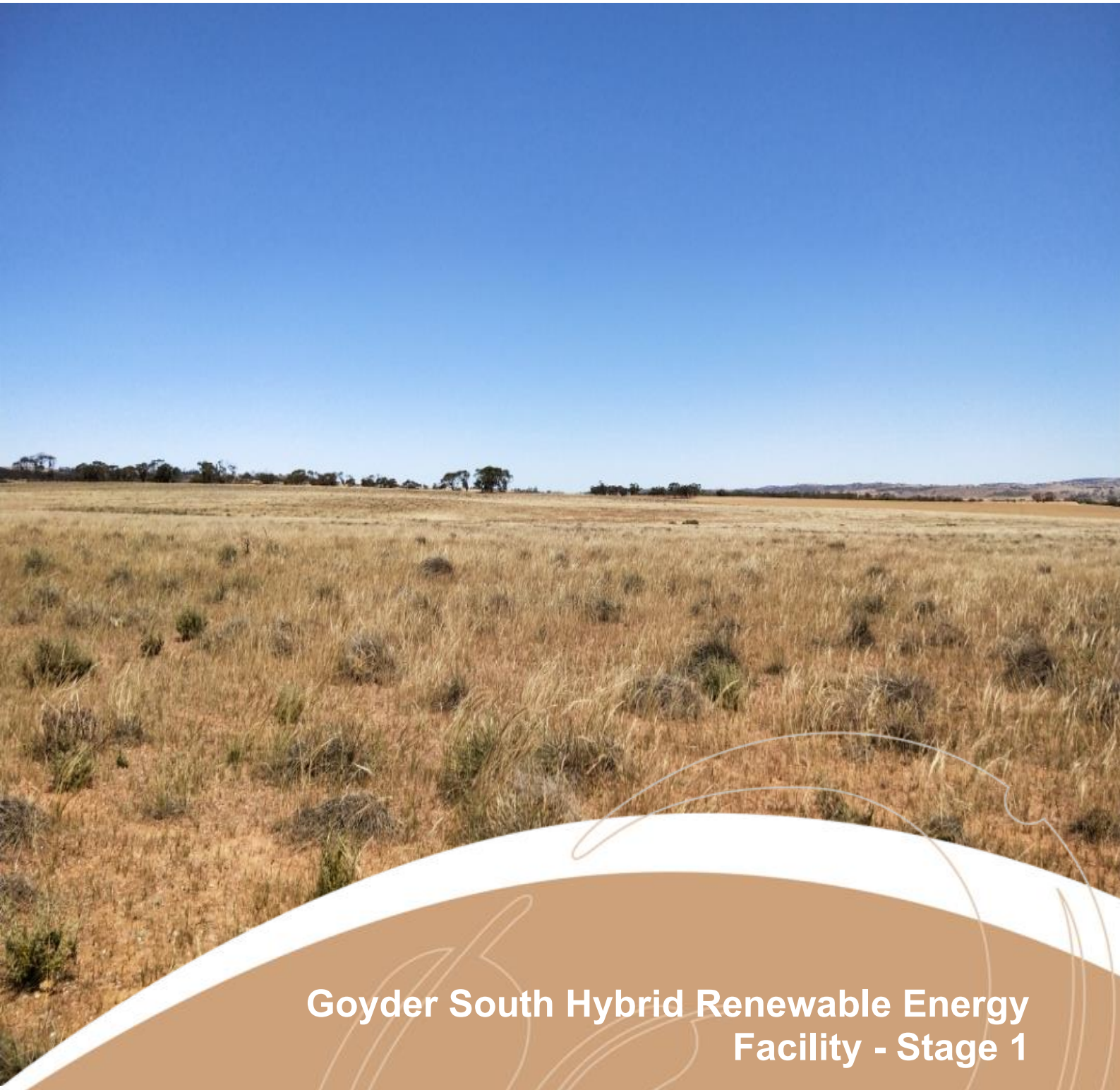

Goyder South Hybrid Renewable Energy Facility - Stage 1

Iron-grass Natural Temperate Grassland of South Australia Threatened Ecological Community Offset Management Plan

Goyder South Hybrid Renewable Energy Facility - Stage 1 Iron-grass Natural Temperate Grassland of South Australia Threatened Ecological Community Offset Management Plan

29 September 2023

Version 5

Prepared by EBS Ecology for NEOEN Australia Pty Ltd

Document Control					
Revision No.	**Date issued**	**Authors**	**Reviewed by**	**Date Reviewed**	**Revision type**
1	04/01/2023	EBS Ecology	T. How	04/01/2023	Draft
2	05/01/2023	EBS Ecology	T. How	05/01/2023	Final
3	02/06/2023	EBS Ecology	T. How	02/06/2023	Final
4	13/09/2023	EBS Ecology	T. How	13/09/2023	Final
5	29/09/2003	EBS Ecology	T. How	29/09/2023	Final

Distribution of Copies			
Revision No.	**Date issued**	**Media**	**Issued to**
1	04/01/2023	Electronic	Inès Béchameil, NEOEN Australia Pty Ltd.
2	05/01/2023	Electronic	Inès Béchameil, NEOEN Australia Pty Ltd.
3	02/06/2023	Electronic	Inès Béchameil, NEOEN Australia Pty Ltd.
4	13/09/2023	Electronic	Inès Béchameil, NEOEN Australia Pty Ltd.
5	29/09/2023	Electronic	Inès Béchameil and Ralph Mitchell, NEOEN Australia Pty Ltd.

EBS Ecology Project Number: EX220804 (previously E90101K)

CITATION: EBS Ecology (2023) Goyder South Hybrid Renewable Energy Facility - Stage 1 Iron-grass Natural Temperate Grassland of South Australia Threatened Ecological Community Offset Management Plan. Report to NEOEN Australia Pty Ltd. EBS Ecology, Adelaide.

Cover photograph: Class C INTG within the Goyder South Project Area..

EBS Ecology
112 Hayward Avenue
Torrensville, South Australia 5031
t: 08 7127 5607
http://www.ebsecology.com.au
email: info@ebsecology.com.au

DECLARATION OF ACCURACY

Declaration of Accuracy

In making this declaration, I am aware that section 491 of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents to specified persons who are known to be performing a duty or carrying out a function under the EPBC Act or the Environment Protection and Biodiversity Conservation Regulation 2000 (Cth). The offence is punishable on conviction by imprisonment or a fine, or both. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this decision.

Signed:

Full name: Louis de Sambucy
Position: Managing Director
Organisation: Goyder Wind Farm 1 Pty Ltd and Goyder Wind Farm Common Asset Pty Ltd
EPBC Referral Number: 2021/8958 & 2021/8959
Name of Action Management Plan this document and declaration refers to: Goyder South Hybrid Renewable Energy Facility – Stage 1: Iron-grass Natural Temperate Grassland of South Australia Threatened Ecological Community Offset Management Plan.
Date: 29 September 2023

GLOSSARY AND ABBREVIATION OF TERMS

Business day	A day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.
Clear / Clearing / Clearance	The cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, ringbarking, uprooting or burning of vegetation.
cm	Centimetre(s)
Commencement of the action / Commence the action	The first instance of any specified activity associated with the action including **clearing** and **construction**. **Commencement of the action/Commence the action** does not include minor physical disturbance necessary to: i. undertake pre-clearance surveys or monitoring programs; ii. install signage and /or temporary fencing to prevent unapproved use of the project area; iii. protect environmental and property assets from fire, weeds and pests, including installation of temporary fencing, and use of existing surface access tracks; iv. install temporary site facilities for persons undertaking pre-commencement activities so long as these are located where they have no **impact** on the **protected matters**; or v. undertaking geotechnical investigations if it causes only minor physical disturbance and is required well in advance of most site works to inform design.
Commence operation / Commencement of operation	2021/8959: The first instance the transmission line and substation are used for commercial purposes.
Commission / Commissioning	All activities, including turning of turbines, after the components of the first complete wind turbine are installed. The date on which **commission/commissioning** commences is the first date on which the blades of the first completed wind turbine start rotating.
Common Asset	The Overhead Transmission Line and Substation components of the Goyder South Hybrid Renewable Energy Project.
Construct / Construction	The erection of a building or structure that is or is to be fixed to the ground and wholly or partially fabricated on-site; the alteration, maintenance, repair or demolition of any building or structure; preliminary site preparation work which involves breaking of the ground (including pile driving); the laying of pipes and other prefabricated materials in the ground, and any associated excavation work; but excluding the installation of temporary fences and signage.
Cth	Commonwealth
DAWE	Department for Agriculture, Water and the Environment (Australian Government) (now DCCEEW)

DCCEEW	Department of Climate Change, Energy, the Environment and Water (Australian Government)
Department	The Australian Government agency responsible for administering the **EPBC Act**. At the time of writing this INTG TEC OMP, DCCEEW is the **Department**.
DEW	Department for the Environment and Water (South Australian)
DEWR	Department of the Environment and Water Resources (now DCCEEW) (Australian Government)
DoE	Department of the Environment (Australian Government)
DPI	Department of Primary Industries (New South Wales)
DSE	Dry Sheep Equivalent - standard measure of feed demand which represents a 50 kg wether which consumes 1.0 kg dry matter per day (1 DSE). A pregnant or lactating ewe has a greater energy requirement (1.4-1.9 DSE) which varies according to the advancing pregnancy and the size of the lamb once it is born and feeding (up to 2.4-3.2 DSE) (DPI 2022).
DSEWPC	Department of Sustainability, Environment, Water, Population and Communities (Australian Government; now DCCEEW)
EBS Ecology	Environment and Biodiversity Services Pty Ltd – trading as EBS Ecology
Environmental Management Plan Guidelines	The *Environmental Management Plan Guidelines*, Commonwealth of Australia 2014.
environmental offset	A measure that compensates for the residual adverse impacts of an action on the environment (DSEWPC 2012a).
Environmental Offsets Policy	the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, Commonwealth of Australia 2012, or any subsequent official revision produced by the **Department**.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth).
EPBC Offset	An environmental offset to compensate for residual significant impacts.
EPBC Offsets Policy	the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, Commonwealth of Australia 2012, or any subsequent official revision produced by the **Department.**
Goyder South Hybrid Renewable Energy Facility	A renewable energy development located between Burra and Robertstown in the Mid North of South Australia. The Goyder South Hybrid Renewable Energy Facility includes the proposed actions described in the EPBC Act referrals 2021/8957, 2021/8958, 2021/8959 and 2021/8960 (as shown in Figure 1).
Goyder South	Goyder South Hybrid Renewable Energy Facility
Guide to providing maps and boundary data for EPBC Act projects	The *Guide to providing maps and boundary data for EPBC Act projects*, Commonwealth of Australia 2021.

ha	hectare(s)
Impact	2021/8958: (verb) means any event which has the potential to, or does, impact on one or more **protected matter**. 2021/8959: (verb) means to cause any measurable direct or indirect disturbance or harmful change as a result of any activity associated with the action.
INTG	Iron-grass Natural Temperate Grassland of South Australia
INTG TEC	Iron-grass Natural Temperate Grassland of South Australia Threatened Ecological Community: the **EPBC Act** listed threatened ecological community (TEC) *Iron-grass Natural Temperate Grassland of South Australia* (INTG).
INTG TEC Management Plan	The *Goyder South Hybrid Renewable Energy Facility INTG TEC Management Plan* prepared by EBS Ecology for NEOEN Australia Pty Ltd (version 3 of 28 June 2022 or subsequent revised version thereof approved by the **Minister** in writing).
IUCN	International Union for Conservation of Nature
Legal securing mechanism	**T**he legal agreement and/or legally binding mechanism under relevant South Australian state legislation, or equivalent, adopted to provide enduring protection for the offsets against development incompatible with conservation.
m	metre(s)
Minister	The Australian Government Minister administering the **EPBC Act** including any delegate thereof.
MNES	Matters of national environmental significance
MW	Megawatt
NEOEN	NEOEN Australia Pty Ltd
NPW Act	*National Parks and Wildlife Act 1972* (South Australian)
OMP	Offset Management Plan
Operation	2021/8958: All activities that occur after the components of the final wind turbine generator are installed. 2021/8959: the usage of the transmission line and substation for the purposes of transforming and/or redistributing electric current.
OTL	Overhead Transmission Line
Plan(s)	Any of the documents required to be prepared, approved by the **Minister**, implemented by the approval holder and published on the **website** in accordance with the EPBC Act conditions of approval for 2021/8958 & 2021/8959 (includes action management plans and/or strategies).
Project	The Goyder South Hybrid Renewable Energy Facility Project (incorporating Stage 1A, Stage 1B and the Common Asset (OTL and Substation)).
Project Area	The area (or boundary) in which the Project will be located, as shown in mapping.

Protected matter(s)	A matter protected under a controlling provision in Part 3 of the **EPBC Act** for which the 2021/8958 and 2021/8959 approvals have effect.
residual impact	The remaining, unavoidable impacts (DSEWPC 2012a).
SA	South Australia / South Australian
SEB	Significant Environmental Benefit
Secure / secured / securing	To execute a legal agreement and/or legally binding mechanism under relevant South Australia state legislation, or equivalent, to provide enduring protection for the offsets against development incompatible with conservation.
Significant impacts	**Significant impacts** are **impacts** which are important, notable, or of consequence, having regard to their context or intensity, and assessed within the framework of the *Matters of National Environmental Significance – Significant Impact Guidelines 1.1*, Commonwealth of Australia 2013.
SPRAT	Species Profile and Threats
ssp.	sub-species
TEC	Threatened Ecological Community
Website	A set of related web pages located under a single domain name attributed to the approval holder and available to the public.
WTG(s)	Wind Turbine Generator(s)

Table of Contents

List of Tables

List of Figures

1 INTRODUCTION

NEOEN Australia Pty Ltd (NEOEN) is contracted by Goyder Wind Farm 1 Pty Ltd and Goyder Wind Farm Common Asset Pty Ltd to ensure compliance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approvals on behalf of the Goyder South Hybrid Renewable Energy Facility (the Goyder South Project; the Project). EPBC Act approval has been obtained to clear Iron-grass Natural Temperate Grassland of South Australia (INTG) Threatened Ecological Community (TEC) within the Stage 1A (EPBC 2021/8958) and Common Asset (Overhead Transmission Line (OTL) and Substation) (EPBC 2021/8959) components of the Project. The clearance of up to **12.67 ha** of INTG TEC for Stage 1A (EPBC 2021/8958) and up to **1.36 ha** of INTG TEC for the Common Asset (OTL and Substation) (EPBC 2021/8959) is likely to have a residual significant impact on the INTG TEC. As such, NEOEN propose to establish and implement on-ground offset areas to offset impacts and achieve a measurable conservation gain for the INTG TEC, which is listed as Critically Endangered under the EPBC Act.

As these impacts cannot be fully avoided or mitigated, an environmental offset is required in accordance with the EPBC Act, which is referred to as an EPBC Offset, to compensate for the residual impact on INTG TEC. Individual EPBC Offsets are required for Stage 1A and the Common Asset (OTL and Substation) and are proposed to be achieved via the establishment and implementation of on-ground INTG TEC Offset Areas that aim to provide a measurable conservation gain for the INTG TEC. As such, this *Goyder South Hybrid Renewable Energy Facility – Stage 1 Iron-grass Natural Temperate Grassland Threatened Ecological Community Offset Management Plan* (INTG TEC OMP) has been prepared to guide the establishment, implementation and management of the two INTG TEC EPBC Offsets.

This INTG TEC OMP provides background information on the Goyder South Project, relevant EPBC Act approval conditions, relevant policies and documents, general information on INTG TEC, known and/or potential threats to INTG TEC, occurrence of INTG TEC within the Goyder South Project Area and residual significant impacts to INTG TEC associated with the Goyder South Project. Then it provides details on the proposed INTG TEC Offsets, including calculation of the required offsets, information on the proposed INTG TEC Offset Areas, protection of the proposed INTG TEC Offset Areas, known and/or potential threats to the INTG TEC Offset Areas and consistency with the EPBC Offsets Policy. Lastly, this INTG TEC OMP details the specific management aspects and associated management actions to establish, implement, manage and monitor the INTG TEC Offsets and INTG TEC Offset Areas to ensure that a measurable conservation gain is achieved for the INTG TEC.

2 BACKGROUND

NEOEN is developing the Goyder South Project between Burra and Robertstown in the Mid North of South Australia (SA). The Project combines wind, solar and energy storage in one integrated project and will be capable of delivering a steady, reliable, dispatchable output of power throughout the day and night. The Goyder South Project will generate more than 4,800,000 MWh of power annually and is comprised of:

- A wind farm of up to 163 turbines with a capacity of up to 1200 Megawatts (MW), a maximum hub height of 121 metres (m), a maximum blade length of 78 m and an overall maximum height (tip height) of 199 m;
- A solar farm (across two sites) of up to 3000 hectares (ha) of solar panels with a capacity of up to 600 MW;
- An energy storage facility (lithium-ion battery) with a capacity of up to 900 MW / 1,800 MWh (2 hours);
- Associated infrastructure for connection to the electricity grid including three substations, access tracks, underground connection cabling and overhead transmission lines;
- Permanent operations and maintenance compounds;
- Temporary construction compounds for both wind and solar components, including concrete batching plants; and
- A number of meteorological masts (in addition to those already on the site) to record wind speed and other meteorological data, both pre- and post- construction.

As the Goyder South Project will total up to $3 billion in investment, NEOEN propose to implement the Project in stages, with each stage having its own legal entity, construction contracts and financing packages. An overview of each stage currently proposed for development, along with the corresponding EPBC approvals sought and obtained is outlined in Table 1. Note that a variation to the conditions attached to the EPBC approval for the Common Asset (OTL and Substation) was received, as outlined in Table 1.

Table 1. Current proposed stages and corresponding EPBC approvals for the Goyder South Project.

Project Stage / Proposed Action	Legal Entity	EPBC Referral Reference	EPBC Referral Decision	Date EPBC Approval Received
Stage 1A (38 WTGs and associated infrastructure)	Goyder Wind Farm 1A Pty Ltd	2021/8958	Controlled Action	5/07/2022
Stage 1B (37 WTGs and associated infrastructure)	Goyder Wind Farm 1B Pty Ltd	2021/8957	Controlled Action	15/08/2022
Common Asset (OTL and Substation)	Goyder Wind Farm Common Asset Pty Ltd	2021/8959	Controlled Action	22/08/2022
			Variation of conditions attached to approval	Variation received 19/12/2022
Battery	NEOEN Australia Pty Ltd	2021/8960	Not a Controlled Action	N/A

Each of the currently proposed stages of the Project are shown in Figure 1. Other components of the Goyder South Project, including the remaining wind farm areas, the two solar farms, overhead transmission lines and substations are considered to be potential future stages as they are not currently commercially viable and there is currently no immediate prospect of these components/stages proceeding to construction.

