

Your ref: SSD-9358
Our ref: 12551870

1 December 2021

Nicole Brewer
Department of Planning, Industry and Environment
12 Darcy Street
Parramatta NSW 2150

Silverleaf Solar Farm (SSD-9358) – Response to Request for additional Information

Dear Nicole

GHD Pty Ltd has been engaged by ENGIE to respond on their behalf to your correspondence dated 19 October 2021 requesting additional information for the above application.

Our response to each item requested is as follows:

Evidence of consultation with SANTOS regarding PEL 238

Evidence of ENGIE's consultation with Santos regarding PEL 238 is provided in Attachment 1.

Confirm the project's area of disturbance, including shapefiles of the disturbance footprint

The area of disturbance for the project is 396.9 hectares. This is the total area that will be disturbed to construct and operate the proposal and is comprised of the following:

- *Clearing area* which is the area of land where vegetation will be removed, this does not include the intersection upgrade area – 396.34 hectares
- *Category 1 exempt land* which is the area exempt from assessment in the BDAR – 285.18 hectares
- *Biodiversity assessment area* which is the area assessed in the BDAR and equals the clearing area minus the category 1 exempt land – 111.16 hectares

For further clarity, a figure (Figure 1) showing these boundaries is provided in Attachment 2.

A shapefile of the disturbance area is provided with this response.

Confirm the basis for 20 kL per day water demand indicated for construction, and provide evidence of access to a reliable water supply

It is difficult to make a firm estimate of construction water requirements until construction planning is complete. However a reasonable assumption, based on GHD's experience, is that one water cart (with a 20,000 litre (20 kilolitre (kL)) capacity) would be used each working day. This equates to a yearly consumption of approximately 4.8 megalitres (ML). A review of recently approved solar farm developments on the Major Projects portal has identified proposed volumes between 2 and 50 ML per annum.

ENGIE have spoken with one of the landholders and Narrabri Shire Council with regard to supplying water for the project during construction. Council have committed to working with ENGIE to meet the project needs (see correspondence in Attachment 3). The landholder has also advised they have surplus water allocation for their property, with more than enough spare capacity to be able to supply the project with the estimated daily amount of 20 kL. He has also advised that they may be able to offer additional capacity above that amount if required (subject to commercial discussions and agreements). ENGIE is confident that the water required for the project during construction is available.

In addition, the following additional information was requested in an email from Karl Okorn on 26 October:

It would be appreciated if you could provide responses to the below via email at your earliest convenience.

- *Clear definitions as to what the Project Site and Development Footprint entail (i.e. why they are different).*
- *Confirm the location of the area of PCT 397 avoided (see below for comments on figures as well).*
- *Confirm that 4.5 ha of the land mapped as BSAL and Class 3 within the project site is outside the disturbance footprint.*
- *Number of solar panels in the final proposed project.*
- *Number of inverter stations.*

It is intended to use Engie's figures in the Assessment Report. Accordingly, send an individual pdf of just Figure 3-2 of the Amendment Report with the following detail:

- *Distinct boundaries of the Project Site and Development Footprint.*
- *Remove 'alternate site access'.*
- *Show the specific extent of riparian and water course buffer zones.*
- *Clearly show what changes occurred for the Amendment (i.e. understood to be reduction in disturbance of 6 ha and reduction in development site of 11 ha).*

Also, the transmission line for the project crosses the ARTC North-West Railway Line. Can you please confirm the landowner of this land and whether land owners consent has been obtained.

The above issues are addressed in turn below.

Project site and development footprint

As is common practice, the 'disturbance area' is predominantly referred to as the 'proposal site or footprint' in the EIS, Submissions Report, BDAR and the Amendment Report. This term could also be described as the 'development footprint' or 'project site'. For clarity, we are now referring to this area as the disturbance area as per the above request. The disturbance area (proposal site/project site/development footprint) is described above and shown in Figure 1 in Attachment 2.

PCT 397

There is 32.69 hectares of PCT 397 within the disturbance area. Of this, 21.98 hectares is category 1 exempt land and 10.71 hectares was assessed in the BDAR. The location of PCT 397 is shown in Figure 2 in Attachment 4.

BSAL and Class 3 land

We confirm that the construction of the solar panels would not impact on the Class 3 land capability and BSAL land on the southwestern boundary of the solar farm area. A figure (Figure 3) showing this area is provided in Attachment 5. The area of land excluded from the disturbance area at this location is approximately 5960 square metres.

The area of Class 3 land to be avoided was identified as being 4.5 hectares in the EIS (GHD August 2019). This represents the area of Class 3 land within the property boundary that would be avoided (see Figure 3).

Number of solar panels and inverter stations

An updated estimate of the number of solar panels proposed is 200,000 to 240,000, with approximately 34 inverters across the site. Note this is an estimate at this stage, which would be confirmed during detailed design.

