Origin Energy

Uranquinty Solar Farm

Scoping Report

January 2021

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1. Introduction

Origin Energy (Origin) propose to develop a commercial scale solar photovoltaic (PV) site and associated battery storage (the proposal) at Uranquinty, near Wagga Wagga in the Riverina region of South-Western New South Wales. The proposal would have a capacity of up to 200 megawatts (MW) of renewable energy production for the local electricity supply.

1.1 Purpose of this document

This document provides an outline of the proposal, its existing site and surroundings, the statutory framework for approval, and the key potential environmental issues that may be associated with the proposal. This scoping report has been prepared with reference to the *Large Scale Solar Energy Guideline (November 2018)* to support a request to the NSW Department of Planning, Industry and Environment (DPIE) for Secretary's Environmental Assessment Requirements (SEARs) which will guide the preparation of an Environmental Impact Statement (EIS) for the proposal under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2 The Proposal

1.2.1 The site

Location

Solar farm site

The site is located within the Wagga Wagga City Council local government area, north-west of Uranquinty village along Uranquinty Cross Road and comprises the land immediately north of Origin's Uranquinty gas-fired power station. The site is approximately 15 kilometres south-west of Wagga Wagga. The proposal site consists of seven separate lots which are owned by Origin. These properties are located between Jacks Road in the east and Uranquinty Cross Road in the south. The proposal site consists of the following lots:

- 132 Jacks Road – Lot 73 DP 754573
- 176 Jacks Road – Lots 66 and 69 of DP 754573
- 478 Uranquinty Cross Road – Lots 67, 68, 74 and 75 of DP 754573
- 280 Uranquinty Cross Road – Lot 1 DP 1098910 (location of existing power station).

The location and extent of the proposal site is shown in Figure 1-1.

Description

Solar farm site

The site has an area of approximately 450 hectares and is currently used for agricultural purposes, with the primary use being cropping. The site contains one host dwelling located on Uranquinty Cross Road, with the existing property access point available adjacent to the dwellings from Uranquinty Cross Road. This property also has a number of sheds, positioned near and around the dwelling.

The site is zoned RU1 Primary Production under the *Wagga Wagga Local Environmental Plan (LEP) 2010*. It is surrounded primarily by rural land uses, with the power station located on land zoned RU1 Primary Production and SP2 Generating Works to the immediate south.

The site is largely cleared of vegetation, primarily limited to small clusters, isolated paddock trees and boundary plantings.

A vegetated drainage channel is also present in the south-eastern allotment. This channel runs through the site from Jacks Road to a farm dam.

The high voltage Uranquinty to Yanco transmission line (132 kV) runs through the southern portion of the site. An easement associated with the natural gas pipeline that fuels the power station transects the southwest corner of the proposal site.

The site on which the proposal is to be located is owned by Origin.

1.2.2 The proposal

The proposal involves constructing and operating a solar farm with up to 200 MW capacity in total, of which up to 85MW capacity could be in the form of a battery energy storage system. The indicative megawatts per hour (MWh) capacity of the battery energy storage system is up to 340 MWh. The majority of the site would be utilised for the installation of solar panels and a battery energy storage system, with the exception of the following areas:

- Existing buried natural gas pipeline associated with the power station (southern portion of the site)
- Existing drainage channel running through the south-eastern portion of the site off Jacks Road.

The proposal would likely include the installation of polycrystalline solar photovoltaic panels, however other types of panels are also being investigated.

In addition to the installation of solar panels and a battery energy storage system, the following ancillary uses would be included on the site:

- Site office
- Storage areas to support operations.

Infrastructure which would be required includes:

- Potential crossing of the existing drainage channel to allow movements across the channel, culverts or flood ways will be considered as part of the design
- Cabling within the site
- A supervisory control and data acquisition (SCADA) control system
- Internal access roads including a perimeter road
- Perimeter security fencing
- Landscaping, in consultation with adjacent landowners to provide a degree of screening and reduce visual impacts.

The site would also include a new substation and the connection into the existing TransGrid substation located immediately north of the power station. There are very little connection requirements given the distance, the exact requirements will be confirmed during detailed design.

Origin seeks the ability to undertake this proposal either in two stages or as one (both stage 1 and 2 at the same time) depending on tenants and lease agreements. The land for Stage 1 becomes available from January 2021 while the land set aside for Stage 2 does not become available until January 2025. A proposed conceptual layout of the solar arrays is shown in Figure 1-2. This layout may be modified following the environmental impact assessment, design development, consultation and the results of the grid connection discussions with the network

operator. The indicative location of the proposed battery energy storage system is shown in Figure 1-2, and may be installed during Stage 1 or Stage 2 depending on market conditions.

The site would be accessed primarily from Uranquinty Cross Road and Jacks Road, with the initial concept designs showing the access in the south-eastern corner of the site (off Jacks Road). No additional road upgrades to access the site would be required. Two alternate access points which could either complement or be in lieu of the primary location are also being considered in the following locations:

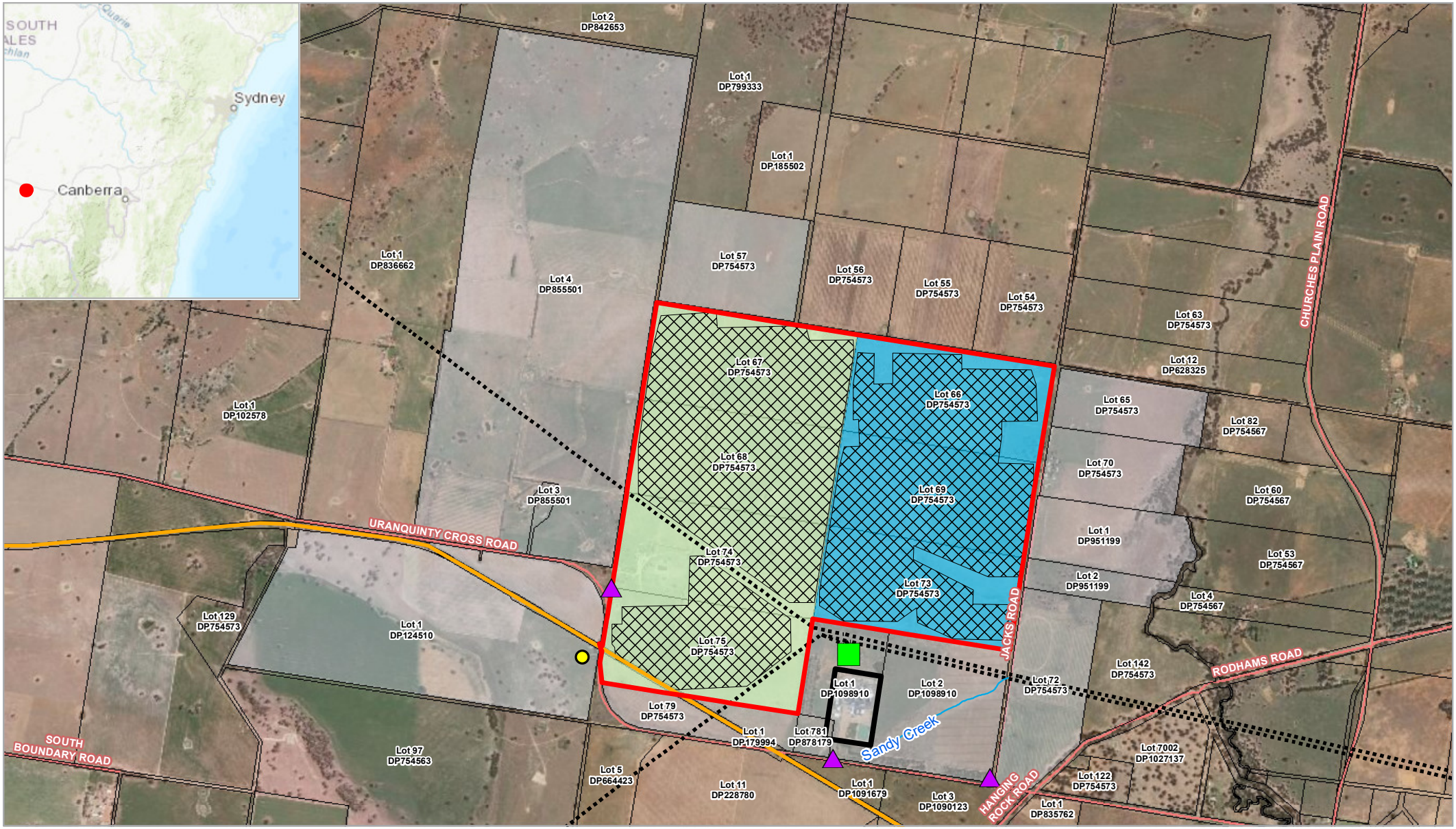
- Existing power station access located on Uranquinty Cross Road
- Existing Origin property access to the two dwellings located off Uranquinty Cross Road, this includes consideration of both access roads in this location (west of Stage 2).

