



Northern Quartz Campus

**Planning Assessment Report – Material Change of Use involving
an undefined use (BESS), Transmission Line and Substation**

BESS, Transmission Line and Substation

Prepared for Solquartz Pty Ltd
August 2025



Northern Quartz Campus

Planning Assessment Report - Material Change of Use involving an undefined use (BESS), Transmission Line and Substation

Solquartz and Private Energy Partners

E231133 RP1

August 2025

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V1-0	30 July 2025	A. McRae	R. Dela Pena	Issue for review
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Approved by



Ron Dela Pena

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28 August 2025

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ABN: 28 141 736 558

Application summary

The table below provides a summary of this application – Development Permit for a Material Change of Use (MCU) involving an undefined use (Battery Energy Storage System).

Proposed development	
Proposal	Battery Energy Storage System (BESS) and substation
Application type	- Development permit for Material Change of Use for an Undefined Use (BESS) - Development permit for Material Change of Use for Major Electricity Infrastructure - Development permit for Material Change of Use for a Substation
Site details	
Address	132 Bidwilli Road, Calcium Townsville QLD, 4816
Defined area of ‘premises’	Refer Appendix D and Figure 2.1
Real property description	Part of Lot 19 SP321818 and part of Lot 87 on RP911426
Overhead transmission line extent	Within proposed LEIP electrical easement, traversing south from the NQC Substation to the Powerlink Calcium Substation. Interaction with the following lots: - Lot 19/ SP321818 - Lot 87/RP911426 - Lot 30/SP321818 - Lot 55 / E124248 - Lot 65/E124264
Tenure	Freehold
Existing use	Unimproved cattle grazing
Local government area	Townsville City Council
Applicant details	
Applicant	Solquartz Pty Ltd
Contact name	Mitch Crawford
Contact details	mc@private-energypartners.com
Consulting team	EMM Consulting Pty Ltd
Landowner	Townsville City Council
Regional plan	
North Queensland Regional Plan	North Queensland Regional Plan (March 2020)
State referrals	
Referral triggers	Powerlink Australia
State codes	Nil
Local planning instrument	
Planning scheme	Townsville City Plan (Version 2024/01)
Temporary local planning instruments	Nil
Zone	High impact industry

Proposed development	
Precinct	Lansdown high impact industry
Applicable overlays to premises	OM-06.1 Flood Hazard OM-08.0 Natural Assets Environmental (pertaining to the transmission line) OM-02.2 Bushfire Hazard Area (pertaining to the transmission line)
Level of assessment	Impact assessment
Key outcomes	
Solquartz Pty Ltd and Private Energy Partners Pty Ltd are proposing to develop a battery energy storage system (BESS), substation and transmission lines to facilitate electricity supply for future Metallurgical Silicon (MG-Si) and Polysilicon (Poly-Si) manufacturing facilities as part of the broader Northern Quartz Campus (NQC) project (prescribed project). The development application provides a comprehensive assessment against the Townsville City Plan 2014 and North Queensland Regional Plan, of which compliance is achieved for the majority of performance outcomes. The Project is a strategically significant development for Townsville in terms of supporting the city's industrial diversification. The Lansdown Eco-Industrial Precinct, around 40 km south west of Townsville's Port, has been identified by all levels of government, including in the Townsville City Plan and NQ Regional Plan, as an ideal industrial estate and is currently the focus for strategic development by TCC. In support of this development application, environmental impact assessments have been prepared. Detailed acoustics, bushfire, water resources, traffic, and visual assessments have been undertaken to determine the likely impacts of the Project and how these impacts will be managed. Overall, the Project will contribute positively to the economy of the region, with all potential impacts of the Project appropriately managed. It is recommended that TCC, as Assessment Manager, considers this development application on its planning and environmental merits and approves the Project subject reasonable and relevant conditions on the development permit.	

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Abbreviations

Abbreviation	Full term
BESS	Battery Energy Storage System
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DIDO	Drive in drive out
EMM	EMM Consulting Pty Ltd
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FIFO	Fly in fly out
kV	Kilovolt
LEIP	Lansdown Eco-Industrial Precinct
MGSi	Metallurgical Silicon
MNES	Matters of national environmental significance
MW	Megawatt
MWh	Megawatt hours
O&M	Operations and maintenance
PEP	Private Energy Partners
NQC	Northern Quartz Campus
Planning Act	<i>Planning Act 2016</i>
PolySi	Polysilicon
RE	Regional ecosystem
SDPWO Act	<i>State Development and Public Works Organisation Act 1979</i>
SPV	Special purpose vehicle
TCC	Townsville City Council
VM Act	<i>Vegetation Management Act 1999</i>

1 Introduction

1.1 Purpose of the report

This Planning Assessment Report (Report) has been prepared by EMM Consulting Pty Ltd (EMM) on behalf of Solquartz Pty Ltd (Solquartz) (the Applicant) in support of a development application to Townsville City Council (TCC) beneath the *Planning Act 2016* (Planning Act). The application seeks approval from the Assessment Manager (TCC) for:

- Development permit for Material Change of Use for an Undefined Use (Battery Energy Storage System (BESS))
- Development permit for Material Change of Use involving Major Electricity Infrastructure
- Development permit for Material Change of Use for a Substation.

This Report evaluates the Northern Quartz Campus BESS Project (the Project) against the *Townsville City Council Planning Scheme (Version 1, 2024)* (TCC Planning Scheme). Further details regarding the statutory framework relevant to the proposed development are provided in Section 4.1.

1.2 Development overview

Solquartz, a wholly owned portfolio company of funds managed by Quinbrook Infrastructure Partners (Quinbrook), and Private Energy Partners Pty Ltd (PEP), an affiliate enterprise of Quinbrook and Quinbrook's dedicated development, delivery and operations service provider, are proposing to develop a BESS, substation and transmission lines to facilitate electricity supply for future Metallurgical Silicon (MG-Si) and Polysilicon (Poly-Si) manufacturing facilities as part of the broader Northern Quartz Campus (NQC) project (prescribed project). The premises which form this application is on part of Lot 19 SP321818 and part of Lot 87 on RP911426, near Woodstock in TCC local government area. The development includes the proposed overhead transmission line which traverses south along the western edge of the project premises and connect into the future Powerlink Calcium substation. The overhead transmission line interacts with the following road reserves and lot boundaries:

- | | |
|--------------------|---------------------------|
| • Lot 19/ SP321818 | • No Name Road |
| • Lot 87/RP911426 | • Bidwilli Road |
| • Lot 30/SP321818 | • an unnamed road reserve |
| • Lot 55 / E124248 | • Manton Quarry Road |
| • Lot 65/E124264 | |

The proposed development details are described further in Section 3.

1.3 Definition of project

Pre-lodgement engagement has occurred with TCC during project scoping and the preparation of this development application (refer Section 4.1.4).

The Project has been determined to be assessable development subject to the provisions of the Townsville City Plan 2014. Further, the Project has been designated in this planning assessment as an *undefined use*. The Townsville City Plan (Schedule 1) defines an undefined use as *Any use not listed in Table SC1.1.1 (Use definitions) is an undefined use*.

Note, whilst not defined within the TCC Planning Scheme, the Planning Regulation 2017 has now been updated to include a 'battery storage facility'. A summary of the development application details is included in Table 1.1.

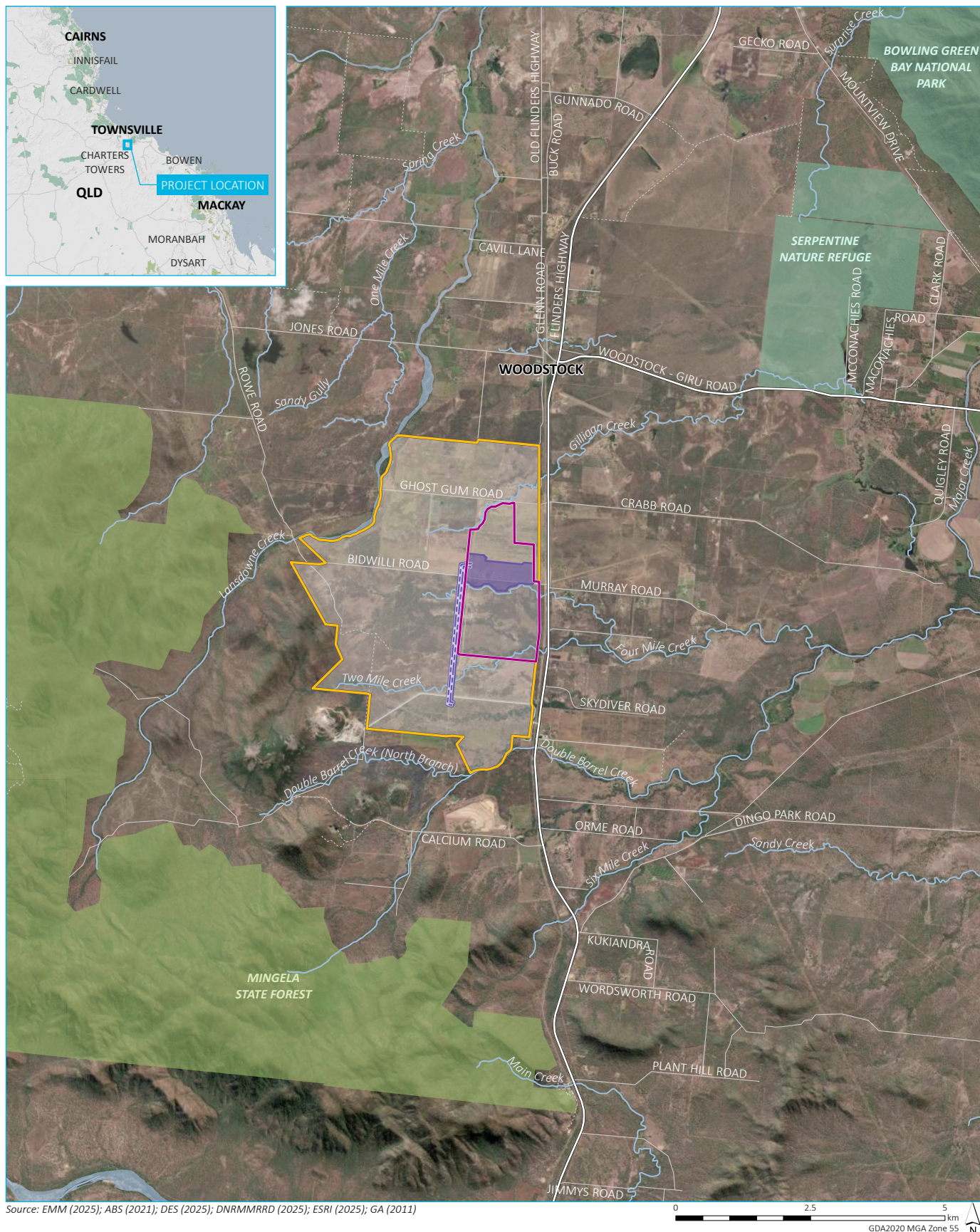
Table 1.1 Assessable development summary

