

# EGH2 Green Hydrogen Project

Application Number: **01932**Commencement Date: **17/07/2023**Status: **Locked**

## 1. About the project

### 1.1 Project details

#### 1.1.1 Project title \*

EGH2 Green Hydrogen Project

#### 1.1.2 Project industry type \*

Energy Generation and Supply (renewable)

#### 1.1.3 Project industry sub-type

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#### 1.1.4 Estimated start date \*

30/06/2024

#### 1.1.4 Estimated end date \*

30/06/2075

## 1.2 Proposed Action details

### 1.2.1 Provide an overview of the proposed action, including all proposed activities. \*

#### Proposed Action background and overview

Edify Energy Pty Ltd (the Proponent) is proposing to construct and operate the Edify Green Hydrogen (EGH2) project at the Lansdown Eco-Industrial Precinct, 46 km south of Townsville, near Woodstock in North Queensland.

Edify Energy has received \$20.74 million from the Australian Renewable Energy Agency (ARENA) and €16.4 million from Germany's Federal Ministry of Education and Research (BMBF) in support of EGH2 as part of the German-Australian Hydrogen Innovation and Technology Incubator (known as HyGATE).

The EGH2 project (the Proposed Action) will be a multi-stage green hydrogen production plant. The first stage will involve the construction and operation of a 17.6 MW green hydrogen production facility, with the electrolyser expected to have a hydrogen generating capacity of 333 kg/hr. The energy source for the initial stage will be either a connection into an overhead transmission line or an integrated 21MWp solar PV renewable energy generation and 6MW battery energy storage system (BESS). After the initial stage (approximately year 5), the facility will be expanded to increase the hydrogen production capacity, leading to an estimated 1GW of hydrogen production in the final stage of the project.

#### Proposed action components / activities

The exact components of the Proposed Action are not certain and will depend on a variety of factors such as future demand and advances in technology. However, the proposed action will be comprised of some or all of the following components:

- A hydrogen plant (building) comprising:
  - An electrolyser including an air compressor package (Nitrogen purge) and an air cooler package, and wastewater storage following electrolysis (for disposal offsite)

- A demineralisation water treatment plant (the final stage will likely include piping of water to site from an approved water source) and storage for waste product following demineralisation (for disposal off-site)
- Dry-lubricated reciprocating compression system and interconnecting piping for hydrogen gas and water system
- Deoxo/dryer package
- Rectifiers
- Transformers
- Control and protection system
- A storage, transport and universal mobile refuelling solution (transporter and refueler) to supply the hydrogen to domestic customers
- Hydrogen conversion fuel carrier system (potential production of methanol for export)
- A small-scale (behind the meter) solar facility comprising:
  - Photovoltaic solar panels
  - Piled foundations
  - Tracking system
  - Inverters (Power Conversion Units, PCUs)
  - Internal access tracks
  - Underground medium voltage network
  - Vehicle car park
  - Security fencing
  - Battery Energy Storage System(s)
- Ancillary and supporting infrastructure including:
  - Site office and car park
  - Access and perimeter tracks
  - Internal tracks and bed level crossings
  - Perimeter fencing
  - Buildings including operations and maintenance
  - High voltage switch room
  - An electricity sub-station
  - Rainwater tanks

For a detailed description of these components Refer to Attachment A - Proposed Action Activity Description, All sections, pages 1-8.

Access to the Proposed Action will be via existing formed roads. Currently the access road is Manton Quarry Road via the Flinders Highway. However, future access may be via an alternative road developed as part of the supporting infrastructure for the Lansdown Eco-Industrial Precinct (LEIP) (for details of the LEIP Master Plan see Calibre, 2022 – Executive Summary, pages ii - xviii).

Water required for the first stage of operation will initially be trucked to the site; however, a connection to an approved water source that is a Council approved water allocation, will then be utilised for later stages. Edify Energy and Townsville City Council have a Memorandum of Understanding for the supply of raw water which can be summarised as follows:

- The initial stage will allow up to 12ML per annum to be trucked to Edify.
- The following stages will increase capacity of water and will be supplied by a pipe to Lansdown. The new pipeline will be an extension from the existing Houghton pipeline sized appropriately to deliver raw water to users of the Precinct.

All wastewater will be stored (in storage tanks) for transport and disposal offsite by a licensed carrier. Potable water will likely be trucked to the site and any other water requirements for non-activity purposes (e.g. fire fighting) will be sourced from rainwater harvesting or trucked to site.

#### **Proposed Action footprints, size and nature of impacts**

The Project Area is 107.28 ha in size and the proponent is seeking to develop up to a maximum 96.67 ha of the site (the Disturbance Footprint) for activities under the Proposed Action, with the remaining 10.61 ha being avoided (the Avoidance Footprint). The Avoidance Footprint encompasses Two Mile Creek (which intersects the site) with a 50m buffer either side of the watercourse centreline.

Refer to Attachment B – EGH2 EPBC Referral Impact Assessment, Figure 1, Section 1, page 6 for locations of the Project Area, Disturbance Footprint and Avoidance Footprint.

To allow access to project infrastructure on either side of Two Mile Creek, two 100m long x 20m wide bed level crossings will be constructed to cross Two Mile Creek where it intersects the fence line along both the western boundary and the northern boundary of the Project Area. These crossings form part of the Development Footprint for the Proposed Action and will be constructed in accordance with the Queensland Government *Accepted development requirements for operational work that is constructing or raising waterway barrier works* (DAF, 2018).

Attachment B – EGH2 EPBC Referral Impact Assessment, Section 2, pages 7-9 provides details of the nature and extent of the direct and indirect impacts associated with the activities for the proposed action.

#### **1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?**

No

## 1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? \*

The Project Area is located within the Lansdown Eco-Industrial Precinct (LEIP). This area was identified under the Lansdown Eco-Industrial Precinct Master Plan 2022 to provide the region with an eco-industrial precinct to facilitate development of manufacturing, processing, technology and emerging industries. The LEIP covers approximately 2,200 ha and in 2020 the land was re-zoned by the Townsville City Council as 'High impact industry' through an amendment to the Townsville City Plan. For details of the LEIP Master Plan see Calibre, 2022 – Executive Summary, pages ii - xviii.

The Townsville City Council ran a public tender process in 2019 and provisionally reserved land within the LEIP for Edify Energy to develop a hydrogen facility and future sub-station. This is identified in the LEIP Master Plan (see Calibre, 2022 – Section 3.1.8, page 16).

Development Approval (DA) for the project Development Permit (Material Change of Use (MCU21/0040) High Impact Industry - Green Hydrogen Facility) was granted by the Townsville City Council (subject to conditions) on 17 September 2021.

A number of policy, guidelines, and guidance documents are relevant to identifying the impacts and constraints for the Proposed Action and providing guidance in the assessment of the ecological values and impacts. Relevant State documents include:

- Queensland *Nature Conservation Act 1999*
  - *Nature Conservation (Animals) Regulation 2020*
  - *Nature Conservation (Plants) Regulation 2020*
- Queensland *Environmental Offsets Act 2014*
  - *Environmental Offsets Regulation 2014*
  - *Queensland Environmental Offsets Policy*
- Queensland *Vegetation Management Act 1999*

Refer to Attachment C - EGH2 Ecological Assessment Report, Table 1, Section 1.4, page 10-11 for details of these state legislation documents and their relevance to the Proposed Action.