The location of all access points being considered are shown in Figure 1-2.

It is expected that a new substation and a short transmission line would be required to connect the solar farm to the existing Uranquinty substation operated by TransGrid. Given the location of the proposed solar farm and TransGrid substation, the transmission requirements for the proposal are minimal (refer Figure 1-2 for indicative locations).

Construction of the proposal is expected to take about 12 months. Construction workforce of about 60 workers on average would be required, however this would peak at about 100 workers during busy periods. Construction staff are proposed to be accommodated within hotels located at Wagga Wagga, if not comprised of local workforce.

The proposal would be largely operated remotely with no need for permanent staff on site. Staff would however access the site for maintenance activities or during emergency situations.



Legend

- The site
- Host dwellings
- Site access
- Sub-station (TransGrid)
- Gas line corridor (APA)
- Transmission line (TransGrid)
- Drainage channel
- Road (LPI 2015)
- Power station
- Site layout
- Stage 1
- Stage 2
- Land owned by Origin

Paper Size ISO A4

0 0.25 0.5

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

GHD

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Scoping Report

Project No. **21-28121**
Revision No. **1**
Date **22/ 01/ 2021**

Site Location

FIGURE 1.1

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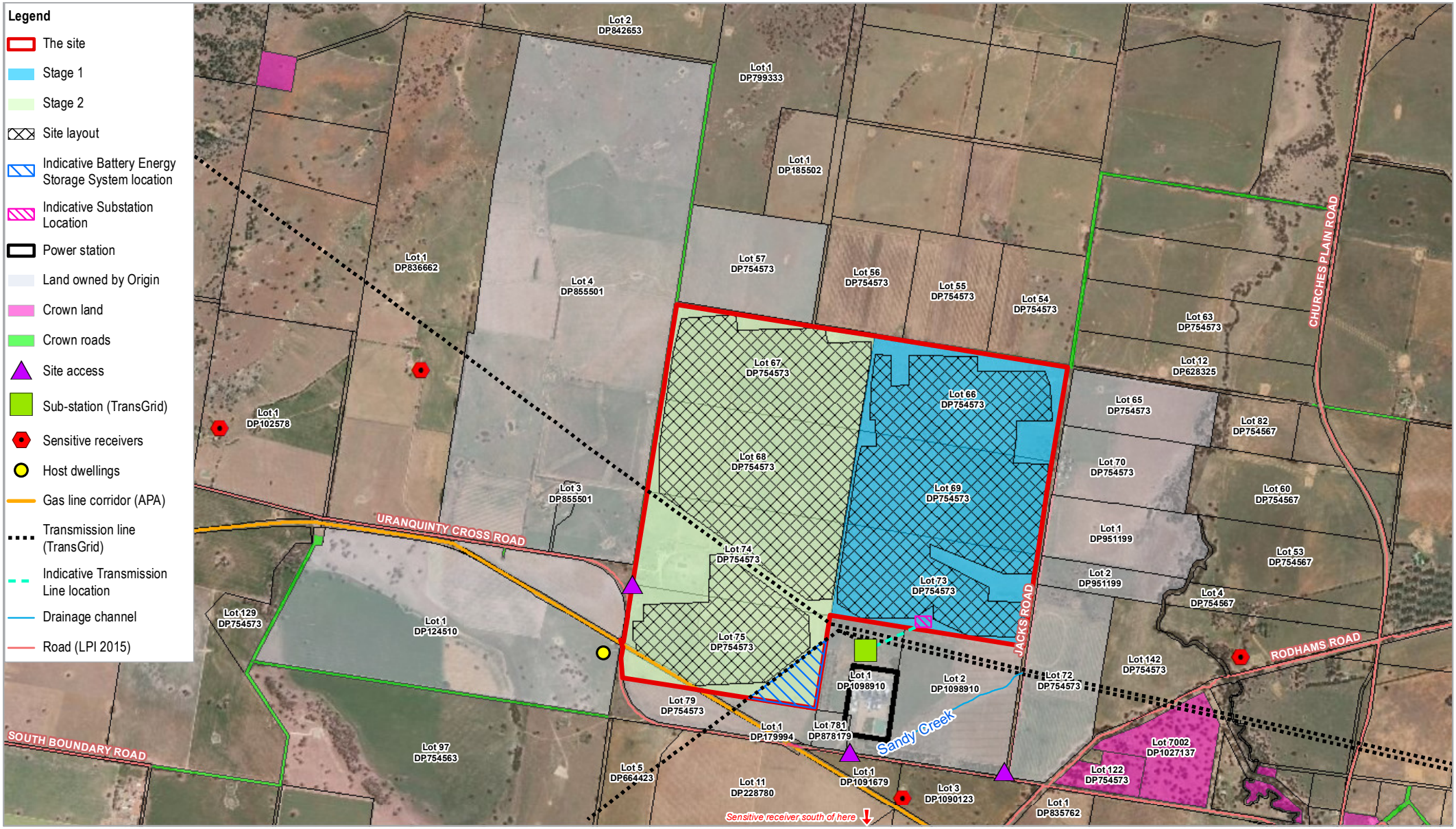
Print date: 22 Jan 2021 - 15:41

Data source: General Topo: NSW LPI 2015, Aerial: ESRI Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community. Created by: eibbertson



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Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

Origin Energy Uranquinty Solar Farm- Scoping Report

The Proposal

Project No. **21-28121**
Revision No. **1**
Date **22/ 01/ 2021**

FIGURE 1.2

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Print date: 22 Jan 2021 - 15:43

Data source: General Topo: NSW LPI 2015, Aerial: ESRI Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: eibbertson

2. Proposal need and alternatives

2.1 Proposal need

The use of fossil fuels for electricity generation has contributed to global climate change with Australia being one of the largest emitters of carbon dioxide per capita. Electricity generation contributes 33 per cent of greenhouse gas emissions and is the dominant source in Australia (Commonwealth of Australia, 2017).