As outlined previously, an individual INTG TEC EPBC Offset is required for each of Stage 1A and the Common Asset (OTL and Substation), to compensate for the residual impact on INTG TEC. However, no INTG TEC EPBC Offset is required for Stage 1B or the Battery.

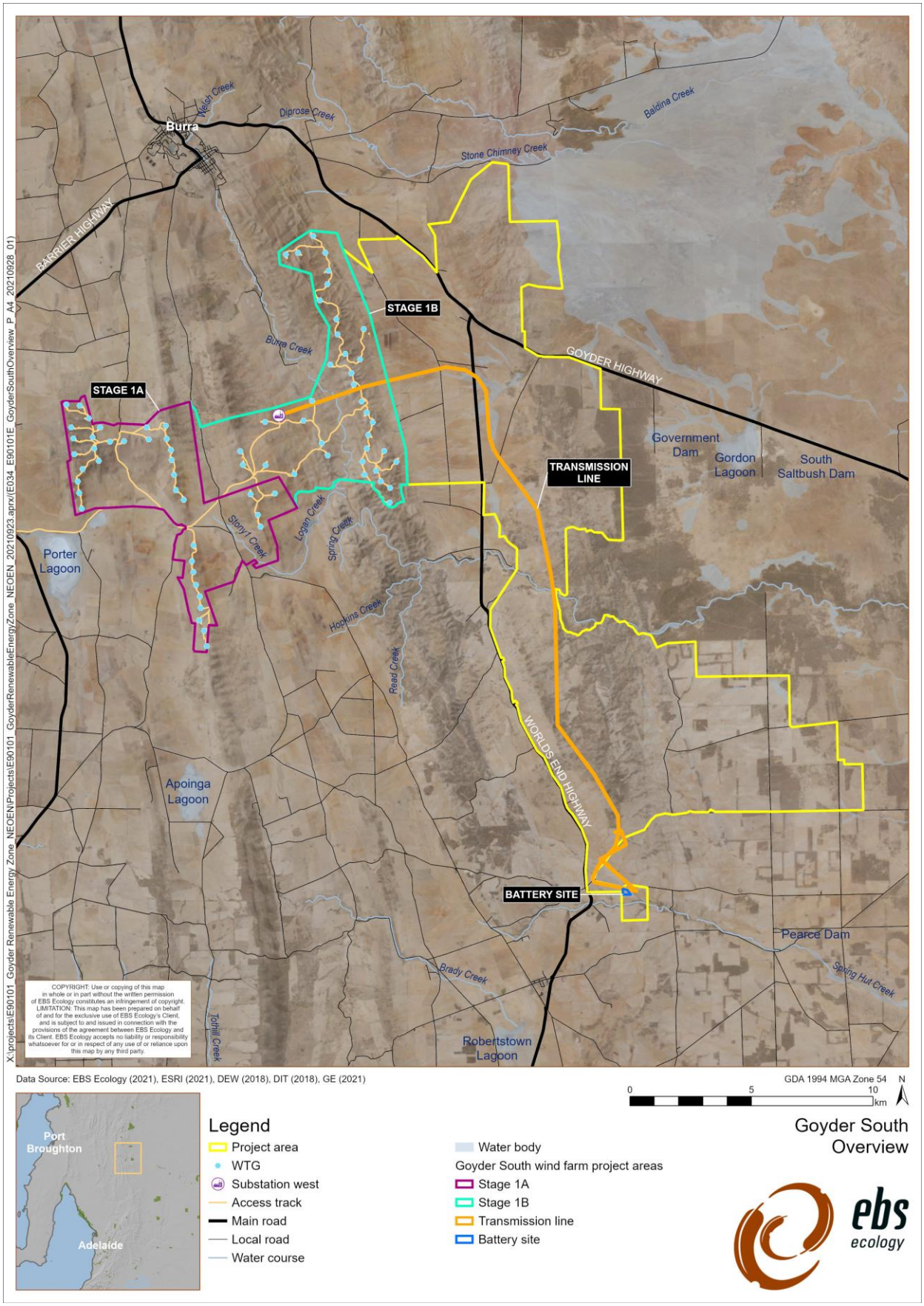

Figure 1. Current proposed stages of the Goyder South Project.

2.1 Previous reports

The following reports and documentation should be referred to for important background and supporting information:

- *Goyder South Hybrid Renewable Energy Facility Flora and Fauna Assessment* (EBS Ecology 2020)
- *Goyder South Hybrid Renewable Energy Facility Flora and Fauna Assessment Addendum* (EBS Ecology 2021)
- *Goyder South Hybrid Renewable Energy Facility: Stage 1A Preliminary Documentation* (EPBC 2021/8958) (EBS Ecology 2022a)
- *Goyder South Hybrid Renewable Energy Facility: Overhead Transmission Line and Substation West Preliminary Documentation (EPBC 2021/8959)* (EBS Ecology 2022b)
- *Goyder South Overhead Transmission Line EPBC Assessment* (EBS Ecology 2022c)
- *Goyder Wind Farm Construction Environmental Management Plan* (Succession Ecology 2023a)
- *Flora and Fauna Management Plan: Goyder South Hybrid Renewable Energy Facility Sub-Stage A: Windfarm Stages 1A and 1B* (FFMP) (Succession Ecology 2023b)
- *Goyder South Hybrid Renewable Energy Facility INTG TEC Management Plan* (EBS Ecology 2023)

2.2 EPBC Act approval conditions

The Stage 1A (2021/8958) and Common Asset (OTL and Substation) (2021/8959) EPBC approvals have specific conditions of approval outlining the requirement for environmental offsets and in particular, an Offset Management Plan (OMP) to compensate for residual significant impacts to INTG TEC. As such, this document has been prepared to satisfy the requirement for an OMP and outline the environmental offsets that will be implemented to compensate for residual impact to INTG TEC associated with the Goyder South Project. The conditions of approval associated with the OMP are presented in Table 2, along with references to sections within this report with corresponding information.

Table 2. Relevant conditions of Approval for Stage 1A (2021/8958) and the Common Asset (OTL and Substation) (2021/8959).

Stage 1A (2021/8958)	Reference	Common Asset (OTL and Substation) (2021/8959)	Reference
Environmental offsets *Offset Management Plan* 6. To compensate for residual **significant impacts** to the **Pygmy Blue-tongue lizard** and the **Iron-grass Natural Temperate Grassland of South Australia TEC**, the approval holder must submit to the **Department** for the **Minister's** approval an Offset Management Plan (OMP) within 6 months of the date of this approval. The OMP must:	This document is the INTG TEC OMP. A separate document is the Pygmy Blue-tongue lizard OMP.	**Environmental offsets** *Offset Management Plan* 4. To compensate for residual **significant impacts** to the **Iron-grass Natural Temperate Grassland of South Australia TEC**, **Pygmy Blue-tongue Lizard**, and any other **protected matters**, the approval holder must submit to the **Department** for the **Minister's** approval an Offset Management Plan (OMP) within 6 months of the date of this approval. The OMP must:	This document is the INTG TEC OMP. A separate document is the Pygmy Blue-tongue lizard OMP.
a. be consistent with the **Environmental Management Plan Guidelines**;	Section 2.4.1	a. be consistent with the **Environmental Management Plan Guidelines**;	Section 2.4.1
b. include a reference to the **EPBC Act** approval conditions to which the OMP refers;	This table.	b. include a reference to the **EPBC Act** approval conditions to which the OMP refers;	This table.
c. include summary information on the residual **significant impacts** to the **Pygmy Blue-tongue Lizard** and the **Iron-grass Natural Temperate Grassland of South Australia TEC** that will be compensated for by the offset(s);	Section 3.6.	c. include summary information on the residual significant impacts to the **Iron-grass Natural Temperate Grassland of South Australia TEC, Pygmy Blue-tongue Lizard**, and any other protected matters, that will be compensated for by the offset(s);	Section 3.6.
d. identify a suitable environmental offset(s) to compensate for residual **significant impacts** to the **Pygmy Blue-tongue lizard** and the **Iron-grass Natural Temperate Grassland of South Australia TEC** that meets the requirements of the **Environmental Offsets Policy** to the satisfaction of the **Minister**;	Section 4 (including sub-sections)	d. identify a suitable environmental offset(s) to compensate for residual **significant impacts** to the **Iron-grass Natural Temperate Grassland of South Australia TEC, Pygmy Blue-tongue Lizard**, and any other protected matters, which meets the requirements of the **Environmental Offsets Policy** to the satisfaction of the **Minister**;	Section 4 (including sub-sections)
e. include detailed baseline habitat quality information on the proposed offset(s);	Section 4 (including sub-sections)	e. include the size of the proposed offset(s) in hectares, maps that visually describe the location and accurate boundaries of the offset(s), in accordance with the **Guide to providing maps and boundary data for EPBC Act projects**, and detailed baseline habitat quality information on the proposed offset(s);	Section 4 (including sub-sections)
		f. specify the nature and timing of the proposed legal mechanism to **secure** the offset area(s), with proposed contingency measures for if the specified legal mechanism is not established within the specified timeframe;	Section 4.8 (including sub-section 4.8.1)
f. commit to achievable ecological benefits and provide timeframes for their achievement;	Section 6.1	g. commit to measurable and achievable ecological benefits and provide timeframes for their achievement;	Section 6.1
g. detail how the offset(s) will be protected, and ecological benefits maintained;	Section 4.8 and Section 6.1	h. detail how the offset(s) will be protected, and how ecological benefits will be maintained once achieved;	Section 4.8 and Section 6.1

Stage 1A (2021/8958)	Reference	Common Asset (OTL and Substation) (2021/8959)	Reference
h. describe the monitoring program(s) to be implemented that will determine progress towards attainment of and maintenance of the ecological benefits at the proposed offset(s), which must include: i. measurable performance indicators to monitor attainment of the ecological benefits; ii. trigger values for corrective actions; and iii. the timing and frequency of monitoring to detect trigger values and changes in the performance indicators.	Section 6.5.	i. detail a monitoring program which will determine progress towards achievement and maintenance of the ecological benefits of the proposed offset(s), which must include: i. measurable performance indicators to monitor the progress of the offset towards the achievement of the ecological benefits; ii. trigger values for corrective actions; and iii. the timing and frequency of monitoring to detect trigger values and changes in the performance indicators.	Section 6.5.
i. include an assessment of risks to achieving the ecological benefit(s) and what risk management strategies will be applied to address these;	Section 6.4.	j. include an assessment of risks to achieving the ecological benefit(s) and what risk management strategies will be applied to address these;	Section 6.4.
j. specify how and at what frequency offset(s) management results, monitoring program findings and assessments of ecological benefits will be reported to the **Department** and the public;	Section 6.3.6.	k. specify how and at what frequency offset(s) management results, monitoring program findings and assessments of ecological benefits will be reported to the **Department** and the public;	Section 6.3.6.
k. propose corrective actions to ensure ecological benefits are attained or maintained, if trigger values are reached or performance indicators not attained;	Table 16.	l. propose corrective actions, if trigger values are reached, or if performance indicators are not attained, to ensure ecological benefit (sic) are achieved and maintained once achieved;	Table 16.
l. include links to referenced **plans** and applicable conditions of approval (including State approval conditions), if any; and	Section 2.1	m. include links to referenced plans and applicable conditions of approval (including State approval conditions), if any; and	Section 2.1
m. specify and justify the period for which the OMP will be implemented.	Section 6.3.1	n. specify and justify the period for which the OMP will be implemented.	Section 6.3.1
The approval holder must not commence **commissioning** until the OMP has been approved by the **Minister** in writing. The approval holder must implement the approved OMP for the period specified in the approved OMP.	N/A	The approval holder must not **commence operation** until the OMP has been approved by the **Minister** in writing. The approval holder must implement the approved OMP for the period described in the approved OMP.	N/A
7. If the OMP (required under Condition 6) has not been approved by the **Minister** in writing within 18 months of the date of this approval, and the **Minister** notifies the approval holder that the submitted OMP is not suitable for approval, the **Minister** may, at least 2 months after so notifying the approval holder, approve a version of the OMP revised by the **Department**.	N/A	5. If the OMP (required under Condition 4) has not been approved by the **Minister** in writing within 18 months of the date of this approval, and the **Minister** notifies the approval holder that the submitted OMP is not suitable for approval, the **Minister** may, at least 2 months after so notifying the approval holder, approve a version of the OMP revised by the **Department**.	N/A
8. The approval holder must provide written evidence to the **Department** that the offset site(s) required under the approved OMP has/have been acquired and secured within 12 months of the OMP approval date. The written evidence must identify the **legal securing mechanism** by which each offset site will be permanently protected for conservation.	N/A	6. The approval holder must provide written evidence to the **Department** that the offset site(s) required under the approved OMP has/have been acquired and secured within 12 months of the OMP approval date. The approval holder must provide written evidence to the **Department** identifying the **legal securing mechanism** by which each offset site will	N/A

Stage 1A (2021/8958)	Reference	Common Asset (OTL and Substation) (2021/8959)	Reference
		be permanently protected for conservation within 10 **business days** of **securing** the offset.	
Note: The approval holder may choose to submit separate Offset Management Plans (OMPs) for the **Pygmy Blue-tongue Lizard** and the **Iron-grass Natural Temperate Grassland of South Australia TEC** instead of a single OMP.	The approval holder has chosen to do this.		
Note: The approval holder may choose to combine the OMPs required as conditions of approval for other proposed elements of the **Goyder South Hybrid Renewable Energy Facility** for the same **protected matters**. In this case, the approval holder must clearly demonstrate how the offset requirement(s) for each individual proposed element is being met and identify unique offset area(s) for each approved action geospatially.	The approval holder has chosen to do this. Section 4 (including sub-sections)	**Note:** The approval holder may choose to combine the OMPs required as conditions of approval for other proposed elements of the G**oyder South Hybrid Renewable Energy Facility**. In this case, the approval holder must clearly demonstrate how the offset requirement(s) for each individual proposed element is being met and identify unique offset area(s) for each approved action geospatially.	The approval holder has chosen to do this. Section 4 (including sub-sections)

2.3 Objectives

The objectives of this INTG TEC OMP are to guide the establishment, implementation and management of the two INTG TEC EPBC Offsets and ensure the relevant EPBC approval conditions are met. More specific objectives of this INTG TEC OMP include (but are not limited to):

- Provide general information on the ecology and biology of INTG TEC and factors to consider, including known and/or potential threats to the TEC, when establishing, implementing and managing the offsets;
- outline the residual impacts of the Goyder South Project on INTG TEC that require environmental offsets;
- outline the type of offsets being implemented;
- outline the calculation of the required offsets and provide the completed Offsets Assessment Guide for each offset required, including further discussion/justification for the figures used to complete the offset calculations;
- outline important details for each offset, including the method of securing and managing the offsets;
- outline the conservation gain to be achieved by the offsets (including positive management strategies that improve the sites and/or avert the future loss or degradation of INTG TEC);
- outline the management objectives, implementation responsibilities, management aspects and associated management actions, as well as monitoring and reporting, corrective actions, adaptive management, risk management and the review and update schedule associated with this INTG TEC OMP; and
- demonstrate how the offsets are consistent with the *Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy, (DSEWPC 2012a).

2.4 Relevant policies and documents

This INTG TEC OMP has been prepared in accordance with the following relevant policies and documents:

- *Environmental Management Plan Guidelines* (DoE 2014);
- *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* (DSEWPC 2012a) referred to herein as the EPBC Offsets Policy;
- EPBC *Offsets Assessment Guide* (the guide) (DSEWPC 2012b);
- *How to Use the Offsets Assessment Guide* (DSEWPC undated);
- *Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act* (Maseyk *et al.* 2017)
- *Approved Conservation Advice for Iron Grass Natural Temperate Grassland of South Australia* (DEWHA 2008; referred to herein as the Approved Conservation Advice for INTG TEC);
- *National Recovery Plan for the Iron-grass Natural Temperate Grassland of South Australia ecological community* (Turner 2012; referred to herein as the INTG TEC Recovery Plan);

- *EPBC Act Policy Statement 3.7: Nationally Threatened Species and Ecological Communities: Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia and Iron-grass Natural Temperate Grassland of South Australia* (DEWR 2007);
- *Guidelines for biological survey and mapped data* (Commonwealth of Australia 2018);
- *Guide to providing maps and boundary data for EPBC Act projects* (DAWE 2021).

A brief overview of the Environmental Management Plan Guidelines, the EPBC Offsets Policy, the Approved Conservation Advice for INTG TEC and the INTG TEC Recovery Plan is provided in the following sub-sections.

2.4.1 Environmental Management Plan Guidelines

This INTG TEC OMP has been prepared in accordance with the Australian Government Department of the Environment Environmental Management Plan Guidelines (DoE 2014). The Environmental Management Plan Guidelines provide general guidance to stakeholders preparing environmental management plans for environmental impact assessments and approvals under Chapter 4 of the EPBC Act.

2.4.2 EPBC Offsets Policy

This INTG TEC OMP has been prepared in accordance with the EPBC Offsets Policy (DSEWPC 2012a). The EPBC Offsets Policy outlines eight overarching Offset Principles that are applied in determining the suitability of offsets, as follows:

Suitable offsets must:

1. deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action
2. be built around direct offsets but may include other compensatory measures
3. be in proportion to the level of statutory protection that applies to the protected matter
4. be of a size and scale proportionate to the residual impacts on the protected matter
5. effectively account for and manage the risks of the offset not succeeding
6. be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs
7. be efficient, effective, timely, transparent, scientifically robust and reasonable
8. have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced

Information on how the proposed Stage 1A and Common Asset (OTL and Substation) offsets are consistent with these Offset Principles is provided in Section 5.

2.4.3 Approved Conservation Advice for INTG TEC

The Approved Conservation Advice for INTG TEC states that the main identified threats to INTG TEC are land clearing, grazing and weed invasion and that potential threats also include agricultural snails, inappropriate tree planting, road and rail maintenance activities and the effects of fragmentation (TSSC 2007 in DEWHA 2008). It includes a list of regional and local priority recovery and threat abatement actions that can be done to support the recovery of INTG TEC (DEWHA 2008), which this INTG TEC OMP aims to be consistent with, where possible.

