

CALLIDE SOLAR POWER STATION PROJECT

Town Planning Report



PR151484

3

20 December 2022

REPORT

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SUMMARY

Table 1: Summary

Details			
Site Address:	551 & 641 Biloela Callide Road & Lot 28 Shorts Road, Mount Murchison QLD 4715		
Real Property Description:	Lot 154 on SP126053, Lot 2 on RP619032, Lot 28 on RN519 and Lot 3 on RP608599.		
Site Area:	515.364 ha		
Regional Plan Land Use Designation:	Priority Agricultural Area		
Zone:	Rural		
Owner(s):	Pamela Jensen & Craig Jensen		
Proposal			
Brief Description/ Purpose of Proposal	Establishment of an agri-solar project (co-location of animal husbandry and renewable solar facility). The development will include a 200MWac Solar Photovoltaic (PV) Farm, 200MW/800MWh Battery Energy Storage System (BESS), associated infrastructure (such as, site office, substation, laydown area, fencing, access tracks and other ancillary equipment). The animal husbandry component will facilitate the grazing of sheep on the site.		
Application Details			
Aspect of Development	Preliminary approval	Development permit	
Material change of use	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Assessment Category	<input type="checkbox"/> Code	<input checked="" type="checkbox"/> Impact	
Public Notification	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes: 15 BD	
Superseded Planning Scheme Application	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Referral Agencies			
Agency	Concurrence	Advice	Pre-lodgement response
SARA	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Powerlink	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Pre-lodgement / Consultation			
Entity	Date	Contact Name	
Council DA Team	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 08/02/2022	Chris Welch	
Community	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2020-2022	Neighbours	
Other			
Council officer/s previously involved:			
Applicant contact person	Harry Connolly Senior Planner D: +61 7 3539 9627 E: harry.connolly@rpsgroup.com.au	Simon Pollock Technical Director – Planning D: +61 409 001 556 E: simon.pollock@rpsgroup.com.au	

1 INTRODUCTION

RPS has been engaged by Edify Energy to seek development approval for establishment of an 'agri-solar' development on land at 551 and 641 Biloela Callide Road and Lot 28 Shorts Road, Mount Murchison. The subject site is more properly described as Lot 154 on SP126053, Lot 2 on RP619032, Lot 28 on RN519 and Lot 3 on RP608599. The subject site has an area of 515.364 hectares.

This development application seeks:

- **Development Permit for Material Change of Use** for Public Facility – Other (Solar PV & Battery Energy Storage System facility);
- **Development Permit for Material Change of Use** for Animal Husbandry;

The proposal involves:

- Establishment of a 200MW Solar Photovoltaic (PV) farm with a development footprint of approximately 406 hectares across the landholding;
- Ancillary facilities for the solar farm such as, 200MW/800MWh Battery Energy Storage System (BESS), substation, site office laydown areas, fencing and other ancillary equipment;
- Provision of sheep grazing activities. It is expected that the site will initially house 49 sheep with the expectation of increasing the head of sheep over time;
- Livestock laneway/yard to hold and enable movement of livestock throughout the site;
- Access via three (3) crossovers on Shorts Road only. No access is proposed from Biloela Callide Road;
- Screening (vegetation buffer) to where the development interfaces with Biloela Callide Road;
- 10m wide bushfire/access buffer provided to the entire perimeter of the development footprint;
- Buffers to the watercourse and drainage lines to ensure they are not impacted by development.

The benefit of the proposal is it will deliver renewable energy into the grid while maintaining an ongoing and viable grazing activity on the subject site. As discussed in the report, the combination of these land uses will facilitate employment through the construction of the solar farm and additional employment through the ongoing use of the site for sheep grazing.

The solar farm is proposed to be connected to the grid via the transmission line corridor that traverses the site. The final form of the connection is being discussed with Powerlink. The benefit of the development is its proximity to the Callide Power Station, where renewable energy from the solar farm can be delivered into the grid alongside the power from the power station.

This development application is to be assessed against superseded planning scheme, being the *2005 Banana Planning Scheme* as agreed by Council on 20 July 2022.

Under the former *2005 Banana Planning Scheme*, the subject site is located within the Rural Zone. In accordance with the Tables of Assessment, this proposal is subject to **Impact Assessment**, in which public notification will be required.

This application has been assessed against Schedule 10 of the *Planning Regulation 2017* and the application triggers referral to the State Assessment Referral Agency (SARA) as a result of the site's proximity to a state-controlled road and railway. The site also contains electrical infrastructure whereby the application will be referred to Powerlink as an advice agency.

This report provides greater detail on the nature of the proposal and provides an assessment of the proposal against the intents and code requirements of relevant statutory planning documents. Technical issues associated with the proposal are addressed in appended technical reports.

Based on these assessments the proposal is recommended for approval subject to reasonable and relevant conditions.

2 SITE DETAILS

2.1 Site Particulars

Key details of the subject site are as follows:

Table 2: Site Particulars

Site Particulars	
Site Address	551 & 641 Biloela Callide Road and Lot 28 Shorts Road, Mount Murchison QLD 4715
Real Property Description	Lot 154 on SP126053, Lot 2 on RP619032, Lot 28 on RN519 and Lot 3 on RP608599
Site Area	515.364 ha
Landowner(s)	Pamela Jensen & Craig Jensen

The site location and its extent are shown in **Figure 1** and **Figure 2**.

Certificates of title confirming site ownership details are included at **Appendix C**.

2.2 Planning Context

The planning context of the site includes the following:

Table 3: Planning Context

Instrument	Designation
Central Queensland Regional Plan 2013	
Regional Plan Designation	Priority Agricultural Area
2005 Banana Planning Scheme (Superseded Planning Scheme)	
Zoning	Rural
Overlays	<ul style="list-style-type: none"> • Agricultural Land Class <ul style="list-style-type: none"> – A – Crop land – Suitable for rainfed cropping and broadacre crops with irrigation • Bushfire Prone Land <ul style="list-style-type: none"> – Low bushfire severity • Gas, Power and Plant Refuse <ul style="list-style-type: none"> – 132kV power lines

Zoning of the subject site and surrounding lands is shown on **Figure 3**

Other relevant mapping, including overlays, regional plan and state interests is provided at **Appendix C**.

2.3 Site Characteristics

Site inspection and searches of local and state government records indicate that key site characteristics include:

Table 4: Site Characteristics

Site Features	Details
Existing use of site	Rural/agricultural land and rural residential dwellings
Topography	The land gradually falls from north to south
Vegetation	Due to the rural nature of the site, vegetation is scattered throughout. Of note is protected vegetation, along the eastern boundary.
Road Frontages and Length (approx.)	<ul style="list-style-type: none"> • Biloela Callide Road: 1.65 km • Shorts Road: 1.05 km
Services	It is assumed that services are present where the residential dwellings are currently sited.
Waterways	The site contains one (1) watercourse/drainage line that is mapped as regulated vegetation along the eastern boundary of the site. Additionally, the site contains a number of Council mapped drainage lines running through the site.
Infrastructure	The site is currently traversed by a transmission line easement.
Heritage Values	No heritage values have been identified for the site
DA Mapping	<ul style="list-style-type: none"> • Fish Habitat Areas <ul style="list-style-type: none"> – Queensland waterways for water barrier works <ul style="list-style-type: none"> ○ Moderate • Water Resources <ul style="list-style-type: none"> – Water resource planning area boundaries • State Transport Corridor <ul style="list-style-type: none"> – Area within 25m of a State-controlled road – Area within 25m of a railway corridor
Other	<ul style="list-style-type: none"> • Electricity Infrastructure <ul style="list-style-type: none"> – Powerlink easement
SPP Mapping	<ul style="list-style-type: none"> • Agriculture <ul style="list-style-type: none"> – Important agricultural areas – Agricultural land classification – class A and B – Stock route network • Biodiversity <ul style="list-style-type: none"> – MSES – Regulated vegetation (Category R) – MSES – Regulated vegetation (intersecting a watercourse) • Natural Hazards, Risk and Resilience <ul style="list-style-type: none"> – Flood hazard area – Level 1 – Queensland floodplain assessment overlay – Bushfire prone area

2.4 Surrounding Land Uses

Immediately surrounding land uses comprise the following.

Table 5: Surrounding Uses

Direction	Commentary
North	Immediately north of the site is the Moura System railway line. Further north is rural land.
East	East of the site is the Callide Power Station and Callide Coal mine
South	Immediately south of the site is Biloela Callide Road. Further south are rural residential properties.
West	West of the site are rural residential properties/agricultural land.

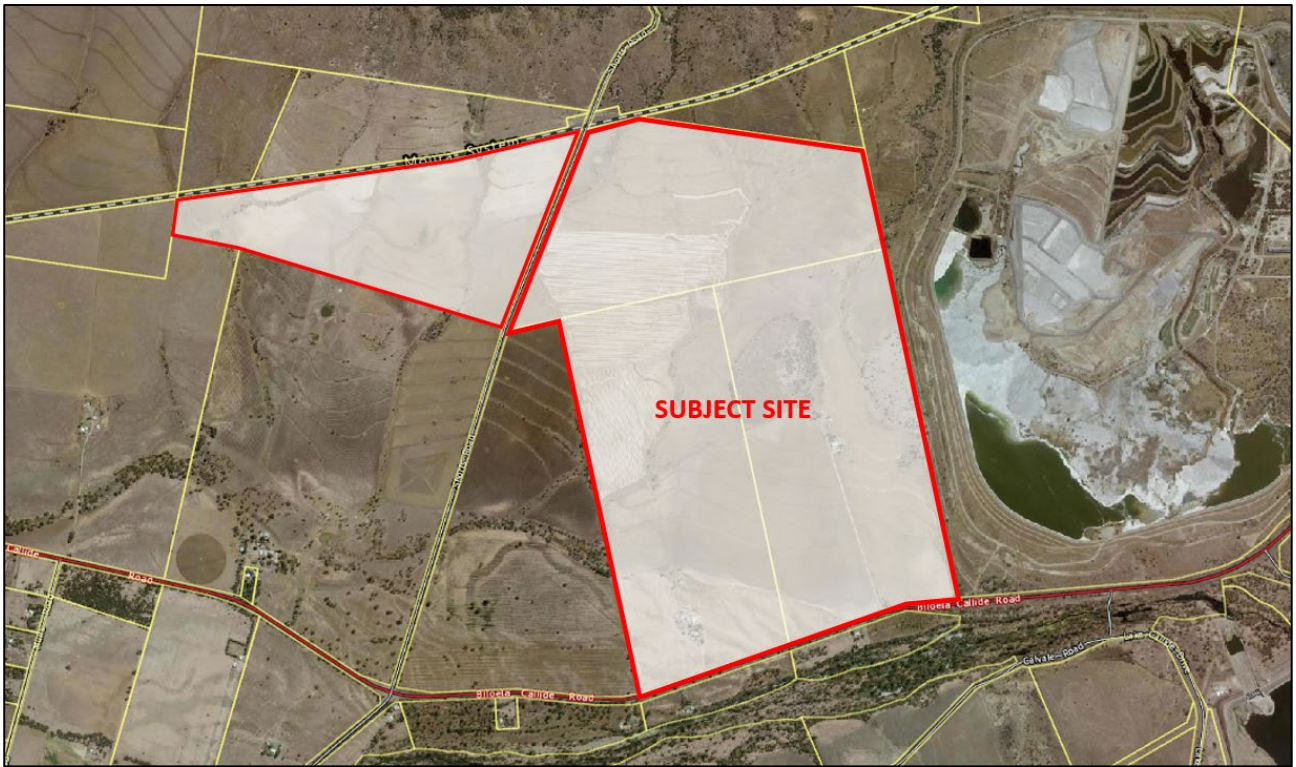


Figure 1 – Aerial Imagery

3 PRE-LODGE MENT HISTORY

3.1 Local Authority Pre-Lodgement Meeting

A pre-lodgement meeting with Banana Shire Council was held on 08 February 2022. A summary of the key items discussed, and how the proposal responds is outlined below.

