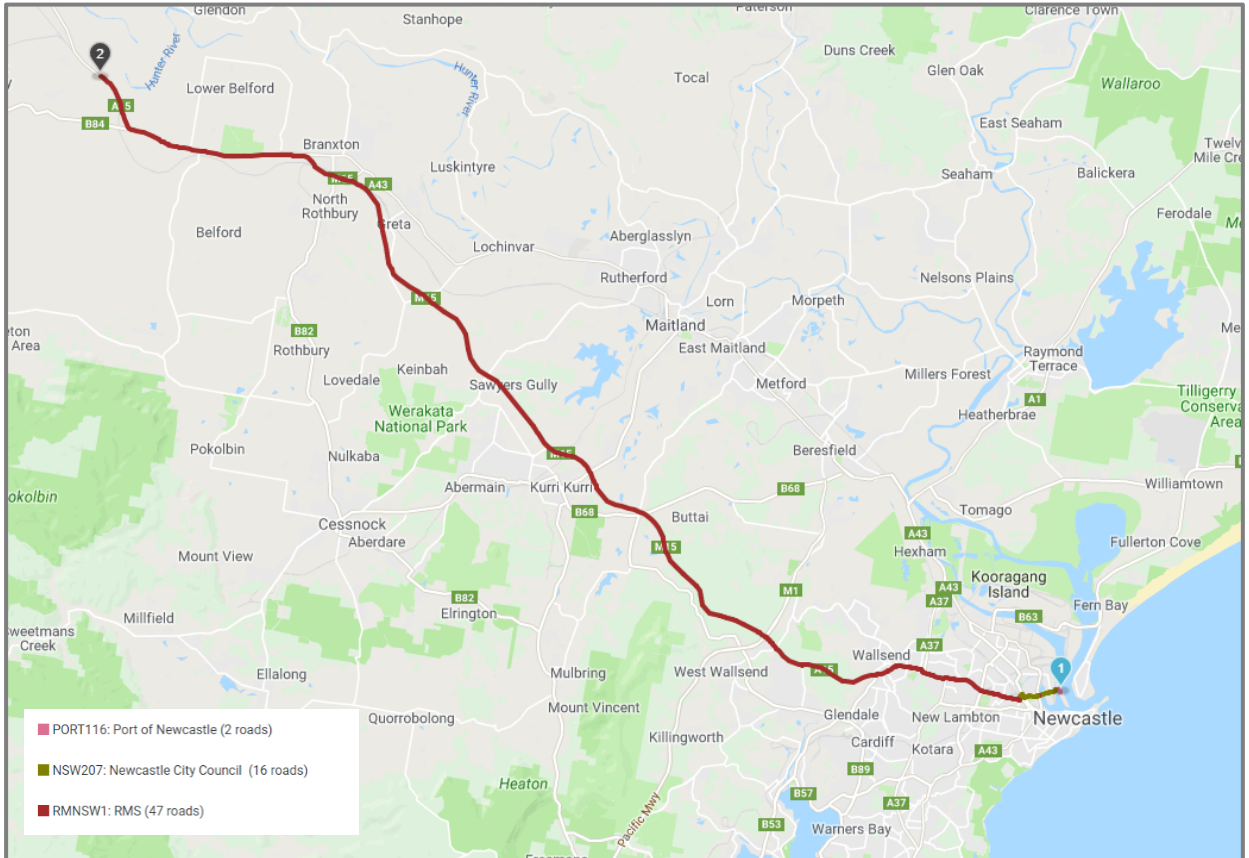


Figure 33 – Whittingham Solar Farm Transport Route
Source – National Heavy Vehicular Regulator – Route Planner, 2019

6.10.2 Potential Impacts

During construction, traffic generated by the associated works would include construction worker vehicles and delivery vehicles.

The proposal has the potential to impact upon traffic in the region throughout the construction phase of the project. The following traffic and access impacts have been considered as having potential to occur during construction of the proposed solar farm;

- Increase of traffic generation, particularly through peak construction periods along local and main roads;
- Nearby sensitive receptors may be impacted in relation to associated dust, vibration and noise generated from vehicular movements. Noise impacts will be limited to the construction period and will only be conducted during standard construction hours.