2.4.4 INTG TEC Recovery Plan

The overall objective of the INTG TEC Recovery Plan "*is to ensure the survival of the Iron-grass Natural Temperate Grassland of South Australia and promote its recovery, by maintaining or improving the area, condition and integrity of the ecological community*" (Turner 2012). The INTG TEC Recovery Plan contains the following three specific objectives:

1. To maintain or improve the condition of remnant Iron-grass Natural Temperate Grassland;
2. To increase the area of Iron-grass Natural Temperate Grassland secured and managed for conservation; and
3. To increase the area of occupancy of Iron-grass Natural Temperate Grassland across its natural range.

This INTG TEC OMP aims to be consistent with these objectives, where possible.

3 IRON-GRASS NATURAL TEMPERATE GRASSLAND TEC

3.1 Conservation status

The INTG TEC (Figure 2) is listed as Critically Endangered under the EPBC Act and Endangered under the South Australian *National Parks and Wildlife Act 1972* (NPW Act). These classifications are consistent with the International Union for Conservation of Nature (IUCN) (2001) criteria for listing species on the IUCN Red List System.

3.2 EPBC legal status and associated documents

The EPBC Act legal status and associated documents for INTG TEC, as provided within DCCEEW's Species Profile and Threats (SPRAT) Database (online) SPRAT Profile for INTG TEC, are presented in Table 3.

Table 3. EPBC Act legal status and associated documents for INTG TEC.

EPBC Act Listing Status	Listed as Critically Endangered
Approved Conservation Advice	Department of the Environment, Water, Heritage and the Arts (2008). *Approved Conservation Advice for Iron-grass Natural Temperate Grassland of South Australia*. Canberra: Department of the Environment, Water, Heritage and the Arts. Available from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/37-conservation-advice.pdf. In effect under the EPBC Act from 16-Dec-2008.
Listing Advice	Threatened Species Scientific Committee (2007). *Commonwealth Listing Advice on Iron-grass Natural Temperate Grassland of South Australia*. Available from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/l-effusa.pdf. In effect under the EPBC Act from 22-Jun-2007.
Recovery Plan Decision	Recovery Plan required, a recovery plan is likely to provide for the research and management actions necessary to stop the decline of, and support the recovery of, this ecological community (17/10/2007).
Adopted/Made Recovery Plans	Turner, J. (2012). *National Recovery Plan for the Irongrass Natural Temperate Grassland of South Australia ecological community 2012*. Department of Environment and Natural Resources, South Australia. Available from: http://www.environment.gov.au/biodiversity/threatened/recovery-plans/national-recovery-plan-iron-grass-natural-temperate-grassland-sa. In effect under the EPBC Act from 24-Jul-2012.
Adopted/Made Threat Abatement Plans	No Threat Abatement Plan has been identified as being relevant for this ecological community

Source: DCCEEW 2022.

3.3 Ecology and biology

INTG TEC (Figure 2) is a natural grassland dominated by Iron-grass (*Lomandra effusa* or *Lomandra multiflora* ssp. *dura*) and tussock forming perennial grasses. A range of herbaceous species also occur in the ground layer, with trees and tall shrubs generally absent or sparse (<10% cover) (DEWR 2007). Cool season C3 grasses (Spear grass or wallaby grasses) are actively growing in spring, whilst C4 grasses are summer active (Kangaroo grass, Windmill grass, Queensland blue grass, Panic and Brush-wire Grass). Diverse grasslands may include winter and summer growing plant species, grasses and broadleaf plants. Both annual and perennial plants are important components of the community (MNGWG 2019).

Figure 2. Class B INTG TEC in the Northern and Yorke Landscape Management Region (photo by EBS Ecology).

Figure 3. Class B INTG TEC at Goyder South (photo by EBS Ecology in December 2020).

3.3.1 Habitat

Remaining remnants of Lomandra grassland generally occur on gentle slopes of low hills approximately 380 m above sea level and predominantly on loams to clay-loams with an estimated clay content of 30–35 % (DEWR 2007). Pygmy Blue-tongue Lizards (PBTLs) are known to occupy native grassland habitats, including, sometimes, highly degraded grasslands (dominated by exotic species), provided that the area is unploughed and the soil structure remains intact (DEWR 2007).

3.3.2 Distribution in South Australia

The INTG TEC occurs only in South Australia and in tussock Grasslands dominated by *Lomandra effusa* and/or *Lomandra multiflora* subsp. *dura* occur predominantly in the Northern and Yorke Landscape Management Region, with smaller occurrences in the Murraylands and Riverland Landscape Management Region. Lomandra Grassland is most widespread in the Flinders-Lofty Block Bioregion (Neagle 2008 in Turner 2012), with smaller occurrences in the Kanmantoo, Eyre-Yorke Block and Murray Darling Depression Bioregions (Department for Environment and Heritage 2005 in Turner 2012).

The area of Iron-grass Natural Temperate Grassland at the time of European settlement has been estimated at between 750,000 to 1,000,000 hectares (ha) (Specht 1972; Hyde 1995 in Turner 2012). At the time of listing under the EPBC Act in 2007, the remaining area of Iron-grass Natural Temperate Grassland of any condition, including highly degraded remnants, was thought to be less than 50,000 ha (Department for Transport, Urban Planning and the Arts 2000 in Turner 2012), whilst the area meeting the criteria for the listed threatened ecological community is likely to be substantially less and may be less than 5,000 ha (Hyde 1995; TSSC 2007 in Turner 2012).

3.3.3 Condition Class

The INTG listing criteria in *EPBC Act Policy Statement 3.7: Nationally Threatened Species and Ecological Communities: Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia and Iron Grass Natural Temperate Grassland of South Australia* (DEWR 2007) facilitates classification of INTG into condition classes based on native plant species diversity, composition and native perennial tussock density. Three Condition Class categories have been defined, representing high quality remnants (Class A), moderate quality remnants (Class B) and degraded remnants with potential for restoration (Class C). Class A and Class B are listed and protected under the EPBC Act, while Class C is not listed or protected under the EPBC Act but considered ‘amenable to rehabilitation’. An overview of the listing criteria for each Class is provided in Table 4.

Table 4. Condition classes for INTG TEC (DEWR 2007).

Condition Class	Minimum size	Diversity of native plant species[1]	No. of broad-leaved herbaceous species[1] in addition to identified disturbance resistant species[2]	No. of native perennial grass species[1]	Tussock count[3]
Listed ecological community (protected by the EPBC Act)					
A	≥ 0.1	> 30	≥ 10	≥ 5	≥ 1/m
B	≥ 0.25	> 15	≥ 3	≥ 4	≥ 1/m
Degraded patches amenable to rehabilitation (not protected by the EPBC Act)					
C		> 5	No minimum	≥ 1	No minimum

1: As measured in a 50 m x 50 m quadrat (or equivalent).
2: The following species are identified as disturbance resistant species: Ptilotus spathulatus forma spathulatus; Sida corrugata; Oxalis perennans; Convolvulus angustissimus; Euphorbia drummondii; and Maireana enchylaenoides.
3: As measured along a 50 m transect.

3.4 Known and/or potential threats

The INTG TEC Recovery Plan (Turner 2012) documents known and potential threats to INTG TEC, along with known and/or potential impacts, which are summarised in Table 5. Note that not all threats documented in the INTG TEC Recovery Plan are necessarily relevant to the Goyder South Project.

Table 5. Known and potential threats to INTG and associated impacts (adapted from Turner 2012).

Known and/or potential threat	Known and/or potential impact
Lack of awareness	Lack of specific knowledge about the Iron-grass Natural Temperate Grassland ecological community, its appearance, significance and ecological values.
	Lack of awareness/knowledge of appropriate Iron-grass Natural Temperate Grassland management.
	View of native grasslands as low productivity, low value agricultural land requiring 'improvement'.
Changes in land use (including altered grazing regimes).	Incompatible grazing levels and disturbance by stock.
	Change of livestock species/breeds and stocking rates resulting in inappropriate grazing levels and disturbance.
	Intensification of activities (cropping in new areas, pasture improvement, handfeeding or establishment of feed-lots, new water supply/dams for irrigation).
	New industries displacing the ecological community (horticulture, agroforestry, apiary, carbon sequestration programs, revegetation).
	Inappropriate chemical application (herbicides, fertilizers, soil ameliorants).
Weed invasion	Competition for resources (space, nutrient, water).
	Increased dominance of existing weeds species.
	Introduction of new weed species.
	Incompatible weed control techniques (cultivation, chemical, off-target damage).
	Inappropriate choice of species composition and density for revegetation.
Exotic animals and overabundant native species	Overgrazing of grassland flora by exotic and native herbivores.
	Predation of grassland fauna by exotic carnivores (foxes, cats).
	Spread of exotic weeds by animal vectors (foxes, starling).
	Soil disturbance and poisoning of native fauna from inappropriate exotic animal control (rabbit warren destruction, spraying of locust/grassland plague).

Known and/or potential threat	Known and/or potential impact
New infrastructure and developments	Infrastructure for energy and water supplies (buildings, wind generator networks, transmission line poles, underground power cables, pipelines, dams, bores).
	New roads or upgrading of existing roads (widening, re-surfacing).
	Infrastructure development in non-arable areas (sheds, roads, storage facilities).
Inappropriate fire regimes	Inappropriate or altered fire regimes.
	Lack of investigation/knowledge about grassland species response to fire.
	Inappropriate biomass management for fire prevention (slashing too frequently or too low to maintain and protect biodiversity assets).
	Damage to vegetation and soils from fire suppression activities (grading of fire breaks, vehicle access through remnants, application of chemical foam).
Ongoing ecological stresses due to past clearance, fragmentation and management changes	Incremental clearance and decline in condition of remnants.
	Isolation of remnant populations (barriers to dispersal, inbreeding, edge effects).
	Increased competition in remnant population (resources, mortality, loss of pollinators, loss of host plants or animals, disruption of critical life stages, vulnerability to stochastic events).
	Competition with new and existing weeds.
	Over-harvesting of native seeds from grassland remnants due to increased demands.
Climate change	Potential reduction in biomass production.
	Possible escalation of species stresses associated with a drying climate (increased competition for water and other resources, increased mortality, disruption to critical life stages, loss of pollinators, loss of host plants or animals).
	Social impacts on agricultural enterprises in lower rainfall areas (reduced management effort in INTG remnants to cut costs).
	Increased grazing intensity from failure to adapt ‘best practice’ grazing management strategy.

3.5 Occurrence within the Goyder South Project Area

A total of 32 patches of INTG have been recorded within the Goyder South Project Area and are summarised in Table 6 and shown in Figure 4. Of these, 14 patches are Class B INTG TEC (which is protected by the EPBC Act) and 18 patches are Class C INTG (which is not protected by the EPBC Act).

Four patches of Class B INTG TEC and one patch of Class C INTG occur within the Stage 1A Project Area as shown in Figure 5. Three patches of Class B INTG TEC and four patches of Class C INTG occur with and/or across the OTL corridor as shown in Figure 6. The remaining 21 patches of INTG occur within the broader area of the Goyder South Project Area as shown in Figure 4.

Refer to previous EBS Ecology reports for more background information (EBS Ecology 2020; 2021; and 2022c). All INTG TEC patches have been assessed against the criteria outlined in the *EPBC Act Policy Statement 3.7: Nationally Threatened Species and Ecological Communities: Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia and Iron-grass Natural Temperate Grassland of South Australia* (DEWR 2007).

Table 6. INTG located within the Stage 1A, Common Asset (OTL and Substation) and broader Goyder South Project Area.

INTG Patch #	Location	Landholder / Property	INTG TEC Class	Area (ha) (before any impact)	Impacted by
1	Broader Goyder South Project Area	Jaeschke	B	35	-
2	Adjacent OTL	Wiech	B	23.48	-
3	Adjacent OTL	Milde Partners	B	3.3	-
4	Adjacent OTL	Loffler	B	5.71	-
5	Adjacent OTL	Roger Launer	B	15.47	-
6	Stage 1A	Geier	B	3.54	-
7	Stage 1A	Geier	B	44.26	-
8	Stage 1A	Geier	B	178.86	WTGs, access tracks and cable
	Stage 1A	Neill	B	22.60	
9	OTL	Schmidt/Phillips	B	19.2	OTL Tower 41 & 42; access track
10	OTL	Schmidt/Phillips	C	28.4	OTL Tower 37
11	Adjacent OTL	Lynch	C	23.39	-
12	Stage 1A	Tilfam Pty Ltd (Thompson)	B	129.22	WTG, access track and cable
13	Stage 1A	Stockman	C	9.72	WTG
14	Broader Goyder South Project Area	Kitschke	C	258.19	-
15	Broader Goyder South Project Area	Kitschke	B	84.87	-
16	Adjacent OTL	Loffler	C	2.27	-
17	Adjacent OTL	Milde Partners	C	0.86	-
18	Adjacent OTL	Milde Partners	C	0.4	-
19	Adjacent OTL	Milde Partners	C	1.15	-
20	Adjacent OTL	Milde Partners	C	0.43	-
21	Adjacent OTL	Wiech	C	0.73	-
22	Adjacent OTL	Wiech	C	8.25	-
23	Adjacent OTL	Milde Partners	B	0.51	-
24	Broader Goyder South Project Area	Ruediger	C	3.35	-
25	Adjacent OTL	Lofler	C		-
26	Adjacent OTL	Lofler	C		-
27	Adjacent OTL	Lofler	C		-
28	OTL	Schmidt/Phillips	C		OTL
29	OTL	Schmidt/Phillips	B	0.54	OTL Tower 43
30	OTL	Schmidt/Phillips	C		OTL Tower 44 and access track
31	OTL	Heinrich	B	1.14	OTL
32	OTL	Heinrich	C		OTL Tower 69

Patches of Class C INTG are shaded in grey.

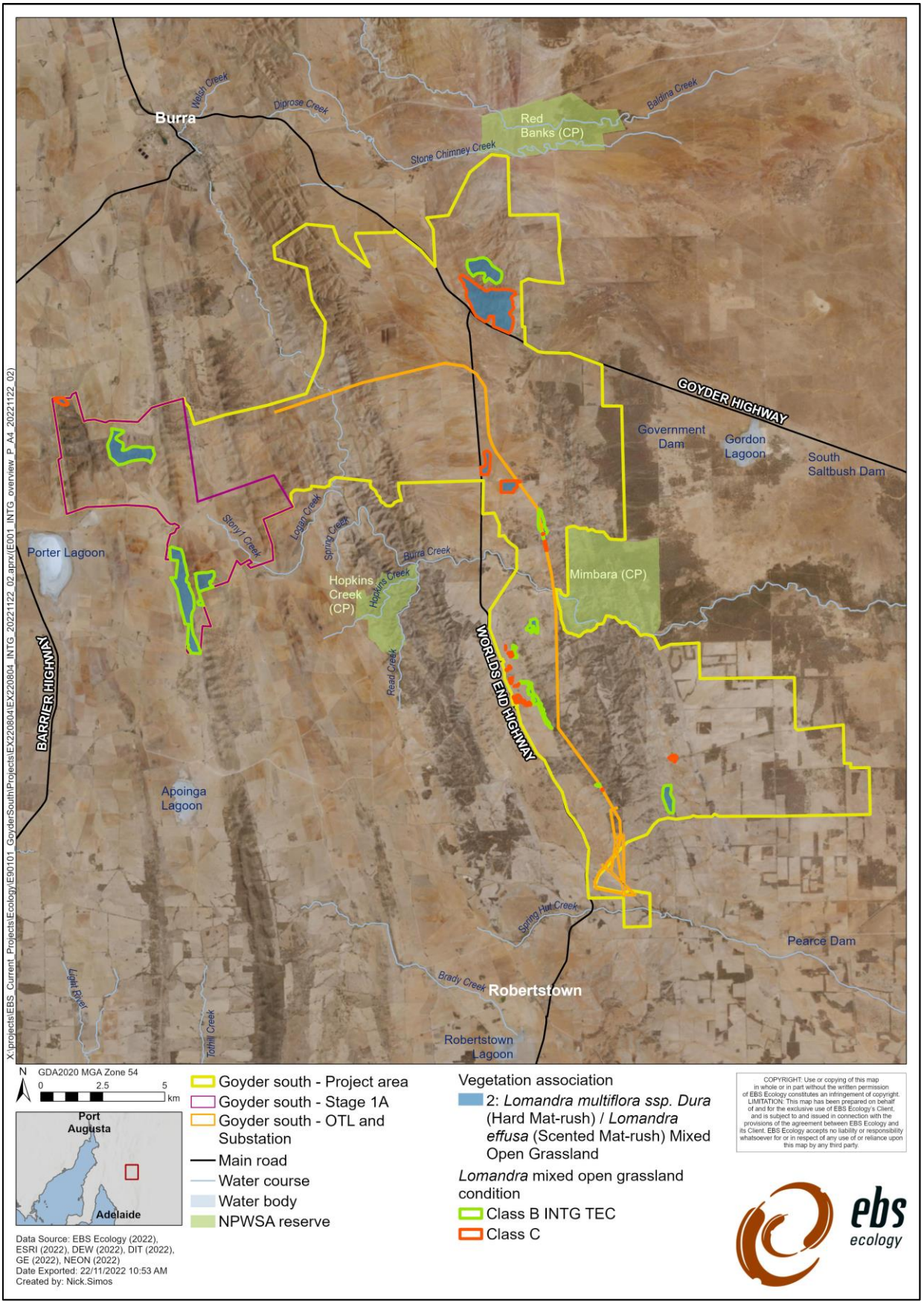

Figure 4. Overview of INTG TEC within the Goyder South Project Area (refer to Figure 5 and Figure 6 for more detail).