Proposed development	Detail
Type of approval sought	• Development permit for Material Change of Use for an Undefined Use (BESS) • Development permit for Material Change of Use for major electricity infrastructure • Development permit for Material Change of Use for a Substation
Site address	132 Bidwilli Road, Calcium Townsville QLD, 4816
Real property description	Part of Lot 19 SP321818 and part of Lot 87 on RP911426
Overhead transmission line extent	Within proposed LEIP electrical easement, traversing south from the NQC Substation to the Powerlink Calcium Substation. Interaction with the following lots: • Lot 19/ SP321818 • Lot 87/RP911426 • Lot 30/SP321818 • Lot 55 / E124248 • Lot 65/E124264
Defined area of 'premises'	Refer Appendix D and Figure 2.1u
Assessment manager	Townsville City Council
Landowner details	Townsville City Council
Applicant details	Solquartz Pty Ltd

The relevant planning instruments against which the Project will be assessed is provided in Table 1.2.

Table 1.2 Planning instrument details

Planning instrument	Details
Regional plan	North Queensland Regional Plan (dated March 2020)
Planning scheme	Townsville City Plan (version 2024-01)
Zone	High Impact Industry
Level of assessment	Impact assessment
Applicable planning scheme overlays	OM-06.1 Flood Hazard OM-08.0 Natural Assets Environmental OM-02.2 Bushfire Hazard Area (pertaining to the transmission line)
Applicable local codes	High impact industry code Flood hazard overlay code Healthy waters code Transport impact, access and parking code Works code Landscape code Telecommunications facility and utilities code



KEY

- | | |
|--|---|
| Lansdown Eco-Industrial Precinct | Existing environment |
| Northern Quartz Campus | Major road |
| Package 1- Premises | Minor road |
| Package 1- Transmission line | Vehicular track |
| | Named watercourse |
| | Named waterbody |
| | National park/nature reserve |
| | State forest |

Regional context

Northern Quartz Campus
Package 1- BESS, transmission line and substation
Planning Assessment Report
Figure 1.1

1.4 Project terminology

Solquartz and PEP are proposing to develop Northern Quartz Campus (NQC) within TCC's Lansdown Eco-Industrial Precinct (LEIP), a high impact industrial area promoted as Australia's first environmentally sustainable industrial hub. NQC encompasses four major project components all of which culminate in the delivery of an industrial hub which powers and provides metallurgical silicon and polysilicon.

To support the overall program delivery, various components were defined and broken into a four-package delivery based on project schedule drivers, investor confidence, and risk profiles:

1. BESS, transmission line and NQC substation (assessed within this planning report)
2. Biochar processing facility (Phase 1) (to be assessed within a future application to TCC)
3. A Metallurgical Silicon (MG-Si) plant and Biochar processing facility (Phase 2) (to be assessed within a future application to TCC)
4. Polysilicon plant (to be assessed within a future application to TCC).

The four project components will be sited within the *project area*, which comprises three allotments (part of Lot 19 on SP321818, Lot 34 on E124243 and part of Lot 87 on RP911426). Of this area, this application seeks to assess the *premises*, a smaller development footprint encompassing 86.63 ha. The premises are located in the centre of the project area. Table 1.3 and Figure 2.1 describes the relationship between the project area and premises. The coordinates of the premises are detailed within Appendix C.

Table 1.3 Description of area terminology used in this application

Terminology	Description
Project area	The project area encompasses an area of approximately 339.2 hectares (ha) and is comprised of three adjoining allotments: • part of Lot 19 on SP321818 • Lot 34 on E124243 • part of Lot 87 on RP911426. The project area represents the extent of all land allocated to Solquartz within the LEIP precinct.
Premises	The premises is the area directly being assessed by this application. It primarily consists of part of Lot 19 on SP321818 and part of Lot 87 on RP911426, and involves all the land required for the BESS, substation and transmission lines. Under Schedule 2 of the <i>Planning Act 2016</i>, 'premises' is defined as: a) A building or other structure; or b) Land, whether or not a building or other structure is on land. For purposes of the Project and this Development Approval, the premises are bounded by land via the coordinates in Appendix D.

1.5 Applicant details

Solquartz, is a wholly owned portfolio company of funds managed by Quinbrook, which aims to produce sustainable and ethically sourced silicon for critical industries. Solquartz is the applicant for this application and is developing this Project with PEP, an affiliate enterprise of Quinbrook and Quinbrook's dedicated development, delivery and operations service provider.

Quinbrook is a specialist energy transition infrastructure investor focused on the development, construction and operation of new assets and the building of scaled businesses seeking to sustainably and responsibly support the transition to net zero in Australia, the United States (US) and the United Kingdom (UK).

Quinbrook was founded by two Queenslanders, who have invested in more than 225 low carbon, renewable, storage and critical minerals projects over the past 25 years, and has offices in Brisbane, Houston, New York, London and Jersey.

PEP specialises in energy and infrastructure projects across Australia, the US and the UK. PEP brings deep technical and commercial capability across the full lifecycle of project development, from feasibility and land acquisition through to approvals, procurement, grid connection, and delivery, and has offices in Brisbane, Houston and London.

PEP works across the technology landscape encompassing distributed scale solar photovoltaic, onshore wind, battery storage, biomass, fugitive methane recovery, demand response, grid support and flexibility, community energy networks, industrial decarbonisation and critical minerals supporting the renewable energy industry's equipment manufacturing supply chain.

Quinbrook and PEP have a particular interest in the opportunities for supporting the growth of the critical minerals and equipment manufacturing industries in Northern Queensland and Central Queensland. Quinbrook and PEP are committed to long-term investment in communities and has a strong focus on ensuring positive relationships are maintained throughout the development, construction, operation and decommissioning stages of its projects. A summary of the applicant details are in Table 1.4.

Table 1.4 **Summary of applicant details**

Attribute	Description
Sponsor	Quinbrook Infrastructure Partners Pty Ltd
Developer	Private Energy Partners Pty Ltd
Applicant	Solquartz Pty Ltd
Australian Company Number	85 652 307 349
Address	Level 4, 167 Eagle Street, Brisbane, QLD 4000

1.6 Community consultation

Solquartz and PEP are committed to working closely with the local community to establish a Community Partnership Program that delivers ongoing benefits. Community input is welcomed and encouraged as the program is developed.

Solquartz and PEP hosted a community information session in Woodstock which was well received by the community with positive engagement from attendees and insightful and valuable feedback. This event was attended by approximately 24 people and was held from 2 – 6 pm on Wednesday 23rd July 2025. Key concerns that were raised revolved around topics of water management including flooding, groundwater contamination, heavy vehicles and road access as well as an interest in job creation and opportunity for those in the community to be involved. Discussions were guided by photorealistic renders of the project which helped to communicate the intention of the development.

On 11 June 2025, Solquartz and PEP engaged with members of the community at an event hosted by TCC. Approximately 25 people attended, with three participants engaging directly and expressing support for the project's progression. Three nearby residents raised concerns related to potential environmental impacts, including odour and chemical hazards.

1.7 Supporting documentation

Supporting documentation to this application includes:

- Appendix A – DA Form 1
- Appendix B – Owners consent
- Appendix C – Relevant plans
- Appendix D – Defined premises
- Appendix E - Pre-lodgement engagement
- Appendix F – Community consultation materials
- Appendix G – TCC code responses
- Appendix H – Noise impact assessment
- Appendix I – Bushfire assessment
- Appendix J – Traffic impact assessment
- Appendix K – Visual impact statement
- Appendix L – Water resources assessment