Amended Figure 3-2

An amended Figure 3-2 (Figure 4) highlighting the amendments referred to in the Amendment Report (and addressing your requirements above) is provided in Attachment 6. The following comments are made:

- The disturbance area is identified (project site/development footprint).
- The alternate access is retained as it would provide an additional access in case of limitations with the other access due to weather or any other issues.
- Proposed amendments are clearly labelled and include:
 - Upgrade of the intersection of the Kamilaroi Highway and Logans Lane.
 - Relocation of the proposed substation (and any co-located inverters) to the battery storage area. Other inverters would be situated throughout the array area.
 - Slight increase in the area of PCT 397 excluded from the clearing area (previously 17.67 hectares, now 18.52 hectares).

Please note all figures are indicative until further design development is complete.

The Department has noted a reduction in disturbance of six hectares and a reduction in the development site of 11 hectares (refer above). This is discussed in Table 3.1 and Section 3.2.5 of the Amendment Report (GHD, September 2021). These areas are summarised and revised below in Table 1.

Table 1 Revised disturbance areas

Area	EIS (GHD, Aug 2019)	Amendment Report (GHD, Sep 2021)	Correct area
Proposal footprint/ disturbance area	450	439	396.90
Clearing area	396	390	396.34
Category 1 exempt land	-	-	285.18
Biodiversity assessment area	-	-	111.16

The following comments are made regarding the revision of the areas in Table 1:

- The footprint described in the EIS was less defined and aligned predominately with property boundaries. ENGIE has now refined the footprint (disturbance area) to meet design and construction requirements to reduce the area of impact.
- The clearing area does not include the area required for the intersection upgrade as no vegetation would be removed.
- The clearing area equates to the sum of the biodiversity assessment area (area for which offsetting is required) and the category 1 exempt land (area for which offsetting is not required).

Buffer distances are unable to be discerned at the scale of the Figure 4 but the following has been applied for each waterway type:

- Steam order 1 20 metre buffer distance from the top of bank
- Steam order 2 40 metre buffer distance from the top of bank
- Steam order 3 60 metre buffer distance from the top of bank
- Steam order 4 80 metre buffer distance from the top of bank

ARTC consent

ARTC has provided in principle agreement for the project and their written advice is included as Attachment 7. ENGIE will seek ARTC approval for construction of the project, as advised in the ARTC correspondence, during the detailed design stage of the project.

Additional information was again requested in an email from Karl Okorn on 18 November:

It would be appreciated if you could confirm, and then complete the tables below, ensuring consistency in the total disturbance area between the two tables.

Land and Soil Classes and BSAL

Class	Disturbance Area, ha – Solar Farm	Disturbance Area, ha – Transmission Line / Other (e.g. intersection upgrade)	Total
2	0	31.47	31.47
3	0	15.29	15.29
5	345.76	3.82	349.58
Total	345.76	50.58	396.34

Summary of Vegetation Disturbance

Item	EIS Disturbance Area (ha)	Amendment Report Disturbance Area (ha)	Area Requiring Assessment in the BDAR (ha)	Area of disturbance generating ecosystem credits	Ecosystem Credits
Woodland					
PCT 55 Belah woodland on alluvial plains and low rises in the central NSW wheatbelt to Pilliga and Liverpool Plains regions	0.69	0.69	0.69	0.69	16
PCT 397 Poplar Box - White Cypress Pine shrub grass tall woodland of the Pilliga- Warialda region, Brigalow Belt South Bioregion	1.15	0	0	0	0
Derived Native Grasslands					
PCT 35 Derived Native Grasslands	26.81	26.81	0.77	0.77	0
PCT 55 Derived Native Grasslands	121.96	121.96	53.89	47.86	679
PCT 397 Derived Native Grasslands	32.69	32.69	10.71	10.71	0
Other					
Planted vegetation	7.88	7.88	0	0	0
Cropped/ predominantly exotic grassland	198.2	198.2	38.41	38.41	0
Cleared	8.11	8.11	6.69	6.69	0
Total	397.49	396.34	111.16	105.13	695

Additionally, could you please clarify the waterway buffer distance terminology listed in the Response to Request for additional information (11 November 2021). Currently, the Assessment Report refers to the setbacks from riparian zones and watercourses as “20 m from either side of **second** order streams, 30 from either side of third order streams” (Section 4.4 of the Assessment Report). The Response to Request for additional information states that a “20 metre buffer distance from the top of bank” has been applied to **Stream Order 1**, 40 m to Stream Order 2, 60 m to Stream Order 3, and 80 m to Stream Order 4. Could you please clarify whether the distances are **either side** of the stream or the **total** buffer distance for the relevant stream order?

To confirm, the proposed buffer distance is 10 m from either side of first order streams, 20 m from either side of second order streams, 30 from either side of third order streams and 40 m from either side of fourth order streams.

We trust that the Department now has all information required to make a determination.