Table 6: Council Pre-lodgement Meeting Outcomes

Issues discussed	Outcome / response
<p>Land Use</p> <ul style="list-style-type: none"> Proposal is for a co-use application being animal husbandry (for sheep grazing) and public facility – other (for solar PV and battery energy storage). There are potential economic benefits associated with the agricultural use (sheep grazing). Edify does not intend to challenge the land or soil classifications, rather present a proposal to use the land for another agricultural use (sheep grazing) to be located with a renewable energy facility. 	<p>The proposed development is for the co-existence of a renewable energy facility and sheep grazing activity to ensure ongoing use and agricultural value of the land and maximise economic benefits for both uses.</p>
<p>Flood Overlay</p> <ul style="list-style-type: none"> Edify intends to avoid flood overlay area with the development layout designed to exclude the south-western corner from the development footprint. 	<p>As illustrated in the Proposal Plan (Appendix D), the proposed solar farm and grazing activity will be located outside of the flood prone portion of the site.</p>
<p>Visual Impacts</p> <ul style="list-style-type: none"> Edify should consider implementing vegetation buffers to reduce potential visual impacts on adjoining residences 	<p>The proposed development layout includes a vegetation buffer of up to 10m to the southern property boundary, which interfaces with Biloela Callide Road, as recommended by the LC VIA. This will provide a visual buffer for landowners located to the south of Biloela Callide Road and users of the road. Note, the vegetation buffer will not run along the entirety of the southern boundary given the flood area which is to remain undeveloped and provide significant separation between the proposal and nearby residential uses.</p> <p>This vegetation will also be planted at a density with an intention to obscure views of what will be the back of the PV panels.</p> <p>Refer to Appendix D – Proposal Plan and Appendix G – LC VIA</p>
<p>Traffic</p> <ul style="list-style-type: none"> The intersection between Shorts Road and Biloela Callide Road is a State matter with advice to be provided by DTMR/SARA. 	<p>Pre-lodgement advice was sought from SARA and DTMR. Outcomes of the meeting included the requirement of a brief assessment of the intersection between Biloela Callide Road and Shorts Road, which forms part of the Traffic Impact Assessment provided in Appendix E.</p> <p>The traffic report has not required any significant works to this intersection as a result of the renewable energy or grazing activities.</p>
<p>Community Engagement</p> <ul style="list-style-type: none"> A community engagement plan/strategy is strongly recommended 	<p>Edify Energy have already engaged with neighbours and landowners within 1.5km of the project. Further to this a Community Engagement Plan has been developed for this proposal and is attached in Appendix H.</p>

3.2 Referral Agency Pre-lodgement Meeting

A pre-lodgement meeting with the State Assessment and Referral Agency (SARA) was held on 30 August 2022. A summary of the key items discussed, is outlined below.

- The applicant confirmed the majority of the mapped site will be predominantly for solar panels for the renewable energy facility.
- The applicant confirmed the existing driveway will be removed and solar panels will be built over this space, the existing dwelling will also be removed.
- The applicant confirmed all construction and operations traffic will travel via Shorts Road, relieving any additional traffic along Biloela Callide Road.
- The Department of Transport and Main Roads (DTMR) noted the daily traffic volumes along the Biloela Callide Road was relatively low and the proposed development was not considered to impose a negative long-term impact upon the daily traffic volumes. This position was based on the understanding the bulk of the traffic would occur during construction of the development and the operational traffic volume would be limited to maintenance activities.
- The proposed buffers to the north of the site were considered to be appropriate for the railway line and no major concerns were raised.
- The applicant noted potential glare issues for trains travelling along the railway line as a result of the solar panels. DTMR advised that they haven't previously experienced any issues with previous applications and/or assessments involving the solar panels causing visual issues. It was also noted to DTMR the intent of the panels is to absorb light.
- DTMR will require a brief assessment of the intersection involving Biloela Callide Road and Shorts Road. This has been completed and included in the traffic impact assessment.
- Applicant confirmed that the drainage runoff will remain untouched in keeping with the natural drainage.
- It was confirmed the application will require referral to SARA under the following provisions of the *Planning Regulation 2017*:
 - Schedule 10, Part 9, Division 4, Subdivision 2, Table 4, Item 1 – State transport corridor
- It was confirmed the application does not require referral to SARA for clearing native vegetation under schedule 10, part 3 of the *Planning Regulation 2017* as clearing is not assessable development and will not result in accepted operational work being carried out.

4 PROPOSAL

4.1 Overview

The proposal seeks to develop an integrated renewable energy project that will facilitate the ongoing agricultural use of the land through co-locating sheep grazing within a solar power and energy storage footprint. This proposal represents the best use of the site as it will facilitate an agricultural use of the land while also facilitating the generation of renewable energy.

The benefits arising from the co-location of these uses include:

- The introduction of sheep grazing will expand the sheep grazing industry in the region. This growth will result in direct and indirect economic benefits through the grazing itself, farm jobs and growth in the production of sheep meat;
- The sheep grazing on the site also benefit from the solar farm activity. Existing projects of this nature have seen:
 - The sheep growth rate and fertility should be higher under the solar panels compared to the direct sunlight, due to the abundant shade and lower temperatures;
 - The shading effect of solar panels creates a micro-climate under the panels with differences in air temperature, humidity, wind speed and soil moisture. This leads to higher water efficiency and soil moisture retention which will help with pasture production for the sheep;
 - Increased sheep stock and health will ensure a better product for farmers, resulting in lower mortality rates and increased profit potential. The benefits will follow on through to butchers and customers who can sell and experience quality meat; and
 - Controlled grazing of the sheep will reduce the risk of fire and reduce the cost of slashing, which in turn lowers the operational cost of the project and supports the provision of low-cost electricity supply.
- Sheep grazing will contribute to the agricultural sustainability of the site. The site is currently used for dryland cropping where parts of or all of the cultivation land is fallowed, leaving the ground bare. The impact of this is that the soil is prone to erosion from being exposed to both wind and water. Altering the land use to a pasture based farming system will lead to a reduction in water and soil run-off from the property.
- Continuous dryland cropping activities often decreases soil organic carbon levels. Transitioning to a pasture based activity will ensure that the soil organic carbon level can gradually improve over time, thus preserving the long term agricultural value of the site.

Further details of the proposal are provided below.

4.1.1 Development Footprint

The proposed development will have a total footprint of 406.49 hectares. This includes area for solar arrays, livestock grazing and ancillary infrastructure (e.g., BESS, substation, laydown area). The following table provides a summary of the proposed development footprint.

Table 7: Development Summary

Aspect	Area
Solar Array & Livestock Area	400.89 ha
BESS/Site Office/Substation/Laydown Area	5.6 ha
Total	406.49 ha

A number of site constraints have been identified for the subject site. How the design of the development footprint responds to each is outlined below.

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As illustrated in Appendix D, the proposal plan has illustrated those areas of the site that are deemed to be 'no go' areas. This includes areas such as waterways, areas of remnant vegetation and flood prone areas. The development footprint for the array is therefore contained in the balance of the site.

The final alignment of the PV panels in the array and location of the electrical equipment within the site will be determined in the detailed design and procurement phase of the project. This more detailed layout can be provided once the detailed design phase has been completed and conditioned accordingly.

Vegetation & Watercourses

The subject site contains one (1) watercourse/drainage line that is mapped as *Category R* regulated vegetation along the eastern boundary of the site (specifically Lot 2 on RP619032). In response to this, the development will provide a 100m wide buffer from the centreline of the watercourse/drainage line. The site also contains a number of Council mapped drainage lines that run throughout the lots. In this instance a 4m buffer from the centreline is proposed and will be 'no-go' zones for the development. These buffers are considered to be acceptable for this form of development, with no additional buffering warranted.

Flooding

The southwest corner of the site is mapped as subject to flooding. The extent of the flood affected area has been identified and purposely kept free of development, to ensure the hazard is mitigated. This area will also act as a separation buffer between the development and nearby lots/Biloela Callide Road, thus reducing the amount of visual impact buffering required.

Electrical Easement

The site is encumbered by Powerlink's transmissions lines and the associated easement. Naturally, this area has been kept clear of all development.

Refer to Appendix D for further detail.

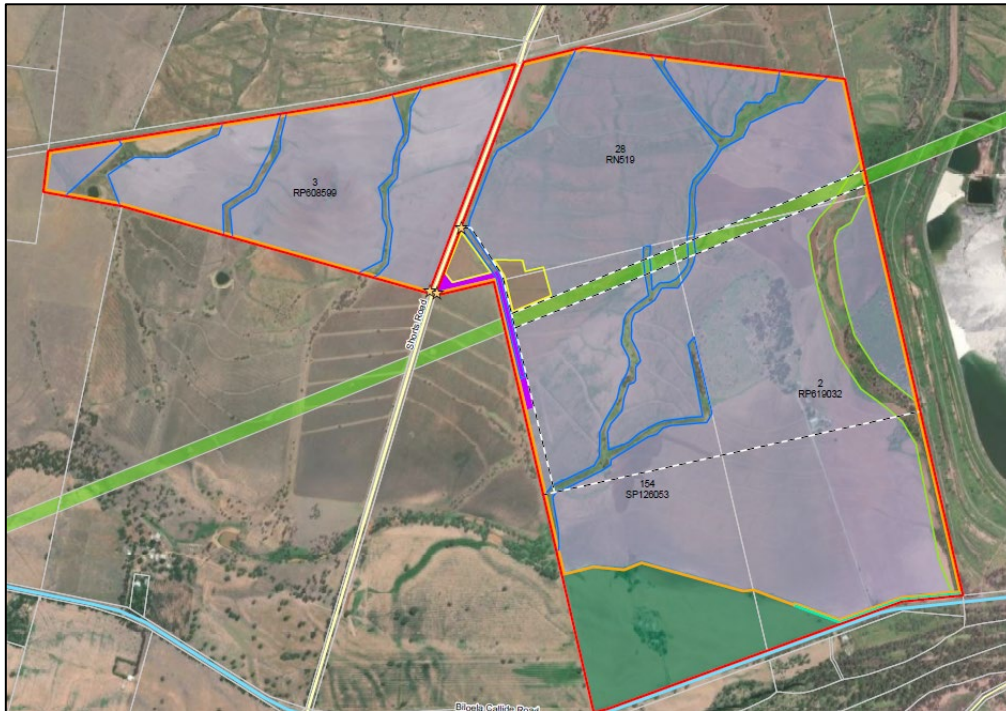


Figure 4 – Proposed Development Footprint

4.2 Solar Generation and Battery Energy Storage

The proposed development will establish a 200MW Solar Photovoltaic (PV) Farm with a development footprint of approximately 406 hectares across the landholding. It is expected that the development will provide power to the broader Banana Shire and Central Queensland region. The development will also involve supporting facilities such as site office, substation, laydown area, 200MW/800MWh Battery Energy Storage System (BESS), fencing, access tracks and other ancillary equipment.