The development of renewable energy projects is one of the most effective ways to achieve reductions in emissions, which led to the implementation of the Renewable Energy Target (RET) Scheme in Australia. As of January 2011, the RET has operated in two parts: the Large Scale Renewable Energy Target (LRET) and the Small Scale Renewable Energy Target (SRET). As of 31 January 2018, the Clean Energy Regulator expects the LRET of 33,000 gigawatt hours to be achieved by 2020.

A global climate agreement was agreed under the United Nations Framework Convention on Climate Change in Paris in 2015. The Paris Agreement sets in place a framework for all countries to take climate action from 2020. This includes a global goal to hold average temperature increase to below 2°C and pursue efforts to keep warming below 1.5°C above preindustrial levels. Australia has set a target to reduce emissions by 26 to 28 per cent below 2005 levels by 2030, which builds on previous emission reduction targets.

The LRET falls short of meeting Australia's commitments under the Paris Agreement.

The Federal Government's Energy Security Board has proposed a National Electricity Guarantee (NEG) to ensure the electricity sector can achieve its share of Australia's international obligation to reduce emissions while supporting the reliability of the National Electricity Market. The Energy Security Board is currently conducting a consultation process for the NEG.

The proposal is being developed to produce renewable energy for the local electricity supply and in doing so will provide the following benefits:

- Reduction in greenhouse gas emissions by providing an alternative clean energy source
- Contribute towards meeting Australia's commitments to the Paris Agreement
- Direct and indirect employment opportunities during construction and operation leading to social and economic benefits for the local community
- The inclusion of a battery energy storage system will contribute to grid system stability.

2.2 Alternatives considered

The existing infrastructure at the site was considered during the site selection process for the proposal. The consideration of this site is considered to minimise environmental impacts, while also maximising the generation capacity of the solar farm.

The site was identified as the preferred location, based on the following:

- Land owned by Origin
- Availability of an abundant solar resource
- Proximity to an existing electricity substation
- Availability of appropriately sized land with appropriate topography

- Suitability in terms of environmental constraints due to past disturbance meaning the site is largely clear of vegetation
- Absence of flood risk.

2.2.1 Alternatives

The planning of the proposal evaluated a number of options relating to location, design and technology taking into account strategic needs and benefits and proposal objectives. The site offers a unique opportunity to co-locate a solar and battery project adjacent to existing major electricity generation and transmission infrastructure.

2.2.2 Do nothing option

Not proceeding with the proposal would forgo the benefits outlined in section 2.1 above.

3. Consultation

3.1 Consultation undertaken to date

Consultation has been undertaken with the following as part of the development of the proposal:

- Wagga Wagga City Council (including Manager City Development and Leader Development Assessment)
- Owners of all properties immediately adjacent to the proposed Uranquinty Solar Farm as shown on Figure 1-2.
- Stakeholders within the vicinity of the proposed Uranquinty Solar Farm and Wagga Wagga City area where relationships exist through Origin's operation of the Uranquinty Power Station. These include landholders, occupants, community groups and local businesses.
- APA
- TransGrid
- Crown Lands.

GHD met with Wagga Wagga City Council in 2019 to discuss the proposal. In September 2020, an advertisement was published in the Quinty Newsletter about the proposed USF and in October 2020 further targeted consultation was undertaken with a number of key stakeholders.

For the majority of stakeholders, consultation was undertaken via email with a letter sent to each stakeholder providing high level information about the project scope and the offer of one on one phone call with Origin's Community Business Partner. Where email details were not available, Origin has attempted to locate a postal address and sent a letter.

To date there has been one verbal objection to the proposed Uranquinty Solar Farm. Origin has committed to keeping this stakeholder informed of key milestones as the project progresses including the opportunity for them to provide their feedback during the formal consultation phase of development approval process.

The remaining few stakeholders who have responded to communications have simply expressed their desire to be kept informed of the project as it progresses.

3.2 Ongoing consultation

A Community and Stakeholder Engagement Plan has been prepared to assist with informing the local community of the project. The aim of the plan is to ensure there is effective ongoing liaison with relevant stakeholders and to provide stakeholders with opportunities to voice their concern and feedback over the proposal. The plan will be used by the proposal team to manage communication and consultation activities.

The key stakeholders identified for the proposal are summarised below:

- Government agency stakeholders (including the relevant network operator)
- Crown Land (neighbouring land owner)
- Wagga Wagga City Council
- TransGrid
- Approval authorities
- Adjoining landowners

- Interest and community groups including the local Aboriginal Land Council and Traditional Owners.

The local Aboriginal Land Council and Traditional Owners have been identified as a key stakeholder and Origin will commence consultation with these parties upon receipt of SEARs.

There are a few landowners identified as key stakeholders who Origin would have preferred to have contacted directly. However, no phone contact details, or postal address was able to be located. For these stakeholders, Origin intends to place an advertisement (with contact details) on the Uranquinty community notice board.

On Monday 9 November 2020, Origin was also approached by the Daily Advertiser about a story on the Uranquinty Solar Farm. Origin provided some information which has been reported on in the story available at the following link: https://links.streem.com.au/the-daily-advertiser-20201110-jnmllLF69HO.

Some of the key issues preliminarily identified as being of interest to stakeholders include:

- Impacts to property values associated with having solar components and energy storage within close proximity to the property
- Loss of agricultural land
- Adverse impacts on health
- Environmental sensitivities relating to vegetation removal and runoff
- Visual and noise impacts generated by the proposal
- Cultural heritage considerations.

To address these issues, a number of engagement tasks have been developed and areas for environmental impact assessment identified. Further details of these tasks would be included in the EIS.

4. Planning considerations

4.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and its associated regulations provide the framework for assessing environmental impacts and determining planning approvals for developments and activities in NSW. The need or otherwise for development consent is set out in environmental planning instruments – State Environmental Planning Policies (SEPPs) or Local Environmental Plans (LEPs).

4.1.1 Part 4 of the EP&A Act

Part 4 of the EP&A Act provides for the control of development that requires development consent from a consent authority. Depending on the circumstances of the proposal, the consent authority may be the local Council or the NSW Minister for Planning.

Part 4, Division 4.1 of the EP&A Act establishes an approval regime for development that is declared to be State Significant Development (SSD) by either a state environmental planning policy (SEPP) or Ministerial Order. In accordance with Section 4.38 of the EP&A Act, the Minister for Planning is the consent authority for SSD. Pursuant to Clause 8 of Section 4.12 of the EP&A Act, an EIS is required to support a development application for SSD.