Additionally, the following EPBC Act policy documents and guidance are relevant to the Proposed action including:

- *Matters of National Environmental Significance – Significant impact guidelines 1.1*
- *Draft referral guideline for 14 birds listed as migratory species under the EPBC Act*
- *Significant impact guidelines for the endangered black-throated finch (southern) (Poephila cincta cincta)*
- *National recovery plan for the black-throated finch southern subspecies Poephila cincta cincta*
- *National recovery plan for the bare-rumped sheath-tail bat Saccolaimus saccolaimus nudicluniatius*
- Conservation Advice *Geophaps scripta scripta squatter pigeon (southern)*
- *Conservation Advice Saccolaimus saccolaimus nudicluniatius bare-rumped sheath-tail bat*
- *Conservation Advice Hirundapus caudacutus White-throated Needletail*

Refer to Attachment B - EGH2 EPBC Referral Impact Assessment, Section 1.2, pages 1-3 for details of these documents and their relevance to the Proposed Action.

## 1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. \*

The City of Townsville undertook a detailed Public Consultation process as part of the Townsville City Plan amendment to rezone the land and facilitate the establishment of the Lansdown Eco-Industrial Precinct LEIP (in which the Project Area is located), and subsequent Master Plan (see Attachment D - Townsville City Plan Proposed Major Amendment Public Consultation Submissions, Sections 1 - 4.2, pages 1 - 11). This consultation process included a public notice period inviting public submissions through which 269 submissions were received. The City of Townsville also held subsequent 'meet the planner' sessions to engage with the public and allow them to share any questions or concerns. The Public Consultation Submissions Review Report was prepared to detail each of the submissions and how they were addressed through any changes to the proposed Plan Major Amendment (see Attachment D - Townsville City Plan Proposed Major Amendment Public Consultation Submissions, Sections 1 - 4.2, pages 1 - 11).

The Proponent (Edify Energy) have a confidential Cultural Heritage Management Agreement (CHMA) with the Bindal People (local indigenous people), established in 2021. This Management Agreement includes the Project Area for the Proposed Action.

## 1.3.1 Identity: Referring party

### Privacy Notice:

Personal information means information or an opinion about an identified individual, or an individual who is reasonably identifiable.

By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

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**Confirm that you have read and understand this Privacy Notice \***

**1.3.1.1 Is Referring party an organisation or business? \***

Yes

Referring party organisation details	
<b>ABN/ACN</b>	90150901965
<b>Organisation name</b>	Open Lines Consulting Pty Ltd.
<b>Organisation address</b>	4B / 5 Hall St, Lyneham, Canberra, 2602
Referring party details	
<b>Name</b>	Mitchell Ross
<b>Job title</b>	Environmental Consultant
<b>Phone</b>	0449211447
<b>Email</b>	mitchell.ross@live.com.au
<b>Address</b>	4B / 5 Hall St, Lyneham, Canberra, 2602

**1.3.2 Identity: Person proposing to take the action**

**1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? \***

No

**1.3.2.2 Is Person proposing to take the action an organisation or business? \***

Yes

Person proposing to take the action organisation details
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<b>ABN/ACN</b>	85606684995
<b>Organisation name</b>	EDIFY ENERGY PTY. LTD.
<b>Organisation address</b>	Level 1 34-35 South Steyne, Manly, NSW, 2095
Person proposing to take the action details	
<b>Name</b>	Patrick Dale
<b>Job title</b>	Project Development Manager
<b>Phone</b>	+61487177136
<b>Email</b>	Patrick.dale@edifyenergy.com
<b>Address</b>	Level 3, 201 Charlotte Street, Brisbane QLD 4000

#### 1.3.2.14 Are you proposing the action as part of a Joint Venture? \*

No

#### 1.3.2.15 Are you proposing the action as part of a Trust? \*

No

#### 1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. \*

The Proponent's business is focused on improving environmental outcomes through the generation and supply of sustainable energy to power homes and industry across Australia. This project will help achieve these environmental outcomes through delivery of the Proponent's first green hydrogen facility. The facility will be an important step in meeting the growing need, both domestically and internationally, for emission-free hydrogen fuel.

The Proponent has sought appropriate approval through the state planning framework and EPBC Act. The Proponent therefore understands and functions in accordance with any Queensland and Commonwealth environmental laws and requirements, including management practices.

The Proponent is deemed to have a satisfactory record of responsible environmental management and will act in accordance with any state and federal requirements for the Proposed Action.

The Proponent has previously referred the following actions under the EPBC Act:

- Gannawarra Solar Farm Development, Vic (2016/7807)
- Solar Farm development, north-west of Collinsville, Qld (2016/7824)
- Stage 2 Solar Farm Development, north-west of Collinsville, Queensland (2017/7904)
- Majors Creek Solar Farm, south of Townsville, Queensland (2017/7963)
- Darlington Point Solar Farm, near Darlington Point, NSW (EPBC 2018/8218)
- Smoky Creek Solar Farm (EPBC 2021/9030)

#### 1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Edify Energy commits to undertake all activities in accordance with the Edify Energy Best Practice Charter (see Attachment E - Edify Energy Best Practice Charter, whole document, pages 1-2).

### 1.3.3 Identity: Proposed designated proponent

#### 1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? \*

Yes

Proposed designated proponent organisation details	
<b>ABN/ACN</b>	85606684995
<b>Organisation name</b>	EDIFY ENERGY PTY. LTD.
<b>Organisation address</b>	Level 1 34-35 South Steyne, Manly, NSW, 2095
Proposed designated proponent details	
<b>Name</b>	Patrick Dale
<b>Job title</b>	Project Development Manager
<b>Phone</b>	+61487177136
<b>Email</b>	Patrick.dale@edifyenergy.com
<b>Address</b>	Level 3, 201 Charlotte Street, Brisbane QLD 4000

### 1.3.4 Identity: Summary of allocation

#### Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	90150901965
Organisation name	Open Lines Consulting Pty Ltd.
Organisation address	4B / 5 Hall St, Lyneham, Canberra, 2602
Representative's name	Mitchell Ross
Representative's job title	Environmental Consultant
Phone	0449211447
Email	mitchell.ross@live.com.au

Address 4B / 5 Hall St, Lyneham, Canberra, 2602

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### Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

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ABN/ACN	85606684995
Organisation name	EDIFY ENERGY PTY. LTD.
Organisation address	Level 1 34-35 South Steyne, Manly, NSW, 2095
Representative's name	Patrick Dale
Representative's job title	Project Development Manager
Phone	+61487177136
Email	Patrick.dale@edifyenergy.com
Address	Level 3, 201 Charlotte Street, Brisbane QLD 4000

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### Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

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Same as Person proposing to take the action information.