Regards



Lisa King
Technical Director – Environment and Approvals

02 4979 9995
lisa.king@ghd.com



Daniel Mees
Project Director

02 6393 6429
daniel.mees@ghd.com

Copy to: Karl Okorn

Attachments

Attachment 1

Santos correspondence

From: Todd.Dunn@santos.com
To: jack.henderson@engie.com
Subject: RE: Silverleaf Solar Farm - Santos PEL238
Date: Monday, 28 June 2021 2:03:27 PM
Attachments: [Silverleaf Landowner Mapping.pdf](#)

Jack

Thanks you for touching base.

As discussed, Santos does not have any concerns with the proposed development of the Silverleaf Solar Farm and in particular any items that may be raised through the EIS assessment process relating to the development being located within Petroleum Exploration Licence (PEL) 238.

Santos is focused on development of the Narrabri Gas Project located further to the south within the project area as defined by PPLA13, 14, 15 and 16, in order to deliver natural gas to the NSW domestic market.

The area of the proposed Silverleaf Solar Farm, while being within PEL 238, is in an area where we do not currently have any proposed exploration activities, while noting Santos has submitted an application to renew this exploration licence.

Additionally we consider these types of projects to play an important role in driving regional investment that would bring energy security, jobs and economic benefits to the Narrabri region and more broadly to New South Wales.

Feel free to give me a call at any time if you have any questions.

Thanks



Todd Dunn
Project Manager Narrabri
Onshore Development
Santos Limited, 300 Yarrie Lake Road, Narrabri NSW
2390
t: +61 2 6792 9039 m: +61 438 720 766



From: jack.henderson@engie.com [mailto:jack.henderson@engie.com]
Sent: Monday, 28 June 2021 11:38 AM
To: Dunn, Todd (Todd) <Todd.Dunn@santos.com>
Subject: ![EXT]: FW: Silverleaf Solar Farm - Santos PEL238

Hi Todd,

If you can give me a call when you're free or send me an email to progress this that would be appreciated, have left a couple of voicemails for you.

Kind regards,

Jack Henderson
Project Developer, Asset Development

ENGIE Australia & New Zealand
jack.henderson@engie.com
M +61 (0) 439 756 594



Level 33, Rialto South Tower
525 Collins Street, Melbourne
Victoria 3000, Australia

We respect and honour First Nations Elders past, present and future.
We acknowledge the stories, traditions and living cultures of First Nations peoples
on the lands on which our sites are located and commit to building a brighter future together.

From: HENDERSON Jack (ENGIE in Australia)
Sent: Wednesday, 23 June 2021 5:18 PM
To: annie.moody@santos.com; cassie.hay@santos.com; Mark.Rodgers@Santos.com
Subject: RE: Silverleaf Solar Farm - Santos PEL238

Have expanded this to include Mark as well, due to Annie being on leave.

Kind regards,

Jack Henderson
Project Developer, Asset Development

ENGIE Australia & New Zealand
jack.henderson@engie.com
M +61 (0) 439 756 594



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Victoria 3000, Australia

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From: HENDERSON Jack (ENGIE in Australia)
Sent: Wednesday, 23 June 2021 5:14 PM
To: annie.moody@santos.com; cassie.hay@santos.com
Subject: Silverleaf Solar Farm - Santos PEL238

Hello Annie and Cassie,

My name is Jack Henderson, I am currently working for Engie on development of the Silverleaf Solar Farm, about 5km north of Narrabri. I've attached a map of the site with different lots marked, as well as an indicative layout for the project.

Below is a link for the Silverleaf Solar farm on the planning portal with EIS etc.:

<https://www.planningportal.nsw.gov.au/major-projects/project/9716>

It's been identified that there is a Petroleum Exploration License (PEL238) which is over the site location (expiry date 2016-08-02, however a renewal application is in progress). Your details were passed on as suitable contacts by Geological Survey of NSW – Mining, Exploration and Geoscience to consult with as part of the planning process.

I would like to discuss the project further with Santos to ensure that proper consultation with all affected parties is undertaken.

Can you please advise if you are the right people to talk with about the project, and when would be a suitable time for you to discuss further?

Kind regards,

Jack Henderson
Project Developer, Asset Development

ENGIE Australia & New Zealand
jack.henderson@engie.com
M +61 (0) 439 756 594



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525 Collins Street, Melbourne
Victoria 3000, Australia