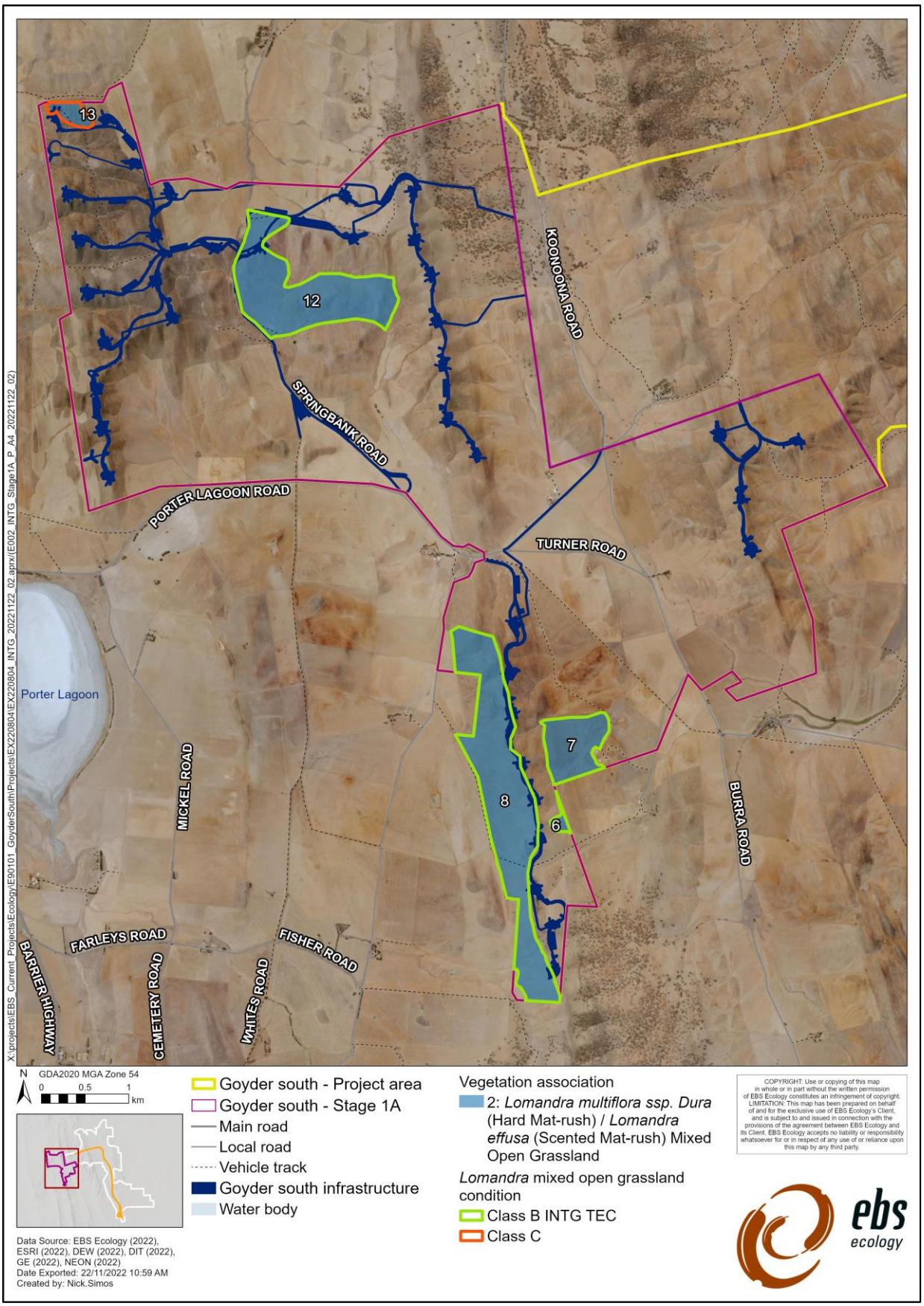

Figure 5. INTG TEC within Stage 1A.

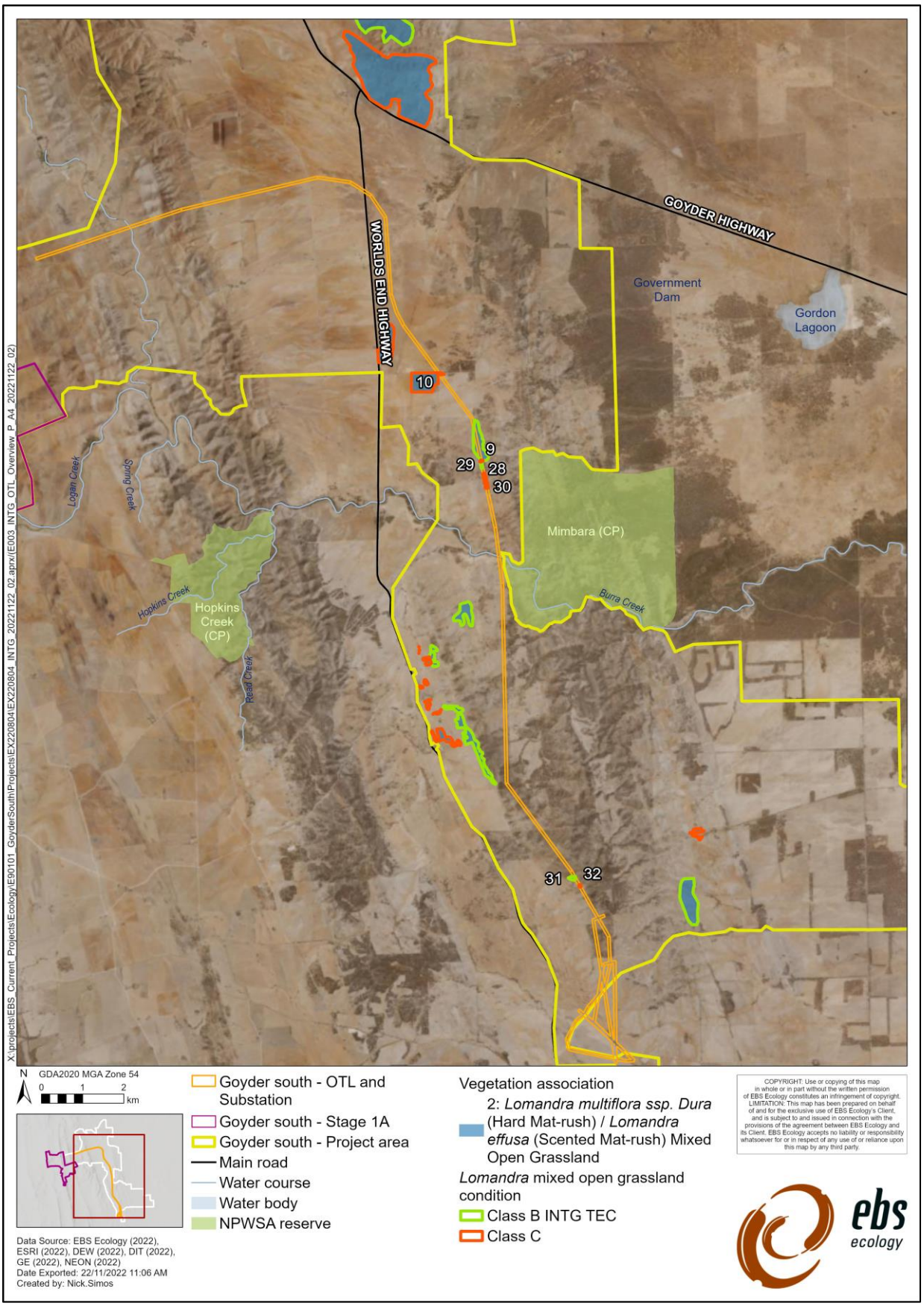

Figure 6. Overview of INTG TEC within and adjacent to the OTL alignment.

3.6 Residual significant impacts to INTG TEC

While Project infrastructure has specifically been designed and/or located to avoid impact to INTG TEC as much as possible, assessment of Project design information, specifically the infrastructure footprint has determined that the Stage 1A and Common Asset (OTL and Substation) components of the Project will directly impact (clear) approximately 12.67 ha and 1.36 ha of Class B INTG TEC, respectively, as summarised in Table 7 and shown in Figure 7 to Figure 9.

As such and in accordance with the *Matters of National Environmental Significance: Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999* (DoE 2013), these impacts are considered to be residual significant impacts.

Table 7. Overview of residual significant impacts to Class B INTG TEC.

Project component (EPBC Referral)	Impact (ha)
Stage 1A (2021/8958)	12.67
Common Asset (OTL and Substation) (2021/8959)	1.36
Total	14.03

More information on each of the five Class B INTG TEC patches to be directly impacted by the Stage 1A and Common Asset (OTL and Substation) components of the Project is provided in Table 8.

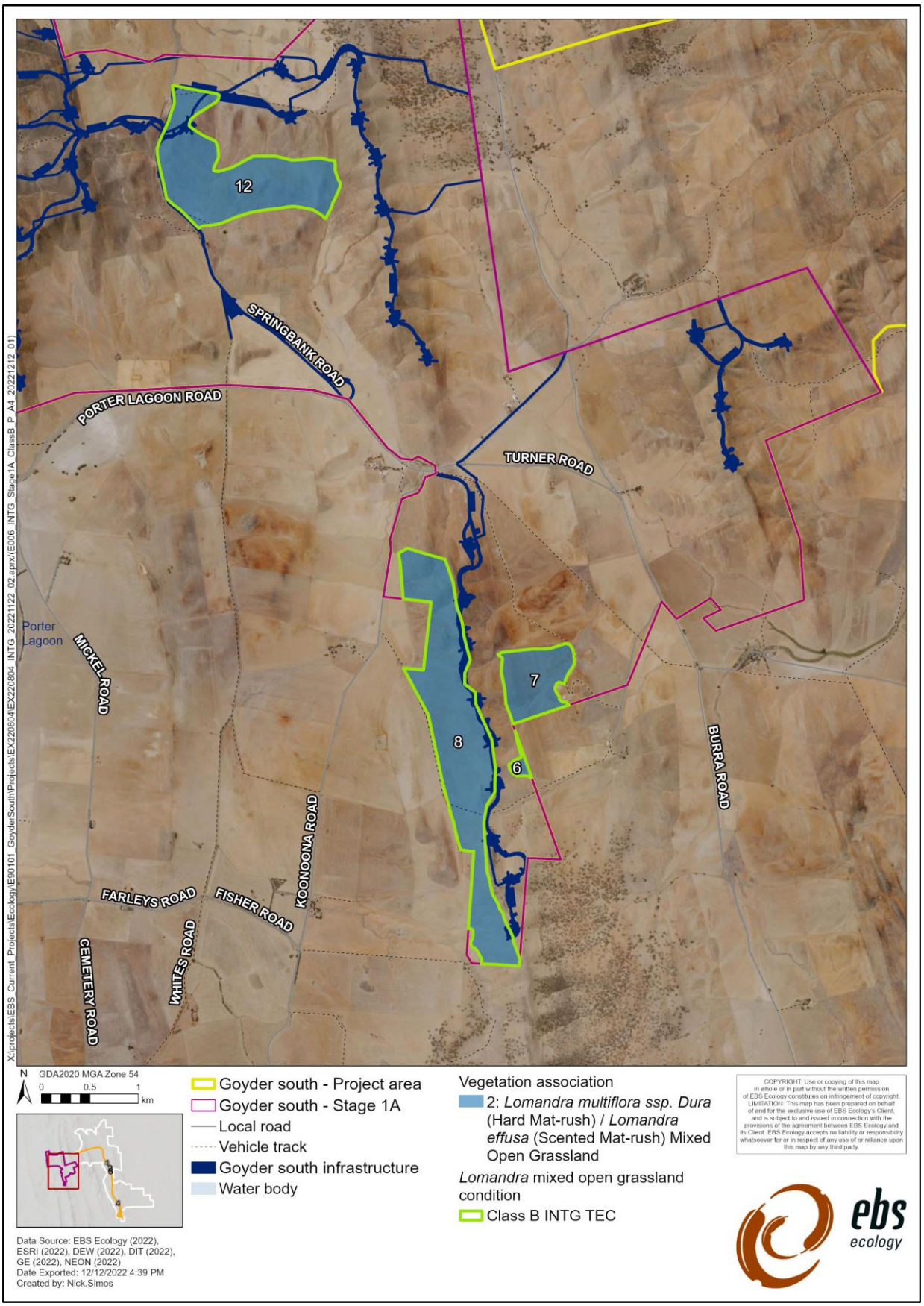

Figure 7. Class B INTG TEC patches 8 and 12 impacted by Stage 1A infrastructure.

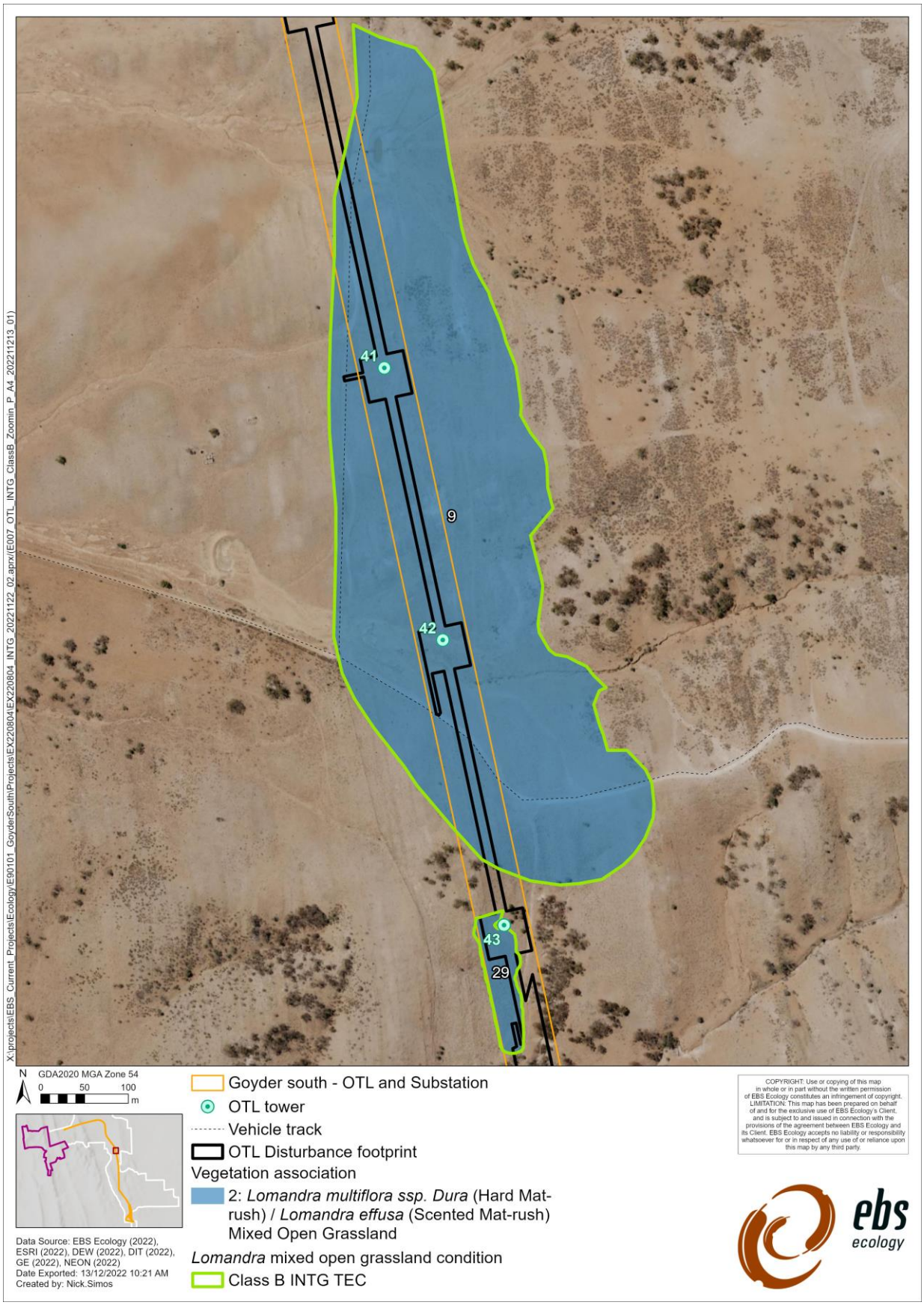

Figure 8. Class B INTG TEC Patches 9 and 29 impacted by Common Asset (OTL) infrastructure.

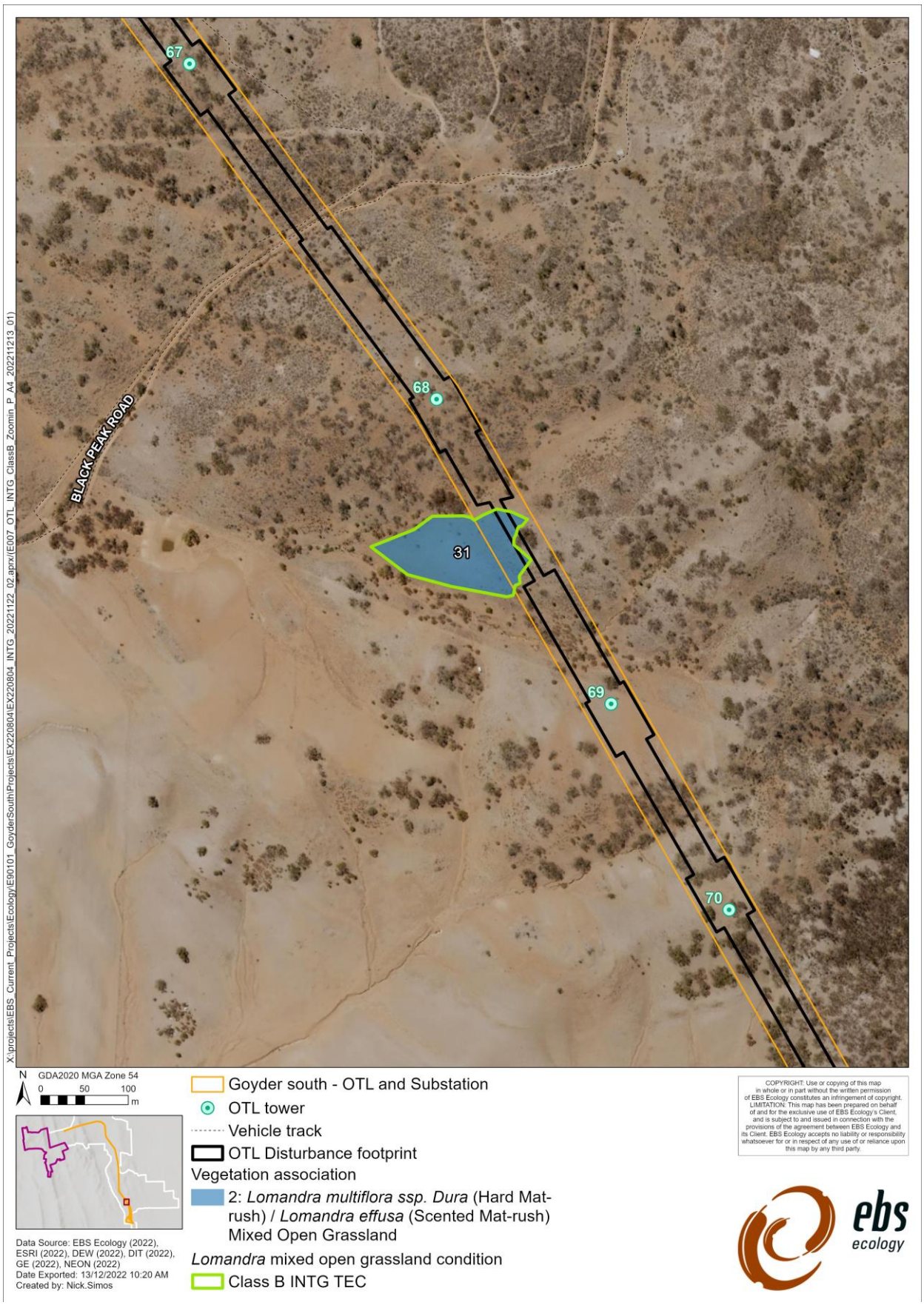

Figure 9. Class B INTG patch 31 impacted by Common Asset (OTL) infrastructure.