## 1.4 Payment details: Payment exemption and fee waiver

### 1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? \*

No

### 1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? \*

No

### 1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?

No

### 1.4.7 Has the department issued you with a credit note? \*

No

### 1.4.9 Would you like to add a purchase order number to your invoice? \*

No

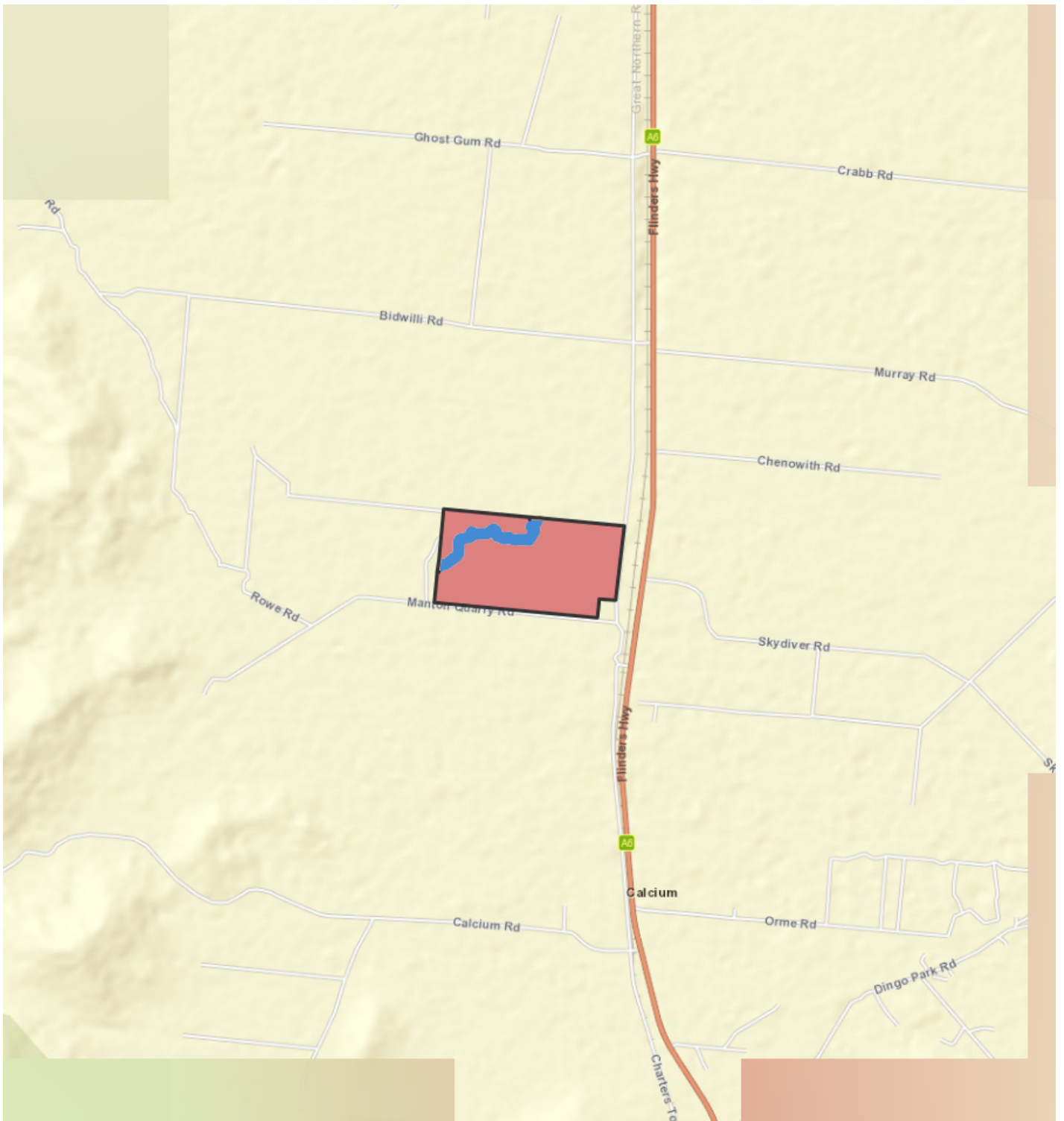
## 1.4 Payment details: Payment allocation

### 1.4.11 Who would you like to allocate as the entity responsible for payment? \*

Person proposing to take the action

## 2. Location

### 2.1 Project footprint



## 2.2 Footprint details

### 2.2.1 What is the address of the proposed action? \*

132 Bidwilli Road, Calcium QLD 4816

### 2.2.2 Where is the primary jurisdiction of the proposed action? \*

Queensland

**2.2.3 Is there a secondary jurisdiction for this proposed action? \***

No

**2.2.5 What is the tenure of the action area relevant to the project area? \***

The Project Area is located on freehold land, Lot 51 of Plan E124242. This Lot occupies an area of 107.28 ha and is bounded by Flinders Highway to the east and Manton Quarry Road to the south.

## 3. Existing environment

### 3.1 Physical description

**3.1.1 Describe the current condition of the project area's environment.****Current condition and distance to major towns**

The Project Area is located approximately 46 km south of Townsville, near Woodstock (5 km south of the intersection of Woodstock Giru Road and Flinders Highway) in North Queensland.

The Project Area has been historically cleared for pasture improvement, access tracks, stock yards and a shed, and has been subject to cattle grazing. The majority of the Project Area therefore comprises of non-native vegetation including grassland comprised of Indian bluegrass (*Bothriochloa pertusa*), rhodes grass (*Chloris gayana*), purple top chloris (*Chloris inflata*), sabi grass (*Urochloa mosambicensis*) and guinea grass (*Megathyrsus maximus*) with occasional patches of summer grass (*Digitaria ciliaris*) and fairy grass (*Sporobolus australasicus*). Within this non-remnant grassland are dense patches of leguminous species dominated by *Chamaecrista rotundifolia* and *Senna obtusifolia*.

Riparian fringing woodland vegetation is present along Two Mile Creek. However, the woodland is typically narrow, often restricted to a single tree width, and has been degraded in many areas due to erosion and scouring from cattle access or vehicle movements. Some areas along Two Mile Creek comprise of a mid-dense to dense shrub layer of rubber vine (listed as a restrictive plant under the Queensland *Biosecurity Act 2014*), leucaena and chinee apple (also listed as a restrictive plant under the Queensland *Biosecurity Act 2014*). These weeds have altered the natural structure of the vegetation communities present in parts of the Project Area.

A patch of woodland vegetation is present in the east of the Project Area near Two Mile Creek. This community is degraded and consists of a highly modified ground layer of introduced species.

Generally, the Project Area is considered to be degraded and/or in poor condition. Details of each vegetation community and their condition are provided in 3.2 below.

**Zoning and land use**

The land use of the Project Area is classified as 'production from relatively natural environments' or 'grazing native vegetation' (Queensland Globe, 2023). The Project Area is currently utilised for cattle grazing. The surrounding land uses include rural grazing, mixed farming and horticulture. There are a number of residential dwellings further to the north, south and east of the Project Area. Manton Quarry (operated by Hy-tec Concrete & Aggregates) is located approximately 1.8 km south-west of the Project Area. The Mount Isa Rail Line is located approximately 120 m to the west of the Project Area and the Flinders Highway is located approximately 200 m to the west of the Project Area. The rail and highway corridors run parallel to the eastern boundary of the Project Area.