More specifically, components of the project would include:

- Photo Voltaic (PV) panels mounted on single axis trackers to follow the sun from east to west. The panels are expected to be of a maximum height in the order of 4.2m.
- Inverters and integrated transformers
- Central 33 kV switchboard (ring main unit)
- Battery energy storage system (BESS) units comprising sealed lithium ion. The batteries would be contained in cabinets with a height of up to 3.0m.
- High voltage (HV) substation
- Prefabricated operations and maintenance (O&M) building.
- Gravel car parking area for construction and then operational staff parking
- Internal access tracks (approximately 4.0m wide)
- Perimeter security fencing
- Fencing associated with the grazing of sheep.

The proposed BESS component will store excess energy generated by the solar farm and support the grid by providing power to the grid in peak periods of demand or when there is a lack of energy generation. The final form and design of the BESS will be determined through the procurement phase of the project.

The panels will be mounted on single-axis trackers to follow the sun to maximise the generation of energy. These tracker systems are suitable for the grazing proposed and will provide opportunities to shade livestock in the hotter parts of the day.

Being located next to the Callide Power Station, the solar and energy storage facility will be able to maximise its access to the grid and its ability to export renewable energy into the power system. It is for this reason the site is ideally suited to the development of a renewable energy development.

4.2.1 Operational Life

The proposed solar and energy storage component will have an operational lifespan of approximately 30 years which would be facilitated through a lease arrangement with the landowner with the possibility of a further extension.

At the conclusion of the lease, the solar and energy storage facility will be decommissioned with the land returned to its original agricultural state to allow the continuation of grazing or future cropping activities. The establishment of a lease will be facilitated via a separate development application.

4.2.2 Construction

Due to the modularity of the solar array and BESS component, minimal heavy machinery is anticipated for the construction of the solar farm. This ensures the construction period will be conducted with minimal disturbance, limiting any impacts on amenity.

The construction of the solar farm will generally require:

- Site survey, inspection, and mobilisation
- Minimal site clearing, leveling and compacting (mostly localised to the hardstand areas of the development)

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- Temporary laydown area for equipment and shipping containers
- Staggered delivery of equipment and material throughout the construction period
- Mechanical installation of the PV modules
- Trenching for underground cabling and footings
- Installation of electrical cabling, inverters, junction boxes and other associated electrical equipment
- Preparation and installation of high voltage transformer(s).
- Construction and installation of new on-site substation
- Construction and installation of battery energy for future storage capabilities
- Commissioning and testing of the facility.

4.2.2.1 Hours of Construction

It is assumed that most construction activities will be undertaken during daylight hours, between 6:00am and 6:00pm, Monday to Saturday. No work will occur on Sundays and public holidays. As there is minimal requirement for access during the ongoing operation of the facility, access during this period will likely be weekday business hours only.

4.2.2.2 Workforce

At its peak, construction of the solar facility would have a maximum peak of 250 staff on-site. The supply of staff would be based on the availability of project staff, supplemented by experienced local workers.

4.2.3 Staging

The renewable energy component of the development will be divided into the following stages:

- **Stage A** – 200MW Solar PV Farm and ancillary office and substation
- **Stage B** – 200MW/800MWh Battery Energy Storage System

The designation of each stage is for information purposes only and to allow flexibility for their delivery in a non-sequential order or concurrently to each other.

4.3 Sheep Grazing

At present, agricultural investigations indicate the land is capable of accommodating up to 1,000 head of sheep. However, the proposed development intends to initially house up to 49 sheep, as a means of pilot testing its co-location with the solar facility. Should this prove successful, it is envisaged the number of sheep will gradually increase up to approximately 1,000 head.

The intention for the project is to sustainably maximise the head of sheep on the land to continue the agricultural use of the site, albeit a different type of agricultural activity to that currently operated.

Sheep grazing has been proven to be one of the most compatible livestock when grazing around a solar farm, and investigations by Edify Energy have identified that Dorper sheep are being grazed in the region.

Dorper sheep are determined to be the best agricultural enterprise suited to this type of development due to the following reasons:

- Machinery and equipment required to continue broadacre cropping is not compatible with the design and operation of a solar farm.
- Extensive livestock production is less intensive. However, cattle are too large and may damage solar panels.
- Sheep will be able to graze under the solar panels without disrupting the solar farm operations or damage to the infrastructure. For this reason, they are most suited to be co-located with a solar farm facility.

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As previously outlined in this report, there are mutual benefits for the co-location of sheep grazing and solar farm activities including:

- Higher growth rate and fertility of the sheep
- Soil improvement created by shading effects of the panels to the ground below
- Reduction of fire risk through controlled grazing

As demonstrated above, to introduce sheep grazing into the project is considered both a positive outcome of the project and the growth of the sheep grazing industry in the region.

4.4 Traffic Impact Assessment

A Traffic Impact Assessment was conducted by Northern Consulting Engineers for the proposed development. Key findings of the assessment are provided below:

- A SIDRA analysis found that the existing intersection configuration will be adequate in all cases including the expected year of the end of construction and the end of the operational design horizon.
- An intersection warrant assessment was completed for the turn movements from Biloela Callide Road into Shorts Road only. This assessment found that a basic left turn (BAL) treatment configuration is required onto Shorts Road. No upgrades to the existing right turn treatment are required.
- The current intersection provides adequate stopping sight distance for the Biloela Callide Road east and west approaches and the Shorts Road approach.
- The current major road approaches for Biloela Callide Road do not provide adequate safe intersection sight distance. This can be mitigated by providing adequate signage warning of the approaching intersection.
- A swept path assessment for a design vehicle of 19m prime mover and semi-trailer turning left into and right out of Shorts Road has been completed. The assessment indicates a widening at the internal left corner is required.
- Shorts Road profile (crossfall) is recommended to be improved by importing suitable gravel overlay material.
- Improvement in some aspects of the drainage and potential increased maintenance during the construction period would assist in limiting or eliminating surface erosion through runoff scouring and reduce soaking of subgrades leading to formal rutting and shoving in the few locations observed.

The findings of the traffic assessment can be imposed as conditions of the approval.

Refer to **Appendix E** for further details.

4.5 Surface Water and Flood Impact Assessment

A Surface Water and Flood Impact Assessment has been prepared by Civil IQ for the proposed development. Findings of the assessment are detailed below.

4.5.1 Site Conditions

The fall of the site is generally from north to south, with a level of 230m AHD to the north and approximately 180m AHD to the south. Several low points and gullies are located through the site with a stream order 1 watercourse located to east of the site, directly adjacent to the Callide Power Station. There are several small farm dams located upstream and downstream within the vicinity of the site and numerous contour bank features within the proposed development footprint.

4.5.2 Flooding

Flood hazard results within drainage lines and watercourses are typically contained within the nominated watercourse buffer zones throughout. There are isolated occurrences where the flood hazards exceed a H2 level (unsafe for small vehicles), however, this is associated with the existing contour banks where

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concentrated sheet flows increase in depth locally. These contour banks are man-made and currently exist from historical farming. Modifications to the contour banks (via earthworks) during the design stage are likely to resolve localised flooding hazards.

4.5.3 Stormwater Quantity

There is an overall negligible hydrologic impact associated with the solar arrays in the 1% AEP event upon discharge to the downstream receiving environment. It has been confirmed that solar arrays do not have a significant impact to run off volumes, peaks, or times to peak, when associated with good vegetative ground cover.

With regards to the laydown area, diversion channels and bunds will be required to convey the external 1% AEP flows away from the area and discharge to the downstream watercourse.

4.5.4 Stormwater Quality

No stormwater quality treatment measures are associated with the solar farm development area. The effective impervious area of the solar panel arrays and the at-grade access roads is insignificant and does not impact surface flows and infiltration.

The incorporation of a treatment train approach to the laydown area is recommended in achieving stormwater quality objectives and will be developed at future design stages.

4.5.5 Erosion and Sediment Control

A detailed Erosion and Sediment Control Plan (ESCP) will be required prior to the commencement of construction once detailed design for the site has been undertaken.

Refer to **Appendix F** for further details.

4.6 Landscape Character and Visual Impact Assessment

A Landscape Character and Visual Impact Assessment (LCVIA) has been prepared by Accent Environmental and is found in **Appendix G**. Key findings of the assessment are detailed below.

4.6.1 Landscape Character Assessment

The dominant character of the surrounding area is a rural undulating landscape characterised by a patchwork of extensive agricultural land, pastureland, extractive industries, and sparsely vegetated slopes.

The landscape which hosts the solar farm is an undesignated landscape with some distinctive landscape characteristics. There are several landscape detractors (including power station infrastructure, mining impacted land, transmission lines and towers). The landscape has a moderate ability to absorb change. As such the landscape receptor has limited sensitivity to disturbance or change in character due to the development.

4.6.2 Visual Impact Assessment

Specific mitigation measures to reduce the visual impacts are necessary for various portions of the proposed development, particularly for existing residential receptors. In addition to the impacts on residential receptors, the Moderate visual impact upon road users along Biloela-Callide Road would also benefit from mitigation efforts.

The following general project objectives aim to maintain the existing landscape character where possible, via strategic and practical measures:

- Adopt integrated rural infrastructure/landscape design that permits the landscape to take precedence over the built form.
- Strengthen the vegetated character of the proposal area and express the rural and bushland nature of landscaping.

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- Design lighting so as not to negatively impact on adjacent land uses and to be compliant with Standard AS/NZS 4284:2019 Control of the obtrusive effects of outdoor lighting (e.g. no light spill into adjacent rural properties affecting residences).

The following landscape design principles would be applied to the proposal:

- Maximise the retention of existing visual screening opportunities.
- Revegetate areas disturbed by construction work, where possible.
- When revegetating, consider the potential to reflect similar vegetation types found in the area.
- Use materials and colours that reflect the existing urban design character and palette.