Traffic generated throughout the operation of the project is deemed negligible, with traffic predicted to be limited to two (2) employees, plus a minor number vehicle movements associated with ongoing maintenance of the Solar Farm.

6.10.3 Assessment Approach

Traffic impacts throughout the construction of the project will be assessed throughout the EIS process, which will take into account existing traffic volumes and the impacts the proposed development will have on traffic generation, potential impacts to road and intersection capacity and potential safety issues. The assessment will be undertaken in accordance with the relevant guideline *Guide to Traffic Generating Developments* (RTA 2002).

The proposed design would also consider any requirements from the Department of Roads and Maritime Services, Singleton Council and other relevant stakeholders on access arrangements to the proposed site.

Furthermore, a Traffic Management Plan would be developed as part of the CEMP.

6.11 Air Quality

6.11.1 Existing Environment

The Singleton Local Government Area is heavily dependent on Mining, Construction and Agricultural Activities (ABS, 2016), which is likely to influence local and regional air quality within the area. Existing sources of air pollution within the area are mainly generated from dust and vehicle/ machinery exhaust emissions, transport on unsealed roads, mining activities, local building and construction activities and farming and animal grazing.

The construction phase of the project has the potential to increase dust emissions through traffic on unsealed roads and the removal of vegetation. It is anticipated that impacts to air quality during the operation would be negligible due to the expected standard of vehicles and maintenance.

6.11.2 Assessment Approach

A CEMP would be prepared to manage any potential air quality impacts throughout the construction phase of the project.

6.12 Noise and Vibration

6.12.1 Existing Environment

Resonate has undertaken a preliminary Noise and Vibration assessment for the proposed development; refer **Appendix C**.

As per *Resonate's* assessment, construction noise and vibration from the site, including noise and vibration during decommissioning works, is expected to be able to be appropriately controlled, given the considerable distance between the site and the nearest sensitive receptor.

The nearest sensitive receptor is located approximately 400m from the site boundary and at this distance, construction noise during standard working hours would be expected to be able to be managed through the application of standard construction noise management and mitigation measures and construction vibration levels are not expected to be perceptible.

6.12.2 Assessment Approach

On the basis of the preliminary assessment undertaken by *Resonate*; refer **Appendix C**, it is expected the Whittingham Farm will be able to operate in compliance with the minimum applicable NPI trigger levels with appropriate design of the site. Additionally, it is expected that noise and vibration associated with construction and decommissioning works will be able to be managed to acceptable levels.

As per the *Resonate*'s assessment, potential noise and vibration sources associated with the development will include;

- Noise associated with the operation of the solar farm, substation, battery storage system, and potentially transmission line corona and aeolian noise; and
- Noise and vibration associated with construction of the solar farm and decommissioning at the end of its life.

A construction noise assessment will be undertaken by *Resonate*, within the EIS. The EIS will detail measures to be implemented during construction and operations to minimise noise related constraints. A traffic noise assessment will be included within the EIS to assess noise impacts relating to traffic throughout the construction phase. Traffic movements during the operation of the Solar Farm are deemed negligible. It is anticipated that the following will be undertaken as part of the EIS phase;

- Background noise monitoring in accordance with the requirements of the *Noise Policy for Industry*;
- Detailed operations noise predictions reflecting the information available on the proposal at the EIS stage;
- Detailed construction noise and vibration assessment including predications;
- Detailed technical report and information suitable for a chapter of the EIS.

Furthermore, given the proximity to the New England Highway, it is anticipated that noise associated with construction traffic would be able to be appropriately managed through planning site access routes along existing major roads.

6.13 Battery Storage Hazard

6.13.1 Assessment Approach

Battery Storage Systems have the potential to pose environmental risks due to the hazardous materials contained within lithium and associated acids, and may also pose a potential fire risk.