The Project is located within the Lansdown Eco-Industrial Precinct (LEIP), identified under the Lansdown Eco-Industrial Precinct Master Plan 2022 (see Calibre, 2022 – Executive Summary, pages ii – xviii). The Project Area and all adjoining properties, have been recently rezoned by the Townsville City Council as 'High impact industry' and there will be no changes to this new zoning for the Project Area.

Properties to the the east of the Project Area on the other side of the Flinders Highway (not adjoining) are zoned as 'rural'. The Townsville City Council has also provisionally reserved land within the LEIP for Edify Energy to develop a hydrogen facility and future sub-station, as identified in the LEIP Master Plan (see Calibre, 2022 – Section 3.1.8, page 16).

#### **Road infrastructure**

Access to the Project Area will be via existing formed roads. Currently the access road is Manton Quarry Road via the Flinders Highway. However, future access may be via (but not dependent upon) an alternative road developed as part of the supporting infrastructure for the Lansdown Eco-Industrial Precinct (LEIP). There will be two driveway accesses, with one entry in and one entry out to facilitate an efficient movement of delivery and transport vehicles during construction and once operational. This will avoid turn-around points.

Further access to all sections of the site will be via internal access tracks and gates around the perimeter of the lot. To allow access to project infrastructure on either side of Two Mile Creek, two 100m long x 20m wide bed level crossings will be constructed to cross Two Mile Creek where it intersects the fence line along both the western boundary and the northern boundary of the Project Area (as explained in Section 1.2.1).

### **3.1.2 Describe any existing or proposed uses for the project area.**

The land use of the Project Area is classified as 'production from relatively natural environments' or 'grazing native vegetation' (Queensland Globe, 2023). The Project Area is currently utilised for cattle grazing. The surrounding land uses include rural grazing, mixed farming and horticulture. There are a number of residential dwellings further to the north, south and east of the Project Area. Manton Quarry (operated by Hy-tec Concrete & Aggregates) is located approximately 1.8km south-west of the Project Area. The Mount Isa Rail Line is located approximately 120 m to the west of the Project Area and the Flinders Highway is located approximately 200 m to the west of the Project Area. The rail and highway corridors run parallel to the eastern boundary of the Project Area.

As explained, the Project is located within the Lansdown Eco-Industrial Precinct (LEIP), identified under the Lansdown Eco-Industrial Precinct Master Plan 2022. The Project Area and all adjoining properties, have been recently re-zoned by the Townsville City Council as 'High impact industry'. The Townsville City Council has also provisionally reserved land within the LEIP for Edify Energy to develop a hydrogen facility and future sub-station, as identified in the LEIP Master Plan.

### **3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.**

The Project Area is located within the IBRA Townsville Plains sub-region of the Brigalow Belt North bioregion. The sub-region covers an area of 763,500 ha between Townsville and Bowen along the coast, extending south-east towards Collinsville. The area experiences a tropical savanna climate.

The geology of the Project Area comprises of quaternary age alluvium which is a stratified unit of flood plain alluvium with a lithologic composition of clay, silt, sand, and gravel (refer to Attachment C - EGH2 Ecological Assessment Report, Section 3.2, page 17).

### **3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.**

The topography of the Project Area comprises a flat to gently undulating system of old channel in-fills, relic swamp deposits and natural river levees. The Project Area is situated on an old alluvial system which drains east and ranges from approximately 80 mAHD in the west of the Project Area to 70 mAHD in the east (refer to Attachment C - EGH2 Ecological Assessment Report, Section 3.1, page 17).

## 3.2 Flora and fauna

### 3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

Detailed field investigations have been undertaken by Terra Solutions across the Project Area and immediate surrounds to inform this referral (see Attachment C - EGH2 Ecological Assessment Report, All Sections, pages 1-69). The results of these investigations are provided in an ecological survey report attached to this referral, along with an EPBC impact assessment document (see Attachment B - EGH2 EPBC Referral Impact Assessment, All sections, pages 1-24), which provides further detailed assessment against the requirements of the EPBC Act. Following is a summary drawn from these reports.

#### Flora

Six listed threatened flora species were identified by the EPBC Protected Matters Search Tool (PMST) conducted for the Project Area, with a 10 km buffer. These flora species and their EPBC listings are:

- *Bulbophyllum globuliforme* (Miniature Moss-orchid) - Vulnerable
- *Dichanthium setosum* (Bluegrass) – Vulnerable
- *Eucalyptus paedoglauca* (Mt Stuart Ironbark) - Vulnerable
- *Eucalyptus raveretiana* (Black Ironbox) – Vulnerable
- *Leichhardtia brevifolia* - Vulnerable
- *Omphalea celata* - Vulnerable
- *Tephrosia leveillei* - Vulnerable

A likelihood of occurrence assessment was conducted for these species (see Attachment C - EGH2 Ecological Assessment Report, Appendix F, pages 60 - 62). This assessment considered the species habitat requirements compared with the vegetation and habitat occurring within the Project Area, species records, distribution data (available from publicly available information sources including the Queensland Wildnet database) and data collected during recent on-ground surveys.

No threatened flora species were identified within or surrounding (within 10 km) the Project Area through desktop analysis and no threatened flora species or likely habitat were recorded within or adjacent to the Project Area during the recent on-ground surveys (see Attachment C - EGH2 Ecological Assessment Report, Section 3.5.4, page 32).

The listed threatened flora species identified by the PMST are therefore considered unlikely to occur within the Project Area.

#### Fauna

28 listed threatened fauna species and 18 listed migratory species were identified by the EPBC Protected Matters Search Tool (PMST) conducted for the Project Area, with a 10 km buffer. A likelihood of occurrence assessment was conducted for these species, as described above (see Attachment C - EGH2 Ecological Assessment Report, Appendix G, pages 63 - 69). The assessment determined that of the 28 listed threatened species, 24 were deemed unlikely to occur. The following listed threatened species were determined to be known or have the potential to occur within the Project Area:

- White-throated Needletail (*Hirundapus caudacutus*) (Vulnerable) has the potential to occur
- Bare-rumped Sheath-tail Bat (*Saccolaimus sccolaimus nudicluniatu*) (Vulnerable) has the potential to occur
- Black-throated Finch – southern subspecies (*Poephila cincta cincta*) (Endangered) has the potential to occur
- Squatter Pigeon (*Geophaps scripta scripta*) (Vulnerable) is known to occur

Of the 18 listed migratory species, 15 were deemed unlikely to occur. The White-throated Needletail (also listed as Vulnerable) has the potential to occur (as above). Fork-tailed Swift (*Apus pacificus*) and Rufous Fantail (*Rhipidura rufifrons*) also have the potential to occur (see Attachment C - EGH2 Ecological Assessment Report, Appendix G, pages 63 - 69).