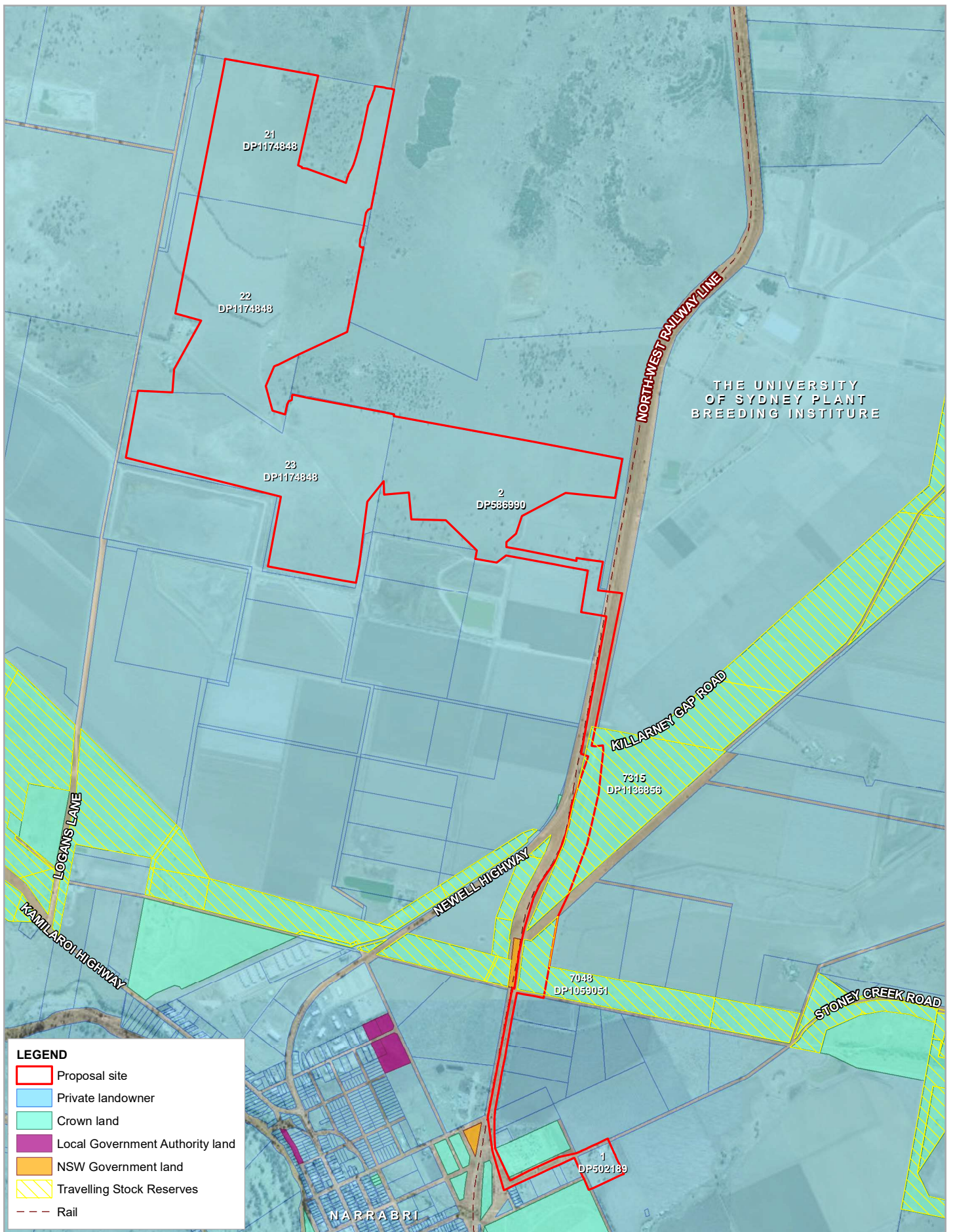
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We acknowledge the stories, traditions and living cultures of First Nations peoples on the lands on which our sites are located and commit to building a brighter future together.

ENGIE Mail Disclaimer: <http://www.engie.com/disclaimer/>

Santos Ltd A.B.N. 80 007 550 923

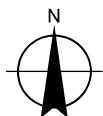
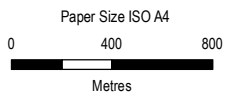
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LEGEND

- Proposal site
- Private landowner
- Crown land
- Local Government Authority land
- NSW Government land
- Travelling Stock Reserves
- Rail