An example of the interface and proposed vegetated screening (at maturity) is provided in Figure 5

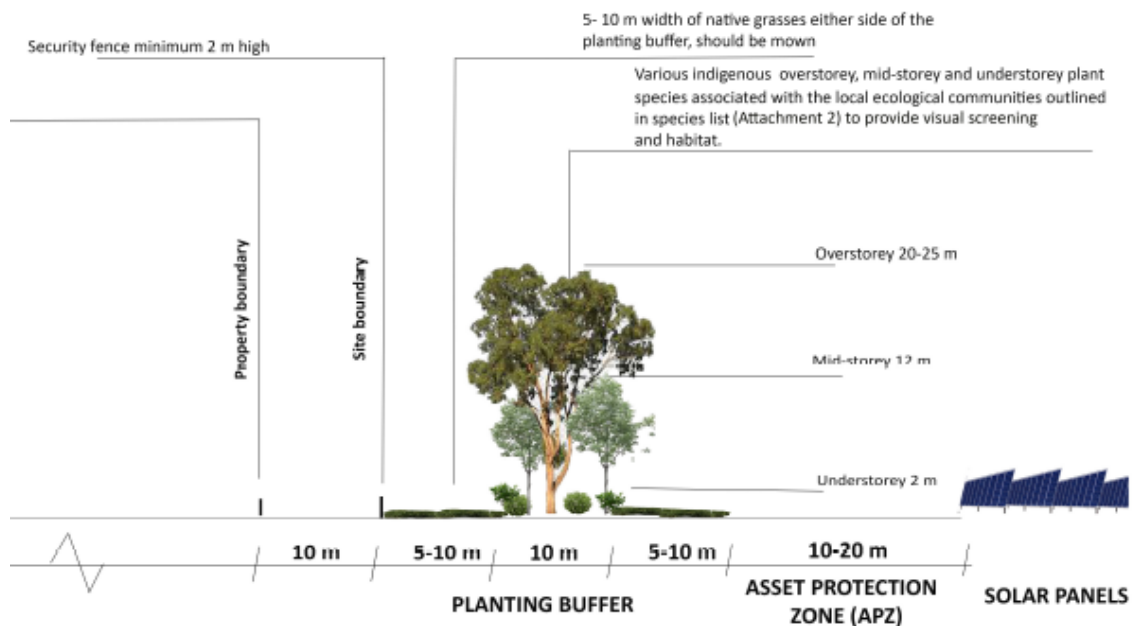


Figure 5 - Cross section of vegetation screening

4.7 Community Engagement Plan

A Community Engagement Plan has been prepared by RPS for the proposed development. A summary of previous and future community engagement is provided below.

4.7.1 Consultation to Date

In the preparations and assessments of the feasibility of the project, extensive consultation has been undertaken with the owner of the land parcels where the project is being proposed. The landowner initially conducted some engagement with neighbouring property owners and presented the concept of the project to Council. Edify Energy continue to engage directly with the landowner of the proposed site however since 2020, have lead stakeholder and community consultation for the project, and will continue to do so.

In January 2020, representatives from Edify Energy and RPS (consulting firm engaged by Edify Energy to complete project planning works) met with approximately six adjacent landowners about the concept for project, the opportunities it provides and the anticipated scope.

Since then, Edify Energy and RPS continuously engaged with landowners over the past 2 years, including in May 2022, where the project team undertook targeted engagement activities with neighbours within 1.5km of the project site and a follow up meeting with Banana Shire Council.

It is proposed to facilitate broader community engagement activities later in 2023.

4.7.2 Further Consultation

All stakeholders during the early engagement phase were informed the project would proceed to the lodgement of an application to Council to submit for a Development Approval, expected in late 2022.

The next phase of community engagement is planned for early to mid-2023 and will involve re-engaging with the project neighbours and consulting with the broader community of Biloela and surrounds.

Edify Energy is committed to keeping landowners and the community informed as project planning progresses.

Refer to **Appendix H** for further details.

5 KEY PLANNING ISSUES

Key planning issues identified for the proposed development are addressed within this section of the report.

5.1 Planning Scheme

Banana Shire Council has agreed for the assessment of this development application be carried out against the superseded *2005 Banana Shire Planning Scheme* as opposed to the current *Banana Shire Planning Scheme 2021* which was adopted 01 July 2022.

The reason for adopting the superseded scheme is that it provides the most appropriate framework for assessing an application that seeks to integrate sheep grazing with a solar farm project. It is recognised the current Planning Scheme includes the definition of ‘*renewable energy facility*’, however, it only considers the preservation of agricultural land in the context of cropping rather than the overall agricultural capacity of the site. This means the current planning scheme provides a restrictive view on the agricultural uses that can reasonably occur on the subject site.

However, the superseded planning scheme refers to ‘agriculture’ more broadly and therefore provides a more appropriate framework for a merits-based assessment to be undertaken and for Council to properly consider this proposal for the generation of renewable energy to be co-located with a **viable** agricultural use on the site. This is demonstrated through a comparison of the intent of the Agricultural Overlay for both planning schemes.

5.1.1 Agricultural Overlay

Further to the above, the following table provides a comparison of the intent for the agricultural overlay for the superseded and current planning scheme.

Table 8: Planning Scheme Comparison

Agricultural Overlay Intent		
	2005 Banana Planning Scheme (Superseded)	Banana Shire Planning Scheme 2021
Intent of Agricultural Land Overlay	<p><i>The overall outcomes sought for the Agricultural Land Overlay are:</i></p> <ul style="list-style-type: none"> <i>(i) Agricultural, intensive agriculture and animal husbandry that continue to make a significant contribution to the Shire’s economy, are sited on land appropriate capability and suitability and are dominant land uses in the overlay area.</i> <i>(ii) All productive agricultural land is protected from the encroachment of incompatible uses and from excessive fragmentation into lot sizes that are not viable for agriculture.</i> <i>(iii) Incompatible non-rural uses are excluded from the overlay area to protect their amenity, and particularly to protect against the effects of aerial spraying; and other impacts as a result of intensive cropping.</i> <i>(iv) Houses are the only exception to 2above, provided that the houses are located such as to minimise the potential conflicts with agricultural activities.</i> 	<p><i>Agricultural land:</i></p> <ul style="list-style-type: none"> <i>(A) The productive viability of agricultural land is not reduced due to the intrusion of incompatible land uses or unnecessary fragmentation of alienation;</i> <i>(B) Development is compatible with the viability, integrity, operation and maintenance of the stock route network.</i>

As outlined in the above table, the intent of the superseded Agricultural Land Overlay provides greater consideration to the broader agricultural uses on the site, which can include ‘grazing’. In contrast, the intent of the agricultural land overlay of the current planning scheme, when read in conjunction with the balance of the planning scheme, takes a more restrictive interpretation and refers to crops on the agricultural land.

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More specifically, the Performance Outcome 1 of the Agricultural Land Overlay of the superseded planning scheme allows an application to demonstrate the suitability of a non-agricultural use to be located on the site where it allows the site to sustain a viable agricultural purpose. This is opposed to the Performance Outcome (PO41) of the current planning scheme which seeks to ensure non-agricultural purposes do not constrain agricultural land from being used for crops.

In doing so, the new PO makes it difficult for Council to consider alternative agricultural uses that are not crops, and yet are still viable agricultural use of the land. While this strict interpretation may not be Council's intention, it provides a limitation on Council to reasonably consider uses such as grazing on the subject site.

Lodging under the superseded planning scheme, when having regard to the intent of the strategic framework and the agricultural overlay matters, provides Council with greater ability to consider the development when co-located with an agricultural co-use (e.g. sheep grazing).

Recent approval from Banana Shire Council to allow this application to be assessed under the superseded planning scheme, shows there is an understanding the planning controls within the superseded planning scheme provide a clearer direction for Council to assess the proposed development than under the current planning scheme.

5.2 Sheep Quantity

The proposed development will involve the 'Animal Husbandry' land use. Under the *2005 Banana Planning Scheme*, a maximum of 49 head of sheep are permitted under the threshold for Animal Husbandry. A higher sheep count would result in the requirement to apply for the 'Intensive Animal Husbandry' land use.

The reason why animal husbandry is sought over intensive animal husbandry is to allow Edify to 'pilot test' the co-location of the solar and energy storage facility and the sheep grazing. While there is reason to suggest that the co-existence of these land uses can occur, the practical applicability of it (with context to the subject site) is yet to be determined. It is Edify's intention to start with up to 49 sheep, with the view to expand to at least 1,000 sheep should the benefits of the co-existence start to show.

Increasing the sheep count to 1,000 head **will not** require a new application or a change to the permit being sought by this application. In accordance with the current *Banana Shire Planning Scheme 2021*, there are no restrictions on the number of livestock permitted under the 'Animal Husbandry' land use definition. Furthermore, the Tables of Assessment prescribe Accepted Development for Animal Husbandry within the Rural Zone. Therefore, the increase of sheep would be compliant with the current planning scheme and not require development approval.

6 LEGISLATIVE REQUIREMENTS

6.1 Assessment Manager

In accordance with Schedule 8 of the *Planning Regulation 2017*, the assessment manager for this application is Banana Shire Council.

6.2 Superseded Planning Scheme

In accordance with Section 29 of the *Planning Act 2016*, a request was made to Banana Shire Council to assess this development application under Council's superseded planning scheme being the *2005 Banana Planning Scheme*. This request was agreed to by Council on 20 July 2022.

It is a requirement for any application made against a superseded planning scheme to be lodged within 6 months after Council has agreed to a request. Therefore, the applicant has until 20 January 2023 to lodge an application.

Accordingly, this application has been lodged within the prescribed timeframe and remains subject to the provisions of Council's superseded *2005 Banana Planning Scheme*.

6.3 Categories of Assessment

The table below summarises the categorising instruments and categories of assessment applicable to this application.

Table 9: Categories of Assessment

Aspect of development	Categorising instrument	Category of assessment
Development Permit for Material Change of Use for Public Facility – Other (Solar PV & Battery Energy Storage System Facility)	<i>2005 Banana Planning Scheme</i>	Impact
Development Permit for Material Change of Use for Animal Husbandry	<i>2005 Banana Planning Scheme</i>	No Change
Overlays	<i>2005 Banana Planning Scheme</i>	No Change

This application requires public notification as it triggers Impact Assessment.

6.4 Referrals

In accordance with Schedule 10 of the *Planning Regulation 2017*, the follow referrals apply.

Table 10: Schedule 10 Referral Matters

Schedule 10	Referral topic and reason	Referral Agency
10.9.4.2.4	Material Change of use near a State transport corridor or a future State transport corridor	The Chief Executive (SARA)
10.9.2.2	Material Change of use near a substation site or subject to an electricity easement	Powerlink (Advice only)

7 STATUTORY PLANNING ASSESSMENT

7.1 Overview

This section assesses the application against relevant assessment benchmarks.

As this application is subject to impact assessment, the assessment benchmarks, and the matters the assessment manager must have regard to, are those identified in section 45(5) of the *Planning Act 2016* and sections 30 and 31 of the *Planning Regulation 2017*.

As Banana Shire Council is the assessment manager, the relevant local authority categorising instrument is the superseded *2005 Banana Planning Scheme* (Planning Scheme) as agreed to by Council.