4.1.2 Approval process

SSD to which Division 4.7 of the EP&A Act applies is identified in the *State Environmental Planning Policy (State and Regional Development) 2011* (State and Regional Development SEPP) and in declarations made by the NSW Minister for Planning. The proposal is considered to be 'State Significant Development' as it is of a type listed in Schedule 1 of the State and Regional Development SEPP (refer to section 4.2.1).

The NSW Minister for Planning is the consent authority for the proposal and a development application is required to be lodged with the NSW Department of Planning, Industry and Environment (DPIE), accompanied by an EIS. Before preparing the EIS, the applicant must request SEARs. The request for SEARs is accompanied by a Supporting Document (this document) which outlines the location, nature and scale of the proposal as well as a preliminary assessment of environmental issues to identify key issues for further assessment in the EIS.

The DPIE then consults with relevant public authorities to obtain input prior to issuing the SEARs. An EIS is then prepared to address the SEARs and the form and content requirements set out in Schedule 2 of the *Environmental Planning and Assessment Regulation 2000 (the EP&A Regulation)*. The EIS is then submitted to the DPIE for review before it is publicly exhibited for a minimum of 28 days. During the exhibition period, the public and agencies are invited to make submissions. After the exhibition period closes, the DPIE may request that the proponent respond to issues raised in the submissions.

4.2 Environmental planning instruments

Environmental planning instruments (EPIs) are legal documents that are prepared under the EP&A Act to regulate land use and development. EPIs determine the relevant part of the EP&A Act under which a development proposal must be assessed and therefore determine the need or otherwise for development consent. EPIs consist of SEPPs and local environmental plans (LEPs).

4.2.1 State environmental planning policies

State Environmental Planning Policy (State and Regional Development) 2011

The *State and Regional Development SEPP* identifies development:

- To which the SSD assessment and approval process under Part 4 of the EP&A Act applies
- That is State Significant Infrastructure and critical State Significant Infrastructure.

Development that is specified in Schedule 1 or Schedule 2 is declared to be SSD. Clause 20 of Schedule 1 relates to electricity generating developments and states that the following development is SSD:

> *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.*

As the proposal is for an electricity generating facility and has a capital investment of over $30 million it is considered to be State Significant Development.

State Environmental Planning Policy (Infrastructure) 2007

The *State Environmental Planning Policy (Infrastructure) 2007 (the Infrastructure SEPP)* aims to facilitate the effective delivery of infrastructure across the State through increased regulatory certainty and improved efficiency and flexibility in the location of infrastructure and service facilities, while also providing for adequate stakeholder consultation.

Clause 34(1) of the Infrastructure SEPP states that:

> *Development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone.*

A prescribed rural zone is defined as the following in Clause 33 of the Infrastructure SEPP:

> ***prescribed rural zone** means any of the following land use zones or a land use zone that is equivalent to any of those zones:*
>
> *(a) Zone RU1 Primary Production,*
>
> *(b) Zone RU2 Rural Landscape,*
>
> *(c) Zone RU3 Forestry,*
>
> *(d) Zone RU4 Rural Small Holdings.*

As the proposal would be an electricity generating works and be located on land that is zoned RU1 Primary Production zone under the *Wagga Wagga Local Environmental Plan 2010* (Wagga LEP) (refer to section 4.2.2), it is permissible with consent under clause 34(1) of the Infrastructure SEPP.

State Environmental Planning Policy 33- Hazardous and Offensive Development

State Environmental Planning Policy No 33 – Hazardous and Offensive Development (SEPP 33) applies to any proposal, which falls under the policy's definition of 'potentially hazardous industry' or 'potentially offensive industry'. If not controlled appropriately some activities within

these industries may create an off-site risk or offence to people, property or the environment thereby making them potentially hazardous or potentially offensive.

As the proposal would include a battery energy storage system with a maximum capacity of 85 MW, a preliminary hazard analysis (PHA) would be prepared to assess the potential impacts of the proposal in line with the requirements of SEPP 33.

Other State Environmental Planning Policies

The EIS would include review of all other potentially applicable State Environmental Planning Policies.

4.2.2 Local environmental plan

The site is zoned as RU1 Primary Production under the Wagga Wagga LEP. The Land Use Table in the LEP provides: 'Any other development not specified in item 2 or 4' including Electricity generating works are permitted with consent in the RU1 Primary Production zone.

4.2.3 Strategic Plans and policies relevant to the region

Wagga Wagga Spatial Plan 2013-2043

The Wagga Wagga Spatial Plan provides clear strategic indicators for development of Wagga Wagga over the next 30 years and beyond. It is the key strategic document for directing and managing urban growth and change in the city, villages and rural areas over the next 30 years.

The Plan documents the pressures for growth and identifies current and future opportunities for sustainable growth across the LGA.

Wagga Wagga Development Control Plan 2010

The Wagga Wagga Development Control Plan (DCP) 2010 applies to all land within the local government area of Wagga Wagga. It is a non-legal document that supports the LEP with more detailed planning and design guidelines.

Wagga Wagga Integrated Transport Strategy 2040

The Wagga Wagga Integrated Transport Strategy and Implementation Plan 2040 establishes a strategic direction to cater for a growing economy and population in a climate where technology and the environment are changing at a rapid rate.

The Plan aims to improve local traffic access and connectivity, identify the provision of responsive parking facilities, and provide a framework for a more cohesive transport network.

The strategy would influence the development of Olympic Highway and the surrounding road network that would provide access to the site.

4.3 Other NSW legislation

4.3.1 Legislation to be applied consistently

Under Section 4.42 of the EP&A Act, the following authorisations cannot be refused if they are necessary for the carrying out of SSD that is authorised by development consent and are to be substantially consistent with the consent:

- *Fisheries Management Act 1994* – aquaculture permit under Section 144
- *Mine Subsidence Compensation Act 1961* – approval under Section 15
- *Mining Act 1992* – a mining lease under this act

- *Petroleum (Onshore) Act 1991* – a production lease under Division 5 of Part 3
- *Protection of the Environment Operations Act 1997* – an EPL under Chapter 3 of the Act
- *Roads Act 1993* – a permit under Section 138 to impact on public roads
- *Pipelines Act 1967* – a licence under Section 11 to construct and/or operate a pipeline.

The above mentioned acts which are relevant to the proposal are discussed below.

Roads Act 1993

The *Roads Act 1993* is administered by Roads and Maritime Services, local councils or the Department of Industry - Land. Roads and Maritime Services has jurisdiction for classified roads, local councils for non-classified roads and the Department of Industry - Land for road reserves or Crown roads.

Under Section 138 of the *Roads Act 1993*, a person must not impact or carry out work on or over a public road otherwise than with the consent of the appropriate roads authority.

The proposal would result in works within the road reserves of Uranquinty Cross Road and Jacks Road (to access the site) and therefore a permit is required from Wagga Wagga City Council.

Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) establishes, amongst other things, the procedures for issuing of licences for environmental protection on aspects such as waste, air, water and noise pollution control. The owner or occupier of premises engaged in scheduled activities is required to hold an environment protection licence (EPL) and comply with the conditions of that licence.