Engie
Silverleaf Solar Farm

Project No. 21-26998
Revision No. 1
Date 27 Mar 2020

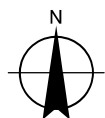
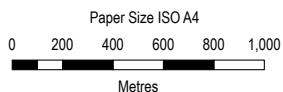
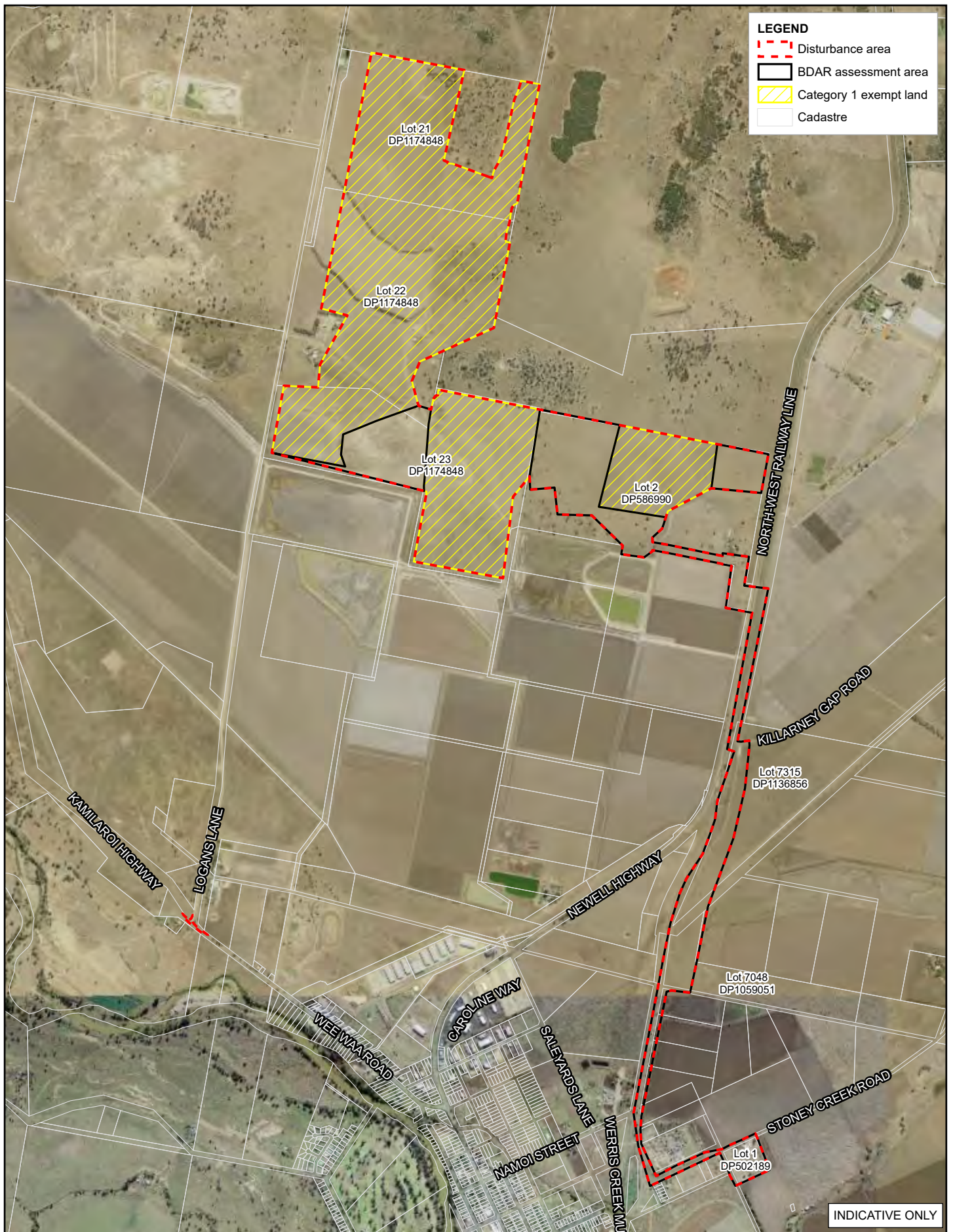
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Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

Land Ownership

FIGURE 3-1

Attachment 2

Disturbance area figure



ENGIE
 Silverleaf Solar Farm EIS
 Request for Further Information

Project No. 12551870
 Revision No. 0
 Date 10 Nov 2021

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

Disturbance Area

FIGURE 1

Attachment 3

Water supply correspondence

From: billb@narrabri.nsw.gov.au
Sent: Thursday, 28 October 2021 8:51 AM
To: jack.henderson@engie.com
Subject: ⚠ Water Access - Engie

Jack,

Council continues to be an advocate for new investment within its Shire.

To this end, Council will work with Engie in an effort to facilitate the arrival of the Silverleaf Solar farm project to the Shire.

As discussed, Council will be more than happy to work with the Engie organisation to provide the water that the Silverleaf Solar Farm project will require throughout their development in Narrabri at commercial rates.

Council looks forward to the imminent arrival of this project.

If I can be of any further assistance, please do not hesitate to ask.

Regards.

Bill Birch

Manager Economic Development

Phone: 02 6799 6866

Email: billb@narrabri.nsw.gov.au

NARRABRI SHIRE
DISCOVER THE POTENTIAL



think safe. | work safe. | be safe.