A preliminary risk screening will be undertaken in accordance with *SEPP33* as part of the EIS. Should the preliminary risk screening indicate that the battery energy storage system is 'potentially hazardous' a preliminary hazard analysis will be prepared in accordance with the *Hazards Industry Planning Advisory Paper No6 – Guidelines for Hazard Analysis and Multi-Level Risk Assessment*, the results of which will be included within the EIS.

6.14 Socio-Economic

6.14.1 Existing Environment

The subject site is located within the Singleton Local Government Area. According to the 2016 ABS Data, the Singleton LGA has a population 22,987. The main industry of employment by occupation comprised of Technicians, Trades and Machinery Operators in the Coal Mining and Defence sectors (ABS 2016).

The socio-economic benefits of renewable energy technologies are increasingly driving their adaptation, with renewable energy deployment having the potential to increase income, improve trade balance and contribute to industrial development and job creation (IRENA 2019). Furthermore, the proposed development would generate economic benefits throughout the construction phase of the project, attracting business to local hotels for short-term accommodation options.

Whittingham Solar Farm would generate economic benefit throughout the construction and operation of the project. Construction of the project would provide immediate social and economic benefits to the Singleton local community, and would provide the following direct economic impacts;

- During the 16 month construction period, the proponent will spend approximately \$100 million on project construction labour, materials, and related services, with approximately half of this to be in wage related
- Employment is expected to peak at approximately 200 workers during the project's construction
- Typical workers will be construction managers, electricians, engineers and other skilled labour
- Over 30 years, the ongoing operation of the proposed project will directly employ approximately 2 employees.

6.14.2 Assessment Approach

An assessment of the potential socio-economic impacts and benefits of the project on the local community and consideration of accommodation and other essential services for construction workers will be undertaken throughout the EIS process.

6.15 Health

6.15.1 Existing Environment

A 66kV transmission line runs through the northern portion of the project area and the proposed connection point will be located within the project boundary as illustrated within **Appendix A**.

DC cabling would run from the combiner boxes to the central inverters, which is proposed to be located underground. AC cabling from the inverters to the solar substation would also be located underground as part of the proposed development. The conversion of solar to electric power involves a series of inverters and transformers which may result in extremely low frequency magnetic fields (ELF-MF). The highest ELF-MF levels measured are directly adjacent to transformers and inverters, which were close to but still below the general public limit set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

6.15.2 Existing Environment

The EIS process will include the assessment of potential hazards and electromagnetic field risks associated with transmission infrastructure and the substation against the ICNIRP *Guidelines for limiting exposure to time-varying electric and magnetic fields* (2010).

6.16 Contamination

6.16.1 Existing Environment

A search has been undertaken against the NSW EPA Contaminated Land register, which confirmed that the subject site, has not been identified as contaminated land. It can be noted that two (2) sites within the Singleton Local Government Area are declared as significantly contaminated land under the EPA register, which comprise of the Putty Saw Mill being located approximately 7.9km from the northern boundary of the subject site and Singleton Gasworks, which is located approximately 8.3km from the northern boundary of the subject site. It is also known that there would likely be some level of contamination in the local airfield and military bases, which will be assessed during the EIS phase.

No information has been obtained from Singleton Council application tracking system that may suggest activities approved onsite would cause contamination. However, due to historical rural uses over the specific project area, there is the potential for soil contamination to have occurred through rural activities such as chemical and fuel storage areas, vehicle maintenance areas, or livestock dip areas.

It is known that there is dumping ground adjoining the north-east corner of the Project area within Lot 11 DP825903. This is an extensive area that appears to be used as landfill; containing waste tyres, demolition waste, and old cars. It cannot be confirmed if there are other waste products in this landfill. As this area has been excluded from the Project area, and the groundwater flows north towards the Hunter River, this is unlikely to have any impact on site construction or operational activities by the Project.

6.16.2 Assessment Approach

A Stage 1 Preliminary Site Investigation desktop assessment has been prepared for the project, which has identified that risk associated with contamination of the project area is considered low. From the results of this desktop assessment, it has been determined that no detailed investigation is likely to be required within the EIS. Mitigation measures regarding possible contamination within the project area will be captured within a CEMP, which will manage any contamination identified or created during construction.