2 Site and local setting

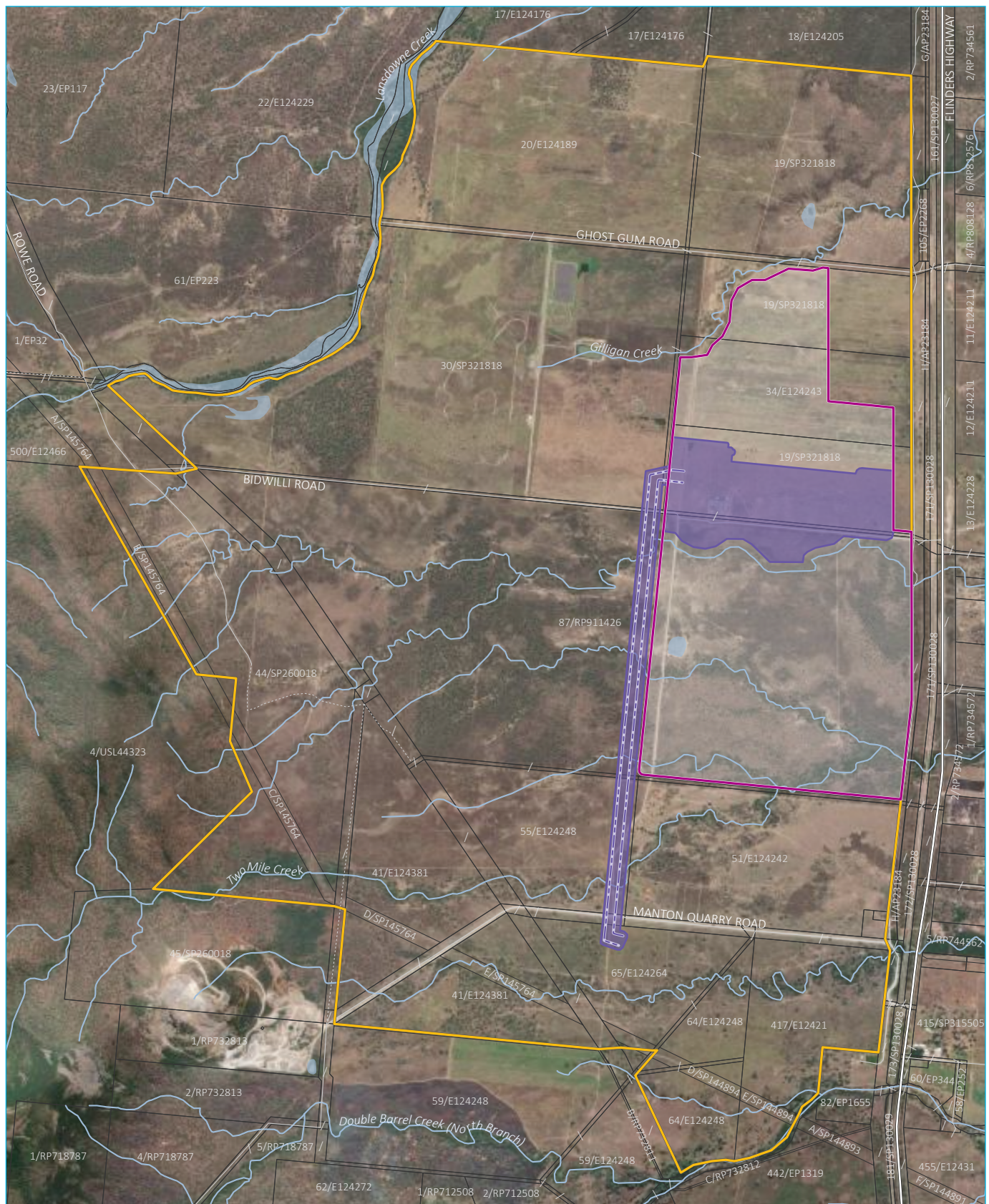
The Project is predominantly proposed to be located centrally on part of Lot 19 on SP321818 and part of Lot 87 on RP911426, as seen on Figure 1.1, with the transmission line extending south approximately 2.6 km and will connect into future Powerlink Calcium substation. The project area is located approximately 40 km south of Townsville at the Lansdown Eco-Industrial Precinct.

The project area encompasses an area of approximately 339.2 hectares (ha) and includes three adjoining allotments including part of Lot 19 on SP321818, Lot 34 on E124243 and part of Lot 87 on RP911426 within the LEIP. Solquartz and PEP has received conditional commitment from TCC over these three blocks of land within the precinct. Local context for the project area is depicted in Figure 2.1.

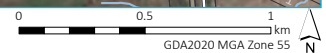
The zoning of the project area and surrounding properties is provided in Figure 2.2.

Table 2.1 Site description

Site characteristic	Premises description
Existing land use	The premises and wider project area are currently used for cattle grazing.
Existing structures	• ~20 m from the western boundary is a pre-existing homestead (located within the project premises). • Bidwilli Road is located adjacent to the premises to the south of the Substation and BESS pads • ~275 m from the eastern boundary is the Mount Isa Rail Line, and Flinders Highway
Frontage and access	• The site can be accessed via Bidwilli Road. Bidwilli Road connects to Manton Quarry Road from a turning lane off Flinders Highway.
Topography and views	Based on available 5 m topographic contours, the ground surface across the premises consists of grass pastures sloping gradually towards the east. Surface elevations range from ~80 mAH in the west to ~74 mAH in the east across the width of the premises.
Existing vegetation	The existing vegetation of the premises comprises open paddocks dominated by grasses, grazed grassy land, and non-remnant vegetation in the northern section, featuring a predominantly dead groundcover of exotic species.
Existing waterways	There are no waterways within the premises. The disturbance areas are located approximately 200 m north of the Four Mile Creek. Four Mile Creek is located approximately 50 m south of the premises, with regrowth classified as Regional Ecosystem (RE) 11.3.30 along its corridor; this ecosystem is ground-truthed and identified as "least concern – remnant" under the <i>Vegetation Management Act 1999</i> (VM Act) status.
Easements	There are no existing easements within the premises.
Road reserve	The Bidwilli Road reserve is situated within the premises. Components of the proposed development that will traverse the Bidwilli Road reserve includes: • underground piping (fire water and electrical), and • driveways to access project components. Road reserves that are associated with the proposed overhead transmission line will include the following: • No Name Road, which straddles Lot 19 SP321818 and Lot 30 SP321818 • Bidwilli Road, which straddles Lot 19 SP321818 and Lot 87 on RP911426 • an unnamed road reserve which straddles Lot 87 on RP 911426 and Lot 51 on E124242 • Manton Quarry Road, which straddles Lot 51 on E124242, Lot 55 on E124248 and Lot 65 on E124264.
Surrounding sensitive receptors	• Driveit NQ, approximately 1 km west of the premises • Homestead, approximately 700 m east of the premises • Woodstock School, approximately 4.5 km north of the premises.



Source: EMM (2025); DES (2025); DNRMMRRD (2025); ESRI (2025); GA (2011)



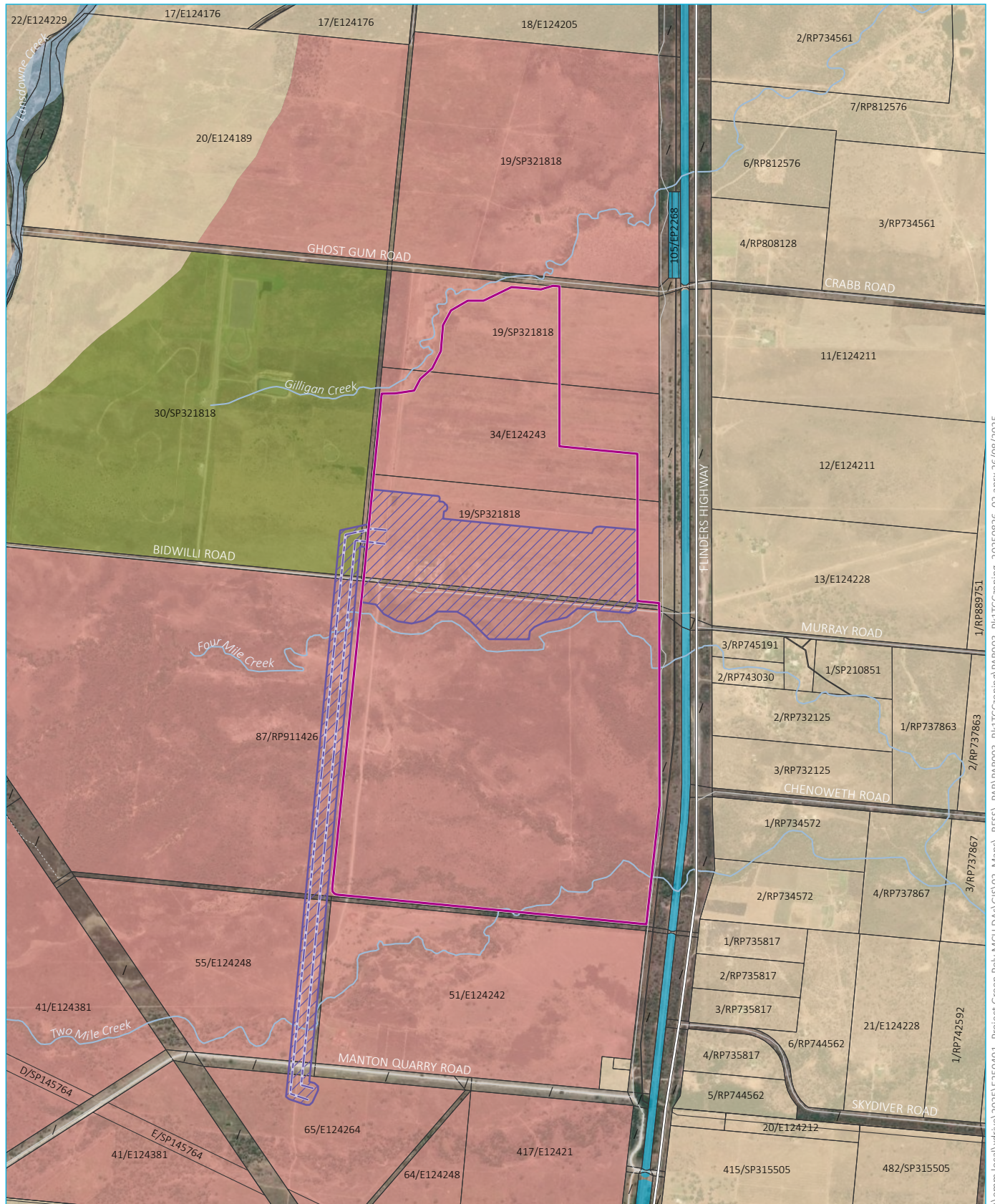
KEY

- | | |
|--|---|
| Lansdown Eco-Industrial Precinct | Existing environment |
| Northern Quartz Campus | Major road |
| Package 1- Premises | Minor road |
| Package 1- Transmission line | Vehicular track |
| | Watercourse/drainage line |
| | Waterbody |
| | Cadastral boundary |

Local context

Northern Quartz Campus
Package 1- BESS, transmission line and substation
Planning Assessment Report
Figure 2.1





Source: EMM (2025); TCC (2025); DES (2025); DNRMMRRD (2025); ESRI (2025); GA (2011)

KEY

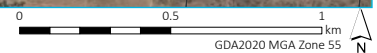
 Northern Quartz Campus	 Existing environment
 Package 1- Premises	 Major road
 Package 1- Transmission line	 Minor road
TCC planning scheme zoning	 Vehicular track
 Community facilities	 Named watercourse
 High impact industry	 Named waterbody
 Rural	 Cadastral boundary
 Sport and recreation	

TCC zoning of premises and project area

Northern Quartz Campus
Package 1- BESS, transmission line and substation
Planning Assessment Report
Figure 2.2



Source: EMM (2025); TCC (2021); DES (2025); DNRMMRRD (2025); ESRI (2025); GA (2011)