#### Fauna habitat

Generally, the habitat present in the Project Area is of low value and/or in poor condition due to the following (see Attachment C - EGH2 Ecological Assessment Report, Section 3.6.2, pages 34 - 37):

- No significant rock, boulder piles or large logs occur in the Project Area and any rocks observed did not possess the required complexity and depth of interstitial spaces to provide adequate cover for threatened species that might utilise these habitats
- Erosion in the form of bank scouring was observed at various locations along Two Mile Creek. This erosion continues to occur due to cattle accessing pooled water in the creek
- Cattle access has reduced native ground cover and reduced the availability of graminivorous plants for birds
- Cattle access also increases the risk that any ground-nesting eggs would be crushed
- The grassland present in the Project Area is dominated by introduced pasture grasses (as detailed above in 3.1)

### 3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

## Soils

The Soils of the CSIRO Research Station 'Lansdown', Townsville, Queensland maps the soils for the Project Area at 1:10,000. Ten soil types were identified in the Project Area using this mapping. Detailed descriptions of the soil types and their presence within the Project Area are provided in Attachment C - EGH2 Ecological Assessment Report, Section 3.3, pages 17 - 18. Generally, the soils present within the Project Area are considered to have low phosphorous, nitrogen and organic carbon content, and provide poor conditions for plant growth.

## Vegetation

Mapped Vegetation (see Attachment C - EGH2 Ecological Assessment Report, Section 3.5.1, pages 24 - 27)

Two remnant vegetation communities are mapped within the Project Area as per the Queensland *Vegetation Management Act 1999* Regional Ecosystem (RE) mapping, both of which are considered least concern. These are:

- RE 11.3.30 - *Eucalyptus crebra* or *E. paedoglauc*a and *Corymbia dallachiana* woodland. Forms an open woodland to open forest in places. Has a grassy ground layer of *Heteropogon contortus*, *Bothriochloa bladhii*, *Themeda triandra*, *Sehima nervosum*, *Enneapogon spp.*, with forbs such as *Indigofera spp.*, *Glycine tabacina*, *Galactia tenuiflora* and *Tephrosia juncea* common. Occurs on older floodplain complexes on Cainozoic alluvial plains.
- RE 11.3.35 - *Eucalyptus platyphylla*, *Corymbia clarksoniana* woodland, occasionally with *Corymbia tessellaris*. A secondary tree layer commonly occurs, including *Planchonia careya*, *Pandanus spiralis*, *Melaleuca viridiflora* or *M. nervosa* and *Petalostigma pubescens*. The ground layer is usually tussock grasses including *Themeda triandra*, *Heteropogon contortus*, *Mnesithea rotboellioides* and *Bothriochloa decipiens*, together with herbs or forbs such as *Glycine tabacina*, *Galactia tenuiflora* or *Sida hackettiana*. Occurs on Cainozoic alluvial plains. Older floodplain complexes, major stream levees and lighter deltaic deposits.

Observed vegetation (see Attachment C - EGH2 Ecological Assessment Report, Section 3.5.2, pages 27 - 31)

The recent field survey of the Project Area confirmed the presence of a degraded form of RE 11.3.30, with vegetation described as *Eucalyptus crebra*, *Corymbia dallachiana* woodland on alluvial plains. The community consists of a canopy dominated by *E. crebra*, with subdominant *C. dallachiana* and occasional *C. tessellaris* over a highly modified, dense ground layer of *C. rotundifolia*, *S. obtusifolia* and *Sida acuta*. The community covers approximately 0.86 ha in the western extent of the Project Area, adjacent to Two Mile Creek which intersects the Project Area in the north-west. Prior to historical clearing, the Project Area likely consisted predominantly of RE 11.3.30.

A riparian fringing woodland community was identified along Two Mile Creek in the Project Area. The community comprises of *Lophostemon grandiflorus*, *Lagunaria queenslandica*, and *Melaleuca fluviatilis*. The vegetation community would be best described as RE 11.3.25b (riverine wetland or fringing riverine wetland). The community covers approximately 5.03 ha of the Project Area and is typically narrow, and often only one tree in width. It also contains a mid-dense to dense shrub layer of rubber vine, chinee apple and *Leucaena* (invasive plants). In some areas these invasive plants have altered the natural structure of the vegetation community, particularly in the northern section of Two Mile Creek in the Project Area.

The majority of the Project Area is comprised of non-remnant vegetation (101.41 ha of the total 107.28 ha Project Area). This includes grassland dominated by exotic species including Indian bluegrass (*Bothriochloa pertusa*), rhodes grass (*Chloris gayana*), purple top chloris (*Chloris inflata*), sabi grass (*Urochloa mosambicensis*) and guinea grass (*Megathyrus maximus*) with occasional patches of summer grass (*Digitaria ciliaris*) and fairy grass (*Sporobolus australasicus*). Patches of dense legume pastures dominated by *Chamaecrista rotundifolia* and *Senna obtusifolia* also occur as patches within the non-remnant grassland, totalling approximately 60.45 ha.

The non-remnant communities contain occasional native isolated trees including *Acacia salicina*, *Corymbia clarksoniana*, *Corymbia dallachiana*, *Corymbia tessellaris*, *Eucalyptus crebra*, *Eucalyptus platyphylla* and *Dolichandrone heterophylla*. Prior to historical clearing, the Project Area likely consisted predominantly of RE 11.3.30. Remnants of this community in the form of a small number of retained *E. crebra* are present throughout the non-remnant areas.

Attachment C - EGH2 Ecological Assessment Report, Section 3.5.2, Figure 8, page 31 provides a map of on-ground vegetation observed during the recent survey.

## Threatened ecological communities

No threatened ecological communities (TECs) were identified by the PMST conducted for the Project Area with a 10 km buffer. The recent survey did not identify any TECs within or adjacent to the Project Area (see Attachment C - EGH2 Ecological Assessment Report, Section 3.5.3, page 32).

## 3.3 Heritage

### 3.3.1 Describe any Commonwealth heritage places overseas or other places recognised as having heritage values that apply to the project area.

No Commonwealth, National or World Heritage places were identified by the PMST within 10 km of the Project Area.

There are no registered State Heritage Places or State Protected Areas within or surrounding the Project Area.

The Project Area is adjacent to a cemetery which is listed as a Local Cultural Heritage Place (as per the Townsville City Plan).

### 3.3.2 Describe any Indigenous heritage values that apply to the project area.

No indigenous heritage values were identified within or surrounding the Project Area during searches of the Commonwealth National Heritage List.

A review of the Queensland Aboriginal and Torres Strait Islander Cultural Heritage Database and Register was undertaken, and no cultural heritage records were located within or surrounding the Project Area.

The Project Area is located on Thul Garrie Waja country. The Proponent has a confidential Cultural Heritage Management Agreement (CHMA) with the Bindal People (local indigenous people), established in 2021. A Cultural Heritage survey with members of the Bindal People has been completed and no Cultural Heritage sites were found. The CHMA ensures the protection of relevant cultural heritage values for the Bindal People within the Project Area.