6.17 Cumulative Impact

6.17.1 Existing Environment

There is potential for cumulative impacts within the project's locality from the following matters; traffic generation on the local road network; visual; noise; air-quality; and socio-economic.

6.17.2 Assessment Approach

Early consultation with community members regarding cumulative impacts will be undertaken. Further assessment and investigation of the cumulative impacts associated with the Whittingham Solar Farm will be assessed within the EIS. The assessment will include combined potential impacts of different impact areas of the proposal, and the identification of recommended mitigation measures to mitigate any potential impacts.

7 Community and Stakeholder Engagement

Whittingham Solar Farm is committed to engaging with the local community to ensure that information regarding the project is readily and easily available to the public.

A Stakeholder Management and Communication Strategy (SMCS) has been prepared by RES Australia to provide a framework to enhance community and stakeholder engagement and provide opportunities to offer input into the project throughout the development and assessment process. Refer to **Appendix H**.

RES commits to the following with respect to the development of the Whittingham Solar Farm project:

- Openness. Relevant information will be shared with the community in a format that is clear, accurate, timely and honest.
- Inclusiveness. RES will work with project stakeholders to ensure their perspectives are considered.
- Responsiveness. All community concerns will be listened and responded to.
- Accountability. The project will continue to monitor, evaluate and disclose information about project activities and the identified positive and negative impacts of the project.

The specific objectives with respect to community engagement for the Whittingham Solar Farm project are:

- To provide accurate and timely information to all stakeholders and members of the community about the Whittingham Solar Farm project.
- To listen and respond to community opinions and concerns.
- To educate stakeholders and interested members of the community about solar farm developments, renewable energy and the benefits to the community and wider Australian economy.
- To make information available to address false information / claims / misconceptions about wind farm developments.
- To create confidence in both the RES business and the project amongst the local community.

RES Australia Pty Ltd will engage with stakeholders during preparation of the EIS. Stakeholder groups including regulators who have a decision-making role in project approvals, and groups or individuals who may be directly or indirectly be affected by the project and are identified in **Appendix H**. Outcomes of engagement activities undertaken with the identified groups will be addressed within the EIS and relevant technical studies.

It can be noted that an array of engagement resources and tools will be utilised throughout the stakeholder and community engagement program, which include;

- Project Online Contact;
 - Website: <http://www.whittingham-solarfarm.com/>
 - Email: info@whittingham-solarfarm.com
 - Phone: 1800 118 737
- Council briefings;
- Residential Consultation, of adjoining and nearby neighbours via meetings and newsletter drop for those up to 3km from Project;
- Community information (drop-in) sessions; and
- Other Public release avenues, such as adverts in newspapers, press releases, subscription to project news updates

7.1 Consultation to date

Consultation using various methods has occurred with varying success with the following stakeholders;

- Nearby / adjacent neighbours. Identified as per Figure 34.
- Department of Defence (DOD);
- Roads and Maritime Services (RMS);
- Singleton Council; and
- NSW DPIE Biodiversity and Conservation Division
- Easement Parties;
 - o Jemena Gas Networks (NSW) Ltd
 - o Hermitage Estate Wines Pty Ltd
 - o AusGrid

The community more broadly, have also been active in holding their own community event at Whittingham Hall on Wednesday the 11th March 2020 to discuss the Project, to which the proponent RES Australia attended.