7.2 State and Regional Assessment Benchmarks

7.2.1 Regional Plan

Section 30(2)(a)(i) of the *Planning Regulation 2017* requires that the impact assessment of the application must be carried out against the assessment benchmarks stated in the regional plan, to the extent the Regional Plan is not identified in the planning scheme as being appropriately integrated.

The subject site is within the Priority Agricultural Area of the *Central Queensland Regional Plan 2013*. The intent of this area is to protect Priority Agricultural Land Uses whilst supporting co-existence opportunities for the resources sector and provide certainty for the future growth of towns.

As previously mentioned, the proposed development seeks to provide an integrated renewable energy project that will facilitate the ongoing agricultural use of the land through co-locating sheep grazing within the solar and energy storage footprint.

Whilst renewable energy is not considered as part of the resources sector, Council should consider that co-existence of agricultural uses with renewable energy activities provides for a better outcome, in that impacts to the agricultural value of the land is less than that caused by resource activities. Furthermore, as outlined in Section 4.4, it has been proven the proposed co-location provides benefits for both the renewable energy use and agricultural activities.

Given the purpose of this development is to provide a land use that contributes to the sustainable generation of energy while complimenting the agricultural value of land (via co-location), it is submitted the proposed development is compliant with the *Central Queensland Regional Plan 2013*.

7.2.2 State Planning Policy

Section 30(2)(a)(ii) of the *Planning Regulation 2017* requires the impact assessment of this application must be carried out against the assessment benchmarks stated in the State Planning Policy, Part E, to the extent Part E of the State Planning Policy is not identified in the planning scheme as being appropriately integrated into the planning scheme.

This application is being assessed under the superseded *2005 Banana Planning Scheme* which does not integrate the current State Planning Policies (SPP). Accordingly, an assessment against the relevant SPP (based on SPP mapping for the site) has been addressed in Table 11.

Table 11: State Planning Policy Assessment

Economic Growth	
Agriculture	
(1) <i>Agriculture and agricultural development opportunities are promoted and enhanced in important agricultural areas (IAAs).</i>	<p>Complies</p> <p>The proposed development is to incorporate sheep grazing activities within the electricity generation infrastructure. This ensures the agricultural value of the land is protected and maintained, whilst deriving the highest economic value from the land while the solar and energy storage facility is in operation.</p>
(2) <i>Agricultural Land Classification (ALC) Class A and Class B land is protected for sustainable agricultural use by:</i>	
(a) <i>avoiding fragmentation of ALC Class A or Class B land into lot sizes inconsistent with the current or potential use of the land for agriculture</i>	<p>Complies</p> <p>The development does not involve an ROL that would create lot sizes not sufficient for agricultural use.</p>
(b) <i>avoiding development that will have an irreversible impact on, or adjacent to, ALC Class A or Class B land</i>	<p>Furthermore, the site is located on the eastern edge of Mapped GQAL Class A land. The proposed development is to incorporate sheep grazing activities within the electricity generation infrastructure. This ensures the agricultural value of the land is protected and maintained, whilst deriving the highest economic value from the land while the solar and energy storage facility is in operation.</p> <p>In addition, the current owners of the land believe that the quality of the soils on the property have been declining over time which is causing a reduction in crop yields. This notion of declining soil is supported by sample extracts from 2000 and 2018 which show a reduction in the soil organic carbon level. This trend observed by the owners is largely in line with similar soils in other regions around Australia that have been continuously farmed for cropping purposes.</p> <p>Results of research trials reveal that the most effective strategy to improve soil levels is to convert cropping land to a grass-legume pasture. Therefore, the proposed transition to a pasture based sheep enterprise will most likely prevent further decline in organic soil carbon levels and should lead to a gradual increase over time through increased nitrogen levels.</p> <p>Advice has also been sought to confirm the introduction of sheep grazing is a viable alternative to cropping on the site while the solar project is operational. This advice has confirmed the grazing of 1,000 head of sheep would produce a viable income. The advice considered the historical viability of the grain cropping operation and formed a view that the budgeted returns for the sheep enterprise could return similar (possibly better) returns when compared to a dryland grain growing operation. This confirms the proposed solar and grazing activity would protect the economic value of the subject land.</p> <p>For the purposes of this application, the applicant will initially introduce up to 49 head of sheep to ‘pilot test’ the practicality of co-existing land uses. Should results prove to be successful, the sheep numbers will increase to 1,000 head.</p>
(c) <i>maintaining or enhancing land conditions and the biophysical resources underpinning ALC Class A or Class B land.</i>	<p>In addition, the current owners of the land believe that the quality of the soils on the property have been declining over time which is causing a reduction in crop yields. This notion of declining soil is supported by sample extracts from 2000 and 2018 which show a reduction in the soil organic carbon level. This trend observed by the owners is largely in line with similar soils in other regions around Australia that have been continuously farmed for cropping purposes.</p> <p>Results of research trials reveal that the most effective strategy to improve soil levels is to convert cropping land to a grass-legume pasture. Therefore, the proposed transition to a pasture based sheep enterprise will most likely prevent further decline in organic soil carbon levels and should lead to a gradual increase over time through increased nitrogen levels.</p> <p>Advice has also been sought to confirm the introduction of sheep grazing is a viable alternative to cropping on the site while the solar project is operational. This advice has confirmed the grazing of 1,000 head of sheep would produce a viable income. The advice considered the historical viability of the grain cropping operation and formed a view that the budgeted returns for the sheep enterprise could return similar (possibly better) returns when compared to a dryland grain growing operation. This confirms the proposed solar and grazing activity would protect the economic value of the subject land.</p> <p>For the purposes of this application, the applicant will initially introduce up to 49 head of sheep to ‘pilot test’ the practicality of co-existing land uses. Should results prove to be successful, the sheep numbers will increase to 1,000 head.</p>
(3) <i>Fisheries resources are protected from development that compromises long-term fisheries productivity, sustainability and accessibility.</i>	<p>Not Applicable</p> <p>The proposed development does not involve fishery resources, nor will it affect the long-term productivity of fisheries.</p>
(4) <i>Growth in agricultural production and a strong agriculture industry is facilitated by:</i>	
(a) <i>promoting hard to locate intensive agricultural land uses, such as intensive animal industries, aquaculture, and intensive horticulture in appropriate locations</i>	<p>Complies</p> <p>While the proposed development is not considered as ‘intensive animal husbandry’, there is the likelihood of sheep</p>

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	numbers to increase after a period of testing. Accordingly, the site is appropriate for this development.
(b) <i>protecting existing intensive agricultural land uses, such as intensive animal industries, aquaculture, and intensive horticulture, from encroachment by development that is incompatible and/or would compromise the safe and effective operation of the existing activity.</i>	Not Applicable The site is not currently used for any intensive agricultural activities.
(c) <i>locating new development (such as sensitive land uses or land uses that present biosecurity risks for agriculture) in areas that avoid or minimise potential for conflict with existing agricultural uses through the provision of adequate separation areas or other measures</i>	Not Applicable The proposed development does not involve sensitive land uses or land uses that would present biosecurity risks for agriculture.
(d) <i>facilitating opportunities for co-existence with development that is complementary to agricultural uses that do not reduce agricultural productivity (e.g. on-farm processing, farm gate sales, agricultural tourism etc)</i>	Complies The proposed development is for a solar and energy storage facility to co-exist with sheep grazing activities. As previously detailed in this report, these land uses complement each other through the benefits they provide.
(e) <i>considering the provision of infrastructure and services necessary to support a strong agriculture industry and associated agricultural supply chains</i>	Complies The infrastructure provided for the solar and energy storage facility will support and enhance the quality of sheep living by: <ul style="list-style-type: none"> • Providing shading (via solar panels) for the sheep, especially during the summer months. This will increase the growth rate and fertility of the sheep. • Better soil quality from shading, which will increase the quality of pasture for the sheep.
(f) <i>ensuring development on, or adjacent to, the stock route network does not compromise the network's primary use for moving stock on foot, and other uses and values including grazing, environmental, recreational, cultural heritage, and tourism values.</i>	Complies Biloela Callide Road is identified as being a stock route. The proposed development will concentrate all vehicle access points and movement from Shorts Road and in doing so, will not compromise the stock route.

Environment and Heritage

Biodiversity

(1) <i>Development is located in areas to avoid significant impacts on matters of national environmental significance and considers the requirements of the Environment Protection and Biodiversity Conservation Act 1999.</i>	Not Applicable The site is not identified as containing MNES.
(2) <i>Matters of state environmental significance are identified and development is located in areas that avoid adverse impacts; where adverse impacts cannot be reasonably avoided, they are minimised.</i>	Complies The proposed development layout has been designed to actively avoid the MSES associated with the watercourse that is mapped for the site. Development buffers have been implemented from the centreline of the features to ensure development does not encroach.
(3) <i>Matters of local environmental significance are identified and development is located in areas that avoid adverse impacts; where adverse impacts cannot be reasonably avoided, they are minimised.</i>	Not Applicable The site is not identified as containing MLES.
(4) <i>Ecological processes and connectivity is maintained or enhanced by avoiding fragmentation of matters of environmental significance.</i>	Complies The proposed development layout has been designed to actively avoid the MSES associated with the watercourse that is mapped for the site. Development buffers have been implemented from the centreline of the features to ensure development does not encroach.
(5) <i>Viable koala populations in South East Queensland are protected by conserving and enhancing koala habitat extent and condition.</i>	Not Applicable The development is not located in South East Queensland.