## 3.4 Hydrology

### 3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. \*

The Project Area is located in the Houghton River sub-basin which is part of the Houghton Basin of the Northeast Coast drainage division of Queensland. This basin is within the Burdekin region of the Great Barrier Reef Catchment. The Great Barrier Reef is located approximately 73 km downstream from the Project Area. The Houghton River sub-basin also forms part of the catchment area for the Bowling Green Bay Ramsar Site, which is located approximately 59 km downstream from the Project Area.

Drainage from the Project Area is in a generally eastern direction, via two main watercourses. Drainage of the north-western extent of the Project Area is via Two Mile Creek (a second order watercourse). This watercourse intersects the Project Area in the north-west of the site, entering the western boundary and flowing north-east before exiting the northern boundary and continuing in a north-easterly direction, flowing into Four Mile Creek, Double Barrel Creek, and finally Major Creek. Drainage of the remaining southern and eastern portion of the site is via overland flow to an unnamed first order stream, south of Manton Quarry Road which connects to Double Barrel Creek and Major Creek, flowing into the Houghton River near Majors Creek, approximately 16 km south of Giru.

The watercourses within and adjacent to the Project Area are ephemeral. However, small pools of water from potential baseflow sources may be present throughout the year in these watercourses; particularly in Two Mile creek and the watercourse to the north of the Project Area. The water quality of these pools varies depending on surrounding erosion and/or cattle access. Pools in areas of fine soils with easy access to cattle were observed to be turbid and the banks were subject to visible scouring and erosion during recent surveys.

No artificial water sources are present within the Project Area. The closest artificial water source is a dam located on adjacent land approximately 800 m north of the Project Area, which likely provides a year round water supply.

Attachment C - EGH2 Ecological Assessment Report, Section 3.4, pages 20 – 23 provides details of the hydrological features within and adjacent to the Project Area.

## 4. Impacts and mitigation

## 4.1 Impact details

### Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

#### 4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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##### 4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? \*

No

##### 4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \*

There are no World Heritage properties within or adjacent to the Project Area.

The Great Barrier Reef World Heritage Area occurs approximately 73 km downstream from the Project Area. The Project Area is located in the Haughton basin, which forms part of the Great Barrier Reef Catchment.

Although there may be an increase in erosion and runoff as a result of vegetation clearance and soil disturbance for the Proposed Action, the area of disturbance is small, will be buffered from the creek corridor, and is unlikely to notably increase the sedimentation or water quality of Two Mile Creek or other nearby watercourses. Additionally, appropriate mitigation measures will be implemented during construction, operation and decommissioning to limit excess run-off or contaminants leaving the site (see Attachment B - EGH2 EPBC Referral Impact Assessment, Section 3.2, pages 10 - 12).

Altogether it is highly unlikely that the Proposed Action will impact the Great Barrier Reef World Heritage Area because:

- The Great Barrier Reef is located over 73 km downstream from Project Area
- Potential indirect impacts including those related to stormwater flows will be mitigated
- The watercourses within and adjacent to the Project Area are only minor ephemeral tributaries
- The size of the Disturbance Footprint is very small relative to the broader catchment area

#### 4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

**4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? \***

No

**4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \***

There are no National Heritage properties within or adjacent to the Project Area.

The Great Barrier Reef National Heritage Area occurs approximately 73 km downstream from the Project Area. The Project Area is located in the Haughton basin, which forms part of the Great Barrier Reef Catchment.

Although there may be an increase in erosion and runoff as a result of vegetation clearance and soil disturbance for the Proposed Action, the area of disturbance is small, will be buffered from the creek corridor, and is unlikely to notably increase the sedimentation or water quality of Two Mile Creek or other nearby watercourses. Additionally, appropriate mitigation measures will be implemented during construction, operation and decommissioning to limit excess run-off or contaminants leaving the site (see Attachment B - EGH2 EPBC Referral Impact Assessment, Section 3.2, pages 10 - 12).

Altogether it is highly unlikely that the Proposed Action will impact the Great Barrier Reef National Heritage Area because:

- The Great Barrier Reef is located over 73 km downstream from Project Area
- Potential indirect impacts including those related to stormwater flows will be mitigated
- The watercourses within and adjacent to the Project Area are only minor ephemeral tributaries
- The size of the Disturbance Footprint is very small relative to the broader catchment area

**4.1.3 Ramsar Wetland**

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Bowling Green Bay

**4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? \***

No

**4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \***

There are no Ramsar Wetlands within or adjacent to the Project Area.

Bowling Green Bay Ramsar Site occurs approximately 59 km downstream from the Project Area. The Project Area is located in the Haughton basin, which forms part of the catchment area for the Ramsar Site.

Although there may be an increase in erosion and runoff as a result of vegetation clearance and soil disturbance for the Proposed Action, the area of disturbance is small, will be buffered from the creek corridor, and is unlikely to notably increase the sedimentation or water quality of Two Mile Creek or other nearby watercourses. Additionally, appropriate mitigation measures will be implemented during construction, operation and decommissioning to limit excess run-off or contaminants leaving the site (see Attachment B - EGH2 EPBC Referral Impact Assessment, Section 3.2, pages 10 - 12).

Altogether it is highly unlikely that the Proposed Action will impact the Bowling Green Bay Ramsar Site because:

- The Bowling Green Bay Ramsar Site is located over 59 km downstream from Project Area
- Potential indirect impacts including those related to stormwater flows will be mitigated
- The watercourses within and adjacent to the Project Area are only minor ephemeral tributaries
- The size of the Disturbance Footprint is very small relative to the broader catchment area

#### 4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

##### Threatened species

Direct impact	Indirect impact	Species
No	No	Calidris ferruginea
No	No	Dasyurus hallucatus
No	No	Dichanthium setosum
No	No	Egernia rugosa
No	No	Erythrorichis radiatus
No	No	Eucalyptus raveretiana
No	No	Falco hypoleucos
Yes	Yes	Geophaps scripta scripta
No	No	Hirundapus caudacutus
No	No	Leichhardtia brevifolia
No	No	Macroderma gigas
No	No	Neochmia ruficauda ruficauda
No	No	Numenius madagascariensis
No	No	Omphalea celata
No	No	Petauroides minor
No	No	Petauroides volans
No	No	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)
No	No	Poephila cincta cincta
No	No	Rhinolophus robertsi
No	No	Rostratula australis
No	No	Saccolaimus saccolaimus nudicluniatus
No	No	Tephrosia leveillei
No	No	Tyto novaehollandiae kimberli

##### Ecological communities

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##### 4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? \*

Yes

##### 4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. \*

No listed threatened ecological communities (TECs) or listed threatened flora species were identified within the Project Area during recent field surveys. The habitat present in the Project Area is unlikely to support any of these MNES. Impacts to TECs and threatened flora are therefore considered unlikely.

The Squatter Pigeon (*Geophaps scripta scripta*) is the only threatened fauna species that has been recorded within the Project Area. Habitat is primarily associated with the existing riparian woodland of Two Mile Creek, with potential habitat also extending a short distance into adjacent grasslands.