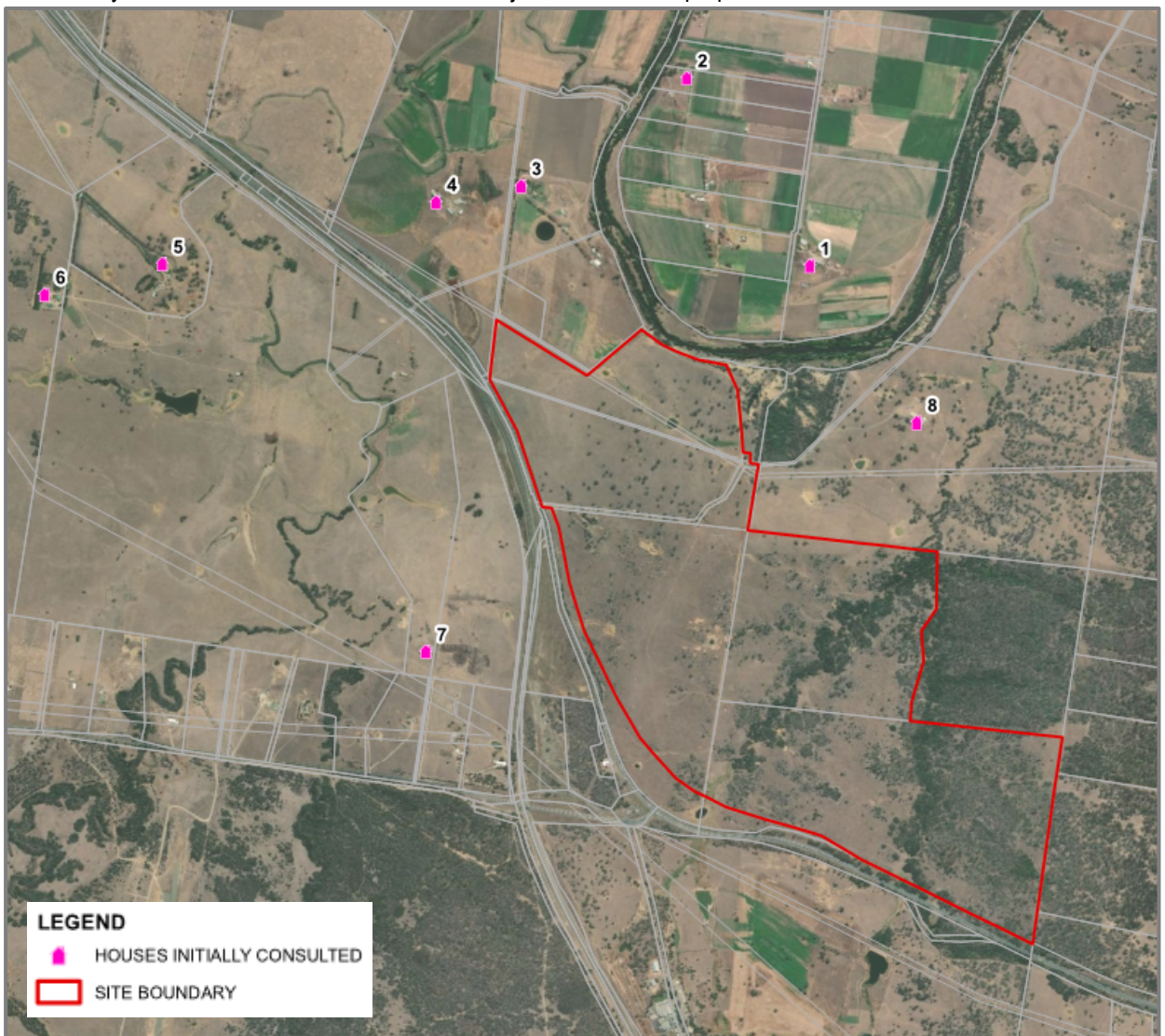


Figure 34 – Location of surrounding community residents contacted so far regarding Project

Source – NSW Spatial Services, 2020

A summary of the matters raised by various parties during the initial consultation process are detailed in Table 6