safeworkmonth.swa.gov.au

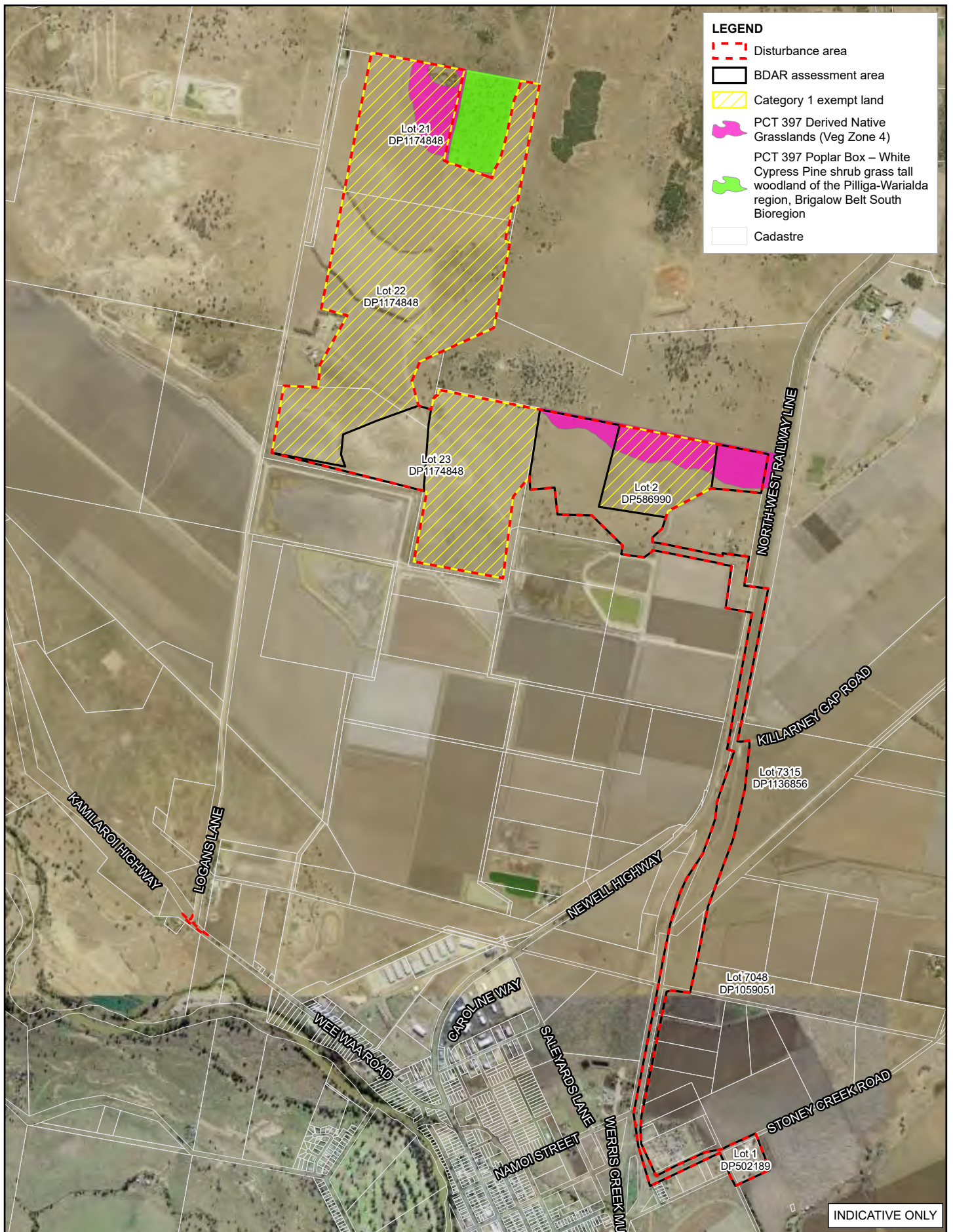
NARRABRI SHIRE
DISCOVER THE POTENTIAL



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Attachment 4

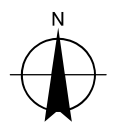
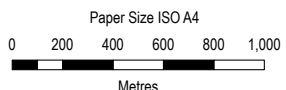
PCT 397 mapping



LEGEND

- Disturbance area
- BDAR assessment area
- Category 1 exempt land
- PCT 397 Derived Native Grasslands (Veg Zone 4)
- PCT 397 Poplar Box - White Cypress Pine shrub grass tall woodland of the Pilliga-Warialda region, Brigalow Belt South Bioregion
- Cadastre