There is some potential for three additional threatened fauna species to occur based on the presence of records within the local area and/or the presence of potential habitat resources in the Project Area. These species are the Black-throated Finch (*Poephila cincta cincta*), Bare-rumped Sheath-tail Bat (*Saccolaimus saccolaimus nudicluniatu*), and the White-throated Needletail (*Hirundapus caudacutus*). None of these species were recorded using habitat within the Project Area, despite systematic targeted surveys. It is also noted that the Project Area does not support the preferred habitat attributes for these species due to historical clearing, land use and ongoing degrading processes. Despite this, some marginal potential habitat for these species occurs within the Project Area and, while unlikely to be important or significant, it is not possible to entirely rule out occasional use.

It is also important to note that vegetation and habitat values within the Two Mile Creek riparian corridor (with a minimum 50 m buffer either side) will be retained as part of the Avoidance Footprint. This will ensure that potential habitat and environmental values (e.g. permanent pools of water) for threatened species will remain within the landscape and connectivity through the Project Area will be maintained.

#### Direct impacts

The Proposed Action will involve the clearing and direct disturbance of up to 96.67 ha within the Disturbance Footprint for the Project Area. Direct impacts to the majority of Two Mile Creek, including a 50m buffer on either side, will be avoided.

Any direct loss of threatened fauna values within the Project Area will be minimal, given habitat for the Squatter Pigeon is primarily associated with Two Mile Creek, which will be avoided (with the exception of two bed level crossings at the northern and western boundaries intersecting the creek). In addition, some areas of marginal potential habitat for the three species with the potential to use the Project Area (being the Black-throated Finch, Bare-rumped Sheath-tail Bat, and the White-throated Needletail) will be removed within the Disturbance Footprint. None of these impacts are expected to be significant. Further details associated with these direct impacts and an assessment of significance against relevant EPBC Act criteria is provided in the attached Impact Assessment document (see Attachment B - EGH2 EPBC Referral Impact Assessment, Section 2.1, page 7 and Section 4.1, pages 13 – 20).

#### Indirect impacts

A number of indirect impacts have been considered in relation to the Proposed Action. These include:

- Hydrological / soil disturbance
- Spread of disease / pathogens
- Introduction and / or spread of weeds
- Predation / competition by pest fauna
- Altered fire regimes
- Noise, vibration, dust and light pollution
- Fauna displacement, fragmentation and barriers to movement

See Attachment B - EGH2 EPBC Referral Impact Assessment, Section 2 pages 7 – 9 for a detailed description of potential impacts associated with the Proposed Action including the nature, extent and duration of potential impacts.

#### 4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? \*

No

#### 4.1.4.6 Describe why you do not consider this to be a Significant Impact. \*

Please refer to Attachment B - EGH2 EPBC Referral Impact Assessment, Section 4.1, pages 13 – 20 for significant impact assessments for the Black-throated Finch, Bare-rumped Sheath-tail Bat, White-throated Needletail and Squatter Pigeon.

**4.1.4.7 Do you think your proposed action is a controlled action? \***

No

**4.1.4.9 Please elaborate why you do not think your proposed action is a controlled action. \***

Significant impacts to threatened species as a result of direct disturbance are unlikely, and any potential indirect impacts will be appropriately managed through implementation of mitigation measures. The Proposed Action is not expected to be a controlled action for listed threatened species.

**4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. \*****Avoidance**

The location of the Disturbance Footprint was determined after consideration of the recent site surveys. The purpose of this process was to avoid any MNES habitat values within the Project Area and reduce the potential for environmental impacts. The surveys confirmed that habitat within the Project Area is of low environmental value to threatened species and that the vegetation outside of the Project Area is of higher value.

Two Mile Creek, with a minimum 50 m buffer either side, will be established as the Avoidance Footprint to minimise potential indirect impacts to this corridor. The Avoidance Footprint covers approximately 10.61 ha and excludes the bed level crossings which will be constructed as part of the Disturbance Footprint. These crossings will still allow for fauna movement and natural hydrological flows within the watercourse. The Avoidance Footprint will ensure that potential habitat and environmental values (e.g. permanent pools of water) for threatened species will remain within the landscape and connectivity through the Project Area will be maintained. Additionally, the Avoidance Footprint will benefit from proposed management actions including control and management of weeds and pests (including cattle exclusion). These actions may lead to improvements in the habitat values of the riparian corridor for threatened species that may occur within and surrounding the Project Area.

**Mitigation measures**

Measures to mitigate impacts of development on MNES will be implemented through an Environmental Management Plan (EMP) which will be developed for the Proposed Action. The EMP will detail the mitigation measures that will be implemented and will be produced prior to commencement of the Proposed Action.

An overview of these management measures is provided in Attachment B - EGH2 EPBC Referral Impact Assessment, Section 3.2, pages 10 - 12.

**4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. \***

No offsets are proposed for the Proposed Action, as residual significant impacts to threatened species are not considered likely due to the low habitat values, low amount of vegetation clearance required, avoidance process and implementation of mitigation measures.

### 4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species
No	No	Actitis hypoleucos
No	No	Apus pacificus
No	No	Calidris acuminata
No	No	Calidris ferruginea
No	No	Calidris melanotos
No	No	Crocodylus porosus
No	No	Cuculus optatus
No	No	Gallinago hardwickii
No	No	Hirundapus caudacutus
No	No	Monarcha melanopsis
No	No	Motacilla flava
No	No	Myiagra cyanoleuca
No	No	Numenius madagascariensis
No	No	Rhipidura rufifrons
No	No	Symposiachrus trivirgatus

#### 4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? \*

No

#### 4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \*

The Project Area does provide potential habitat for three migratory species, the White-throated Needletail (*Hirundapus caudacutus*) (also listed as Vulnerable), Fork-tailed Swift (*Apus pacificus*) and Rufous Fantail (*Rhipidura rufifrons*). These species may occur as occasional visitors to the Project Area but the habitat present would not support an 'ecologically significant proportion' of populations of these species.

Although there will be direct and indirect impacts associated with the Proposed Action, these are considered unlikely to impact migratory species given that the Project Area would only support occasional visitors of the species, which have the capacity to travel to, and utilise more suitable habitat in the broader landscape.

Detailed significant impact assessments for the White-throated Needletail, Fork-tailed Swift and Rufous Fantail are provided in Attachment B - EGH2 EPBC Referral Impact Assessment, Sections 4.1 and 4.2, pages 19 – 22.

### 4.1.6 Nuclear

#### 4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? \*

No

**4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \***

The Proposed Action does not constitute a nuclear action under section 22 of the EPBC Act.

**4.1.7 Commonwealth Marine Area**

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

**4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? \***

No

**4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \***

There are no Commonwealth Marine Areas within or adjacent to the Project Area.

**4.1.8 Great Barrier Reef****4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? \***

No

**4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \***

The Great Barrier Reef is located approximately 73 km downstream from the Project Area. The Project Area is located in the Haughton basin, which forms part of the Great Barrier Reef Catchment.

Although there may be an increase in erosion and runoff as a result of vegetation clearance and soil disturbance for the Proposed Action, the area of disturbance is small, will be buffered from the creek corridor, and is unlikely to notably increase the sedimentation or water quality of Two Mile Creek or other nearby watercourses. Additionally, appropriate mitigation measures will be implemented during construction, operation and decommissioning to limit excess run-off or contaminants leaving the site (see Attachment B - EGH2 EPBC Referral Impact Assessment, Section 3.2, pages 10 - 12).