Schedule 1 of the POEO Act outlines the activities which are considered to be scheduled activities to which an EPL is required to be obtained. Electricity generating works (Clause 17 of Schedule 1) with the capacity to generate over 30 MW require an EPL. As outlined in Clause 17(1) of Schedule 1 general electricity works does not include the generation of electricity through solar and wind power. As the proposal would generate power from solar energy, an EPL is not required for the proposal.

4.3.2 Approvals that do not apply

Section 4.41 of the EP&A Act specifies certain authorisations which are not required for SSD that is authorised under a development consent. These include the following authorisations, which may otherwise have been relevant to this proposal:

- NSW *Coastal Protection Act 1979* – concurrence from the minister
- NSW *Fisheries Management Act 1994* – permit for work or structures within a waterway
- NSW *Heritage Act 1977* – approval to disturb an item or an excavation permit
- NSW *National Parks and Wildlife Act 1974* – an Aboriginal heritage impact permit under Section 90
- NSW *Rural Fires Act 1997* – a bush fire safety authority under Section 100B
- NSW *Water Management Act 2000* – water use approval, water management work approval or activity approval.

4.3.3 Other relevant legislation

Biodiversity Conservation Act 2016

The NSW *Biodiversity Conservation Act 2016* (BC Act) came into effect on 25 August 2017 and repealed the *Threatened Species Conservation Act 1995* (TSC Act). The BC Act established the Biodiversity Offsets Scheme (BOS), which provides tools to assist developers and land owners to avoid, minimise and offset potential impacts on biodiversity. An area threshold or assessment of significance is used to determine when the BOS will apply to local developments. If the area threshold is met or a significant impact is likely, the BOS is applied and impacts and offsets must be assessed in accordance with the Biodiversity Assessment Method (BAM).

The potential impact to threatened species, populations and ecological communities is discussed in Section 5.2.1 of this report.

4.4 Commonwealth legislation

4.4.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of the Environment and Energy (DoEE). Under the EPBC Act, if the Minister determines that an action is a 'controlled action' which would have or is likely to have a significant impact on a Matter of National Environmental Significance (MNES) or Commonwealth land, then the action may not be undertaken without prior approval of the Minister.

The EPBC Act identifies the following eight MNES:

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

When a person proposes to take an action which may be a 'controlled action' under the EPBC Act, they must refer the proposal to the DoEE for a decision about whether the proposed action is a 'controlled action'.

A search of the Commonwealth Protected Matters Search Tool indicates that there are no World Heritage or National Heritage places within the proposal site. Search results listed four Wetlands of International Importance that are either known to occur or have potential to occur in the area, however these were located approximately 400 kilometres upstream of the proposal site and are therefore not considered to be impacted by the proposal. Section 5.2.1 discusses the results of this search in relation to threatened species, ecological communities and migratory species.

4.4.2 Native Title Act 1993

The *Native Title Act 1993* provides a legislative framework for the recognition and protection of common law native title rights. Native title is the recognition by Australian law that Indigenous people had a system of law and ownership of their lands before European settlement. Where that traditional connection to land and waters has been maintained and where government acts have not removed it, the law recognises this as native title.

People who hold native title have a right to consult or continue to practise their law and customs over traditional lands and waters while respecting other Australian laws. This could include visiting protected important places, making decisions about the future use of the land or waters, hunting, gathering and collecting bush medicines. Further, when a native title claimant application is registered by the National Native Title Tribunal, the people seeking native title recognition gain a right to consult or negotiate with anyone who wants to undertake a project on the area claimed.

A search of the Register of Native Title Claims conducted on 4 December 2020 showed there are no native title applications which cover the Wagga Wagga local government area (LGA).

5. Preliminary environmental assessment

5.1 Preliminary environmental risk analysis

A preliminary environmental risk analysis has been conducted to assist in the identification of key environmental matters that will require detailed assessment within the EIS. Risks were identified for both the construction and operation phase of the project and analysed in relation to their possible consequence and likelihood of occurrence. From this analysis, some environmental matters were deemed to be key issues on the basis that they require further assessment to determine whether they are likely to have a significant impact on the environment.

A summary of the key environmental issues is provided in Section 5.2. The intent of the discussion is to demonstrate an understanding of the issues and the need for further environmental assessment and mitigation measures for these key issues. The potential impacts and management of other issues are discussed in Section 5.3.

5.2 Assessment of key issues

5.2.1 Biodiversity

Existing environment

The site is largely cleared agricultural land with some isolated and patches of trees present, associated with buildings and fence lines (Figure 5-1). In addition, several areas of planted vegetation border the southern boundary of the site (established to partially screen the existing power station).

Potential ecological constraints within the study area were identified based on the following information sources:

- Office of Environment and Heritage vegetation mapping
- Department of the Environment and Energy Protected Matters Search Tool
- Flora and Fauna survey undertaken for the power station and surrounding area in September 2003 (ELP, 2004).

A search of the EPBC Act Protected Matters Search tool was conducted on 4 December 2020 for the site using a 10 kilometre radius from a single point located approximately at the centre of the site. This search identified three threatened ecological communities, 27 threatened species and 10 migratory species that are known to occur or have the potential to occur in this area.

A search of the NSW Atlas of Wildlife was conducted on 4 December 2020, which identifies species listed under the BC Act. The search identified several threatened communities and species that may occur onsite. Grassy woodlands vegetation formation is located west of the proposal site, which consists of Western Grey Box- White Cyprus Pine Tall Woodland vegetation community.

The Flora and Fauna survey undertaken for the Uranquinty power station site and surrounding area in September 2003 (ELP, 2004), concluded the area was unlikely to support, or be occupied by threatened species. The power station site was dominated by exotic pasture species, with three native species identified: Wireweed (*Polygonum aviculare*), Spreading Stonecrop (*Crassula macrantha*) and *Oxalis perennans*.

Figure 5-1 View of site from Uranquinty Road.

Conclusions and need for further assessment

The proposal site is largely cleared of vegetation due to agricultural practices, however isolated patches of vegetation remain. Site investigations would be required to confirm the identity of vegetation communities present. Following these investigations, the design will be developed to minimise potential impacts on vegetation or habitat features.

A biodiversity assessment of the proposal would be undertaken as part of the EIS.

5.2.2 Social and economic impacts

Existing environment

The site is located near Uranquinty in the Wagga Wagga LGA. The nearby village of Uranquinty has a population of around 909 (2016 census). Community facilities for local residents include sporting ovals and fields, parks and gardens.

The local economy is predominantly agricultural based and a major component of this comes from cropping (Australian Bureau of statistics, 2019).

Conclusions and need for further assessment

The proposal is likely to have a number of social and economic impacts. The proposal will provide employment opportunities during the construction phase. During operation, there may be some ongoing employment opportunities (eg. maintenance). Furthermore, the proposal will reduce greenhouse gas emissions and assist in mitigating global warming.

The proposal will however change the land use from the current cropped areas subject to rural leases.

Origin will implement a Community and Stakeholder Engagement Plan to ensure that all potential impacts are identified and addressed, and where possible, avoided. In addition, Origin will make alternative cropping land available to lease for those affected.

5.2.3 Aboriginal heritage

Existing environment

The land surface within the site has been modified due to heavily cropping. The site contains a landscape feature which are generally associated with the presence of Aboriginal heritage items (e.g. watercourse).