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Safety and Resilience to Hazards

Natural Hazards, Risk and Resilience

Bushfire, flood, landslide, storm tide inundation, and erosion prone areas outside the coastal management district:

<p>(3) <i>Development other than that assessed against (1) above, avoids natural hazard areas, or where it is not possible to avoid the natural hazard area, development mitigates the risks to people and property to an acceptable or tolerable level.</i></p>	<p>Complies The proposed development will provide 10m wide bushfire and access buffer around the perimeter of the development footprint. In addition, no development is proposed to the area mapped as affected by flooding, which will mitigate the natural hazard risks.</p>
<p><i>All natural hazard areas</i></p>	
<p>(4) <i>Development supports and does not hinder disaster management response or recovery capacity and capabilities.</i></p>	<p>Complies The development footprint has been designed to largely avoid the natural hazards mapped for the site. Development includes 10m wide bushfire buffer that can act as a firebreak and access during bushfire disaster management activities.</p>
<p>(5) <i>Development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties.</i></p>	<p>Complies The development footprint has been designed to largely avoid the natural hazards mapped for the site. Furthermore, the proposed development does not contain any components that would increase their severity. Development will adopt co-location of renewable energy facility and sheep grazing. As discussed in Section 4.4.2, benefits of this co-location will be reduced bushfire risk due to controlled grazing lowering potential fuel loads.</p>
<p>(6) <i>Risks to public safety and the environment from the location of hazardous materials and the release of these materials as a result of a natural hazard are avoided.</i></p>	<p>Complies The proposed development does not contain hazardous materials. Notwithstanding, the development footprint has been designed to either avoid natural hazards or has been buffered from the hazard.</p>
<p>(7) <i>The natural processes and the protective function of landforms and the vegetation that can mitigate risks associated with the natural hazard are maintained or enhanced.</i></p>	<p>Complies The development footprint has been designed to mostly avoid the hazard areas (i.e. flooding). Notwithstanding, natural drainage channels have been retained and protected by buffers to ensure runoff naturally flows which will reduce the risk of increased flooding to areas not currently affected.</p>

Infrastructure

Energy and Water Supply

<p>(1) <i>Existing and approved future major electricity infrastructure locations and corridors (including easements and electricity substations), and bulk water supply infrastructure locations and corridors (including easements) are protected from development that would compromise the corridor integrity, and the efficient delivery and functioning of the infrastructure.</i></p>	<p>Complies Existing and future major electricity infrastructure has been considered as part of the development layout design. The development footprint has been designed as to avoid encroaching on the infrastructure. Refer to Appendix D – Proposal Plan.</p>
<p>(2) <i>Major electricity infrastructure and bulk water supply infrastructure such as pump stations, water quality facilities and electricity substations, are protected from encroachment by sensitive land uses where practicable.</i></p>	<p>Not Applicable The proposed development does not involve any sensitive land uses.</p>
<p>(3) <i>Development of major electricity infrastructure and bulk water supply infrastructure avoids or otherwise minimises adverse impacts on surrounding land uses and the natural environment.</i></p>	<p>Not Applicable The proposed development does not involve ‘major electricity infrastructure’ land uses.</p>
<p>(4) <i>The development and supply of renewable energy at the regional, local and individual scale is enabled in appropriate locations.</i></p>	<p>Complies The subject site is considered appropriate for the proposed development as it provides sufficient area to support a</p>

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	200MWac renewable energy facility and is within proximity to existing electrical infrastructure.
Transport Infrastructure	
<i>All transport infrastructure:</i>	
(1) <i>Transport infrastructure and existing and future transport corridors are reflected and supported through compatible land uses.</i>	Complies The operational phase of the proposed development will generate minimal traffic movement and will not impact upon the existing conditions of the roads. As such, the proposal is considered as a compatible land use from a transport infrastructure perspective.
(2) <i>Development is located in areas currently serviced by transport infrastructure, and where this cannot be achieved, development is facilitated in a logical and orderly location, form and sequence to enable cost-effective delivery of new transport infrastructure to service development.</i>	Complies The proposed development is serviced by a local road and a State-controlled road.
(3) <i>Development achieves a high level of integration with transport infrastructure and supports public passenger transport and active transport as attractive alternatives to private transport.</i>	Not Applicable The proposed development is to be located on a site in a remote rural area.
(4) <i>Development is located and designed to mitigate adverse impacts on development from environmental emissions generated by transport infrastructure.</i>	Not Applicable The proposed development does not involve land uses that would be susceptible to transport infrastructure emissions.
(5) <i>A road hierarchy is identified that reflects the role of each category of road and effectively manages all types of traffic.</i>	Complies The 2005 Banana Planning Scheme identifies a road hierarchy. Furthermore, no access will be provided from the State-controlled road, with all access to be provided via the local road.
<i>State transport infrastructure:</i>	
(6) <i>Development in areas surrounding state transport infrastructure, and existing and future state transport corridors, is compatible with, or support the most efficient use of, the infrastructure and transport network.</i>	Complies The proposed development will not impact on the State-controlled road, with vehicular access to be provided exclusively from the local Council road.
(7) <i>The safety and efficiency of existing and future state transport infrastructure, corridors, and networks is not adversely affected by development.</i>	Complies The proposed development will not impact on the State-controlled road, with vehicular access to be provided exclusively from the local Council road.

7.2.3 Temporary State Planning Policy

Section 30(2)(a)(iii) of the *Planning Regulation 2017* requires the impact assessment of this application must be carried out against the any temporary State planning policy applying to the premises.

In this instance no temporary State planning policies apply.

7.2.4 Local Government Infrastructure Plan

Section 30(2)(c) of the *Planning Regulation 2017* requires that if the assessment manager of this application is an infrastructure provided the impact assessment be carried out against the LGIP.

Due to the nature of this development, no infrastructure charges will be applicable.

7.2.5 Development Assessment under Schedules 9 and 10 (SDAP)

Schedules 9 and 10 of the *Planning Regulation 2017* identify the matters that the assessment manager and/or referral agency assessment must have regard to.

The State Development Assessment Provisions (SDAP) nominate applicable State Codes based on the referral triggers. The State Codes applicable to the proposal are identified in the table below.

Table 12: Relevant SDAP State Codes

Schedule 10	Referral Topic	State Code
10.9.2.2	<i>Infrastructure-related referrals</i> Material change of use of premises near a substation site or subject to an easement	(No State Code)
10.9.4.2.4	<i>Infrastructure-related referrals</i> Material change of use of premises near a State transport corridor or that is a future State transport corridor	State code 1 – Development in a state-controlled road environment State code 2 – Development in a railway environment

7.3 Local Authority Assessment Benchmarks

This application is to be assessed against *2005 Banana Planning Scheme*. The assessment benchmarks applicable under the Planning Scheme are addressed below.

7.3.1 Strategic Framework

The Planning Scheme identifies desired environmental outcomes to provide a strategic framework that sets the policy direction for the planning scheme and forms the basis for ensuring appropriate development occurs in the planning scheme area for the life of the planning scheme.

For the purpose of describing the policy direction for the planning scheme, the desired environmental outcomes are addressed under three (3) elements being Social, Environment and Economic.

An assessment against each element is provided in the table below.

Table 13: Strategic Framework Response

2005 Banana Planning Scheme Strategic Framework	
Aspect	Response
Social Elements	
(a) <i>The Banana planning area's residential communities are preserved in character, well serviced, enjoy high levels of safety and amenity, able to accommodate growth and offer a range of housing options to meet the diverse needs of all members of the community.</i>	Not Applicable The proposed development does not involve residential development, nor is it located within a residential area.
(b) <i>Biloela and Moura are the main business and economic centres, providing higher order services and a range of community and civic functions.</i>	Not Applicable The proposed development does not involve business/centre land uses that could detract from Biloela and Moura.
(c) <i>Communities of Banana, Baralaba, Cracow, Dululu, Jambin, Goovigen, Thangool, Theodore and Wowan have access to facilities and services that meet local needs, and where appropriate also provide some higher order services and functions important to the Banana Shire.</i>	Not Applicable The proposed development is to be located in a rural region of Banana Shire Council.

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(d) <i>The park and recreation opportunities for residents and visitors of the Shire have been enhanced and expanded.</i>	Not Applicable The proposed development does not involve residential land uses.
(e) <i>Rural residential areas are located and consolidated to provide suitably serviced, alternative rural living options that are close to townships.</i>	Not Applicable The proposed development does not involve residential land uses.

Environmental Elements

(a) <i>The Shire's water resources, including the Callide subartesian water resource, aquifers, watercourses, wetlands, springs and floodplains are managed sustainably and development is appropriately conditioned to ensure water quality is maintained and enhanced wherever possible.</i>	Complies The proposed development will not impact upon the water quality. An ESC and EMP to manage stormwater run-off are to be implemented during construction and operational phases to ensure the proposed development does not impact on water quality of surrounding water sources
(b) <i>The sites of existing and planned water resource infrastructure such as the Callide Dam and the proposed Nathan Dam, are not compromised by the detrimental impacts of development in upstream catchment areas.</i>	Complies As detailed in the Stormwater Management Plan, the proposed development will have negligible impacts on the catchment as there will be no change in stormwater run-off or flow across the site.
(c) <i>The recognised values and integrity of significant natural features, conservation areas and open space networks eg. Conservation Parks, National Parks, are protected.</i>	Complies A 100m buffer has been provided to the significant watercourse located to the east of the site.
(d) <i>Vegetation that supports important flora and fauna habitats, provides watercourse buffering or has associated scenic values, is protected from clearing and the spread of pest plants and animals.</i>	Complies A 100m buffer has been provided to the significant watercourse located to the east of the site. Furthermore, 4m buffers have been implemented to Council drainage lines.
(e) <i>Development is located and managed where ever possible to ensure the long term protection and conservation of the significant cultural heritage values of the Shire.</i>	Not Applicable No cultural heritage values have been identified for the site.
(f) <i>Public health and the environment are protected from environmental harm from waste and contaminated land. Efficient resource use and waste minimisation and management are promoted while allowing for ecologically sustainable development.</i>	Not Applicable The proposed development does not involve development that will generate waste and contaminate land.
(g) <i>Air quality is maintained or enhanced while allowing for ecologically sustainable development.</i>	Not Applicable The proposed development does not involve land uses that could impact upon air quality.
(h) <i>The quality of the acoustic environment is maintained or enhanced while allowing for ecologically sustainable development.</i>	Not Applicable The proposed development does not involve land uses that could impact upon acoustic quality.
(i) <i>The spread or increase of weeds and pest animals is prevented.</i>	Complies The proposed development will not increase weeds and pests animals, through the implementation of a biosecurity management plan as part of the construction and operation environmental management plan.

Economic Elements

(a) <i>The long term viability of agricultural industries within the Banana planning area is enhanced through measures to protect productive agricultural land from excessive fragmentation and encroachment of incompatible uses.</i>	Complies The proposed development intends on co-locating sheep grazing activities with the solar arrays to ensure the agricultural value of the land is not lost. Furthermore, there is no subdivision of land proposed as the solar array tenure will be secured via a lease of the land. This will ensure there is no fragmentation of the land, and it will be able to continue to provide an agricultural activity once the project is complete and decommissioned. Consequently, Integrating grazing and solar power generation has benefits for both activities including:
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- The use will not preclude the ongoing use of the site for agricultural activities for the life of the project and once the solar power generation use is decommissioned;
- Safety of livestock, as the solar infrastructure is surrounded by a maintained security fence. This ensures savings to capital costs of establishing a profitable sheep enterprise;
- Reduced fire risk due to sheep grazing activity;
- Contributes to a stronger vegetation management regime around and under the panels as part of a productive and compatible agricultural activity;
- Free agistment of livestock, which provide both a productive and viable agricultural use of the land whilst being utilised for the solar and energy storage facility;
- Increased health and well-being of the sheep due to protection from the elements by the array, and potentially improvement of the sheep grazing use through the sowing of improved pasture grass species.

As demonstrated above, the solar and energy storage facility can operate in conjunction with the proposed sheep grazing activity and facilitate a viable and productive agricultural use.

Importantly, the development will not result in the fragmentation of land as there is no subdivision of land to occur.

The combination of the grazing, the benefits of the solar array in protecting the livestock and ability to provide improved pasture will ensure the agricultural use of the land can continue and satisfy this element of the Strategic Framework.