KEY

- Northern Quartz Campus
- Package 1- Premises
- Package 1- Transmission line
- Existing environment
- Major road
- Minor road
- - - Vehicular track
- Named watercourse
- Cadastral boundary

Local planning constraints

- Core habitat (F-SC6.9.3)
- - - Draft black throated finch habitat
- Bushfire hazard area (OM-02.0)
- Medium bushfire hazard area
- Environmental importance (OM-08.0)
- Very high
- High
- Medium

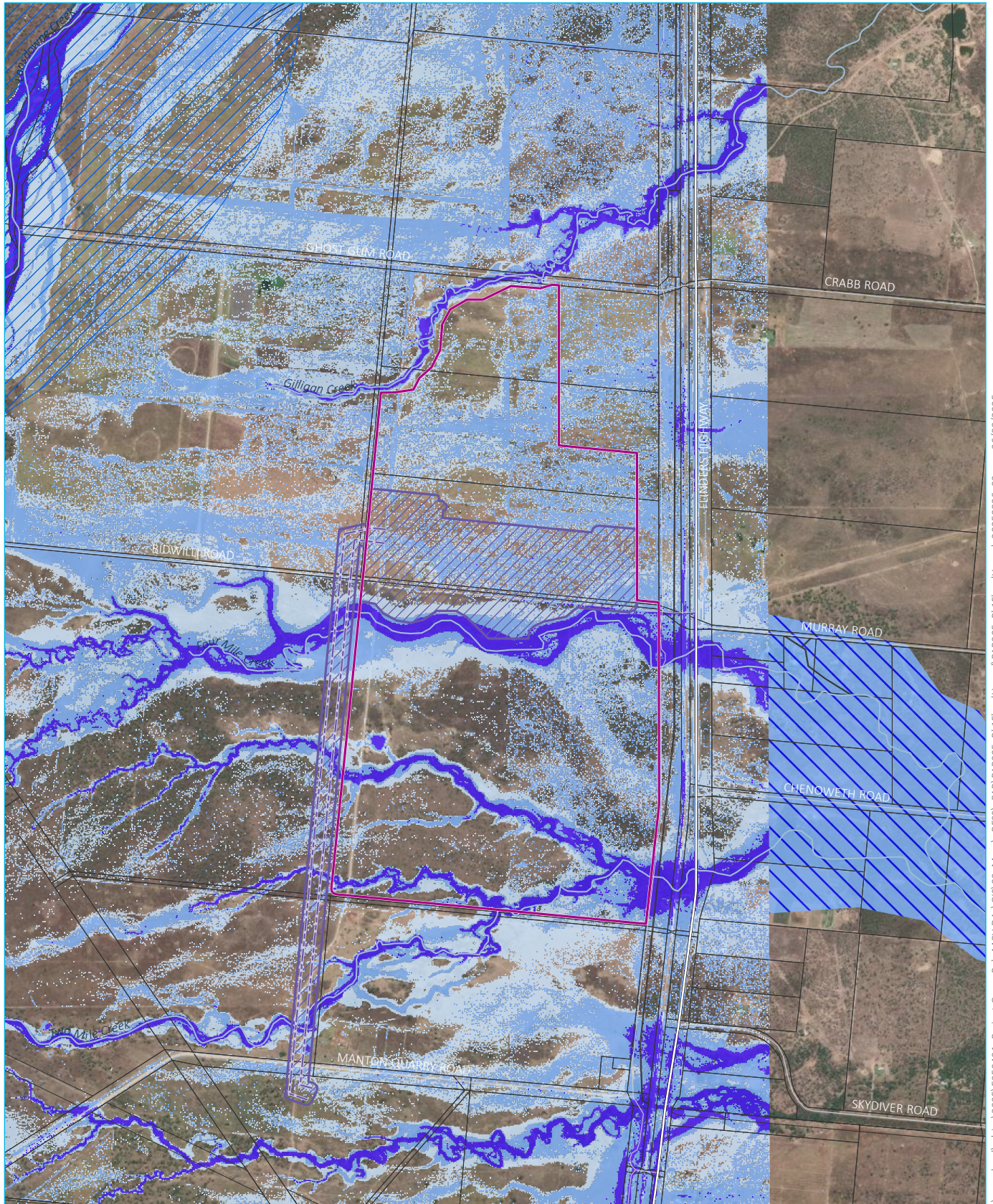
Rail noise corridors (OM-10.2)

- Category 2
- Category 3
- Category 4
- Road noise corridors (OM-10.1)
- Category 1
- Category 2
- Category 3
- Category 4

Local planning constraints

Northern Quartz Campus
Package 1- BESS, transmission line and substation
Planning Assessment Report
Figure 2.3





Source: EMM (2025); TCC (2021); DES (2025); DNRMMRRD (2025); ESRI (2025); GA (2011)

KEY

- Northern Quartz Campus
- Package 1- Premises
- Package 1- Transmission line
- Existing environment
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Cadastral boundary

Local planning constraints

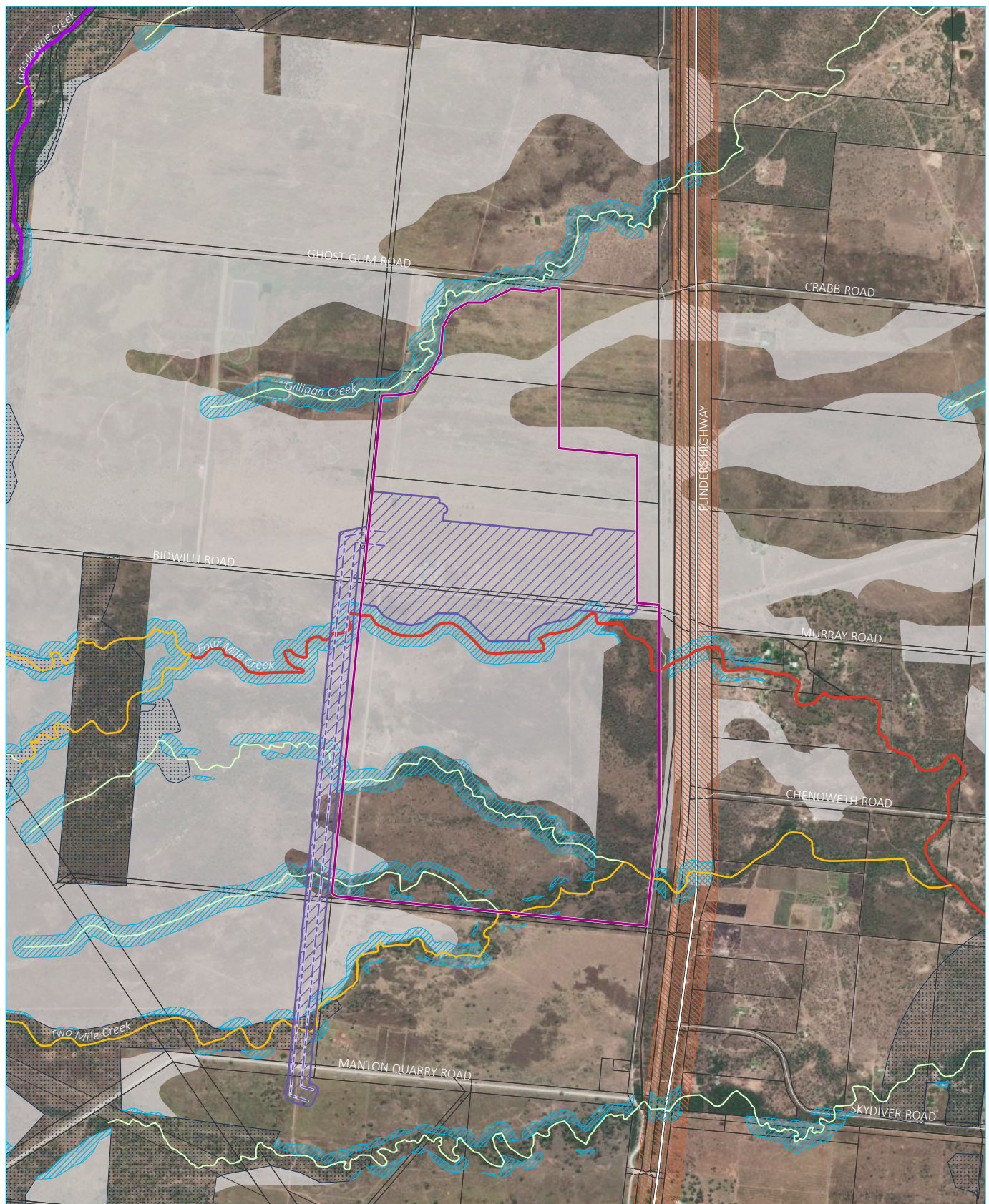
- Water resource catchment area- Ross River dam (OM-09.0)
- Flood hazard overlay (OM-06.1)
- High hazard area
- Medium hazard area
- Low hazard area
- Medium hazard- further investigation area

Local planning constraints
Flood hazard

Northern Quartz Campus
Package 1- BESS, transmission line and substation
Planning Assessment Report
Figure 2.4



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Source: EMM (2025); DAF (2025); DES (2025); DNRMMRRD (2025); ESRI (2025); GA (2011)

KEY

- Northern Quartz Campus
- Package 1- Premises
- Package 1- Transmission line
- Existing environment
- Major road
- Minor road
- Vehicular track
- Cadastral boundary

State planning constraints

- Category R: GBR riverine
- Essential habitat
- Strategic cropping land
- State controlled road (100 m buffer)
- Queensland waterways for waterway barrier works (risk of impact)
- Major
- High
- Moderate
- Low

State planning constraints

Northern Quartz Campus
Package 1- BESS, transmission line and substation
Planning Assessment Report
Figure 2.5



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3 Proposed development details

The Project involves the construction, operation and maintenance of up to 780 MW BESS and substation facility which will be supported by enabling infrastructure including roads, parking, switchgear, transformers, site offices and onsite storage areas. The BESS will provide firming for the electricity supply provided to the MG-Si and Poly-Si manufacturing facilities as part of the larger NQC project. A 275 kV transmission line is proposed between the NQC substation and the Powerlink Calcium substation, the length of this transmission line is 2658 m and includes 21 transmission towers. The Powerlink Calcium substation does not form part of this application though the connection of the transmission lines into it does.