INDICATIVE ONLY



ENGIE
Silverleaf Solar Farm EIS
Request for Further Information

Project No. 12551870
Revision No. 0
Date 10 Nov 2021

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

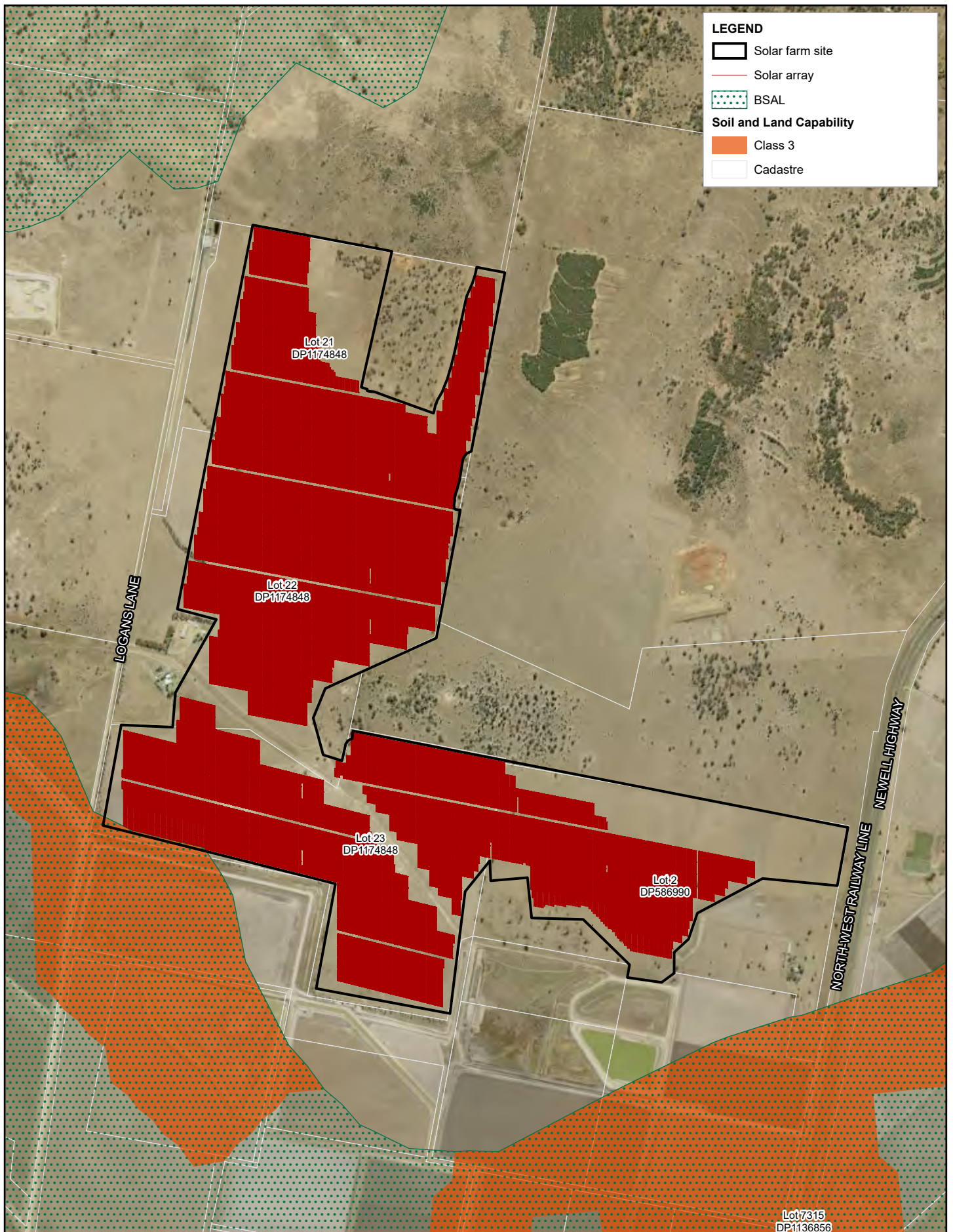
PCT 397 mapping

FIGURE 2

N:\AU\Orange\Projects\2126998\GIS\Maps\12551870_RFI_0.aprx Data source: General topo - NSW LPI DTDB 2015 & 2015; Aerial imagery - SIX maps 2019 (public_NSW_Imagery); © Department of Customer Service 2020; Survey data & site details - Engie & Solaire direct.
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Attachment 5