Altogether it is highly unlikely that the Proposed Action will impact the Great Barrier Reef because:

- The Great Barrier Reef is located over 73 km downstream from Project Area
- Potential indirect impacts including those related to stormwater flows will be mitigated
- The watercourses within and adjacent to the Project Area are only minor ephemeral tributaries
- The size of the Disturbance Footprint is very small relative to the broader catchment area

#### 4.1.9 Water resource in relation to large coal mining development or coal seam gas

##### 4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? \*

No

##### 4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \*

The Proposed Action does not constitute a coal seam gas or large coal mining development.

#### 4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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##### 4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? \*

No

##### 4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \*

There is no Commonwealth Land within or adjacent to the Project Area.

#### 4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

**4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? \***

No

**4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. \***

There are no Commonwealth heritage places within or adjacent to the Project Area.

**4.1.12 Commonwealth or Commonwealth Agency****4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? \***

No

**4.2 Impact summary****Conclusion on the likelihood of significant impacts**

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

*None*

**Conclusion on the likelihood of unlikely significant impacts**

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Threatened Species and Ecological Communities (S18)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

## 4.3 Alternatives

### 4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? \*

No

### 4.3.8 Describe why alternatives for your proposed action were not possible. \*

The Project Area is located within the Lansdown Eco-Industrial Precinct (LEIP). This area was identified under the Lansdown Eco-Industrial Precinct Master Plan 2022 (the LEIP Master Plan) (see Calibre, 2022 – Executive Summary, pages ii - xviii) to provide the region with an eco-industrial precinct to facilitate development of manufacturing, processing, technology and emerging industries. The LEIP covers approximately 2,200 ha and in 2020 the land was re-zoned by the Townsville City Council as 'High impact industry' through an amendment to the Townsville City Plan.

Part of the process which informed the re-zoning of the land and the development of the LEIP Master Plan, involved a detailed impact assessment and constraints analysis of the entire Lansdown Industrial Estate (LIE). This process assessed a range of constraints at three broad levels, based on the impact they would have on potential development in the LIE. These constraints included (see Calibre, 2022 – Section 2.3.1.2, page 8):

- Environmental constraints – including areas of high ecological value such as habitat, vegetation and waterways
- Existing and potential infrastructure – the capacity for existing infrastructure to facilitate or guide development
- Management constraints – consideration of sensitive receptors and potential impacts from noise, light, flooding etc.

This process resulted in identification of the 'developable area' within the LIE. A further constraints analysis was subsequently undertaken to help identify 'sub-precincts' for the LEIP Master Plan. This included considerations such as ecological values, tenure, slope, catchments, heritage, bushfire hazard and buffers to sensitive uses. The Project Area for the Proposed Action is within the 'Renewables / bio-energy' precinct of the LEIP Master Plan and Two Mile Creek is identified as land for 'biodiversity' (see Calibre, 2022 – Figure 0-3, page 11).

The Townsville City Council ran a public tender process in 2019 and provisionally reserved land within the LEIP for Edify Energy to develop a hydrogen facility and future sub-station. This is identified in the LEIP Master Plan (see Calibre, 2022 – Section 3.1.8, page 16).

The Project Area location is therefore considered to be the most appropriate and feasible option, following a robust planning process undertaken for the LEIP Master Plan and the identification of the land (which includes Project Area) for Edify Energy.

Additionally, the timeline and activity scope for the Proposed Action was evaluated during the robust planning process undertaken in obtaining Development Approval (DA) for the Project. This process involved consideration of social, economic and environmental factors and constraints to determine the most appropriate scope and timeframes for the Proposed Action.

## 5. Lodgement

### 5.1 Attachments

#### 1.2.1 Overview of the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att A-Proposed Action Activity Description_FINAL.pdf A detailed description of the activities associated with the Proposed Action	16/07/2023	No	High
#2.	Document	Att B-EGH2 EPBC Referral Impact assessment_FINAL.pdf Detailed impact assessment for the referral prepared by the referring party	16/07/2023	No	High
#3.	Link	<a href="https://www.townsville.qld.gov.au/__data/assets/..">Calibre 2022 - Lansdown Eco Industrial Precinct Infrastructure Master Plan</a>			High

#### 1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Att C-EGH2 Ecological Assessment Report_FINAL.pdf Ecological assessment report which identifies and describes the	14/06/2023	No	High

environmental values of the Project Area and adjacent land to enable an assessment of potential impacts to MNES

#### 1.2.7 Public consultation regarding the project area

Type	Name	Date	Sensitivity	Confidence
#1. Document	Att D-Townsville City Plan Proposed Major Amendment Public Consultation Submissions.pdf Provides details of the public consultation process the City of Townsville undertook as part of the Townsville City Plan amendment to rezone the land and facilitate the establishment of the Lansdown Eco-Industrial Precinct LEIP (in which the Project Area is located), and subsequent Master Plan		No	High

#### 1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

Type	Name	Date	Sensitivity	Confidence
#1. Document	Att E-Edify Energy Best Practice Charter.pdf Edify Energy Best Practice Charter		No	High

#### 3.1.2 Existing or proposed uses for the project area

Type	Name	Date	Sensitivity	Confidence
#1. Link	Queensland Globe (2023) <a href="https://qldglobe.information.qld.gov.au/">https://qldglobe.information.qld.gov.au/</a>			High

## 5.2 Declarations

### Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN 90150901965

Organisation name Open Lines Consulting Pty Ltd.

Organisation address 4B / 5 Hall St, Lyneham, Canberra, 2602

Representative's name Mitchell Ross

Representative's job title Environmental Consultant

Phone 0449211447

Email mitchell.ross@live.com.au

Address 4B / 5 Hall St, Lyneham, Canberra, 2602

Check this box to indicate you have read the referral form. \*

I would like to receive notifications and track the referral progress through the EPBC portal. \*

By checking this box, I, **Mitchell Ross of Open Lines Consulting Pty Ltd.**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. \*

I would like to receive notifications and track the referral progress through the EPBC portal. \*

## ✔ Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

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ABN/ACN	85606684995
Organisation name	EDIFY ENERGY PTY. LTD.
Organisation address	Level 1 34-35 South Steyne, Manly, NSW, 2095
Representative's name	Patrick Dale
Representative's job title	Project Development Manager
Phone	+61487177136
Email	Patrick.dale@edifyenergy.com
Address	Level 3, 201 Charlotte Street, Brisbane QLD 4000

Check this box to indicate you have read the referral form. \*

I would like to receive notifications and track the referral progress through the EPBC portal. \*

I, **Patrick Dale of EDIFY ENERGY PTY. LTD.**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. \*

I would like to receive notifications and track the referral progress through the EPBC portal. \*

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## ✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

Check this box to indicate you have read the referral form. \*

I would like to receive notifications and track the referral progress through the EPBC portal. \*

I, **Patrick Dale of EDIFY ENERGY PTY. LTD.**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. \*

I would like to receive notifications and track the referral progress through the EPBC portal. \*