(b) *Natural resources and areas of economic value, such as Agricultural Land Classification (ALC) Class A and Class B land in accordance with the State Planning Policy mapping, extractive materials, mineral resources and native forests are protected and utilised sustainably.*

Complies

The site is located on the eastern edge of Mapped GQAL Class A land. The proposed development is to incorporate sheep grazing activities within the electricity generation infrastructure. This ensures the agricultural value of the land is protected and maintained, whilst deriving the highest economic value from the land while the solar and energy storage facility is in operation.

In addition, the current owners of the land believe that the quality of the soils on the property have been declining over time which is causing a reduction in crop yields. This notion of declining soil is supported by sample extracts from 2000 and 2018 which show a reduction in the soil organic carbon level. This trend observed by the owners is largely in line with similar soils in other regions around Australia that have been continuously farmed for cropping purposes.

Results of research trials reveal that the most effective strategy to improve soil levels is to convert cropping land to a grass-legume pasture. Therefore, the proposed transition to a pasture based sheep enterprise will most likely prevent further decline in organic soil carbon levels and should lead to a gradual increase over time through increased nitrogen levels.

Advice has also been sought to confirm the introduction of sheep grazing is a viable alternative to cropping on the site while the solar project is operational. This advice has confirmed the grazing of 1000 head of sheep would produce a viable income. The advice considered the historical viability of the grain cropping operation and formed a view the budgeted returns for the sheep enterprise could return similar (possibly better) returns when compared to a dryland grain growing operation. This

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	<p>confirms the proposed solar and grazing activity would protect the economic value of the subject land.</p> <p>For the purposes of this application, the applicant will initially introduce 49 head of sheep to 'pilot test' the practicality of co-existing land uses. Should results prove to be successful, the sheep numbers will increase to 1,000 head.</p>
<p>(c) <i>Industrial development opportunities are available, including new industrial lands in the Callide Energy Park, and are planned such as to balance economic values against the values of the natural environment, transport network and residential amenity.</i></p>	<p>Not Applicable</p> <p>The proposed development does not involve industrial opportunities.</p>
<p>(d) <i>The efficiency of infrastructure, including telecommunication, electricity and transport networks, is maintained and future extensions are well planned to meet the future development needs of the Banana planning area.</i></p>	<p>Complies</p> <p>The proposed development will include solar and energy storage facility and associated infrastructure to support the power system requirements of the Banana region.</p>
<p>(e) <i>Water, sewer and stormwater infrastructure is planned and provided in a cost effective and timely manner to meet the needs of the Banana planning area.</i></p>	<p>Not Applicable</p> <p>The proposed development is for a solar and energy storage facility and sheep grazing. Due to the nature of these land uses, it does not require the provision of trunk infrastructure.</p>
<p>(f) <i>Waste disposal facilities which are adequate for the Banana planning area's needs, are maintained and protected from the encroachment of inappropriate land uses.</i></p>	<p>Not Applicable</p> <p>The proposed development does not involve waste disposal facilities.</p>

7.3.2 Zone

The site is located within the Rural Zone. An assessment against the overall outcomes of the zone are provided in the table below.

Table 14: Rural Zone Overall Outcomes

Outcome	Comments
<i>(b) The overall outcomes sought for all Rural Zoned land are:</i>	
<p>i. <i>Agriculture and animal husbandry uses, dominate the land uses within the Zone;</i></p>	<p>Complies The proposed development will co-locate sheep grazing activities with the solar generation and battery storage facilities to ensure a significant part of land uses within the rural zone are for animal husbandry/agricultural purposes.</p>
<p>ii. <i>Land is not provided with urban services;</i></p>	<p>Complies The proposed development will not require the provision of urban services.</p>
<p>iii. <i>Rural character, including rural and agricultural landscapes, is protected;</i></p>	<p>Complies The proposed development will provide a visual landscape buffer to part of the property boundary, where fronting the Biloela Callide Road and adjacent to a residential dwelling. This buffer will consist of native plants and will be planted at a density to ensure it reduces the visual impact of the proposed development and promotes a vegetated edge to the development that (once mature) is consistent with vegetation found in this locality. The use of native plants as a buffer will make a positive contribution to the streetscape and will reflect the rural character of the locality. Additionally, intentional planting of native species (and wildflowers) to attract butterflies, birds and bees can help improve habitat and biodiversity values of the land. Furthermore, the development has been located on sites that are significantly separated from most dwellings by existing agricultural land and natural features. This will ensure that the rural landscape from these sensitive receptors will not be compromised by the proposed development, when viewed at ground level from the dwellings and other vantage points due to the existing vegetation between these locations and the subject site. A visual impact assessment has been provided as part of the development application. Refer to Appendix G.</p>
<p>iv. <i>Overall water quality is maintained and enhanced where possible by the protection of natural features such as watercourses, soil landscapes and vegetation and the spread or increase of weeds and pest animals is prevented;</i></p>	<p>Complies As depicted on the proposal plan in Appendix D the development will avoid and maintain all natural watercourses and drainage channels.</p>
<p>v. <i>Rural Uses which are likely to generate significant odour, noise or other impacts are located away from towns and villages to protect the amenity of those towns and villages;</i></p>	<p>Not Applicable The proposed development will not involve rural uses which generate significant odour, noise or other impacts. Additionally, the development will not be located within proximity to townships.</p>
<p>vi. <i>Intensive agriculture and intensive animal husbandry uses locate in the Zone, provided that it is demonstrated through the application process that both on-site and off-site impacts of the development are managed so as not to pose a risk to the natural environment;</i></p>	<p>Complies The proposed use will involve a solar and energy storage facility integrated with animal husbandry land uses. Areas of the site will be fenced as to prevent livestock from destroying significant natural values.</p>

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Outcome	Comments
vii. <i>Particular non-rural uses such as recreational based uses, home based businesses, home host accommodation, educational or tourism related uses of a low intensity and scale, and mining and extractive industry uses only where consistent with maintaining a high level of rural amenity and character.</i>	Not Applicable The proposed development will be for solar generation and battery storage facilities and does not involve recreational based uses.
viii. <i>Development in the area around Moura does not compromise the future potential for the establishment of an Inter-modal Freight Hub.</i>	Not Applicable The proposed development will not be located in the area around Moura.

A response to the zone code has been provided in **Appendix I**.

7.3.3 Overlays

Overlays affecting the site are listed in section 2.2 and details of the overlay sub-categories that are mapped over the site are shown at **Appendix C**.

Details of the responses to the applicable overlay codes are provided in section 7.3.4 below.

7.3.4 Codes

The planning scheme codes applicable to the proposal, and the location of the relevant appended code response are identified below: Infrastructure charges.

Table 15: Planning Scheme Code Responses

Planning Scheme Codes	Location of Response
Zone Codes	
Rural Zone Code	Appendix I – prepared by RPS
Use Codes	
Animal Uses Code	Appendix I – prepared by RPS
Overlay Codes	
Economic Resources Overlay Code	Appendix I – prepared by RPS
Major Utility Overlay Code	Appendix I – prepared by RPS
Natural Features and Conservation Area Overlay Code	Appendix I – prepared by RPS
Natural Hazard Overlay Code	Appendix I – prepared by RPS
Development Codes	
Development Standards Code	Appendix I – prepared by RPS

8 CONCLUSION

This town planning report supports a development application made on behalf of Edify Energy to Banana Shire Council for the establishment of an 'agri-solar' development.

The site is located at 551 and 641 Biloela Callide Road and Lot 28 Shorts Road, Mount Murchison and is formally described as Lot 154 on SP126053, Lot 2 on RP619032, Lot 28 on RN519 and Lot 3 on RP608599.

The application seeks:

- **Development Permit for Material Change of Use** for Public Facility – Other (Solar PV & Battery Energy Storage System facility) ;
- **Development Permit for Material Change of Use** for Animal Husbandry;

More specifically, the staged development will deliver a 200MW Solar Photovoltaic (PV) farm, 200MW/800MWh Battery Energy Storage System (BESS) and grazing for sheep.

This report has demonstrated the proposal's consistency with the intents and code requirements of the superseded *2005 Banana Shire Planning Scheme* and has provided appropriate justification for aspects that do not fully adhere to the acceptable outcomes. In particular:

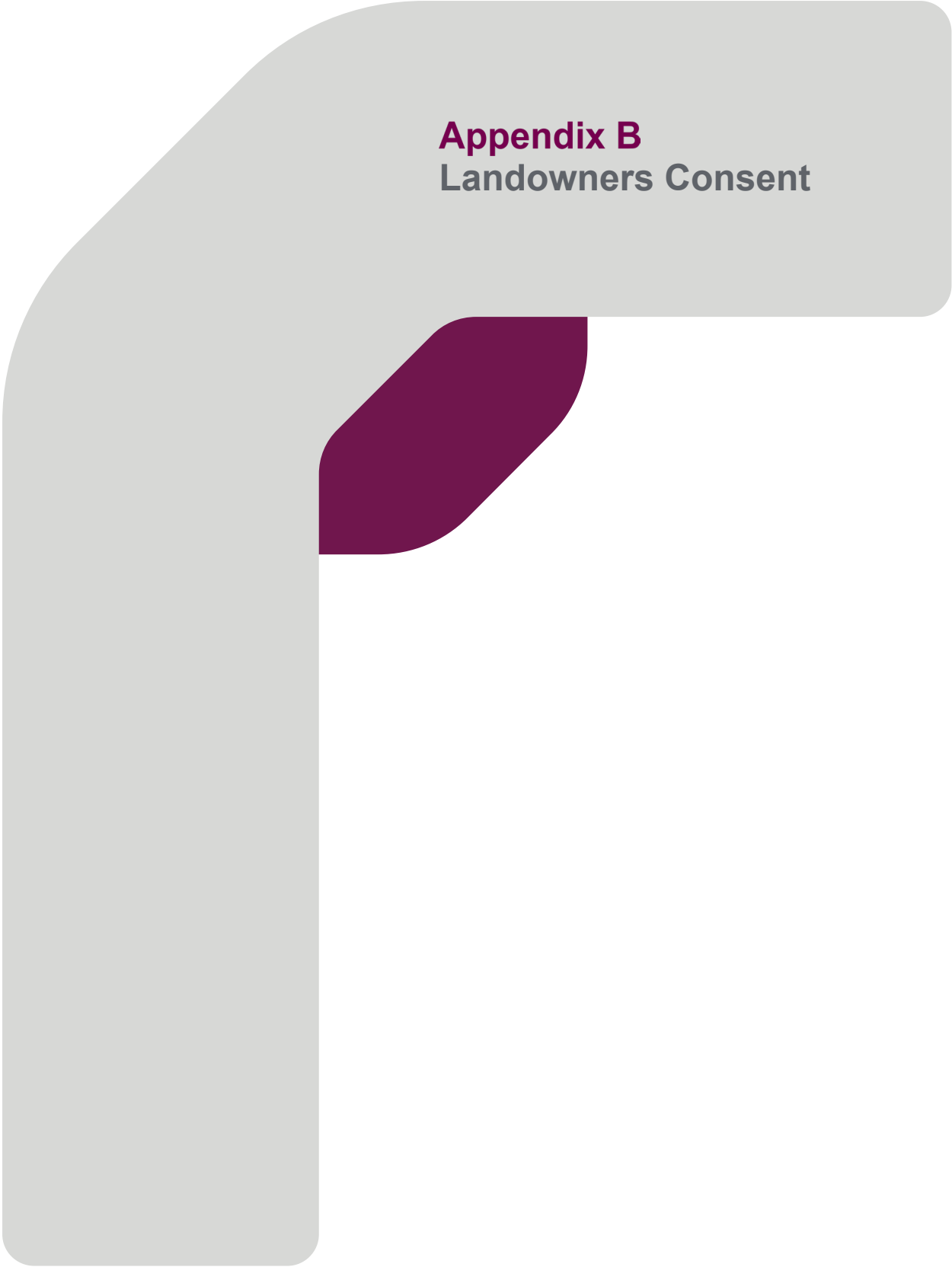
- The proposed development can achieve compliance with the overall intent of the Agricultural Land Overlay Code which considers broader agricultural uses on the site including grazing.
- The introduction of sheep grazing on the site will ensure the land retains an agricultural purpose. It will also generate a number of employment opportunities in the form of farming and sheep meat production. These economic benefits will be of benefit to the shire.
- The solar energy facility will provide benefits to the agricultural value of the site (e.g. increase sheep growth rate, improve the quality of soils/land). This achieves compliance with PO1 of the Agricultural Land Overlay Code, by demonstrating the suitability of a non-agricultural use to be located on the site, as it allows the sustainability of a viable agricultural purpose.
- The continuous dryland farming activities are impacting the agricultural value of the site, as evident through decreased soil organic carbon levels and fallowed land being exposed to the elements. The proposed development will gradually improve soil quality, thus increasing the agricultural value of the site.
- The development footprint has considered the existing environmental values, by providing buffers from the centreline of watercourses and natural drainage lines. Flood affected areas to the south-west corner of the site have been avoided. Therefore, the development will avoid the environmentally sensitive components of the site.
- A landscaped visual impact buffer can be successfully delivered along the development interface with Biloela Callide Road to reduce the potential visual impacts to adjacent residential properties.
- A 10m bushfire buffer/internal road will be provided to the perimeter of the development footprint. This will also serve as separation from the railway corridor in northern part of the site.
- Access to the site will be provided from the local road (being Shorts Road) to mitigate long term traffic impacts to the State-controlled road (Biloela Callide Road) with limited roadworks required to cater for the larger construction vehicles.
- Community consultation with neighbours has commenced prior to the lodgement of this application. This has also informed the Community Engagement Plan for the project.