An extensive search of the Australian Heritage Information Management System (AHIMS) was completed on 21 March 2019 for the site and surrounding area. The data base search identified 113 registered Aboriginal places or sites within a 10 kilometres radius of the proposal site. Of these, 17 sites were located within one kilometre of the proposal site, with two sites (artefacts) located on the eastern boundary of the site next to Jacks Road associated with an existing drainage line (Sandy Creek).

The proposal site is within the Wagga Wagga Local Aboriginal Land Council (LALC).

Conclusions and need for further assessment

An Aboriginal heritage assessment of the proposal site would be completed as part of the EIS. Consultation with representatives of local Aboriginal groups and LALC would also be undertaken as part of the assessment if the proposal would impact on Aboriginal sites.

5.2.4 Noise and vibration

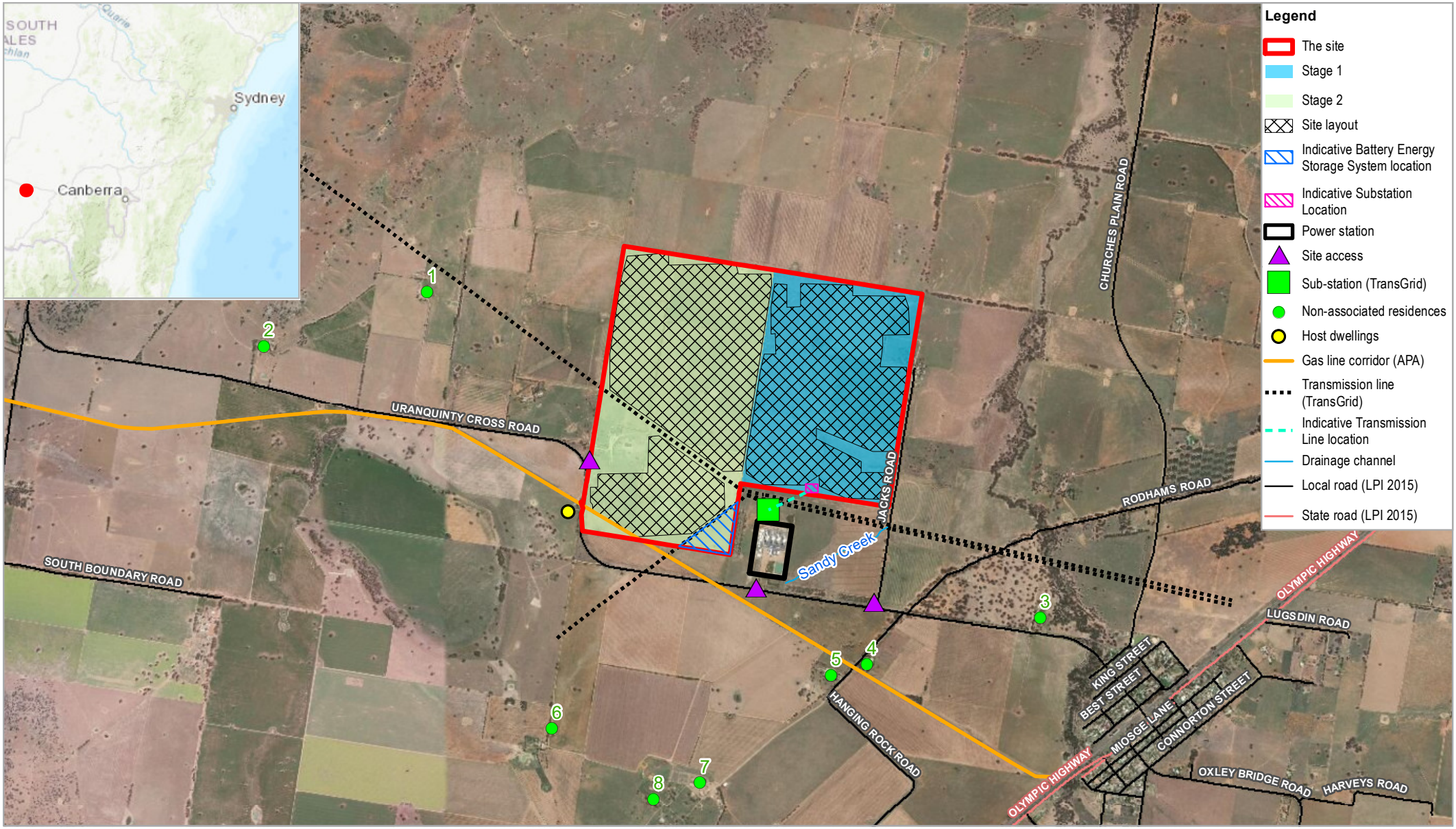
Existing environment

Background noise levels on and surrounding the site would be heavily influenced by the power station (especially in peak power generation periods in the morning and afternoon).

Sources of background noise also include vehicles along Uranquinty Cross Road, and farming equipment and machinery used on adjacent properties, particularly to the south.

The two dwellings located within the site are unoccupied and hence not considered to be sensitive as part of the assessment. The location of these receivers is shown in Figure 1-2.

The nearest sensitive receivers are located east of Jacks Road, on Origin owned land, and south of Uranquinty Cross Road (about 800 metres away) on private land. There are eight non-associated residences within two kilometres of the site. The location of sensitive receivers in the vicinity of the proposal are shown in Figure 5-2.



Paper Size ISO A4

0 0.25 0.5 0.75 1

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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GHD

Origin Energy
Uranquinty Solar Farm-
Scoping Report

Location of Non- Associated Residences

Project No. **21-28121**
Revision No. **1**
Date **22/ 01/ 2021**

FIGURE 5.2

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Print date: 22 Jan 2021 - 15:42

Data source: General Topo: NSW LPI 2015, Aerial: ESRI Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community. Created by: eibbertson

Conclusions and need for further assessment

Construction of the proposal is expected to result in noise impacts to nearby receivers due to the movement of vehicles along roads and equipment around the site. Due to the distance to most receivers, construction impacts are considered to be minimal and the majority of works would be undertaken during standard hours. A qualitative assessment of construction noise impacts would be undertaken with the Interim Construction Noise Guideline.

Due to the nature of the land use and the proposed activity itself, noise is considered to have a minimal impact during operation.

5.2.5 Visual impact

Existing environment

Besides the power station adjoining the site, the visual amenity of the site is typical of a rural landscape where dryland agricultural cropping is conducted. The site predominantly comprises large paddocks used for cropping and occasionally cattle and sheep grazing. The groundcover is a mixture of dry grass and, in places, bare soil. There are several isolated paddock trees and some clusters of vegetation located across the site, as well as some planted rows of trees located along paddock boundaries. There is also planted vegetation and embankments along Uranquinty Cross Road and west of the power station associated with the screening of the development.

Some adjacent and nearby properties have views into the site. The visual impact to these receivers will be a change from existing views of rural landscapes to views of the solar farm. The host dwelling located south west of the site across the other side of Uranquinty Cross Road is not considered a sensitive receiver. The properties considered to be most sensitive in terms of visual impacts are the properties located south of the proposal site on Hanging Rock Road. Views from these locations are partially screened from existing vegetation on the property.