Table 8. Summary of individual Class B INTG TEC patches impacted by the Stage 1A and Common Asset (OTL and Substation) components of the Project.

Patch ID	Landowner	Location	Patch Size[1] (ha)	Area impacted (ha)	Comment on impact	Diversity of native species (min)	Broad-leaved herbaceous species[2]	Perennial grass species (min)	General comments on patch
8	Geier	Stage 1A	156.26	7.91	Portions of patch 8 on the Geier property will be impacted by five WTGs and associated access tracks and electrical cabling.	21	8	8	Widespread on mid to upper hill slope, intermixed with Spinifex (*Triodia sp.)* and Kangaroo Grass (*Themeda triandra*).
	Neill		22.60	0.67	One WTG and associated access track and electrical cabling will be located adjacent to this patch. However, no direct impact is anticipated.				
12	Tilfam Pty Ltd	Stage 1A	129.22	3.30	One WTG and associated access track and electrical cabling will impact this patch.	16	5	8	*Lomandra multiflora and Lomandra effusa* of varying sizes. Some regeneration present. Diversity increasing from top to bottom of hill. Scattered *Rumex* and multiple native grass species, but few disturbance-resistant herbs.
Stage 1A INTG TEC impact total:				**11.88[3]**					
9	Schmidt / Phillips	OTL	19.20	1.08	Up to three OTL towers and associated access tracks will impact this patch.	17	6	4	Regeneration of *Lomandra multiflora*, dense and variable in size. Few weeds except thistle sp. (*Carthamus and Silybum*).
29	Schmidt / Phillips	OTL	0.54	0.23	A portion of this patch will be permanently impacted by OTL tower #43 and temporarily impacted by cable stringing works during construction.	22	5	4	Good cryptogram layer and some regenerating *Lomandra* sp. tussocks.
31	Heinrich	OTL	1.14	0.05	This patch is located between OTL Towers 68 and 69 and will be permanently impacted by a short section of access track and temporarily impacted by cable stringing works during construction.	34	10	4	The eastern side of the transmission line is a *Bursaria* shrubland (>10 %) rather than an INTG patch. It contains a high diversity of native species. As you move further west it becomes a Class B INTG TEC patch and *Bursaria* individuals become <10%. Tussock health and density increases. Numerous herbaceous species present with rocky outcrops and good cryptogram layer (EBS Ecology 2022d).
Common Asset (OTL & Substation) INTG TEC impact total:				**1.36**					

1: Total patch size prior to impact.

2: Minimum excluding disturbance resistant species. The following species are identified as disturbance resistant species: *Ptilotus spathulatus* forma *spathulatus*; *Sida corrugata*; *Oxalis perennans*; *Convolvulus angustissimus*; *Euphorbia drummondii*; and *Maireana enchylaenoides*.

3: Note that the Stage 1A EPBC approval includes impact to 12.67 ha of INTG TEC, but further design development post EPBC assessment and approval is likely to have reduced the impact to INTG TEC within Stage 1A.

4 PROPOSED INTG TEC OFFSET

As stated previously, NEOEN propose to establish and implement on-ground INTG TEC Offset Areas to offset residual significant impacts and achieve a measurable conservation gain for INTG TEC. Two Offset Areas are required, including one to offset the impact to 12.67 ha Class B INTG TEC associated with Stage 1A and one to offset the impact to 1.36 ha of Class B INTG TEC associated with the Common Asset (OTL and Substation). However, as outlined in Table 2 and stated in the EPBC Approval Conditions (Stage 1A: Condition 8; Common Asset (OTL and Substation) Condition 6), "*the approval holder may choose to combine the OMPs required as conditions of approval for other proposed elements of the Goyder South Hybrid Renewable Energy Facility for the same protected matters.*"

As such, this *Goyder South Hybrid Renewable Energy Facility INTG TEC Offset Management Plan* (INTG TEC OMP) has been prepared and will be executed to guide the establishment and implementation of each proposed INTG TEC Offset Area. Refer to Section 6 for the management aspects and actions associated with this INTG TEC OMP.

4.1 Type of Offset

The total amount (i.e., 100 %) of the EPBC Offset required for each action (Stage 1A and the Common Asset (OTL and Substation)) is proposed to be achieved via the establishment and implementation of a direct offset in the form of on-ground Offset Areas that aim to provide a measurable conservation gain for INTG TEC, referred to herein as the INTG TEC Offset Areas. The EPBC Offsets Policy (DSEWPC 2012a) states that:

> "*conservation gain is the benefit that a direct offset delivers to the protected matter, which maintains or increases is viability or reduces any threats of damage, destruction or extinction. A conservation gain may be achieved by:*
>
> - *improving existing habitat for the protected matter*
> - *creating new habitat for the protected matter*
> - *reducing threats to the protected matter*
> - *increasing the values of a heritage place, and/or*
> - *averting the loss of a protected matter or its habitat that is under threat."*

Establishment and implementation of each on-ground INTG TEC Offset Area will improve the existing condition of INTG TEC within each Offset Area site as well as reduce threats to INTG TEC within each Offset Area site, such as, but not limited to, potential changes in land use (including altered grazing regimes), weed invasion, exotic animals, new infrastructure and developments and climate change (via adaptive grazing management), through active management and legal protection of the land.

4.2 Class of the INTG TEC Offset Areas

As the Project is impacting upon patches of Class B INTG TEC, it is proposed to use an existing Class B INTG TEC patch for the INTG TEC Offset Areas to meet the requirements of the EPBC Offsets Policy.

4.3 Proposed location of INTG TEC Offset Areas

Out of the 14 patches of Class B INTG TEC within the Goyder South Project Area (Table 9), NEOEN have identified three patches that are considered suitable to compensate for residual significant impacts to the INTG TEC and propose to locate the INTG TEC Offset Areas in one of these patches or in a combination of some of these patches.

Table 9. The 14 patches of Class B INTG TEC within the Goyder South Project Area.

INTG Patch #	Location	Landholder / Property	Area (ha) (before any impact)	Impacted by
1	Broader Goyder South Project Area	Jaeschke	35	-
2	Adjacent OTL	Wiech	23.48	-
3	Adjacent OTL	Milde Partners	3.3	-
4	Adjacent OTL	Loffler	5.71	-
5	Adjacent OTL	Roger Launer	15.47	-
6	Stage 1A	Geier	3.54	-
7	Stage 1A	Geier	44.26	-
8	Stage 1A	Geier	178.86	WTGs, access tracks and cable
	Stage 1A	Neill	22.60	
9	OTL	Schmidt/Phillips	19.2	OTL Tower 41 & 42; access track
12	Stage 1A	Tilfam Pty Ltd (Thompson)	129.22	WTG, access track and cable
15	Broader Goyder South Project Area	Kitschke	84.87	-
23	Adjacent OTL	Milde Partners	0.51	-
29	OTL	Schmidt/Phillips	0.54	OTL Tower 43
31	OTL	Heinrich	1.14	OTL

The most suitable patches of Class B INTG TEC are considered to be Patch 8, Patch 12, and Patch 15 (highlighted in grey in Table 9). Considering the size of each of these INTG patches, use of one of these would allow NEOEN to locate both INTG TEC Offset Areas in one property and as such, reduce the risk of not being able to secure legal agreements with the landowner (to implement and manage the proposed INT GTEC Offset Areas) in a timely manner and facilitate management of the INTG TEC Offset Areas.

However, it is not possible for NEOEN to use INTG Patch 8 for the location of the INTG TEC Offset Areas due to the Offset Area management measures being considered too restrictive for the landholder's current land use practices. As such, NEOEN propose to locate the INTG TEC Offset Areas within INTG Patch 12 or INTG Patch 15. More detailed information on these two patches is provided in Table 10, while the location of each is shown in Figure 10.

If NEOEN can't reach agreement with either of the properties for INTG Patch 12 or INTG Patch 15, then in order to achieve the required Offset Areas, NEOEN will investigate the possibility of using a combination of patches of Class B INTG TEC outlined in Table 9 and shown in Figure 4, Figure 5, and Figure 6.

NEOEN will advise the Department of the exact location, accurate boundaries and detailed baseline habitat quality information of the INTG TEC Offset Areas once agreement is reached with the landowner(s).

Table 10. Further information on the two most suitable patches of Class B INTG TEC where INTG TEC Offset Areas are proposed to be located.

Patch ID	Landowner	Location	Patch Size[1] (ha)	Comment on impact	Area remaining post impact[2] (ha)	INTG TEC Class	Diversity of native species (min)	Broad-leaved herbaceous species[3]	Perennial grass species (min)	General comments on patch
12	Tilfam Pty Ltd (Thompson)	Stage 1A	129.22	One WTG and associated access track and electrical cable will impact this patch. However, areas directly and indirectly impacted (e.g., shaded by a WTG) will not form part of the specific area required for the Offset Areas.	125.43	B	16	5	8	*Lomandra multiflora and Lomandra effusa* of varying sizes. Some regeneration present. Diversity increasing from top to bottom of hill. Scattered *Rumex* and multiple native grass species, but few disturbance-resistant herbs.
15	Kitschke	Broader Goyder South Project Area	84.87	No impact, but patch is located within potential future wind farm stage. However, patch will be identified as a no-go zone (impact must be avoided) if future wind farm development occurs.	84.87	B	17	8	6	*Lomandra effusa* and *Lomandra multiflora.* Sparse native herbs.

1: Total patch size prior to impact (EBS Ecology 2021).

2: The area remaining post impact has been estimated by subtracting the infrastructure footprint within the patch from the total patch size. The final area remaining post impact may increase if impacts can be further minimised during construction, for example, if infrastructure is micro-sited and the impact to INTG TEC is reduced.

3: Minimum excluding disturbance resistant species. The following species are identified as disturbance resistant species: *Ptilotus spathulatus* forma *spathulatus*; *Sida corrugata*; *Oxalis perennans*; *Convolvulus angustissimus*; *Euphorbia drummondii*; and *Maireana enchylaenoides*.

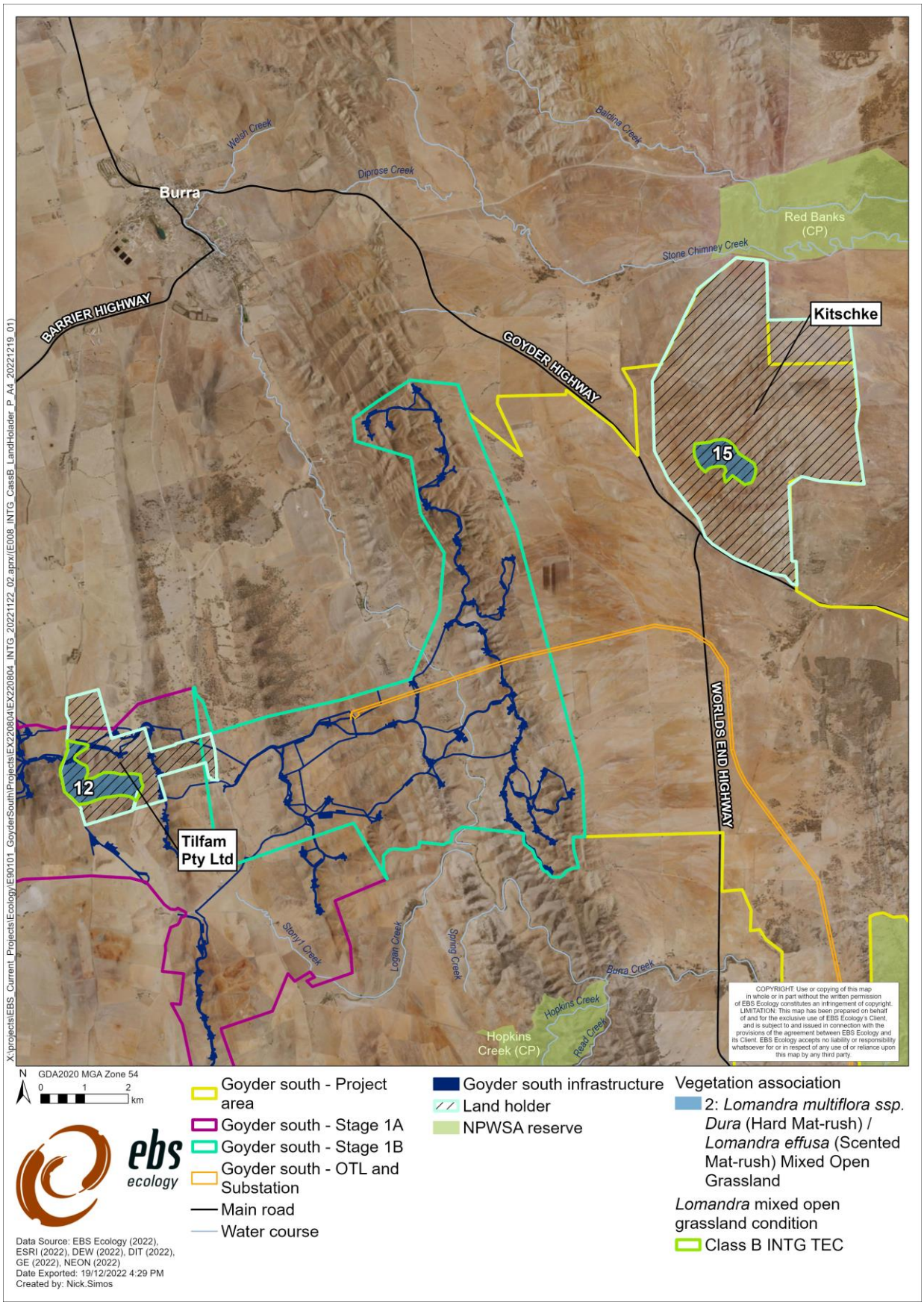

Figure 10. Location of the two most suitable patches of Class B INTG TEC where the INTG TEC Offset Areas are proposed to be located.

4.4 Calculation of required EPBC Offsets

The *Offsets Assessment Guide* (the guide) (DSEWPC 2012b) was used to calculate the minimum direct offset areas (i.e., physical area in hectares) required to compensate for the clearance of up to 12.67 ha and 1.36 ha of Class B INTG TEC for the Stage 1A and Common Asset (OTL and Substation) components of the Project, respectively.

The methodology used to complete the Offsets Assessment Guide (the guide) was in accordance with the *How to Use the Offsets assessment Guide* (DSEWPC undated). Within the guide there are seven protected matter attributes within either *ecological communities*, *threatened species habitat* or *threatened species*, as follows:

- Ecological communities:
    - Area of community;
- Threatened species habitat:
    - Area of habitat;
    - Number of features (e.g., nest hollows, habitat trees);
    - Condition of habitat (change in habitat condition, but no change in extent);
- Threatened species:
    - Birth rate (e.g., change in nest success);
    - Mortality rate (e.g., change in number of road kills per year); and
    - Number of individuals (e.g., individual plants/animals).

The *How to Use the Offsets Assessment Guide* (DSEWPC undated) states:

> ***"Protected matter attributes*** *show the various options to calculate a suitable offset depending on a protected matter's habitat or ecology that a proposed action may be likely to impact – for example* ***area of habitat*** *or* ***birth rate****. The attribute that most effectively captures the nature of the residual impact should be selected…*

As Stage 1A and the Common Asset (OTL and Substation) components of the Goyder South Project will directly impact 12.67 ha and 1.36 ha of Class B INTG TEC, respectively, the *area of community* attribute was used in the guide as it is the attribute that most effectively captures the nature of the residual impacts (i.e., clearance of INTG TEC).

Calculation of the area of impact

To calculate the impact to INTG TEC, ArcMap (a geospatial processing program) was used by EBS Ecology to determine the overlap between the infrastructure footprint and Class B INTG TEC. For Stage 1A the infrastructure footprint includes, (but is not limited to), WTGs, access tracks, electrical circuits, construction compounds, batter slopes, site drainage and construction access. For the Common Asset (OTL and Substation), the infrastructure footprint includes transmission line towers, hardstands, access tracks and electrical cable stringing corridor.

The overlap between the infrastructure footprint for the Stage 1A and the Common Asset (OTL and Substation) components with Class B INTG TEC is 12.67 ha and 1.36 ha, respectively (as outlined in

Section 3.6). As such, these are considered to be the areas of impact to Class B INTG TEC (i.e., impact areas) and have been inserted into the impact calculator within the guide.

Calculation of habitat quality

Habitat quality has been assessed in accordance with the *How to Use the Offsets assessment Guide* (DSEWPC undated). The key ecological attributes of the INTG TEC are summarised in Table 11 and have been used to help determine the overall habitat quality score of the impact areas as well as the INTG TEC Offset Areas, in relation to the three habitat quality components (site condition, site context and species stocking rate) as outlined in Table 12. Note that no weighting has been applied to any of the three habitat quality components (site condition, site context and species stocking rate). Rather, in this particular case, each component is considered equally important and as such contributes equally to the habitat quality score.

A habitat quality score of 6 (out of 10) has been assigned to both the Stage 1A and Common Asset (OTL and Substation) impact areas and the proposed Offset Areas, as all have Class B INTG TEC and similar diversity of relevant habitat species (Table 12). As stated previously, NEOEN will advise the Department of the exact location, accurate boundaries and detailed baseline habitat quality information of the INTG TEC Offset Areas once agreement is reached with the landowner(s).

Table 11. Evaluation of key ecological attributes of the INTG TEC.