It is submitted to Council it has been demonstrated the development of the site can occur and demonstrate the benefits of co-locating renewable energy projects with agricultural activities. This form of development will provide both green energy to the broader community and local economic benefits.

On this basis, approval is sought subject to reasonable and relevant conditions.



Appendix A
DA Form 1



Appendix B Landowners Consent



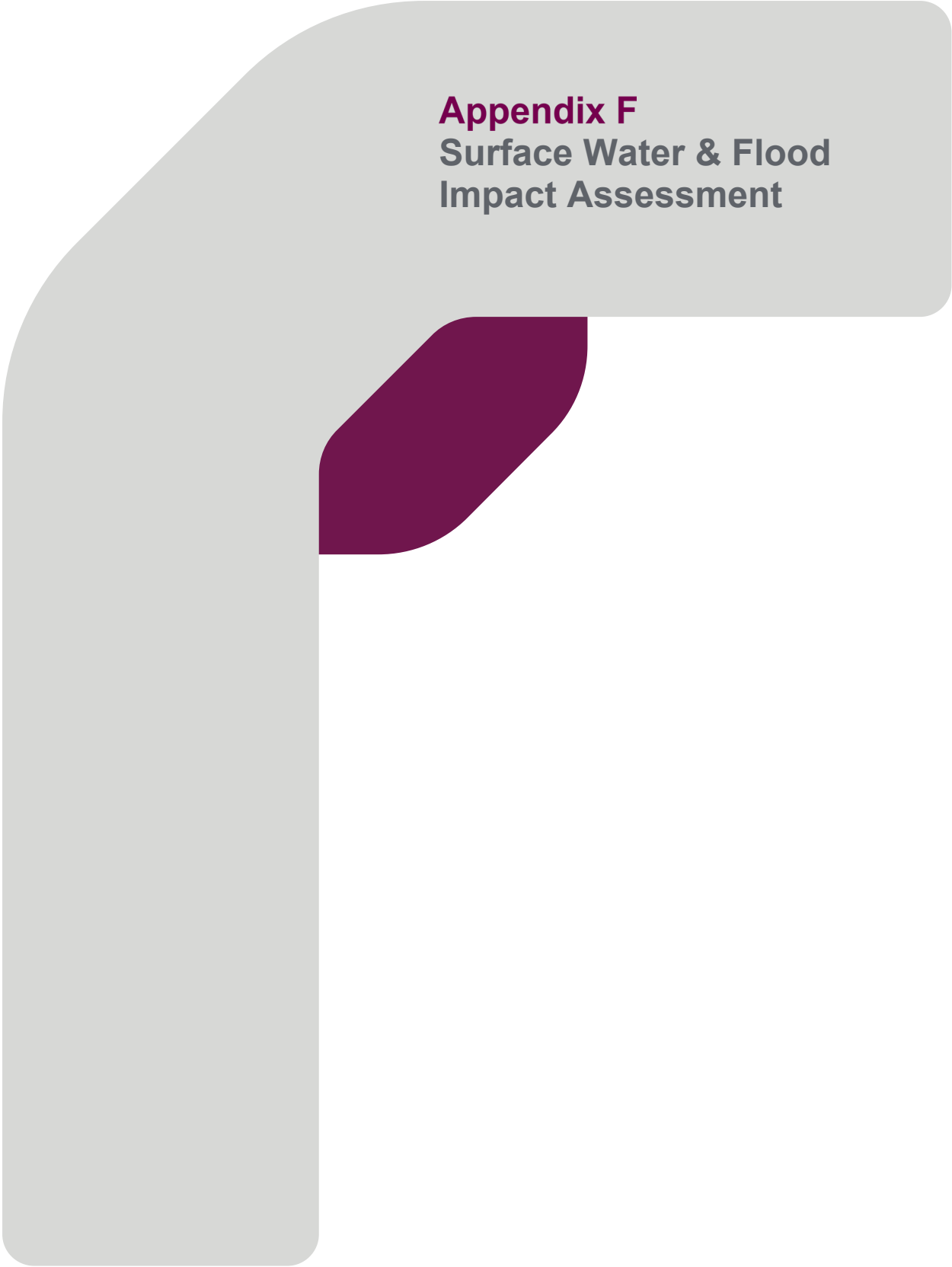
Appendix C Searches

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Appendix D Proposal Plan

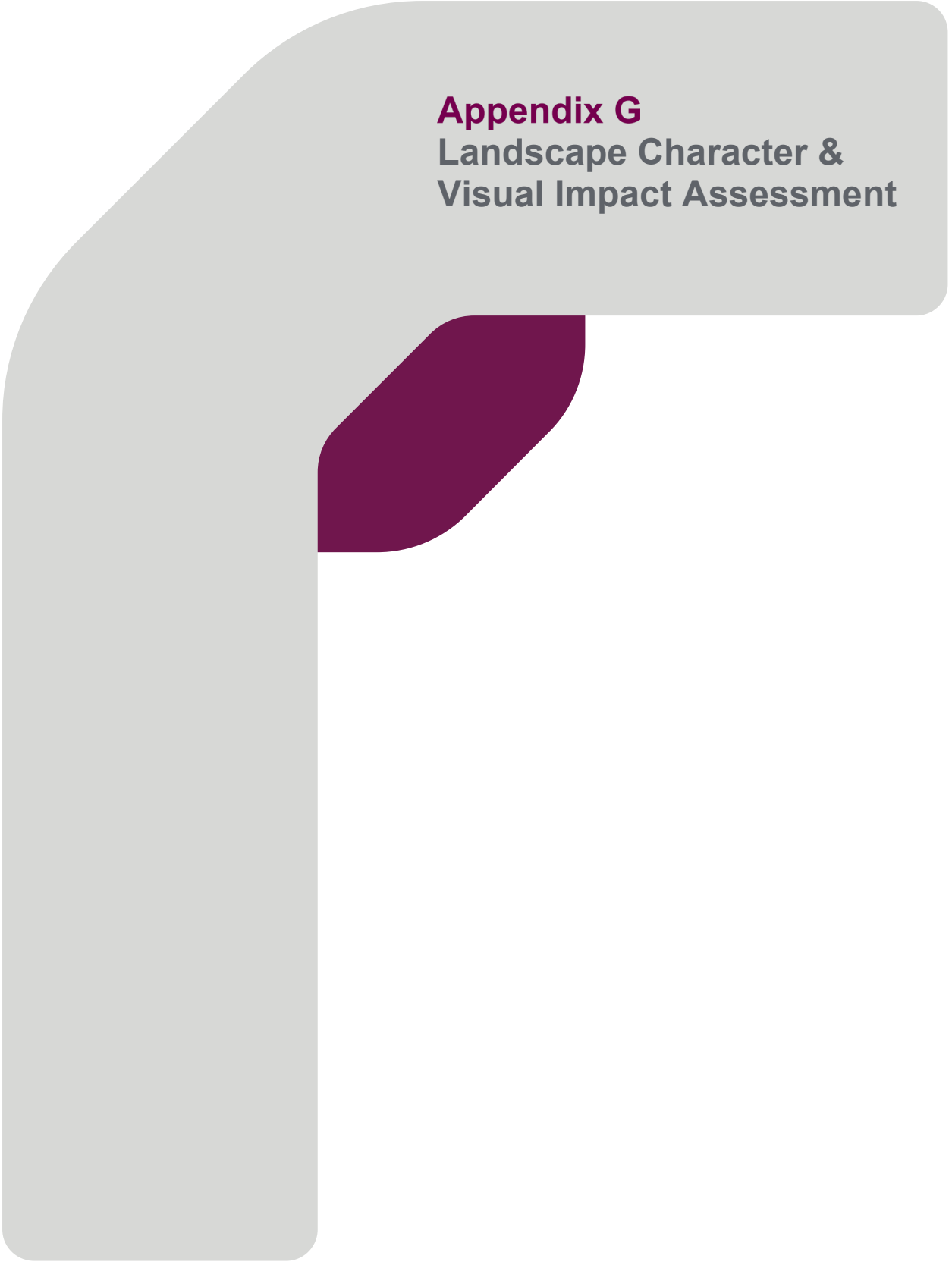


Appendix E **Traffic Impact Assessment**

A large, light gray graphic element with rounded corners and a notch on the right side, containing the title text. A dark purple shape is partially visible behind the notch.

Appendix F

Surface Water & Flood Impact Assessment



Appendix G **Landscape Character & Visual Impact Assessment**



Appendix H **Community Engagement Plan**



Appendix I **Council Code Responses**

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Appendix J SDAP Code Responses