Views from the east are partially screened by existing vegetation and the undulating topography.

Views from the south are partially screened by an existing large embankment and vegetation screen located on the power station property to the south of the proposal site. This embankment partially screens views of the southern portion of the site, while some distant views of the site would be available to the northern part of the site. The remaining sensitive receptors are located at a greater distance from the site and therefore while some views are available due to the distance such views are limited.

Conclusions and need for further assessment

The proposal will be visible to a number of adjacent and nearby properties, although the majority of these will only be able to view the proposal from a distance. Views of the proposal from properties to the east will likely be obstructed by the existing topography and screening and those to the south partially by the existing berm and vegetation screening in the southern portion of the power station site.

The most sensitive properties are those located adjacent to the east of the proposal site. Where possible, vegetation screening will be incorporated into the proposal, and will be considered for impacted properties to reduce the visual impacts experienced by these receivers.

A landscape and visual impact assessment for the proposal would be undertaken as part of the EIS.

5.2.6 Land use and land capability

Existing environment

The site is currently used for predominately cropping, however some grazing has been undertaken in the past. A search of NSW SEED portal was conducted on 17 December 2020 which identified the majority of the site is classified as Class 3 Land (moderate limitations) under the NSW Land and Soil Capability Assessment Scheme. Class 3 land is capable of sustaining high impact land uses, such as cropping with cultivation using more intensive, readily available and widely accepted management practices. However, careful management of limitations is required for cropping and intensive grazing to avoid land and environmental degradation. Across NSW, Biophysical Strategic Agricultural Land (BSAL) is land with high quality soil and water resources capable of sustaining high levels of productivity. The site is not mapped as BSAL, with the nearest BSAL being located approximately five kilometres to the north of the site adjacent to the Murrumbidgee River.

Surrounding land is zoned RU1 Primary Production with a small lot south of the project zoned SP2 Generating Works, and Uranquinty Village south east of the project is zoned RU5- Village. Surrounding land is predominately used for agricultural purposes, with the exception of the power station, which is located to the south of the proposal site. The existing buried natural gas pipeline associated with the power station traverses local rural properties including the southwest portion of the proposal site (refer to Figure 1-2).

Uranquinty village is located about two kilometres southeast of the site, along Uranquinty Cross Road.

Conclusions and need for further assessment

The proposal has the potential to result in the reduction of land used for agricultural purposes due to the establishment of the solar farm and the associated infrastructure. Origin would consider whether it is feasible to allow stock to graze within the site during operation as part of ongoing design development.

The proposal would avoid the gas line easement associated with the natural gas pipeline (Lot 1 DP 179994 – the Rock-Collingullie Road Collingullie).

An Agricultural Impact Study would be undertaken for the proposal and would consider the loss of agricultural land associated with the proposal. Impacts on other land uses including Uranquinty village would be considered in the EIS.

5.2.7 Traffic, transport and access

Existing environment

The site is currently accessed via an existing gate located on Jacks Road, which is accessed off Uranquinty Cross Road to the south of the site. The western part of the site is accessed from Uranquinty Cross Road. Access from Uranquinty also includes a level crossing of the existing train line which runs along the western side of the Olympic Highway at Uranquinty.

This section of the rail line is subject to a development application to upgrade the track as part of ARTC's Inland Rail project (Albury to Illabo project). The section of the track at the site is proposed to be upgraded but not duplicated. A review of ARTC's project documents indicate that the Albury to Illabo project is still in the early development phases of the project.

Conclusions and need for further assessment

The proposal site would be accessed from a point located along Jacks Road. The proposed traffic transport route during construction would be either from the west via Collingullie Road

and Rock Road, or from the west through Uranquinty Via Uranquinty Cross Road and Olympic Highway which is a NSW state owned road.

During construction the proposal would increase the number of vehicles on the surrounding road network due to truck movements for the delivery of material, plant and machinery. The EIS would provide additional details on the proposed construction traffic and transport route, including a qualitative assessment of the impacts of these additional movements.

Operationally, the proposal is not considered to result in any impacts on the road network.

5.2.8 Hydrology, groundwater and water quality

Existing environment

Surface water

The site has a drainage channel traversing the south-eastern portion of the site (Lot 73 DP 754573) (refer to Figure 1-1). There are approximately 10 farm dams across the site for existing agricultural and livestock purposes.

A flood modelling study undertaken by Wagga Wagga City Council (2015) considered design floods ranging between 1 in 5 year and 1 in 500 year flood events, as well as a probable maximum flood. It was determined that during a 1 in 100 year flood event, floodwaters of Sandy Creek extend over a width of 500 to 1200 metres. Due to the distance of the site from Sandy Creek (approximately two kilometres), it is expected that the 1 in 100 year flood events would not impact the site.

Groundwater

A search of the Office of Water's groundwater identified the following bores on the proposal site and the potential additional property:

- GW402808 – Location near existing power station, for monitoring, no water level information available
- GW402809 – Location near existing power station, for monitoring, no water level information available
- GW402810 – Location near existing power station, for monitoring, no water level information available
- GW402811 - Location near existing power station, for monitoring, standing water level at 53.62 metres (completed in 2003).

Conclusions and need for further assessment

The proposal has the potential to alter surface water flows off site due to the need for any localised earthworks to level the ground for infrastructure associated with the proposal. The proposal would avoid impacts on the existing drainage channel running through the south-eastern portion of the site. The EIS would consider impacts on this channel including potential changes to flows within this channel and the potential for offsite impacts.

5.2.9 Hazards and risks

Existing environment

The site is largely cleared with the exception of existing infrastructure associated with the power station, including the natural gas pipeline which traverses the southwest portion of the site.

Conclusions and need for further assessment

The proposal would include a battery energy storage system with a maximum capacity of 85 MW. The proposed size of the battery storage triggers the requirements for a preliminary hazard analysis (PHA) to be prepared in line with the requirements of the SEPP 33 risk screening process.

The PHA would assess the risks and potential impacts from the proposal on the surrounding land users, including concerns for battery storage, bushfires and grid connection. The PHA would also assess the cumulative risks of the existing power station, gas pipeline and associated infrastructure on the proposal and its occupants.

The PHA would provide sufficient information and assessment of risks to show that the residue risk levels are acceptable in relation to the surrounding land use.

The proposal is located within close proximity to the existing natural gas pipeline, which therefore requires a safety management study (SMS) to be undertaken in accordance with the *Australian Standard, AS 2885.6:2018 Pipelines – Gas and liquid petroleum, part 6: Pipeline safety management*. The SMS will identify any potential threats posed to the pipeline by the proposal.

The PHA and SMS for the proposal would be undertaken as part of the EIS.

5.3 Other environmental issues

There are a range of potential environmental issues associated with the Uranquinty Solar Farm which are not considered to be key issues. These issues are considered secondary issues given the characteristics of the proposal and the availability of appropriate safeguards for mitigation. These issues are outlined in Table 1.