3.1 Project components

The project components that are described in the following sections are depicted on Figure 3.1. The layout provided is conceptual and will be subject to detailed design once the technology partner has been decided.

3.1.1 Battery energy storage system

The BESS will have a capacity of up to 780 MW, with major components comprising of:

- batteries – lithium-ion technology
- inverters – bi-directional inverters to convert direct current to alternating current when exporting electricity, and vice versa when importing electricity
- transformers – transformers will be installed adjacent to each inverter to step up the voltage to the internal reticulation voltage of the plant.

The BESS components are full encased within a battery storage container similar to a shipping container, with approximate dimensions of 2.4 m wide, 6.1 m long, and 2.9 m high. The dimensions and number of containerised batteries is subject to the choice of provider.

The BESS will most likely be developed in a three staged approach aligned with the development timeline and energy requirements of the manufacturing facilities. Each construction stage will reflect a 260 MW staging approach which will culminate in a total of storage provision of up to 780 MW. Whilst an 8-hour battery is proposed, longer or shorter durations will be contemplated based on market conditions.

The BESS pad will require filling to achieve the flood immunity requirement of a 0.2% annual exceedance probability (AEP) immunity level. Excavation of the water management area will generate a significant volume of material which will be used for the bulk fill earthworks. The design has been optimised to align with the general west to east fall of the land. The localised grading of the sites would ensure free-draining surface runoff, and that no localised ponding within the sites.

A BESS expansion area which mirrors that of the existing BESS footprint has been accommodated within the defined premises to the north of the BESS pad. This expansion area is to cater for future requirements whereby additional area is required as result of technology change.

3.1.2 Substation and transmission line

The BESS will link in with the NQC substation, which will include equipment such as switchgear and circuit breakers, protection and control systems and metering and communication systems. The Substation pad will require filling to achieve the flood immunity requirement of a 0.5% AEP immunity level.

The proposed design includes 2 x 2.6 km 275 kV double circuit overhead transmission powerlines between the NQC substation and Calcium substation. The transmission line is proposed to be above ground within the

proposed easement with a minimum width of 100 m. The transmission line includes 21 lattice towers standing at a height of 51.1 m and a connection span length of 300 m maximum.

The Calcium substation will be operated by Powerlink. Relevant approvals to facilitate the construction and operation of the Calcium substation (i.e. MCU DA, if required, and EPBC referral) do not form part of this application and will be sought separately. The Calcium substation will facilitate the connection between the BESS and electricity grid and will include high-voltage transformers.

3.1.3 Internal roads

Internal road width of the project on the BESS pad are proposed to be 7m (main north-south roads) and 6m (west-east roads). Roads are to be concrete and built to match the natural surface level. The BESS platform areas will also be un-sealed and covered with 10mm single size aggregate.

Internal roads located on the substation pad are proposed to be 5m and 6m wide. Both north and south main site access roads are 9m wide.

3.1.4 Water management area

The drainage system for the sites will comprise of inlet pits, pipes, overland flow paths and open channels designed to accommodate the following minor (20% AEP) and major (1% AEP) events in accordance with the Townsville City Plan. The pit and pipe system will be designed to contain the flows for the minor event. During the major event the surplus water which cannot be conveyed by the pit and pipe system will be contained within the roadways and designated overland flow paths and directed away from the sites. The pits will be located along road centrelines, and the roads will have a sagged cross section to facilitate the overland flow. Open channels are designed to capture underground and surface flow for minor and major events and discharge into bio-retention basin via a multicell box culvert structure. 150mm freeboard is maintained for open channels.

Runoff from both the Substation pad and the BESS pad will ultimately discharge into a stormwater basin located east of the BESS site for stormwater quality treatment and on-site detention prior to release into Four Mile Creek

3.1.5 Construction laydown area

A construction laydown area south of Bidwilli Road will include a temporary area for provision for construction material laydown and construction parking.

3.1.6 Enabling infrastructure

The enabling infrastructure of Package 1 – BESS, substation and transmission development includes the following:

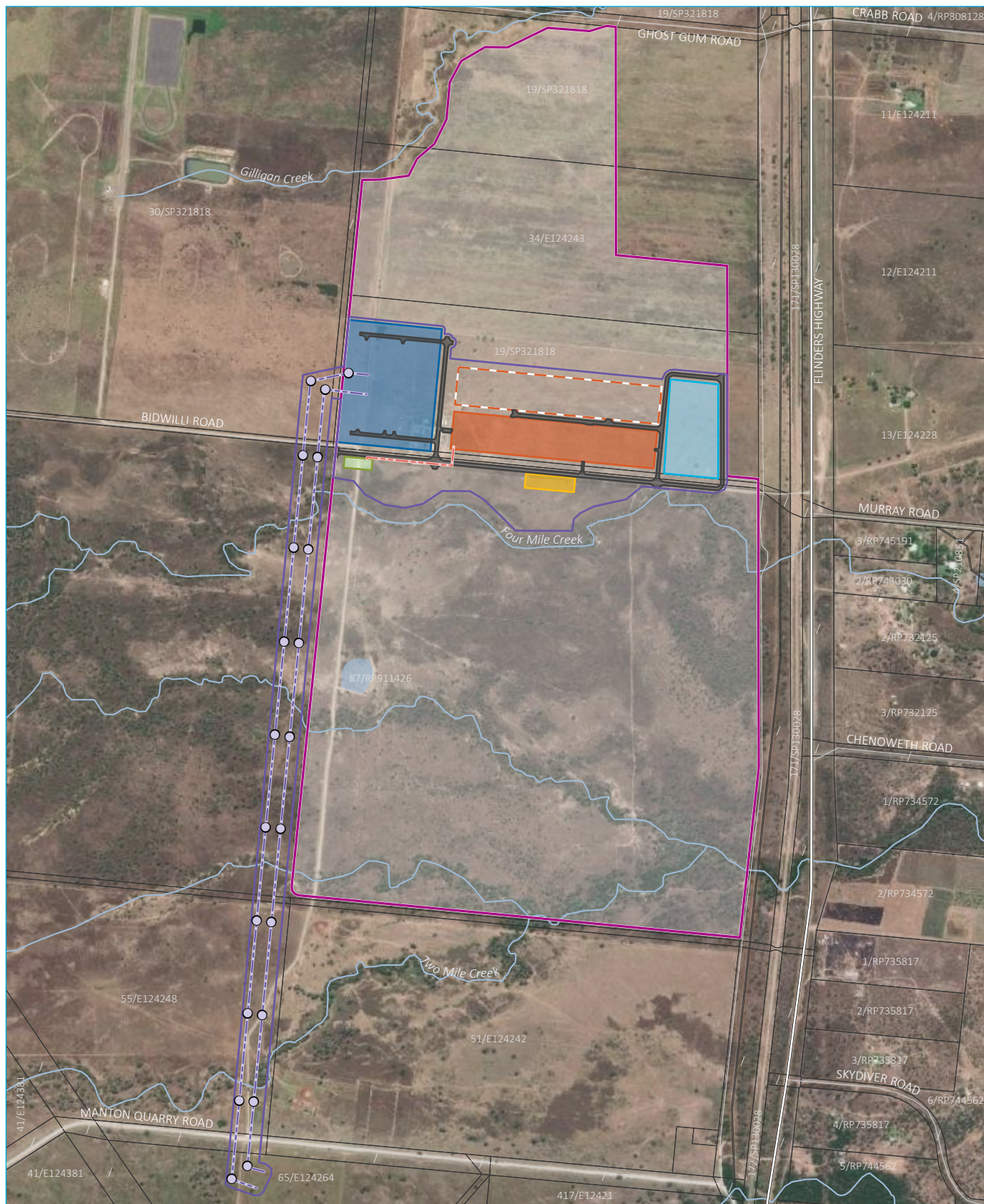
- operations and maintenance (O&M) building - the O&M building provides storage space, a workshop and maintenance shed as well as desk space and amenities (including kitchen, toilets and potable water) for staff.
- switch room – housing medium-voltage switchgear and protection equipment
- control room – houses the monitoring and control systems equipped for monitoring and communications to allow for local and remote supervision of the BESS operations and serves as a centralised control station for visualisation of key operational parameters.
- switchyard – interfacing transformers from substation to transmission lines
- fire water pad - an at grade pad south of Bidiwilli Road is proposed to house the Fire water tanks and pumping infrastructure for emergency provision to the BESS infrastructure. Underground pipeline is

proposed which runs parallel to Bidwilli road and then connects to the BESS pad beneath the proposed road.

3.1.7 Site access and carparking

Access to the premises during both construction and operation phases will be via the northern LEIP access route which includes Flinders Highway via Glenn Road and Jones Road. The proposed site access on Bidwilli Road will act as a new left-in/right-out driveway as all vehicles will arrive and depart from/to the north.

The construction car parking area will be accommodated within the laydown area. Operational car parking provision adjacent to the BESS pad and provides 9 carparks.



Source: EMM (2025); DES (2025); DNRMMRRD (2025); ESRI (2025); GA (2011)

KEY

- | | |
|---|--|
| Northern Quartz Campus | Package 1 proposed site layout |
| Package 1 - Premises | BESS expansion area |
| Existing environment | Substation |
| Major road | Construction laydown area |
| Minor road | Water management area |
| Watercourse/drainage line | Fire water pad |
| Waterbody | Fire water pipeline |
| Cadastral boundary | Transmission line |
| | Transmission pole |

NOTES:

1. BESS will be undertaken in 3 stages of up to 260MW per stage
2. BESS expansion area- if required in the future
3. Water storage area- subject to detailed design
4. NQC Substation - AIS or GIS subject to detailed design
5. Transmission lines will connect into future PLQ Substation
6. PLQ Substation (65/E124264)- design and approvals by others

Proposed site layout

Northern Quartz Campus
Package 1- BESS, transmission line and substation
Planning Assessment Report
Figure 3.1

3.2 Project stages

During the initial 24 to 36-month period, the project will comprise of primarily of site establishment works and Stage 1 and Stage 2 of the BESS. This period will involve the majority of the site establishment earthworks, as well as most of the cabling works. Stages 1 and 2 of the BESS will deliver up to 520 MW of capacity. In addition, the NQC Substation will be constructed with two transformers, and transmission infrastructure will be installed to connect to the Calcium substation via a single tower double circuit, comprising approximately 12 towers.