Habitat requirements and variability: **What are the various ecological components and occurrence states for the ecological community?**
As outlined in Section 3.3, INTG TEC is a natural grassland dominated by Iron-grass (*Lomandra effusa* or *Lomandra multiflora* ssp. *dura*) and tussock forming perennial grasses. A range of herbaceous species also occur in the ground layer, with trees and tall shrubs generally absent or sparse (<10% cover) (DEWR 2007). Cool season C3 grasses (Spear grass or wallaby grasses) are actively growing in spring, whilst C4 grasses are summer active (Kangaroo grass, Windmill grass, Queensland blue grass, Panic and Brush-wire Grass). Diverse grasslands may include winter and summer growing plant species, grasses and broadleaf plants. Both annual and perennial plants are important components of the community (MNGWG 2019). INTG TEC occurs only in South Australia and tussock Grasslands dominated by *Lomandra effusa* and/or *Lomandra multiflora* subsp. *Dura* occur predominantly in the Northern and Yorke Landscape Management Region, with smaller occurrences in the Murraylands and Riverland Landscape Management Region. Lomandra Grassland is most widespread in the Flinders-Lofty Block Bioregion (Neagle 2008 in Turner 2012), with smaller occurrences in the Kanmantoo, Eyre-Yorke Block and Murray Darling Depression Bioregions (Department for Environment and Heritage 2005 in Turner 2012). The area of iron-grass Natural Temperate Grassland at the time of European settlement has been estimated at between 750,000 to 1,000,000 hectares (ha) (Specht 1972; Hyde 1995 in Turner 2012). At the time of listing under the EPBC Act in 2007, the remaining area of Iron-grass Natural Temperate Grassland of any condition, including highly degraded remnants, was thought to be less than 50,000 ha (Department for Transport, Urban Planning and the Arts 2000 in Turner 2012), whilst the area meeting the criteria for the listed threatened ecological community is likely to be substantially less and may be less than 5,000 ha (Hyde 1995; TSSC 2007 in Turner 2012). As outlined in Section 3.3.3, the Iron-grass listing criteria (DEWR 2007) facilitates classification of INTG into condition classes based on native plant species diversity, composition and native perennial tussock density. Three Condition Class categories have been defined, representing high quality remnants (Class A), moderate quality remnants (Class B) and degraded remnants with potential for restoration (Class C). An overview of the listing criteria for each Class is provided in Table 4.
Lifecycle and population dynamics: **What are the key life cycle stages of the species? How do these impact its population viability or ecosystem integrity?**
As outlined in the INTG TEC Recovery Plan (Turner 2012): "*Continuation of appropriate livestock grazing is one of the main tools available for long-term management, maintenance and protection of the ecological community. Studies in native grasslands in the Mid North of South Australia indicate that management practices such as low intensity grazing and time-managed rotational grazing can help maintain or improve the condition, structure and habitat values of grassland*

remnants whilst also benefiting agricultural production (Earl and Kahn 2003). Complete exclusion of stock after a long history of grazing can be detrimental to native grasslands and depending on the grassland species composition and condition, can lead to dominance by introduced annual grasses and other weeds.

Natural grassland communities are adapted to regular disturbance by herbivore grazing and fire (Curry 1994). Introduced livestock have largely replaced native herbivores in the landscape, especially small mammals and invertebrates. Stock grazing in Iron-grass grasslands could be actively managed to provide some of the essential ecosystem functions previously controlled by the native herbivores, including timely reduction of dry biomass from native tussocks, nutrient recycling and redistribution, seed dispersal and maintenance of structural complexity such as inter-tussock spaces, patchiness of species distribution and different growth stages of plants in the grassland. Stock can also be managed to reduce the impacts of introduced pasture species and some weeds, by controlling biomass and reducing seed production."

***Movement and distribution patterns:* How does the species population function across the landscape?**

As outlined in Section 3.3.2, INTG TEC occurs only in South Australia and tussock Grasslands dominated by *Lomandra effusa* and/or *Lomandra multiflora* subsp. *Dura* occur predominantly in the Northern and Yorke Landscape Management Region, with smaller occurrences in the Murraylands and Riverland Landscape Management Region. Lomandra Grassland is most widespread in the Flinders-Lofty Block Bioregion (Neagle 2008 in Turner 2012), with smaller occurrences in the Kanmantoo, Eyre-Yorke Block and Murray Darling Depression Bioregions (Department for Environment and Heritage 2005 in Turner 2012).

The area of Iron-grass Natural Temperate Grassland at the time of European settlement has been estimated at between 750,000 to 1,000,000 hectares (ha) (Specht 1972; Hyde 1995 in Turner 2012). At the time of listing under the EPBC Act in 2007, the remaining area of Iron-grass Natural Temperate Grassland of any condition, including highly degraded remnants, was thought to be less than 50,000 ha (Department for Transport, Urban Planning and the Arts 2000 in Turner 2012), whilst the area meeting the criteria for the listed threatened ecological community is likely to be substantially less and may be less than 5,000 ha (Hyde 1995; TSSC 2007 in Turner 2012).

***Threatening processes:* What are the threatening processes contributing to the loss of the species?**

As outlined within the INTG TEC Recovery Plan (Turner 2012) and summarised within Table 5 in Section 3.4, the known and potential threats to INTG TEC include:

- Lack of awareness and/or knowledge about INTG TEC;
- Changes in land use (including altered grazing regimes);
- Weed invasion;
- Exotic animals and overabundant native species;
- New infrastructure and developments;
- Inappropriate fire regimes;
- Ongoing ecological stresses due to past clearance, fragmentation and management changes; and
- Climate change.

Adapted from the How to Use the Offsets assessment Guide (DSEWPC undated).

Table 12. Determining the habitat quality scores for the impact areas and the INTG TEC Offset Areas.

Component	Question / consideration	Impacted areas		INTG TEC Offset Areas (refer to Section 4.3 for more detail)
		Stage 1A	Common Asset (OTL and Substation)	
	Impact (Ha)	12.67	1.36	
Site condition	**What is the structure and condition of the vegetation on the site?**	12.67 ha of Class B INTG TEC (Table 8).	1.36 ha of Class B INTG TEC (Table 8).	Class B INTG TEC (Table 10 and EBS Ecology 2021).
	What is the diversity of relevant habitat species present (including both endemic and non-endemic)?	Diversity of native species within the Class B patches of INTG TEC proposed to be impacted includes (as outlined in Table 8): Patch 8 (~201.46 ha): - 21 native plant species; - 8 broad leaved herbaceous species; - 8 perennial grass species. Patch 12 (~129.22 ha): - 16 native plant species; - 5 broad leaved herbaceous species; - 8 perennial grass species. Stage 1A averages = - 18.5 native plant species; - 6.5 broad leaved herbaceous species; - 8 perennial grass species.	Diversity of native species within the Class B patches of INTG TEC proposed to be impacted includes (as outlined in Table 8): Patch 9 (~19.2 ha): - 17 native plant species; - 6 broad leaved herbaceous species; - 4 perennial grass species. Patch 29 (~ 0.54 ha): - 22 native plant species; - 5 broad leaved herbaceous species; - 4 perennial grass species. Patch 31 (~ 1.14 ha): - 34 native plant species; - 10 broad leaved herbaceous species; - 4 perennial grass species. OTL averages = - 24.3 native plant species; - 7 broad leaved herbaceous species; - 4 perennial grass species.	Diversity of native species within the patches of Class B INTG TEC where INTG TEC Offset Areas are proposed to be located includes (as outlined in Table 10): Patch 12 (~ 129.22 ha): - 16 native plant species; - 5 broad leaved herbaceous species; - 8 perennial grass species. Patch 15 (~ 84.87 ha): - 17 native plant species; - 8 broad leaved herbaceous species; - 6 perennial grass species. Although both of these patches have less native plant species than the averages for the impact areas, Patch 15 has more broad leaved herbaceous species than the averages of the impact areas, and both patches have more perennial grass species than the OTL impact patches. As such, the diversity in these patches is considered to be similar to the diversity in the impacted patches.
	What relevant habitat features are on the site?	12.67 ha of Class B INTG TEC.	1.36 ha of Class B INTG TEC.	Class B INTG TEC.
	Site condition score:	2	2	2

Component	Question / consideration	Impacted areas		INTG TEC Offset Areas (refer to Section 4.3 for more detail)
		Stage 1A	Common Asset (OTL and Substation)	
Site context	**What is the connectivity with other suitable/known habitat or remnants?**	The patches of Class B INTG TEC proposed to be impacted are considered to be fragmented from other patches due to historical vegetation clearance and agricultural activities, and not connected to other remnants.	The patches of Class B INTG TEC proposed to be impacted are considered to be highly fragmented from other patches due to historical vegetation clearance and agricultural activities, and not connected to other remnants.	The patches of Class B INTG TEC where the INTG TEC Offset Areas are proposed to be located (INTG Patch 12 or INTG Patch 15) are considered to be fragmented from other patches due to historical vegetation clearance and agricultural activities and not connected to other remnants.
	What is the importance of the site in relation to the overall species population or the occurrence of the community?	As outlined in the INTG TEC Recovery Plan (Turner 2012), the INTG TEC occurs only in South Australia, and tussock grasslands dominated by *Lomandra multiflora* subsp. *dura* and/or L. *effusa* occur mainly in the Flinders-Lofty Block Bioregion (Neagle 2008 in Turner 2012), with smaller occurrences in the Kanmantoo, Eyre-Yorke Block and Murray Darling Depression Bioregions (Department for Environment and Heritage 2005 in Turner 2012). The INTG TEC Recovery Plan states that there is likely to be approximately 5,000 ha of INTG TEC meeting the criteria for the listed TEC (Turner 2012). The 12.67 ha of Class B INTG TEC proposed to be impacted is located within the Flinders-Lofty Block Bioregion. Given the above, and as the INTG TEC Recovery Plan (Turner 2012) states that all sites that meet the criteria for the listed community should be considered habitat critical to the survival of the ecological community, the patches of Class B INTG TEC that are proposed to be impacted are considered to be highly important in relation to the overall occurrence of the community.	As outlined in the INTG TEC Recovery Plan (Turner 2012), the INTG TEC occurs only in South Australia, and tussock grasslands dominated by *Lomandra multiflora* subsp. *dura* and/or L. *effusa* occur mainly in the Flinders-Lofty Block Bioregion (Neagle 2008 in Turner 2012), with smaller occurrences in the Kanmantoo, Eyre-Yorke Block and Murray Darling Depression Bioregions (Department for Environment and Heritage 2005 in Turner 2012). The INTG TEC Recovery Plan states that there is likely to be approximately 5,000 ha of INTG TEC meeting the criteria for the listed TEC (Turner 2012). The 1.36 ha of Class B INTG TEC proposed to be impacted is located within the Flinders-Lofty Block Bioregion. Given the above, and as the INTG TEC Recovery Plan (Turner 2012) states that all sites that meet the criteria for the listed community should be considered habitat critical to the survival of the ecological community, the patches of Class B INTG TEC that are proposed to be impacted are considered to be highly important in relation to the overall occurrence of the community. However, two of the patches are very small (Patch 29: ~ 0.54 ha; Patch 31: ~ 1.14 ha) and as such, could be considered less important than others.	The patches of Class B INTG TEC where the INTG TEC Offset Areas are proposed to be located (INTG Patch 12 or INTG Patch 15) are located within the Flinders-Lofty Block Bioregion. Given the information in the cells to the left and above, the Class B INTG TEC within each Offset Area is considered to be highly important in relation to the overall occurrence of the community.

Component	Question / consideration	Impacted areas		INTG TEC Offset Areas (refer to Section 4.3 for more detail)
		Stage 1A	Common Asset (OTL and Substation)	
	What threats occur on or near site?	Threats that currently occur on or near the impact sites include potential changes in land use (e.g., potential for inappropriate grazing), weed invasion, exotic animals and overabundant native species, new infrastructure developments (wind farm), ongoing ecological stresses due to past clearance, fragmentation and management changes, and climate change.	Threats that currently occur on or near the impact site include potential changes in land use (e.g., potential for inappropriate grazing), weed invasion, exotic animals and overabundant native species, new infrastructure developments (wind farm), ongoing ecological stresses due to past clearance, fragmentation and management changes, and climate change.	Threats that currently occur on or near the proposed INTG TEC Offset Areas include potential changes in land use (e.g., potential for inappropriate grazing), weed invasion, exotic animals and overabundant native species, new infrastructure developments (wind farm), ongoing ecological stresses due to past clearance, fragmentation and management changes, and climate change.
	Site context score:	2	2	2
Species stocking rate	**What is the presence of the species on the site? (i.e., confirmed / modelled).**	Class B INTG TEC has been confirmed within the impact sites during field survey (EBS Ecology 2021) (Figure 7).	Class B INTG TEC has been confirmed within the impact sites during field survey (EBS Ecology 2021; 2022d) (Figure 8 and Figure 9).	Class B INTG TEC has been confirmed, during field survey, within each patch of Class B INTG TEC where the INTG TEC Offset Areas are proposed to be located (INTG Patch 12 or INTG Patch 15) (EBS Ecology 2021) (Table 10; Figure 10).
	What is the density of species known to utilise the site?	12.67 ha of Class B INTG (refer to Table 8 for more detail). Stage 1A averages: - 18.5 native plant species; - 6.5 broad leaved herbaceous species; - 8 perennial grass species.	1.36 ha of Class B INTG (refer to Table 8 for more detail). OTL averages: - 24.3 native plant species; - 7 broad leaved herbaceous species; - 4 perennial grass species.	Class B INTG TEC (refer to Table 10 for more detail). Patch 12: - 16 native plant species; - 5 broad leaved herbaceous species; - 8 perennial grass species. Patch 15: - 17 native plant species; - 8 broad leaved herbaceous species; - 6 perennial grass species.
	What is the role of the site population in regards to the overall species population?	As stated in the INTG TEC Recovery Plan (Turner 2012), all sites that meet the criteria for the listed community should be considered habitat critical to the survival of the ecological community.	As stated in the INTG TEC Recovery Plan (Turner 2012), all sites that meet the criteria for the listed community should be considered habitat critical to the survival of the ecological community.	As stated in the INTG TEC Recovery Plan (Turner 2012), all sites that meet the criteria for the listed community should be considered habitat critical to the survival of the ecological community.
	Species stocking rate score:	2	2	2
Habitat Quality Score:		**6**	**6**	**6**

Adapted from the How to Use the Offsets assessment Guide (DSEWPC undated).

4.4.1 Reasoning associated with the values applied to other parameters in the offset calculator

A summary of the reasoning associated with the values applied to each parameter in the offset calculator within the guide is provided in Table 13.

Table 13. Reasoning associated with the values applied to each parameter in the guide.

Parameter	Value		Reasoning
	Stage 1A	Common Asset (OTL and Substation)	
Impact Calculation			
Protected matter attribute	Area of community	Area of community	The *area of community* attribute has been selected as it is the attribute that most effectively captures the nature of the residual impact (i.e., clearance of 12.67 ha (Stage 1A) and 1.36 ha (Common Asset (OTL and Substation)) of Class B INTG TEC.
Area of impact (ha)	12.67 ha	1.36 ha	Impact calculated by EBS Ecology by intersecting the infrastructure footprint with Class B INTG TEC extent (established via site survey: EBS Ecology 2020; 2021 and 2022d).
Impact area habitat quality (scale of 0-10)	6	6	Class B INTG TEC of varying condition/quality. Refer to Table 8 for more information.
Total quantum of impact (ha)	7.60 ha	0.82 ha	Adjusted hectares as calculated by the guide.
Offset Calculation			
Protected matter attribute	Area of community	Area of community	Aligning with the impact calculation protected matter attribute.
Proposed offset	On-ground INTG TEC Offset Area	On-ground INTG TEC Offset Area	On-ground offsets with a targeted management plan are proposed.
Risk-related time horizon (max. 20 years)	20 years	20 years	Loss is expected to be averted immediately due to the establishment of legal agreements between NEOEN and the landowners, which will commence once the INTG TEC Offset Areas are established. NEOEN propose to execute a Heritage Agreement, in accordance with the South Australian *Native Vegetation Act 1991*, over each of the INTG TEC Offset Areas, which will provide protection in perpetuity. Refer to Section 4.8 for more information on protection. A maximum of 20 years has been applied.
Time until ecological benefit	5 years	5 years	The legal agreement for each INTG TEC Offset Area will require that the specific management actions associated with each management aspect (including grazing management, weed and feral animal control, fire prevention, restricting access, monitoring and reporting) within the INTG TEC Offset Management Plan are implemented upon execution of the agreement to commence achieving the objectives of each INTG TEC Offset Area (protection and improvement in condition).