Table 6 – Initial Community Commentary on Project

Matters Raised by Community	Assessment Approach
Surrounding Residents	
Glare	Glare Assessment has been identified in sections 6.0 and 8.0 of this scoping report
Heat Radiant	Preliminary Hazard Assessment requirement has been identified in sections 6.0 and 8.0 of this scoping report
Land Value	Not applicable for planning consideration
Lighting Strikes	Bushfire and Preliminary Hazard Assessment has been identified in sections 6.0 and 8.0 of this scoping report
Water Usage	Water Use has been identified in sections 6.0 and 8.0 of this scoping report
Flooding	Flooding has been not been identified as a matter of significant to the Proposal given current flood modelling maps available. Refer to Section 6.0
Use alternative location	Consideration has been given to alterative sites; Refer to Section 4.3. Further justification to be provide in Land Use Assessment identified in Section 8.0 of this scoping report.
Additional residents from new subdivisions near Project	Visual Impact Assessment and further community consultation has been identified in sections 6.0 and 8.0 of this scoping report
Noise	Preliminary acoustic assessment finds no significant impact, but this assessment will be expanded for the EIS as identified in sections 6.0 and 8.0 of this scoping report
Dust from vehicles etc	A Construction Management Plan (CMP) will control any dust mitigation activities from construction of the Project. A preliminary CMP may be provided as part of the EIS.
Communication of Project	Consultation will occur as outlined in the Stakeholder Management and Community Consultation Plan in Appendix H.
Stormwater Runoff	Water Impact Assessment has been identified in sections 6.0 and 8.0 of this scoping report
Accommodation	Socio-Economic Impact Assessment has been identified in sections 6.0 and 8.0 of this scoping report
Clearing vegetation	BDAR assessment using the BAM has been identified in sections 6.0 and 8.0 of this scoping report
Department of Defence	
Glare	Glare Assessment has been identified in sections 6.0 and 8.0 of this scoping report
Roads and Maritime Services – Email response received 06 Nov 2019	
Traffic Impact Assessment	Assessment identified as required in sections 6.0 and 8.0 of this scoping report.
Underboring of Highway	Boring under the New England Highway is no longer proposed or required for the Proposal
Glare	Glare Assessment has been identified in sections 6.0 and 8.0 of this scoping report
Singleton Council	
Vibration from Military Operations	Vibration Assessment has been identified in sections 6.0 and 8.0 of this scoping report
Land Use	Land Use assessment has been identified in sections 6.0 and 8.0 of this scoping report
Heritage	Heritage (Aboriginal and European) Assessment has been identified in sections 6.0 and 8.0 of this scoping report
Road conditions maintained	Traffic Route Assessment to confirm condition of local roads utilised by Project. Assessment identified in sections 6.0 and 8.0 of this scoping report
Vegetation Clearing Permit	BDAR assessment using the BAM has been identified in sections 6.0 and 8.0 of this scoping report. Clearing under current Permit may occur in the interim.



NSW DPIE Biodiversity and Conservation Division
No response is to be provided until lodgement of SEARs request
Jemena Gas Networks (NSW) Ltd
Business owns gas pipeline along New England Highway. Letter emailed to head office on 6 th April 2020. No response at time of SEARs request.
Hermitage Estate Wines Pty Ltd
Business owns rights to Irrigation Easements through subject site. Business Name has been cancelled under ASIC. Further investigations to determine if easement ownership has been abandoned to form part of EIS consultation process
AusGrid
Owner of Easement for Transmission Lines. Discussion regarding connection to existing transmission line within subject site have been ongoing since April 2019

Consultation as part of the EIS will include a wider range of parties as detailed in the SMCS prepared by RES Australia.
Refer to **Appendix H**.

8 Summary of Assessments and Approval Required for Project

The following summary is derived from the assessment results of this scoping report, to provide an overview of material and approvals that may be required for further assessment and/or approval of the Whittingham Solar Farm Project. It is intended that Table 7 may also be used as a reference for the development of applicable SEARs for this Project, where appropriate.