Stage 3 of the BESS will add further capacity, up to 260 MW. This stage will also include the installation of an additional transformer and another set of transmission towers, consisting of approximately 12 structures, to support the expanded system.

3.2.1 Construction

Pending receipt of necessary project approvals, construction is anticipated to commence in Q4 2026. Works will generally be undertaken during standard construction hours. Works undertaken outside of standard hours will be limited to exceptional activities required to safely construct the Project.

During the construction phase, the workforce is anticipated to peak at approximately 90 workers. The staffing requirements for the construction phase is expected to follow a normal distribution, peaking approximately halfway through construction. Where practicable, workers will be sourced locally and where not possible, will be fly in fly out (fif).

Key construction activities will be confirmed during detailed design and are expected to include:

- site access and establishment, including temporary construction facilities, security fencing and laydown areas
- excavation work, including ground preparation
- civil works including activities such as clearing of the site, earthworks, grading, compaction, stormwater drainage and sediment controls
- bulk earthworks and soil movement
- establishment of sediment pond and all associated drainage including site diversion channels, ponds and release infrastructure
- concrete delivery, formwork placement and concrete pouring
- transit, craning, placement of equipment and electrical fit out the BESS, substation and ancillary infrastructure including installation of the pad drainage (swales and pit and pipe networks), underground cabling and containerised storage units.
- commissioning of BESS, substation and transmission line includes testing of all equipment and commissioning tests required under the electrical connection agreement. Commissioning activities to be undertaken prior to operation.

3.2.2 Operation

The Project will be in operation 24 hours a day, 7 days a week, 365 days a year. It is expected a 20 year project life commencing in Q2 2028 and with 1-2 operational workforce.

The likely operational process for the Project involves the following activities:

- weekly and monthly inspections (electrical, civil and environmental)
- testing and replacing of faulty plant components (fuses, etc.)
- site safety and security includes CCTV and locked gate and fenced area
- vegetation management (in line with various management plans)
- waste management, quantity, disposal, sewerage consideration
- corrective actions within O&M and licensed activities scope.

3.2.3 Decommissioning

At the end of the BESS infrastructure asset life (20 years), the Project will be re-evaluated to determine if the Project infrastructure is to be:

- maintained, refurbished or include the replacement of certain components to extend the life of the existing infrastructure
- renewed to repower the site
- decommissioned along with rehabilitation of the site.

If repowering is not considered feasible or desirable at the end of the Project life, the site will be decommissioned. This will involve removing all above-ground infrastructure for sale, recycling or disposal. Access tracks and hardstand areas would be remediated in order to prepare a suitable soil profile for revegetation with an appropriate groundcover, rehabilitating the land to a state where continued agricultural use can recommence.

It is recommended that a Rehabilitation and Decommissioning Plan is developed and submitted to TCC for approval at least one year prior to decommissioning. The plan will provide the level of detail required to guide the restoration of the site to a standard facilitating continued agricultural use. The plan will include performance criteria and an action plan for aspects such as the timing for remedial works, structure removal and weed, pest and animal control activities.

4 Planning and environmental considerations

4.1 Statutory framework

4.1.1 Prescribed project declaration

The Minister responsible for administering the *State Development and Public Works Organisation Act 1971* (SDPWO Act) may, by gazette notice, declare a project to be a 'prescribed project' under Part 5A of the SDPWO Act.

A prescribed project is one which is of significance, particularly economically or socially, to Queensland or a region.

The purpose of declaring a project a prescribed project is to overcome any unreasonable delays in obtaining project approvals. It enables the Coordinator-General, if necessary, to intervene in the approvals process in a number of ways to ensure timely decision making for the prescribed project.

On 25 March 2024, the overall NQC Project was declared a prescribed project under Section 76E of the SDPWO Act, further validating the development's socio-economic benefits to the Townsville region and beyond.

4.1.2 *Environment Protection and Biodiversity Conservation Act 1999*

An assessment of the Project's potential impact upon Matters of National Environmental Significance (MNES) (listed threatened species and threatened ecological communities) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) has been undertaken by a team of qualified ecologists.

On 13 January 2025, the Minister for the Department of Climate Change, Energy, the Environment and Water (DCCEEW) determined that the NQC Project (i.e. all four NQC components) was a controlled action, requiring further assessment beneath the EPBC Act. EMM, on behalf of Solquartz and PEP are responding to information requests from DCCEEW via preliminary documentation.

A copy of the MNES Assessment Report which informed the EPBC referral can be made available to TCC upon request.

The transmission line corridor did not form part of the NQC EPBC referral and will be captured by TCC as part of the LEIP enabling infrastructure approvals.

4.1.3 *Planning Act 2016*

The following addresses the relevant requirement of the *Planning Act 2016* (Planning Act) by assessing the Project against the relevant assessment benchmarks.

i Assessment manager

Schedule 8, Table 2, Item 1 (b)(i) of the Planning Regulation states that where development is made assessable by a local categorising instrument, the local government is the assessment manager. Consequently, the assessment manager for the Project is TCC.

ii Use definition and level of assessment

The TCC Planning Scheme defines the Project as summarised in Table 4.1. In accordance with the Table 5.5.20 – High impact industry zone of Part 5 of the TCC Planning Scheme, the proposed use is subject to Impact Assessment as this is the highest level of assessment covering the three key project components.

Table 4.1 **Summary of the Project land use definitions**

Project component	Definition	Level of assessment
Battery Energy Storage System (BESS)	Undefined Any use not listed in Table SC1.1 (Use definitions) is an undefined use. Note, whilst not defined within the IRC Planning Scheme, the Planning Regulation 2017 has now been updated to include a 'battery storage facility'.	Impact
Transmission line	Major electricity infrastructure beneath SC1.1 of the Planning Scheme. All aspects of development for either the transmission grid or electricity supply networks as defined under the <i>Electricity Act 1994</i> , in this case, powerlines greater than 66kV.	Code
Substation	Premises forming part of a transmission grid or supply network under the <i>Electricity Act 1994</i> , and used for: • converting or transforming electrical energy from one voltage to another; • regulating voltage in an electrical circuit; • controlling electrical circuits; • switching electrical current between circuits; • a switchyard; or • communication facilities for 'operating works' as defined under the <i>Electricity Act 1994</i> or for workforce operational and safety communications.	Code

4.1.4 Pre-lodgement meeting and advice

The first formal pre-lodgement meeting with TCC was held on November 27 2024 to introduce TCC to Private Energy Partners team and the project components. A follow up formal meeting with TCC was held on 17 April 2025 (PLM25/0068) to introduce the planning pathway, project components and detail on the BESS development. Meeting minutes received from TCC are attached as Appendix E.

A second meeting was held with the TCC planning team and Owner's team on 24 July 2025. The purpose of this meeting was to inform the TCC Owners Consent team of the project, and provide an update of the components specifically in relation to Package 1.

Informal communications with the Planning assessment team at TCC has been ongoing during the baseline studies for the project site since August 2024. Outcomes from which have identified alignment of model input considerations and technical model scenarios such as climate change.

4.2 State development assessment

The Planning Act details the assessment benchmarks which the assessment manager must assess the proposed development against. These state assessment benchmarks are summarised in Table 4.2.

Table 4.2 **State assessment benchmarks**

Document	Assessment benchmark	Addressed in report
State Planning Policy 2017 (SPP 2017)	In accordance with section 2.1 – <i>State Planning Policy</i> of the Townsville City Plan, the Minister has identified that all aspects of the SPP have been integrated into the planning scheme.	Assessment of the Project against the provisions of the SPP is not required as all relevant matters will be dealt with under the provisions of the planning scheme.

Document	Assessment benchmark	Addressed in report
North Queensland Regional Plan 2020 (Regional Plan)	<i>Planning Act 2016</i> , Part 2, Subdivision 2, Section 30 states that impact assessment applications must include discussion of the proposed development against the relevant regional plan.	Assessment of the Project against the North Queensland Regional Plan is in Section 4.4.

4.3 Referral agencies

In accordance with Schedule 10 of the Planning Regulation, Table 4.3 identifies the following referral agency triggers have been identified for the Project.

Table 4.3 Referral agency triggers

Planning Regulation reference	Description	Referral agency
Schedule 10, Part 9, Division 2, Table 2	Material Change of Use of premises near a substation site or subject to an easement	Powerlink Australia

4.4 TCC planning assessment

4.4.1 Strategic framework

Table 4.4 provides a response to the relevant strategic outcomes in the strategic framework against the proposed development.

Table 4.4 Assessment of relevant strategic framework outcomes

Strategic outcome	Response
Strategic intent	
Environmentally sustainable future	The project area is not within or in close proximity to any outstanding natural values. Solquartz and PEP have consciously avoided placement of the BESS, substation and transmission lines within areas of environmental importance. Appendix L further discusses the water quality impacts in relation to sensitive receptors.
Sustaining economic growth	The project is expected to directly create up to 90 jobs during construction. While LEIP is not specifically mentioned in the strategic theme, it is inferred that the progression of development in this precinct facilitating renewable energy and energy diversification is a positive for building a diverse and healthy economy in Townsville.
Environmentally sustainable future	
Natural assets	The site has historically been used for grazing purposes, thereby diminishing the original environmental values on site. The majority of the site had obviously been cleared of native vegetation and cultivated in the recent past. This area had an extremely high coverage of dense weeds. Very few native species of vegetation were recorded in this area, and native fauna was scarce.
Integrated water cycle management and ecosystem health	The premises is not located within or in proximity to any wetlands. The nearest waterway and riparian area is associated with Four Mile Creek, 50 m away from the premises boundary. The Project will not cause any degradation to Four Mile Creek. The Project has been sited such that no development is proposed within the Water Resource Catchment Overlay. Risks associated with this development are further detailed and risk assessed within Appendix L.