Parameter	Value		Reasoning
	Stage 1A	Common Asset (OTL and Substation)	
			NEOEN aims to commence establishing and implementing each of the INTG TEC Offset Areas, after execution of the legal agreement(s), which is anticipated to be within about 12 months of approval of the OMP by the Minister. As such, ecological benefit is expected to commence within the first year of implementation of each INTG TEC Offset Area. However, 5 years has been applied as a conservative measure as it may take up to 5 years for ecological benefit associated with management actions to be achieved.
Start area (ha)	59.0 ha	6.30 ha	An Offset Area of 65.30 ha (59.0 ha and 6.30 ha) of Class B INTG TEC enables 100.70 % and 100.17 % (respectfully) of the impact (Stage 1A: 12.67 ha and Common Asset (OTL and Substation): 1.36 ha of Class B INTG TEC) to be offset as a direct offset, therefore meeting the minimum 90 % direct offset requirement. NEOEN propose to locate the INTG TEC Offset Areas within suitable patches of Class B INTG TEC (with the intention of having both INTG TEC Offset Areas on one property) (Table 10).
Start quality of habitat (scale of 0-10)	6	6	Refer to Table 12.
Risk of loss (%) without offset	0.52 % (shown as 1 % in the guide)	0.52 % (shown as 1 % in the guide)	A Risk of Loss (ROL) without offset value of 0.52 % has been applied in accordance with the *Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act* document (Maseyk *et al.* 2017) as outlined below. In accordance with the *Calculating Risk of Loss under a Without Offset scenario* decision tree outlined in Figure 4 and Table 3, Pathway C (in Maseyk *et al.* 2017) reflects the situation, as: 1. *The proposed offset site contains a threatened ecological community*; and 2. *There is no credible, site-specific evidence to indicate development will occur within the foreseeable future* (i.e. 20 years), As such, the recommended ROL is "*average annual background rate of loss x time horizon*". The 'Risk of Loss over twenty years (%)' for the Goyder Local Government Area is 0.52 % (in accordance with Appendix One in Maseyk *et al*. 2017). As such a ROL of 0.52% been applied for the ROL without offset value.
Future quality without offset (scale of 0-10)	5	5	The condition of habitat within the proposed INTG TEC Offset Areas has the potential to decrease, for example if grazing regimes are changed (increase in stocking rates and/or grazing duration), or if weeds increase.
Risk of loss (%) with offset	0 %	0 %	A Risk of Loss (ROL) with offset value of 0 % has been applied in accordance with the *Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act* document (Maseyk *et al.* 2017) as outlined below. In accordance with the *Calculating Risk of Loss under a With Offset scenario* decision tree outlined in Figure 3 and Table 2, Pathway A (in Maseyk *et al.* 2017) reflects the situation, as: 1. *The proposed offset site contains a threatened ecological community*;

Parameter	Value		Reasoning
	Stage 1A	Common Asset (OTL and Substation)	
			2. *The tenure status of the proposed offset site will be changed to secure protection* (i.e. Heritage Agreement); and 3. *Development induced clearing of the proposed offset site due to allowable activities would trigger an offset requirement under legislation* (i.e. the EPBC Act), As such, the recommended ROL is “0 %".
Future quality with offset (scale of 0-10)	7	7	Implementation of the INTG TEC OMP, for a minimum of 10 years, (after which the need for ongoing management in accordance with this INTG TEC OMP will be reviewed and reconsidered, as outlined in Section 6), is expected to maintain and increase (where possible) future quality within the INTG TEC Offset Areas. For example, known and/or potential threats to INTG TEC (as outlined in Section 3.4) will be actively managed, with some being almost eliminated altogether. Changes in land use, including incompatible grazing levels and disturbance by stock; changes of livestock species/breeds and stocking rates resulting in inappropriate grazing levels and disturbance; intensification of activities (cropping in new areas, pasture improvement, handfeeding or establishment of feed-lots, new water supply/dams for irrigation); inappropriate chemical application (herbicides, fertilizers, soil ameliorants); will be prevented from occurring, particularly as the land on which the INTG TEC Offset Areas occur will be placed under a Heritage Agreement (refer to Sections 4.8 and 4.8.1), and protected in perpetuity. As such, the changes in land use stated above will be prevented from occurring. More importantly, the implementation of specific management actions contained within the INTG TEC OMP, for a minimum of ten years, (as outlined in Section 6.3), is expected to maintain and increase (where possible) the condition/quality of each INTG TEC Offset Area, including: • Management of livestock and grazing regime (including grazing duration and stocking rate to ensure continuation of appropriate livestock grazing that is beneficial for the INTG TEC and contributes to maintenance and increase (where possible) in condition / quality; • Weed control to reduce competition for resources (space, nutrient, water) and enable grassland species to utilise available resources and proliferate; • Feral / exotic / pest animal control to reduce overgrazing of grassland flora and/or soil disturbance (e.g., by rabbits) and enable grassland species to proliferate; • Fire prevention, as inappropriate fire regimes are a threat to the INTG TEC. In addition, the proposed INTG TEC Offset Areas will be monitored for a minimum of ten years (as outlined in Section 6.3.6) *and* monitoring results will be used to identify any changes required to management measures (such as grazing regime) (i.e., adaptive management) to maintain and increase (where possible) the condition/quality of each INTG TEC Offset Area. While this INTG TEC OMP and the management actions within it are proposed to be implemented for a minimum of ten years (after which the need for ongoing management will be reviewed and reconsidered as outlined in Section 6), the land on which the on-ground INTG TEC Offset Areas occur will be placed under a Heritage Agreement (refer to Sections 4.8 and 4.8.1). As such, the land will be protected in perpetuity and must be managed for conservation by the landowner. The legal agreement with the landowner to establish

Parameter	Value		Reasoning
	Stage 1A	Common Asset (OTL and Substation)	
			and manage the proposed INTG TEC Offset Areas will include conditions on the management of grazing in the INTG TEC Offset Areas. Refer to Section 6.3.3 for more detail on management of livestock and grazing regime. As the land will be managed for conservation, it will not be subject to altered grazing (over-grazing) by stock, and weeds and feral animals will also be managed/controlled, which is expected to contribute to maintaining the increase in INTG TEC condition / quality achieved in the ten years of implementation of this INTG TEC OMP. Furthermore, changes in land use (such as those described above previously) will also be prevented from occurring, which is also expected to contribute to maintaining the increase in INTG TEC condition / quality achieved in the ten years of implementation of this INTG TEC OMP. As such, the future quality of the INTG TEC within the INTG TEC Offset Areas is expected to be increased via implementation of the INTG TEC OMP, compared to the future quality of the same INTG TEC without implementation of the offsets or INTG TEC OMP. If monitoring undertaken as part of this INTG TEC OMP (as outlined in Section 6.3.6 and Section 6.5) determines that the future quality target score of 7 out of 10 for the INTG TEC Offset Areas has not been achieved within the proposed ten-year management timeframe, then NEOEN will undertake further management in accordance with this INTG TEC OMP beyond the initial ten years proposed, until the future quality target score is achieved. Monitoring and reporting will also continue until the future quality target score is achieved.
Confidence in result (%) – Risk of loss	90 %	90 %	The high confidence (90 %) is due to the major threats outlined in the INTG TEC Recovery Plan (Turner 2012), such as changes in land use (including altered grazing regimes and new infrastructure developments) and weed invasion, being addressed by the INTG TEC Offset Management Plan for the proposed INTG TEC Offset Areas, including implementation of the legal agreement. In particular, monitoring results for the INTG TEC Offset Areas will be used to identify any changes required to management measures (such as grazing regime) to rectify any shortfalls or underperformance issues.
Confidence in result (%) – Future quality	90 %	90 %	The high confidence (90 %) is attributed to the implementation of the legal agreement with an adaptive management plan (the INTG TEC Offset Management Plan) for the INTG TEC Offset Areas and the fact that NEOEN propose to execute a Heritage Agreement, in accordance with the South Australian *Native Vegetation Act 1991*, over the INTG TEC Offset Areas, which will provide protection in perpetuity.
% of impact offset (i.e., by proposed INTG TEC Offset Area)	100.70 %	100.17 %	As calculated by the guide.
Minimum 90 % direct offset requirement met?	Yes	Yes	As calculated by the guide.

4.5 Size of the INTG TEC Offset Areas

Use of the *Offsets Assessment Guide* (the guide) has determined that an Offset Area of 59 ha is required to offset the impact to 12.67 ha of INTG TEC associated with Stage 1A. Likewise, an Offset Area of 6.3 ha is required to offset the impact to 1.36 ha of INTG TEC associated with the Common Asset (OTL and Substation). As such, the total combined size required for the two INTG TEC Offset Areas is 65.30 ha.

4.6 Property and land tenure

The current land tenure of the privately owned properties where patches of Class B INTG TEC have been identified as suitable and where NEOEN propose to locate the INTG TEC Offset Areas (INTG Patch 12 or INTG Patch 15) is freehold and is expected to remain to be freehold into the future.

4.7 Current land use and management

The patches of Class B INTG TEC where INTG TEC Offset Areas are proposed to be located (INTG Patch 12 or INTG Patch 15) are believed to be part of paddocks primarily used for grazing by sheep. The current grazing regime including stocking rates (number and type of sheep), grazing times and duration are unknown, but will be obtained from the land manager prior to implementation of this OMP.

4.8 Protection of the Offset Areas

NEOEN propose to execute a Heritage Agreement, in accordance with the South Australian *Native Vegetation Act 1991*, over each INTG TEC Offset Area, which will provide protection in perpetuity. The Native Vegetation Branch within the SA Department for Environment and Water (DEW) manages the implementation of Heritage Agreements. Neoen propose to commence the process to implement and execute a Heritage Agreement as soon as possible after receiving approval of the OMP from the Minister and it is expected to take at least 12 months to finalise. If it is not finalised within 12 months Neoen will contact the Native Vegetation Branch within DEW to follow up on the implementation and execution.

4.8.1 Heritage Agreement

A Heritage Agreement is a conservation area on private land, which is subject to the (SA) *Native Vegetation Act 1991* and established by agreement (or contract) between a landowner and the (SA) Minister for Climate, Environment and Water (or equivalent environment Minister). Agreements are ongoing or perpetual and are binding on future landowners. Even if the property is sold or ownership is transferred, the conservation status of the land under agreement will continue. Native plants and animals within the specified Heritage Agreement area must be protected from the time the agreement is made. It will be the responsibility of the landowner to conduct weed and feral animal control and they must abide by relevant legislation such as the *Landscape South Australia Act 2019*. If an activity could adversely impact native flora and fauna in a Heritage Agreement area, then the Minister will need to grant approval before it can be performed. In addition to this, the planting of vegetation, regardless of whether it is native or exotic, requires Ministerial approval. The Minister is likely to grant approval if an activity is to provide a net benefit for the conservation of the area.

Rather than placing a Heritage Agreement over the entire land parcel containing an INTG TEC Offset Area, NEOEN propose to only place the Heritage Agreement over the extent of the INTG TEC Offset Area (i.e., the patch of INTG TEC). As such, the Heritage Agreement will exclude any areas of the land parcel that contain infrastructure associated with the Goyder South Project.

A Heritage Agreement will not preclude livestock (such as sheep) grazing from occurring within the INTG TEC Offset Area(s). However, it is likely that implementation of the INTG TEC OMP, which includes specific grazing management measures such as limiting livestock to sheep and excluding cattle, as well as limiting grazing rates and timeframes, will be a condition of approval / execution of the Heritage Agreement.

4.9 Selection and suitability of the Offset Areas

The patches of Class B INTG TEC where the INTG TEC Offset Areas are proposed to be located are considered highly suitable as an offset site for INTG TEC for the following reasons:

- Each property contains Class B INTG TEC, which, with active management of threats (such as, but not limited to, changes in land use, grazing regime and weeds) is likely to improve the condition of the INTG TEC within the site;
- Each INTG TEC Offset Area can be placed under a Heritage Agreement for protection in perpetuity;
- The properties are in close proximity to the impact site (infrastructure footprint of the Goyder South Project); and
- Each property will have one land manager (the landowner) (rather than multiple property owners / managers), which will increase the ease of co-ordinated management of each Offset Area site.

4.10 Known and/or potential threats to the INTG TEC Offset Areas

All of the known and/or potential threats identified in the INTG TEC Recovery Plan (Turner 2012), which are summarised in Table 5 (Section 3.4), have the potential to threaten the INTG TEC Offset Areas. However, apart from climate change (which is limited to being managed via adaptive grazing management), all of the known and/or potential threats can be avoided and/or managed via implementation of specific management actions within this INTG TEC OMP (which are outlined in Section 6).

5 EPBC OFFSETS POLICY

As stated previously, this INTG TEC OMP has been prepared in accordance with the EPBC Offsets Policy (DSEWPC 2012a). In order to demonstrate how the proposed Stage 1A and Common Asset (OTL and Substation) offsets are consistent with the EPBC Offsets Policy, a review of the proposed INTG TEC Offsets against the eight overarching Offset Principles has been undertaken and is presented in Table 14 on the following pages.

Table 14. Offset Principles outlined in the EPBC Offsets Policy and comments on how the INTG TEC Offsets are consistent with them.

Offset Principle	Details / Commentary	Comments on how the INTG TEC Offsets are consistent with the Offset Principle
1. Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action.	Offsets must directly contribute to the ongoing viability of the protected matter impacted by the proposed action, and deliver an overall conservation outcome that *improves* or *maintains* the viability of the protected matter as compared to what is likely to have occurred under the status quo, that is if neither the action nor the offset had taken place. Offsets should be tailored specifically to the attribute of the protected matter that is impacted in order to deliver a conservation gain. For impacts on habitat for threatened species, migratory species and threatened ecological communities, any direct offset must meet, as a minimum, the quality of the habitat at the impact site.	The EPBC Offsets Assessment Guide has been used to calculate the direct offset areas required for the maximum disturbance that may occur under the proposed layouts, in order to compensate for any adverse impacts to INTG TEC and provide a measurable conservation gain. Implementation of the INTG TEC Offset Areas is expected to achieve an overall conservation outcome that improves the condition of INTG TEC within the INTG TEC Offset Areas. This INTG TEC OMP has been specifically developed to ensure the effective management of the INTG TEC Offset Areas. Active management of the INTG TEC Offset Areas, in accordance with the INTG TEC OMP will ensure that the quality of INTG TEC within the Offset Areas will improve upon current conditions.
2. Suitable offsets must be built around direct offsets but may include other compensatory measures.	Offsets must be built around direct offsets, which should form a minimum of 90 % of the total offset requirement. Other compensatory measures may satisfy up to a maximum of 10 % of the total offset requirement. Where possible, an offset should address key priority actions outlined for the impacted protected matter in any approved recovery plans, threat abatement plan, conservation advice, ecological character description or approved Commonwealth management plan. Higher priority actions are preferred to lower priority actions. ***Tenure*** The securing of existing unprotected habitat as an offset only provides a conservation gain if that habitat was under some level of threat of being destroyed or degraded, and as a result of offsetting will instead be protected in an enduring way and actively managed to maintain or improve the viability of the protected matter. The tenure of the offset should be secured for at least the same duration as the impact on the protected matter arising from the action, not necessarily the action itself. Legal mechanisms, such as conservation covenants, exist in each state and territory to enable protection of the land that is set aside for environmental purposes on a permanent or long-term basis. There is also provision under Part 14 of the EPBC Act for the Minister to enter into a conservation agreement with a third party for the conservation of a protected matter. An EPBC Act conservation agreement is a flexible instrument that can be used for implementing a range of management activities to benefit a protected matter, such as fencing off important habitat areas, undertaking weed and feral animal control or the establishment of compensatory habitat.	The total amount (i.e., 100 %) of the required EPBC Offsets will be achieved via the establishment and implementation of direct offsets in the form of on-ground INTG TEC Offset Areas. The EPBC offsets (i.e., the Offset Areas) address key priority actions for INTG TEC outlined in the INTG TEC Recovery Plan (Turner 2012). In particular, the INTG TEC Offset Areas contribute to the following specific objectives of the INTG TEC Recovery Plan (Turner 2012): • To maintain or improve the condition of remnant INTG; • To increase the area of INTG secured and managed for conservation. As stated in Section 3.2 there is no threat abatement plan for INTG TEC. ***Tenure*** NEOEN propose to execute a Heritage Agreement, in accordance with the South Australian *Native Vegetation Act 1991*, over each INTG TEC Offset Area, which will provide protection in perpetuity. NEOEN will enter into a legal agreement with the landowner(s) to manage the proposed INTG TEC Offset Areas for a minimum of ten years.

Offset Principle	Details / Commentary	Comments on how the INTG TEC Offsets are consistent with the Offset Principle
3. Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter.	Due to the higher risk involved with protected matters of greater conservation status, the offsets required for those protected matters with higher conservation status must be greater than those with a lower status. For listed threatened species and ecological communities, this is calculated in the Offsets assessment guide by using International Union for Conservation of Nature data on the probability of annual extinction for different categories of threatened species.	The proposed offset is considered to be in proportion to the level of statutory protection that applies to INTG TEC, as the Offsets Assessment Guide was used to calculate the direct offset area required for the maximum disturbance that may occur under the proposed infrastructure layout.
4. Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter.	Offsets must be proportionate to the size and scale of the residual impacts arising from the action so as to deliver a conservation gain that adequately compensates for the impacted matter. The size and scale of an offset required for each impact is determined by taking account of a number of different considerations that are discussed in the EPBC Offsets Policy, including the: • level of statutory protection that applies to the protected matter; • specific attributes of the protected matter, or its habitat, being impacted; • quality or importance of the attributes being impacted with regard to the protected matter's ongoing viability; • permanent or temporary nature of the residual impacts; • level of threat (risk of loss) that a proposed offset site is under; • time it will take an offset to yield a conservation gain for the protected matter; and • risk of the conservation gain not being realised.	A number of different considerations outlined in the *EPBC Offsets Policy* have been taken into account and entered into the *Offset Assessment Guide* (where appropriate), including: • level of statutory protection to INTG TEC (Critically Endangered); • specific attributes of INTG TEC being impacted by the infrastructure footprint = Stage 1A: 12.67 ha and Common Asset (OTL and Substation): 1.36 ha, of Class B INTG TEC with a quality score of 6 (out of 10); • quality or importance of the INTG TEC being impacted with regard to INTG TEC ongoing viability (6 out of 10); • permanent or temporary nature of the residual impacts (operational life of the Goyder South Project is expected to be approximately 30 years); • level of threat (risk of loss) that the proposed offset site is under (which is considered to be a low to moderate risk of loss without offset measures in place); • time it will take the proposed offset (INTG TEC Offset Areas) to yield a conservation gain for INTG TEC (time until ecological benefit of up to 5 years); and • risk of conservation gain not being realised (which is considered to be a low 2% as confidence in result is considered to be 90%). Therefore, the direct offsets (INTG TEC Offset Areas) are considered to be proportionate to the size and scale of the residual impacts on INTG TEC arising from the actions.

Offset Principle	Details / Commentary	Comments on how the INTG TEC Offsets are consistent with the Offset Principle
5. Suitable offsets must effectively account for and manage the risks of the offset not succeeding.	The use of offsets as a compensatory measure through the assessment and approval process involves two levels or risk. The first, and highest, level of risk is that the impact on the protected matter will be too great and that an offset will not be able to compensate for the impact. The second level of risk relates to whether individual offsets are likely to be successful in compensating for the residual impacts of a particular action over a period of time. It is this risk that is considered in determining a suitable offset and has direct bearing on the scale of the offset required. The magnitude of a suitable offset will increase proportionately to the risk posed to the protected matter by the proposed action. In general terms, direct offsets present a lower risk than other compensatory measures, as they are more likely to result in a conservation gain for a protected matter.	The INTG TEC Offset Areas will be implemented and managed in accordance with this INTG TEC OMP (particularly Section 6), which will identify potential risks (such as a decrease in INTG TEC condition) as well as associated contingency measures for the successful management of the INTG TEC Offset Areas. This INTG TEC OMP involves an adaptive management approach where monitoring will measure progress and allow for timely identification of any changes required to management actions (for example the grazing regime), which will help to ensure that the INTG TEC Offset Areas are successful. 100 % of the INTG TEC Offsets are a direct offset (i.e., the on-ground INTG TEC Offset Areas), which is considered by the *EPBC Offsets Policy* to present a lower risk than compensatory measures, as they are more likely to result in a conservation gain. Furthermore, NEOEN aims to commence establishing and implementing each of the INTG TEC Offset Areas as soon as possible after execution of the land agreement(s), which is anticipated to be within about 12 months after receiving approval of the OMP from the Minister, which is also considered to reduce the risk profile of the offset through providing a conservation gain at an earlier point in time.
6. Suitable offsets must be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs.	Offsets must deliver a conservation gain for the impacted protected matter, and that conservation gain must be new, or additional to what is already required by a duty of care or to any environmental planning laws at any level of government. It is important to note however that this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action. Whether or not an offset is considered to be additional will be assessed on a case by case basis. ***Links with state and territory approval processes*** It is important to note that while there are many similarities between the environmental laws of the states and territories and the EPBC Act, they also differ in a fundamental way. The EPBC Act focuses on protecting MNES and only protects the broader environment in certain circumstances, while state and territory laws usually protect the environment as a whole (for example air quality, noise pollution, water quality, biodiversity, and heritage values). These differing legislative objectives result in different assessment processes and can result in different offset requirements. As a consequence, some proponents may need to provide offsets under both state or territory laws and the EPBC Act for the same action. A state or territory offset will count toward an offset under the EPBC Act to the extent	The Goyder South Project is required to achieve a Significant Environmental Benefit (SEB) in accordance with the SA *Native Vegetation Act 1991,* for clearance of native vegetation. NEOEN have negotiated with a local landowner to purchase land located south-east of Stage 1A and south of Stage 1B, which includes the Worlds End Gorge, to achieve majority of the total SEB required for the Goyder South Project (Stage 1A, Stage 1B and the Common Asset (OTL and Substation)). However, the SEB area is separate to the INTG TEC Offset Areas and as such the INTG Offsets are additional to what is required by the SA *Native Vegetation Act 1991*. No other environmental schemes or programs, for example stewardship funding from a program such as *Caring for our Country* are currently applicable to the land parcels being used for the INTG TEC Offsets. Therefore, the EPBC Offsets will be additional to what is already required and/or determined by SA law or planning regulations (other offset requirements).