Table 1 Other environmental considerations

Issue	Existing environment	Potential impacts	Management and mitigation measures
Non-Aboriginal heritage	A search of the following heritage databases and registers was undertaken on the 7 May 2019: • National Heritage Register (searched on the Australian heritage database) • Commonwealth Heritage Register (searched on the Australian heritage database) • State Heritage Register (search on the NSW heritage database) • Wagga LEP • Section 170 register for public authorities (search on the NSW heritage database). The search did not identify any heritage items on the proposal site. The closest listed heritage items are about 140 metres west of the site – Wise Grave (item #I218) and about 170 metres south of the site- Liquid Explosives Store (item #I287) Based on this non-Aboriginal heritage is not considered to be a constraint for the proposal site.	Due to the predominantly cleared and disturbed nature of the site, it is considered unlikely that any heritage artefacts remain unidentified in the proposal area. This heritage search will be updated as part of the EIS. However a non-Aboriginal heritage assessment is unlikely to be required for the proposal.	An unexpected finds protocol will be established during construction of the proposal. This protocol will outline the procedure to follow if an archaeological or suspected heritage item is uncovered during the works.
Soils and geology	The geology of the area consists of Quaternanry floodplain sediments comprising of unconsolidated clay, silt, sand and gravel along drainage lines, which in turn is underlain by Syn- Kinematic Granites. The depth weathering is dependent on location within the landscape (ELP, 2004)	Minor soil disturbance may be required for installation of the solar panels. However, the site is relatively flat and the majority of panels will be installed at existing ground level. As such, any earthworks necessary for installation of the proposal are expected to be minor in nature. The proposed transmission line is also considered to require minimal ground disturbance.	Impacts to soil and geology are expected to be minimal and will be managed during construction by the implementation of a sediment and erosion control plan. All disturbed areas on site will be rehabilitated to ensure that the existing condition is maintained wherever possible.
Contamination	The Environment Protection Authority (EPA) maintains datasets on contaminated properties including the Contaminated Land:	Based on the desktop searches conducted, the potential for significant contamination to exist onsite is considered low.	If contamination is identified during site construction, it will be managed in accordance with a Construction

Issue	Existing environment	Potential impacts	Management and mitigation measures
	Record of Notices and the List of NSW contaminated sites notified to the EPA. A search of these lists for the town of Uranquinty was conducted on 7 May 2019. No sites listed on either of these records are located in the vicinity of the proposal site. However contamination associated with agricultural activities (e.g. pesticides, fuel storage, dumping) may be present onsite.		Environmental Management Plan (CEMP).
Bushfire	Most of the site is cleared with managed cropping or grazed pastures which typically represent a low bushfire risk. There are some pockets of vegetation on, and adjacent to the site which represent a higher bushfire hazard.	Impacts to the proposal could arise as a result of bushfires on, or in close proximity to the site. Conversely, the proposal works have the potential to cause a bushfire if construction mitigation measures are not followed.	A Bushfire Management Plan will be developed for the site.
Electro Magnetic Field (EMF)	The proposal site has no substantial sources of EMF with a high voltage transmission line through the site the only likely source.	Establishment of the solar farm and all the associated electrical infrastructure such as the transmission and connection would potentially generate electromagnetic fields which can impact on the surrounding community.	Design and positioning of equipment will seek to minimise impacts offsite where possible. Monitoring of any EMF will be undertaken during operation with further mitigation to be determined at this time.
Air quality	The air quality at the site is considered to be good and typical of a rural setting with few point sources of air pollution. Sources of air emissions include the power station, vehicles along the Olympic Highway, and dust generated the movement of vehicles along dirt roads and across dry paddocks.	There is the potential for air quality impacts due to the disturbance of soils (albeit relatively minor) and the movement of vehicles over disturbed land. The increase in vehicles along Jacks Road (which is not paved) would also generate dust. These impacts will be limited in duration to the construction period. During operation, there will be limited localised adverse air quality impacts as there will only be a small number of vehicles travelling over unsealed surfaces. The proposal will have a positive impact to air quality over its operational lifetime by assisting to reduce greenhouse gas emissions.	Commonly used mitigation measures will be implemented during construction to minimise air quality impacts.

Issue	Existing environment	Potential impacts	Management and mitigation measures
Waste	The proposal would generate a number of waste streams and utilise a variety of materials during the construction phase.	During the construction phase, there will be cardboard and packaging from the solar panels which will require disposal. Excavated soil and green waste would also be generated in additional to general construction consumables and materials.	A waste management plan (WMP) will be developed and incorporated in to the CEMP. This will include principles to avoid, reuse and recycles products to minimise waste.
Cumulative impacts	One ARTC project is located near to the proposal site. The Albury to Illabo project involves the enhancement of existing structures to increase height clearances and track upgrades along the rail corridor. The existing train line located directly east of the proposal site (adjacent to the Olympic Highway). There are other approved Solar Farm projects located within the Wagga Wagga Council area. These include Gregadoo, Culcairn and Bomen. However, Gregadoo and Culcairn have not commenced construction.	If the ARTC project is constructed at the same time as the proposal then there may be cumulative impacts due to traffic and noise. These would be restricted to the construction phase of the projects. The Albury to Illabo track realignment project is in the early stages of development and so is unlikely to clash with construction of this proposal. The EIS would consider any cumulative impacts with this project based on any information available on these projects. There is the potential for the identified solar farm projects within the vicinity of the proposal site are to be constructed at the same time as the proposal.	Consultation with ARTC to ensure that cumulative impacts are minimised. Cumulative impacts will be considered as part of the EIS. The EIS will take into consideration the approved nearby solar farm projects and identify any cumulative impacts from construction activities associated with the other approved projects.

6. Conclusion

This report has described the proposed Uranquinty Solar Farm and established the planning context of the proposal.

The proposal would be assessed under Part 4 of the EP&A Act and classes as State Significant Development under *State Environmental Planning Policy (State and Regional Development) 2011*.

Potential environmental impacts associated with the proposal have been categorised as key issues or other issues. Based on this scoping study, an indicative scope for the EIS has been developed, focusing on the key issues which have been identified as land use and land capability, biodiversity, Aboriginal heritage, social and economic, hydrology and water quality and visual impact. The other issues can be addressed through appropriate mitigation and management measures and are not considered to require detailed assessment.

This report has been prepared to support a request to the DPIE for SEARs which will guide the preparation of an EIS.

7. References

Australian Bureau of Statistics, 2019, *Value of Agricultural Commodities Produced, Australia, 2015-16.*

ELP, 2004, *Proposed Wagga Wagga Gas-Fired Power Station Environmental Impact Statement*, Submission to NSW Department of Infrastructure, Planning and Natural Resources, NSW

Wagga Wagga Council, 2015, *Flood Futures-Uranquinty Village Flood Study- March 2015,* NSW

NSW Government, 2018. *Large Scale Solar Energy Guideline November 2018*

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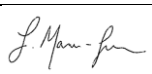
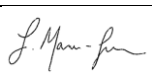
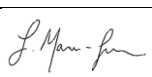
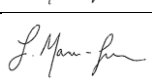
Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Draft	C. Henry	L. Bourne		S. Mason-Jones		15/05/19
Rev 0	C. Henry	L. Bourne		S. Mason-Jones		20/09/2019
Rev 1	C. Henry	L. Bourne		S. Mason-Jones		7/12/2020
Rev 2	C. Henry	L. Bourne		S. Mason-Jones		22/1/2020

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