Strategic outcome	Response
Natural hazards (bushfire, landslide and flood)	The Project avoids areas of high flood hazard and high bushfire hazard. There are no areas of landslide hazard on the subject site. The Project does not materially increase the extent nor severity of natural hazards.
Sustainability	The Project maintains and upholds sustainability in its development through the following: • Development is designed to sensitively respond to Townsville’s climate through its orientation, layout and design of the built environment. • Development minimises demands for energy use and otherwise promotes efficient use of energy. • Innovation in climate responsive and energy efficient design is encouraged. • Development is located, designed and managed to avoid environmental harm or nuisance.
Sustainable economic growth	
Industrial land	The Project is sited within the Lansdown Eco-Industrial Precinct. The Project is a high impact industry, which is consistent with the intent of the Precinct.

4.4.2 Code assessment matrix

The assessment matrix below (Table 4.5) summarises the outcome of assessment of the proposed development against the relevant performance and accepted outcomes of the applicable IRC assessment benchmarks. The assessment matrix identifies the level of compliance of the proposed development in accordance with the legend below. Criteria identified in the assessment matrix as requiring further explanation is addressed in Appendix G.

Table 4.5 **Assessment matrix for the proposed development**

Outcome PO or AO	High Impact Industry Code		Bushfire Overlay Code		Flood Overlay Code		Natural Assets Overlay Code		Healthy Waters Code		Transport Code		Works Code		Telecomms Facility Code		Landscape Code	
	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO
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Outcome PO or AO	Legend Criteria is clearly met and no further assessment is required Criteria is met and further explanation is provided for clarity Alternative solution is proposed to meet performance outcome Not applicable or no criteria prescribed																	
	High Impact Industry Code		Bushfire Overlay Code		Flood Overlay Code		Natural Assets Overlay Code		Healthy Waters Code		Transport Code		Works Code		Telecomms Facility Code		Landscape Code	
	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO	PO	AO
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4.4.3 High impact industry zone

The project is consistent with the purpose of the High impact industry zone. Consistent with the purpose of the High impact industry zone code, the project positively contributes to the safe and efficient use of industrial land for industrial purposes and aligns with the intended vision for the LEIP. A detailed assessment against the Performance Outcomes and Acceptable Outcomes of the High Impact Industry Code is provided in Appendix G.

Table 4.6 Assessment against the High Impact Industry Code overall outcomes

Overall outcomes	Response
(1) The purpose of the High impact industry zone code is to provide for high impact industry uses. It may include non-industrial, and business uses that support the industrial activities where they do not compromise the long-term use of the land for industrial purposes. Activities considered appropriate in this zone are defined as High impact industry in the schedule of definitions.	The development a high impact industrial use (BESS, substation and transmission lines) represents the highest and best use of the industrial land. This development will facilitate electricity supply for future Metallurgical Silicon (MG-Si) and Polysilicon manufacturing facilities is one component which is part of the broader NQC project.

Overall outcomes	Response
(2) The particular purpose of the code is to: (a) facilitate the safe and efficient use of land for a range of higher impacting industrial activities; and (b) ensure development does not detract from the function and viability of centres and minimises impacts on the amenity of nearby sensitive uses.	The NQC is a project recognised as a Prescribed Project by the State due to its potential economic and social significance to Queensland. The subject site is bounded by the Flinders Highway to the east (600m away), north of Four Mile Creek (50m no-go zone from the creek line has been established).
(3) The purpose of the code will be achieved through the following overall outcomes: (a) the zone accommodates industrial uses that are likely to have a higher potential for off-site impacts and other uses that are of a similar nature or scale and are compatible with the impacts and risks associated with the zone; (b) the zone does not accommodate uses which attract visitation by members of the public. (c) the intrusion of incompatible uses, or uses which may be more appropriately accommodated in other zones, is avoided to protect the availability of land for industrial purposes and the viability and efficient operation of existing and future industry uses; (d) the impacts of development are managed to ensure public health and safety; (e) development avoids significant adverse effects on water quality and the natural environment; (f) development does not adversely affect the safe and efficient operation of Department of Defence landholdings; (g) development is safe and legible and designed to facilitate large format industrial uses. (h) development makes a positive contribution to the public domain, particularly along major roads	Visual screening to roads internal to the Lansdown Precinct will be facilitated through landscaping, landscaping matters are subject to reasonable and relevant conditions, reflecting the nature of the development and surrounding land uses and viewpoints. Located within LEIP, the BESS and Substation will be accessible to authorised personnel via private vehicle only. The facility will be secured behind appropriate security fencing and where practical other security monitoring (people or technology) to reduce opportunity for intruders and maintain public health and safety. The project does not include land that is held by the Department of Defence, nor does it impede on the operation of any operation or landholding that is held by the Department of Defence
(4) The purpose of the zone will also be achieved through the following additional overall outcomes for particular precincts: Lansdown high impact industry precinct: (a) medium and high impact industrial uses are accommodated in this precinct; (b) development provides adequate new infrastructure to support new uses, including roads, stormwater, water and sewer infrastructure; (c) development is avoided in environmental corridors and the water resource catchment area to maintain ecological processes, biodiversity values and the quality of waterways; (d) development avoids impacts on groundwater; (e) development provides strong landscape amenity to all boundaries fronting a road and land external to the zone; (f) development minimises impacts on surrounding land uses, including existing sensitive land uses; and (g) development does not compromise petroleum pipeline infrastructure, and the risks and hazards to people and property associated with petroleum pipeline infrastructure are not further increased through development.	As a high industrial impact use, the project represents the highest and best use of the subject land. Whilst one component of the larger NQC project, the BESS and Substation facility will be a first mover within the LEIP precinct helping cement it as a strategically important area for emerging technologies. The development incorporates infrastructure to support the proposed use including drainage and water management structure as per Appendix C. Further assessment to the development on the surrounding infrastructure and receiving environment is provided in Appendices Appendix H - Appendix L. Consistent with the intent of the LEIP, the avoids and maintains the riparian corridor along Four Mile Creek in the south and avoids any impact to groundwater. Further, located over 1200m from the gas pipeline, the project does not compromise the function of the pipeline nor increase the risk to people and/ or property.

i Overlays

A summary of the applicable overlay codes is provided in Table 4.7. A full assessment against these assessment benchmarks is provided in Appendix G.

Table 4.7 **Summary of assessment against overlay codes**

Overlay	Sub-Class	Response
OM-06.1 Flood Hazard	Low hazard area Medium hazard area	As the project premises intersects with the flood hazard overlay code sub class of low and medium hazard areas, an flood impact assessment has been undertaken on the proposed development. With respect to the overhead transmission lines intersection with the OM-06.1 flood hazard overlay, there is minimal disturbance of the towers and overhead cabling to the areas identified to be low and medium flood hazard areas. As the overlay codes identifies the premises is subject to medium flood hazard, a baseline flood study as been prepared and is provided as Appendix K. This assessment assesses the potential impacts on flooding of the proposed development, identifies the suitable measures to mitigate any adverse impacts on flooding and demonstrates how the proposed development layout reduces risk of flooding. Performance of the development against the TCC Planning scheme code is presented in the Water Resources Assessment Report in Appendix L.
OM-08.0 Natural Assets Environmental (pertaining to the transmission line)	High environmental importance area	The project premises intersects with the OM-08.0 high environmental importance overlay along the areas of the Fourth Mile Creek. Although the premises intersects with this area, there is no disturbance proposed in this area. A 50 m offset buffer area has been identified along the Four Mile Creek to maintain the natural environment and protect the environmental infrastructure and function of this area. With respect to the overhead transmission lines intersection with the OM-08.0 natural hazard overlay, there is minimal disturbance of the towers and overhead cabling to the areas identified to be high environmental importance areas.
OM-02.2 Bushfire Hazard Area (pertaining to the transmission line)	Medium Bushfire hazard area	The project premises is located adjacent to the areas designated as medium bushfire hazard. As such, a Bushfire hazard assessment and management plan has been completed as is provided as Appendix I. The purpose of the overlay code is to ensure that the development does not increase the extent or the severity of bushfire hazard or increase the risk to life, property, community or the environment. The development will materially increase the number of people congregating on the premises for operational purposes. Given that the site-specific remodelled mapping of bushfire-prone areas shows that the majority of the lot is outside the 'Medium' hazard, 'Potential Impact Buffer' area, which has minimised the bushfire prone area potential. A detailed bushfire emergency management and evacuation plan shall be prepared to ensure the safety of people is maintained, this is further discussed within Appendix I.

4.5 North Queensland Regional Plan assessment

Assessment of the proposed development against the North Queensland Regional Plan 2020 (Regional Plan) identifies that the project aligns with the vision and key outcomes of the Regional Plan. The project balances the retention and avoidance of the Four Mile Creek corridor, while also supporting the regional plan's vision to diversify the economy and strengthen the agricultural industries prosperity. The project makes a positive contribution to the delivery of the LEIP, helping drive employment growth, economic development, and broader social benefits through its build out.

5 Environmental considerations

Relevant environmental impacts have been considered in the preparation of this application. These are summarised in Table 5.1 and further detailed in Appendix H - Appendix L.