BSAL and Class 3 land



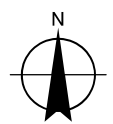
LEGEND

- Solar farm site
- Solar array
- BSAL

Soil and Land Capability

- Class 3
- Cadastre

Paper Size ISO A4
 0 150 300 450 600
 Metres



ENGIE
Silverleaf Solar Farm EIS
 Request for Further Information

Project No. **12551870**
 Revision No. **0**
 Date **10 Nov 2021**

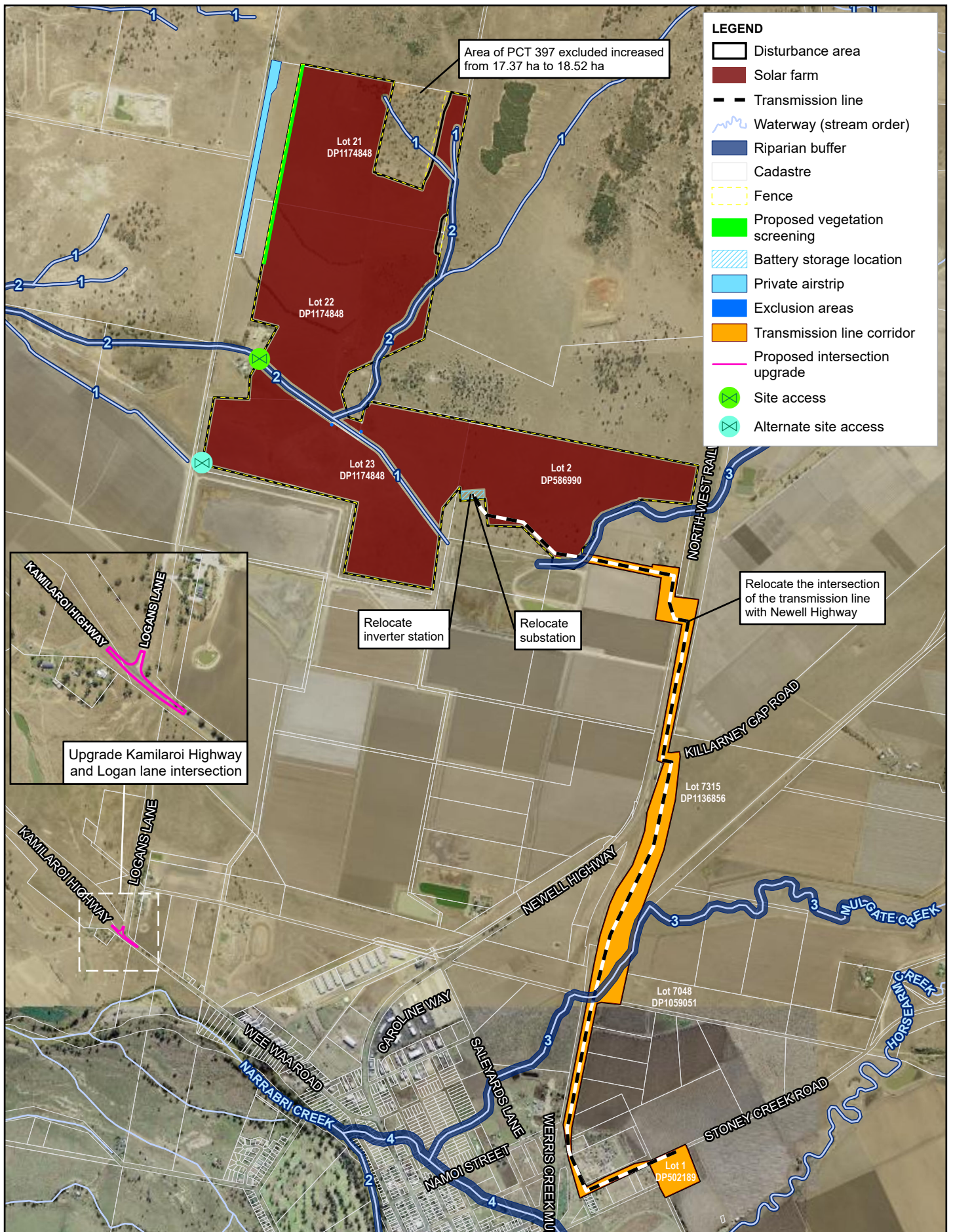
**BSAL and Class 3
 land capability mapping**

FIGURE 3

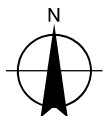
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Attachment 6

Amended Figure 3-2



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



ENGIE
Silverleaf Solar Farm EIS
Request for Further Information

Project No. 12551870
Revision No. 0
Date 11/11/2021

The proposal - as revised

FIGURE 4

Attachment 7

ARTC advice

Silverleaf Solar Farm Pty Ltd
C/- Marcus Dowling, Engie Services
Level 33, Rialto South Tower
525 Collins Street
MELBOURNE VIC 3000

Email: marcus.dowling@engie.com

9 August 2019

Dear Marcus,

In Principle Agreement – Installation of new 132kV transmission lines – Newell Highway, Narrabri, 574.830km

I refer to your application and advise that “agreement in principle” for the location and design can only be granted by ARTC at this stage.

Therefore, before ARTC can grant approval for the **construction/installation** and issue a Licence for the infrastructure the following is required for review:


1. Final design plans complying with ARTC Engineering Standards, Australian Standards, and Inland Route Specific standards any reasonable requirements of ARTC.
2. **A minimum vertical clearance of 12.75m from underside of lowest conductor to top of rail is required to allow for future Inland Rail expansion.**
3. All Poles / Guides wires to remain outside the rail corridor
4. Current Public Liability Insurance.
5. Provide Construction Safety documentation –and must relate to working in the rail corridor.
6. Evidence of Accreditation of Protection Officer. & Works will be required to align with a Scheduled Track outage.

All Workers Must Complete Inland Route Inductions and Adhere to any specific Inland Requirements, in addition to ARTC Contractors induction and standard requirements. If entering ARTC Rail Corridor or ARTC Land.

I look forward to receiving the associated documentation required for the approval of construction of the infrastructure within **12 months** of the date of this correspondence. For the avoidance of doubt, should ARTC not receive the abovementioned documentation during the specified timeframe this “In Principle Agreement” will be withdrawn.

If you have any questions in relation to the application process please feel free to contact the undersigned.

Yours faithfully

A handwritten signature in black ink, appearing to read 'V. Howard', is centered within a light gray rectangular box.

Vanessa Howard

Property Officer – Hunter Valley