Table 7 – Summary of Assessments for Project

ASSESSMENTS AND APPROVALS FOR PROJECT
Biodiversity Development Assessment Report (BDAR) using the Biodiversity Assessment Method and includes; <ul style="list-style-type: none"> - Targeting species, both terrestrial and aquatic; - Avoidance, minimisation and mitigation measures required; - Offset strategies EPBC assessment for Project requirements will also be applied
Aboriginal and European Heritage Assessment in accordance with <i>Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW</i>
Land Use Assessment including; <ul style="list-style-type: none"> - assessment of compatibility of the development with the existing onsite and adjoining land uses during operation and decommissioning using DPI's Land Use Conflict Risk Assessment Guide - Crown Land 'paper road' use or closure further actions post EIS - demonstration that the beneficiaries of easements across the Project area are informed and consulted about the Project and their rights under law are maintained - Decommissioning details in accordance with <i>State Environmental Planning Policy No 55 - Remediation of Land</i>
Bushfire Hazard Assessment (BHA), of Battery Storage component of the Project in accordance with RFS's <i>Planning for Bush Fire Protection</i>
Landscape and Visual Impact Assessment of likely affected residences and public places, including any mitigation measures development in consultation with affected parties
Glare Impact Assessment of likely affected residences and public places, including any mitigation measures development in consultation with affected parties
Water Impact Assessment including mitigation measures
Soil assessment including erosion mitigation measures in accordance with <i>Managing Urban Stormwater: Soils & Construction (Landcom 2004)</i> ;
Preliminary Hazards Analysis, specifically Battery Storage component
Preliminary Electromagnetic Field Assessment
Preliminary Erosion and Sediment Control Plan
Preliminary Traffic Management Plan (TMP)
Traffic Impact Assessment
Transport Route Assessment
Noise and Vibration Assessment, including background noise monitoring in accordance with the requirements of the <i>Noise Policy for Industry</i>
Waste Management Assessment
Socio-Economic Impact Assessment
Preliminary Construction Management Plan
Preliminary Land Contamination Assessment
Consultation under Stakeholder Management and Communication Strategy Plan, including: Consultation with aboriginal RAPs in accordance with OEH's <i>Aboriginal Community Consultation Requirements for Proponents (AHCRP) 2010</i>

9 Conclusion

RES Australia Pty Ltd proposes to develop a large-scale PV solar farm with an estimated capacity in the order of 90MW AC, located within the jurisdiction of *Singleton Council* over land situated at New England Highway and New Freugh Lane, Whittingham.

This Scoping Report has been prepared in accordance with the requirements of the DPIE for projects identified as SSD's. This Scoping Report highlights the various assessment matters relating to the Project with regards to the NSW Legislative Acts, Regulations, Policies, LEPs and Guidelines.

This Scoping Report identifies the following key components associated to the Whittingham Solar Farm project, which will be assessed in greater detail throughout the EIS process;

- Biodiversity
- Visual Amenity
- Land Use
- Aboriginal Cultural Heritage
- Bushfire Hazard

Potential impacts arising from the Project have been identified through preliminary assessments with appropriate recommendations on mitigation measures and further assessments and documentation required to address each impact, as detailed in section 6.0 of this Scoping Report. The results from this preliminary assessment are summarised in Section 8.0 of this report, which has been designed to be used as a reference for refinement of SEARs that may be applicable for this Project.

In light of the material provided in this Scoping Report, we respectfully request SEARs for this SSD Project.

10 References

- Australia Bureau of Statistics (ABS). '2016 Census QuickStats (Singleton)' https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA17000. Accessed March 2020
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- NSW Department of Planning and Environment. 'Hunter Regional Plan 2036'. October 2016
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- NSW Transport (Roads and Maritime Services). 'Classified Road Network'. 2017
- NSW Transport (Roads and Maritime Services). 'New England Highway upgrade between Belford and the Golden Highway: Submissions Report'. July 2018
- Resonate. 'Preliminary Noise and Vibration Assessment', S190463RP1 Rev0. 2020
- RES Australia. 'About Us' <https://www.res-group.com/en>. Accessed March 2020



Appendices

Appendix A – Development Plans

Drawings prepared by RES Australia



Appendix B – Protected Matters Search Tool Database Search



Appendix C – Preliminary Noise and Vibration Assessment

Assessment prepared by Resonate



Appendix D – Preliminary Ecological Assessment

Assessment prepared by NGH



Appendix E – AHIMS Web Service (AWS) Search Results



Appendix F – NSW Heritage Database Search



Appendix G – Bionet Database Search



Appendix H – Stakeholder Management and Communication Strategy Plan

Management Plan prepared by RES Australia