Table 5.1 Summary of environmental assessments supporting this application

Discipline	Summary of assessment
Water resources	The potential for construction, operation, and decommissioning phases to create risks to surface water environmental values were assessed via: • Simulation of potential flood risk at the proposed site, and effect of development on flood behavior • Simulation of the effectiveness of proposed stormwater treatment and management methods • Semi-quantitative source-pathway-receptor assessment of the risk to Lake Ross drinking water in the event of BESS fire • Qualitative consideration of typical construction methodologies Outcomes from which are provided on a stage basis below. • Construction: – During construction, site clearing and earthworks may create conditions which promote erosion. Erosion during a rainfall runoff event would have the potential to increase the sediment load in the nearby Four Mile Creek. Although sediments may be present during construction, low velocities in the overland flow (<0.1 to 0.3 metres per second (m/s)) will reduce the sediment load in any runoff. Good erosion and sediment control practices during construction should reduce the sediment load from the construction areas. Prior to construction, a Construction Erosion Management Plan (CEMP) would be developed to address temporary and site-specific risks to water quality and drainage during the construction phase of the project • Operation: – Flood risk - The development lies within the TCC 'medium flood hazard' area. The sub-station and BESS will be elevated above the 0.2% AEP flood level (Figure 5.1). The bio-retention basin will occupy a section of the Fields Creek flood storage area, but will not worsen flood characteristics (see afflux mapping in Appendix L). Shallow overland flow will be redirected around the development. The altered flow paths will be of relatively low flow rate, such that scour and erosion will not be increased. – Water quality ▪ Stormwater management – ○ at the sub-station and BESS will incorporate water sensitive urban design (WSUD) principles and industry specific water quality requirements. The expected effectiveness of WSUD elements was simulated using MUSIC software (Appendix B). Treatment of oils (which may be spilled at the sub-station) and battery chemicals (which may be spilled at the BESS) is not addressed in MUSIC, were considered in addition to standard MUSIC modelling. The development includes the sub-station, O&M buildings, the BESS, access roads, vegetated areas. Runoff, and transport of sediment, nitrogen and phosphorus from these areas was simulated using the MUSIC software (Appendix L). A split node approach was used, whereby hardstands, vegetated areas, and roads were simulated as separate nodes. ▪ Stormwater treatment - ○ The proposed treatment mechanisms for oil spilled at the sub-station include; A spills cleanup procedure will be in place during site operations. Areas containing oils will be bunded. Residual oils transported by rainfall runoff will be intercepted and treated via oily-water separators as per industry guidelines. Treated stormwater would be discharged to the BESS stormwater system, which provides the option for containment if required. ○ The proposed treatment mechanisms for metals and chemicals at the BESS include: A spills cleanup procedure will be in place during site operations. Stormwater runoff would be directed to a grassed swale, which will intercept and store particulate matter in the grass root zone during low flows. The swale would discharge to a bio-retention basin with significant event storage volume. This basin would be designed such that discharge could be prevented when desirable, such as in the event of a spill. This will allow time for cleanup procedures to occur. ○ The bio-retention basin will have dimensions of approximately 170 m x 170 m x 5 m deep, with excavation occurring for the purpose of supplying fill material to enable construction of the BESS

Discipline	Summary of assessment
	and sub-station pads, and the void then repurposed for stormwater management. The excavated depth of the pond would prevent passive drainage of the pond to Four Mile Creek. ▪ Drainage – ○ To enable pond drainage, and to prevent the formation of stagnant water conditions (and the possibility of poor water quality developing), a pump will be installed to lift water from the pond to the elevation of the creek. The pump would be activated by the presence of water in the bio-retention pond, and would discharge to Fields Creek at a nominal rate of around 10 L/s (subject to detailed design). This arrangement will allow isolation of the pond in the case of a spill by switching off the pump and result in sufficient detention time that stormwater treatment is expected to be effective – During operation of the site, the erosion potential of the soils from the site will not be increased from existing conditions due to the low velocities in the overland flow (max 0.3 m/s). This will be further reduced if the surface is re-vegetated as soon as practicable. – MUSIC modelling indicates that the proposed stormwater treatment measures will be effective at reducing sediment and nutrients from the site Refer Appendix L for further detail.
Noise	Noise emission objectives have been established in line with the acoustic quality objectives outlined in the <i>Environmental Protection Policy (Noise) 2019</i> (EPP 2019) with consideration of subsequent development packages of NQC, and development of the LEIP in general. Noise models were run to quantify the potential impacts of construction and operation on nearby sensitive receptors. Outcomes from which are summarised below: • Noise from construction of the Project was predicted to exceed noise objectives at four nearby sensitive receptors. • The road traffic noise associated with the construction of the Project was predicted to comply with the project specific road traffic noise objectives at all sensitive receptors • Noise modelling predictions indicated adverse impacts during the operation of the Project at surrounding sensitive receptors during the night-time period at four nearby sensitive receptors. • No construction and operational vibration impacts are anticipated given the distance between the nearest sensitive receivers to the Project. Refer Appendix H for further detail including proposed mitigation measures.
Ecology	The premises mostly consist of cleared areas, with a very high percentage of exotic groundcover. EMM conducted field surveys of the project area in 2023 and 2024 including assessing for vegetation communities, fauna, habitat assessment, bird surveys, spotlighting, and deployment of Anabat detectors. Of relevance to the premises, no ground-truthed regional ecosystems were mapped and no threatened flora or fauna observed. The area contains very few fauna habitat features with the site having been historically cleared and cropped for intensive agriculture. Vegetation adjacent to Four Mile Creek, located south of the premises, is mapped as RE11.3.30 (Eucalyptus woodland) and classified as Least Concern Regrowth vegetation. A 50-metre offset buffer from this creek has been adopted and will be maintained in the development of Package 1. The development has been carefully sited to ensure the protection of areas of ecological significance, including wetlands, riparian vegetation, ecosystems, and water quality. Overhead transmission lines, with their minimal footprint, allow sensitive natural assets to be avoided. This approach ensures that ecological values are maintained, with no intensification of impact or permanent habitat loss. As discussed in Section 4.1.2, an EPBC referral for the broader NQC project is currently under assessment by DCCEEW.

Discipline	Summary of assessment
Bushfire	A Bushfire Hazard Assessment and Management Plan has been prepared for the Project. Outcomes from which identified that in line with PO3 of the Townsville City Plan 2014 – Bushfire Hazard Code, the siting and design of structures must maintain an ‘acceptable’ or ‘tolerable’ level of risk. As such, to minimise potential radiant heat exposure which could reach BAL Flame Zone (BAL-FZ) at the site perimeter a maximum radiant heat flux of 10 kW/m² (BAL-10) is recommended, consistent with the State Planning Policy Guidance (DSDMIP, 2019). To achieve this, a 29.1-metre Asset Protection Zone has been proposed along the entire boundary of the BESS and Substation. Maintenance of this Asset Protection Zone, will require regular removal of vegetation and fuel loads. Most of the Asset Protection Zone area is already cleared and has minimal ecological impact due to dominance by weeds. Refer Appendix I for further detail. Overhead transmission lines involve minimal vegetation clearing and non-habitable structures. They do not increase hazard exposure or community vulnerability, so do not trigger bushfire assessments or management plan requirements.
Traffic	Traffic generated by the project will be the highest during peak construction in 2027. For a period of three months, traffic is expected to reach 93 light vehicle movements and 10 heavy vehicle movements, for a total of 103 vehicle movements the AM and PM peak hours (inbound and outbound). Traffic impacts expected to be negligible during operations. The Flinders Highway/Woodstock-Giru Road/Glenn Road intersection is expected to maintain a level of service LOS B with the construction traffic. However, with Drive IT motor sport development traffic, the intersection will operate at LOS C during the AM peak hour. Nonetheless, there will not be any excessive queuing by the inbound vehicles that will affect the right turn by on Flinders Highway. Even with construction and cumulative traffic, the intersection will have sufficient capacity to accommodate additional traffic. The Austroads intersection turn warrant assessment show that no road infrastructure upgrade is required at Flinders Highway/Woodstock-Giru Road/Glenn Road as this intersection already have dedicated right and left turn bays at the north and south approaches. A level crossing assessment is undertaken at the realigned Jones Road. It is recorded that there are two trains during the AM peak and one train during the PM peak hours that pass this level crossing. The assessment shows that due to the cumulative traffic, Flinders Highway will be impacted due to the excessive queuing. Therefore, it is recommended that the heavy vehicle deliveries are to be restricted during the operation of this level crossing. The heavy vehicle movement will be controlled by a Construction Traffic Management Plan to be prepared in collaboration with TCC. Refer Appendix J for further detail.
Visual	The visual study area is characterised by flat terrain and land use dominated by rural, mining, and industrial activities. As a result, the overall scenic quality across all assessed viewpoints is considered very low. Viewpoint sensitivity is generally low due to the nature of surrounding land use. Private viewpoints are limited to secondary views from rural dwellings, while public viewpoints such as Manton Cemetery are rated as low or very low in sensitivity. The highest visual impact will occur east of the Project near the Flinders Highway and neighbouring Railway. While two public viewpoints (PVP-05 and PVP-11) are rated moderate and high in magnitude respectively, all others are rated low or very low due to distance, low infrastructure height, flat topography, and existing vegetation that provides effective screening for nearby private residences. Additional mitigation is not required for the Project because no viewpoints have been assessed as potentially experiencing a visual impact higher than low. Although not required, visual impacts resulting from the BESS and substation will be further mitigated by proposed buffer planting east of the Project that is associated with the Lansdown Eco-Industrial Precinct and is not part of the Project. Refer Appendix K for further detail.

Discipline	Summary of assessment
Cultural heritage	A search was undertaken of the Aboriginal and Torres Strait Islander Cultural Heritage Database and Register. No Aboriginal or Torres Strait Islander cultural heritage site points are within the project area. The cultural heritage party for the area is the Bindal People. The Cultural Heritage Body for the area is the Gudjuda Reference Group Aboriginal Corporation. A search of Commonwealth, State and local heritage registers did not identify any recorded sites within or adjacent to the project area. The purpose and primary intent of the performance outcome is to protect sites of heritage significance. This project is not expected to impact any historical heritage sites in the vicinity of the project area, primarily due to their location relative to the proposed development and the absence of any interaction or disturbance arising from the works. Given the significant distance from the project area, a historical heritage assessment is not considered necessary. There are three historic heritage sites surrounding the project area which protected under the Townsville City Plan (version 2024 v.1), these include: • Lansdown Station Homestead Site (former) and Unmarked Grave - Lot 500 on E12466 (located 2.7 km West from the Project area); • Manton Cemetery - Lot 2 on EP1107 (located 600 m South from the Project area); and • Woodstock CWA Hall - Lot 24 on EP352 (located 2.5 km North from the Project area).

6 Conclusion

Solquartz and PEP is seeking a development permit for the construction, operation and maintenance of a BESS, switchyard and ancillary infrastructure.

This Development Application seeks:

- Material Change of Use for an undefined use (BESS)
- Material Change of Use for a Substation
- Material Change of Use for Major Electricity Infrastructure (transmission line).

This report and its supporting documents have been prepared in accordance with the provisions of the *Planning Act 2016* and the relevant requirements of the TCC Planning Scheme. An overall assessment of the Project against the Planning Scheme confirms that the development represents a suitable land use outcome for the site and upholds the character and amenity of the high impact industry zone. It is therefore requested that the Project is approved subject to reasonable and relevant conditions.