Offset Principle	Details / Commentary	Comments on how the INTG TEC Offsets are consistent with the Offset Principle
	that it compensates for the residual impact to the protected matter identified under the EPBC Act.	
7. Suitable offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable.	Efficient and effective offsets are those that maintain or improve the viability of a protected matter through the sound allocation of resources. An offset should be implemented either before, or at the same point in time as, the impact arising from the action. This timing is distinct from the time it will take an offset to yield a conservation gain for the protected matter, which may be a point in the future. Offsets must be based on both scientifically robust and transparent information that sufficiently analyses and documents the benefit to a protected matter's ecological function or values. This includes undertaking desktop modelling of offset benefits and conducting relevant field work as appropriate.	Implementation of the INTG TEC Offset Areas is considered to be a highly efficient, effective, timely, transparent, scientifically robust and reasonable offset for the following reasons: • Although ecological benefit will commence when each INTG Offset Area is implemented, *time until ecological benefit* has been nominated as 5 years, as it may take up to 5 years for ecological benefit associated with management actions to be achieved. • The *risk of loss* (with offset) is only 0 % as the INTG TEC Offset Areas will be protected in perpetuity via execution of a Heritage Agreement; and the INTG TEC Offset Areas will be actively managed in accordance with this INTG TEC OMP. • Bi-annual monitoring of the INTG TEC Offset Areas, in accordance with this INTG TEC OMP, will provide scientifically robust data which will be used to identify any changes required to management measures (for example the grazing regime). • Monitoring reports will be provided to the Department and may also be uploaded to the Goyder South Project's website for public viewing if appropriate.
8. Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.	Offsets must be delivered within appropriate and transparent governance arrangements. Proponents, or their contractors, must report on the success of the offsets so that conditions of approval can be varied if the offsets are not delivering the desired outcome. Offset proposals will need to include clearly articulated measures of success that are linked to the purpose of the offsets and provide clear benchmarks about their success or failure. Annual reports will be required by the Department and, where possible, will be made publicly available. Performance of offsets will be reviewed as part of the monitoring, compliance and audit program for all proposals considered under the EPBC Act.	This INTG TEC OMP (Section 6) which includes a monitoring program, clearly outlines the following: • the management responsibilities between NEOEN and the land manager, as well as an ecological consultancy; • the ecological indicators to be monitored and a monitoring methodology to audit the implementation of the management actions and identify any changes to management actions that might be required; and • the annual reporting responsibilities, which include submission of a monitoring report to the Department. All environmental reporting and records will be available for auditing by the Department if required.

Source: Adapted from the EPBC Offsets Policy (DSEWPC 2012a).

6 INTG TEC OFFSET MANAGEMENT PLAN

This section outlines the specific details to guide the establishment, implementation and management of the INTG TEC Offsets consisting of the INTG TEC Offset Areas. It details the specific management aspects and associated management actions that are required to be undertaken to establish, implement and manage the INTG TEC Offset and INTG TEC Offset Areas for a minimum of ten years, after which the need for ongoing management in accordance with this INTG TEC OMP will be reviewed and reconsidered (as outlined in Section 6.3.1).

Furthermore, this section contains clear objectives, roles and responsibilities, as well as the measurable outcomes associated with each management action to monitor progress and success. It also includes a specific monitoring program, reporting requirements and a process for review and improvement, as well as identifying potential risks to achieving the objectives of the INTG TEC Offsets.

6.1 Objectives

The key objectives of each INTG TEC Offset Area will include:

- Formal protection of each INTG TEC Offset Area for the duration of each associated action (Stage 1A and the Common Asset (OTL and Substation)). However, protection will be in perpetuity as each INTG TEC Offset Area will be protected via Heritage Agreement (as outlined in Section 4.8).
- Management of each INTG TEC Offset Area in accordance with this INTG TEC OMP, for a minimum of ten years (after which the need for ongoing management will be reviewed and reconsidered) in order to maintain and increase (where possible) the condition/quality of each INTG TEC Offset Area from a 6 to a 7 (as outlined in Table 13).

Maintenance and an increase in the condition/quality of each INTG TEC Offset Area will involve maintenance and an increase (where possible) in the following (which are used to determine condition class for INTG TEC):

- Diversity of native species;
- Number of broad-leaved herbaceous species[1] in addition to identified disturbance resistant species[2];
- Number of native perennial grass species[1]; and
- Tussocks[3].

1: As measured in a 50 m x 50 m quadrat (or equivalent).
2: The following species are identified as disturbance resistant species: Ptilotus spathulatus forma spathulatus; Sida corrugata; Oxalis perennans; Convolvulus angustissimus; Euphorbia drummondii; and Maireana enchylaenoides.
3: As measured along a 50 m transect.

However, in addition to the above, maintenance and an increase (where possible) in the condition/quality of each INTG TEC Offset Area will also involve a decrease in the diversity and coverage of weeds.

The key objectives outlined above directly align with and will contribute to the following specific objectives of the INTG TEC Recovery Plan (Turner 2012):

1. To maintain or improve the condition of remnant INTG; and
2. To increase the area of INTG secured and managed for conservation.

These key objectives will be achieved via implementation of specific management aspects and associated management actions, and monitoring will determine if the objectives are being achieved. To ensure the objectives are met, an adaptive management approach will be adopted (as outlined in Section 6.3.7). This approach requires regular monitoring and review of the Plan (as outlined in Section 6.3.6, Section 6.3.9 and Section 6.5), allowing for review and corrective action of management strategies (as outlined in Section 6.3.8) if required.

The objective to manage each INTG TEC Offset Area for a minimum of ten years, in order to maintain and increase (where possible) the condition / quality of each INTG TEC Offset Area from a 6 to a 7, will primarily be achieved via the following management aspects:

- management of livestock and grazing regime (Section 6.3.3); and
- weed and pest animal control (Section 6.3.4).

Although it is possible that the condition / quality of each INTG TEC Offset Area may decrease due to factors outside of NEOEN's control, such as climate change, the condition / quality of each INTG TEC Offset Area is still expected to be maintained and increased (where possible) from a 6 to a 7, via implementation of this INTG TEC OMP and the specific management actions within it, particularly management of livestock and grazing regime (Section 6.3.3), and weed and pest animal control (Section 6.3.4).

6.2 Roles and responsibilities

It is anticipated that there will be three main roles associated with implementation of the INTG TEC OMP, including the Project Owner (NEOEN), the land manager (property owner) and an ecological consultancy. The aspects and/or tasks that each role is responsible for are outlined in Table 15.

Table 15. Roles and responsibilities associated with implementation of this Plan.

Role	Aspects and/or tasks the role is responsible for
Project Owner (NEOEN)	Currently NEOEN is the project developer and Project Owner, and is responsible for the planning of the entire Goyder South Project, including seeking and obtaining relevant planning and environmental approvals under State and Federal legislation as well as construction and operation of the Project. NEOEN intends to own and operate the Goyder South Project in the future and does not intend to sell the Project. The Project Owner will be responsible for implementing the INTG TEC OMP, which involves planning and establishing the INTG TEC Offset Areas as well as engaging a suitably qualified ecological consultancy, to undertake monitoring and reporting on the INTG TEC Offset Areas and review of the INTG TEC OMP. In particular, the Project Owner is responsible for ensuring that reporting responsibilities are completed. Implementation of the INTG TEC OMP will be the responsibility of the Project Owner. Should the Project Owner change in future, implementation of the INTG TEC will remain the responsibility of whoever is the Project Owner.
Land manager (property owner)	It is proposed that the land manager (property owner) will be responsible for undertaking the day-to-day management of the INTG TEC Offset Areas on behalf of the Project Owner (NEOEN), including management of livestock and grazing regime, and weed and pest animal control. The Land manager will also be responsible for reporting on management actions undertaken.
Ecological Consultancy	A suitably qualified and experienced ecological consultancy will be required to undertake monitoring and reporting activities. However, as outlined above it is the Project owner's responsibility to engage the ecological consultancy to undertake the monitoring and reporting activities. The ecological consultancy will also be responsible for reviewing and analysing monitoring data and results to determine the success (or failure) of management actions and recommending refinement/improvement, if required.

As stated previously, NEOEN proposes to negotiate a legal agreement with the land manager to manage the INTG TEC Offset Areas. Whilst the land manager will be responsible for implementing management actions within this INTG TEC OMP, NEOEN will retain overall responsibility for ensuring the entire INTG TEC OMP is implemented. NEOEN will also be responsible for undertaking monitoring and reporting, as well as review of the INTG TEC OMP, with these tasks likely to be completed by a suitably qualified and experienced ecological consultancy. This includes periodic review of the INTG TEC OMP's success, including update and improvement of management actions if required. This may involve NEOEN providing further direction to the land manager or utilising the resources of an external contractor to implement specific tasks.

Management responsibilities are also allocated for each management action (which are described in the next section) in Table 16 on the following page.

6.3 Management aspects and associated management actions

The management aspects addressed in this Plan include the following:

- Implementation of the INTG TEC OMP
- Planning and establishment (including protection) of the INTG TEC Offset Areas
- Management of livestock and grazing regime
- Weed and pest animal control
- Fire prevention
- Monitoring and reporting
- Review and update of the INTG TEC OMP

These management aspects and the management actions associated with them, are outlined in Table 16, while more detail is provided in the sub-sections further below. The timeline, responsibility and measurable outcome associated with each management action is also included in Table 16.

Management actions associated with each management aspect will be implemented in accordance with the INTG TEC Recovery Plan (Turner 2012).

Table 16. Proposed management aspects and actions, along with associated proposed timing, responsibility, measurable outcomes and corrective actions.

Management aspect	Management action	Reference	Timing	Responsibility	Measurable outcome	Corrective action
Implementation of the INTG TEC OMP	Implement the INTG TEC OMP	Section 6.3.1	Immediately upon approval of the OMP by the Minister and for a minimum of ten years.	Project Owner	The INTG TEC OMP is implemented immediately upon approval of the OMP by the Minister and for a minimum of ten years and measurable outcomes associated with management actions are achieved or in the process of being achieved.	Project Owner to implement the INTG TEC OMP within 14 days of becoming aware that the INTG TEC OMP has not yet been implemented.
Planning and establishment of INTG TEC Offset Areas	Execute the legal agreement between the Project Owner (NEOEN) and the land manager (property owner).	Section 6.3.2	As soon as possible after approval of the OMP by the Minister.	Project Owner	Legal agreement between the Project Owner (NEOEN) and the land manager is executed as soon as possible after approval of the OMP by the Minister.	Project Owner to execute the legal agreement as soon as possible upon becoming aware that the legal agreement has not yet been executed.
	Establish formal protection (likely to be Heritage Agreement) of the INTG TEC Offset Areas.	Section 6.3.2	Commence process immediately after approval of the OMP by the Minister.	Project Owner	Process to achieve formal protection of the INTG TEC Offset Areas commenced immediately after approval of the OMP by the Minister.	Project Owner to establish formal protection of the INTG TEC Offset Areas as soon as possible upon becoming aware that formal protection of the INTG TEC Offset Areas has not yet been established.
	Install fencing around the boundary of the INTG TEC Offset Areas where there is no existing fence line.	Section 6.3.2	As soon as possible after the legal agreement between the Project Owner and the land manager is executed.	Project Owner (may delegate task)	Fencing surrounding the INTG TEC Offset Areas on site is installed as soon as possible after the legal agreement between the Project Owner and the land manager is executed.	Project Owner to install fencing around the INTG TEC Offset Areas within 14 days of becoming aware that the fencing has not yet been installed on site.
Management of livestock and grazing regime	Implement managed grazing regime within INTG TEC Offset Areas.	Section 6.3.3	As soon as possible after fencing has been installed around the boundary of the INTG TEC Offset Areas.	Land manager	Domestic grazers (sheep) managed in accordance with this plan and documented (via Grazing Record Sheet in Appendix 2).	Project Owner to ensure that domestic grazers (sheep) are managed in accordance with this plan as soon as possible upon becoming aware that they have not yet been managed in accordance with this plan.
	Management of grazing regime via monitoring of grassland conditions. If monitoring determines that grazing levels/timing/frequency are too high, then grazing	Section 6.3.3	As soon as possible after monitoring results.	Project Owner, ecological consultancy and land manager.	Grassland conditions are monitored and reported upon with management recommendations made (by ecological consultancy); and if grazing levels are considered too high, then grazing levels are likely to be reduced, if	Project Owner to contact land manager within 7 days of becoming aware of any identified non-compliance associated with management of grazing regime, as outlined within the INTG TEC OMP and required by the legal agreement between the Project Owner and the land manager.

Management aspect	Management action	Reference	Timing	Responsibility	Measurable outcome	Corrective action
	levels are likely to be reduced.				recommended by ecological consultancy.	
Weed and feral animal control	Control weeds, particularly Declared weeds such as Salvation Jane (*Echium plantagineum*), in accordance with measures detailed in Section 6.3.4.	Section 6.3.4.	Annually during implementation of this OMP, as appropriate for each targeted weed species and ongoing for a minimum of ten years.	Land manager	Records of weed control effort documented (via Activity Record Sheet in Appendix 1) and included in the monitoring report, including mapping (if possible), including: • Species; • Location; • Method of control (including quantity / concentration of herbicide, if used); and • If re-treatment is required.	Project Owner to contact land manager within 7 days of becoming aware of any identified non-compliance associated with weed control to remind them to control weeds and document weed control in the Activity Record Sheet (Appendix 1), as outlined within the INTG TEC OMP and required by the legal agreement between the Project Owner and the land manager. Agreement with Land manager to permit Project Owner to take corrective action including stepping in to undertake weed control, if required.
	Control pest animals, particularly rabbits and foxes. Use methods which avoid or minimise ground disturbance.	Section 6.3.4.	Annually during implementation of this OMP, or as appropriate for each feral animal species and ongoing for a minimum of ten years.	Land manager	Records of feral animal control documented (via Activity Record Sheet in Appendix 1) and included in the monitoring report, including mapping (if possible), including: • Species and number (if possible); and • Method of control (including quantity and/or concentration of any poison used).	Project Owner to contact land manager within 7 days of becoming aware of any identified non-compliance associated with feral animal control to remind them to control feral animals and document feral animal control in the Activity Record Sheet (Appendix 1), as outlined within the INTG TEC OMP and required by the legal agreement between the Project Owner and the land manager. Agreement with land manager to permit Project Owner to take corrective action including stepping in to undertake feral animal control, if required.
Fire prevention	Continue to use grazing to manage fuel loads. Ensure grazing is in accordance with INTG TEC Offset Areas grazing regime requirements.	Section 6.3.5	Ongoing during operation of this OMP, for a minimum of ten years.	Land manager	Evidence of native grazers being present within the INTG TEC Offset Areas (observed by ecological consultancy during monitoring).	Project Owner to contact land manager within 7 days of becoming aware of any identified non-compliance and remind them to use grazing to manage fuel loads (ensuring that grazing is in accordance with INTG TEC Offset Areas grazing regime requirements) as outlined within the INTG TEC OMP and required by the legal agreement between the Project Owner and the land manager.

Management aspect	Management action	Reference	Timing	Responsibility	Measurable outcome	Corrective action
						Agreement with land manager to permit Project Owner to take corrective action, if required.
	Any occurrence of a fire event within the INTG TEC Offset Areas should be reviewed as part of the monitoring and reporting process.	Section 6.3.5	During INTG TEC Offset Areas monitoring and reporting.	Ecological Consultancy / Project Owner	Occurrence of fire documented in INTG TEC Offset Areas Monitoring Report.	Project Owner to contact the ecological consultancy within 7 days of becoming aware of any identified non-compliance and remind them to document the occurrence of fire in INTG TEC Offset Areas Monitoring Report or request re-drafting of the report as required.
Monitoring and reporting	Complete Activity Record Datasheet (Appendix 1) and Grazing Record Datasheet (Appendix 2) and provide to the Project Owner (NEOEN).	Section 6.3.6	Proposed to be completed by the end of May each year, for the duration of the INTG TEC Offset Areas monitoring program.	Land manager	Completed Activity Record Datasheet provided to the Project Owner by the end of May each year.	Project Owner to contact the land manager within 7 days of becoming aware of any identified non-compliance and remind them to complete the Activity Record Sheet (Appendix 1) and Grazing Record Datasheet (Appendix 2) and provide them to the Project Owner by the end of May each year. Agreement with Land manager to permit Project Owner to take corrective action, if required.
	Engage a suitably qualified and experienced ecological consultancy to undertake the monitoring program (for the first ten years (as a minimum) of the INTG TEC Offset Areas) and complete reporting requirements.	Section 6.3.6	As soon as possible after approval of the OMP by the Minister.	Project Owner	A suitably qualified and experienced ecological consultancy is engaged to undertake monitoring and reporting for the INTG TEC Offset Areas.	Project Owner to engage a suitably qualified and experienced ecological consultancy to undertake the monitoring program and complete reporting requirements, within 28 days of becoming aware of any identified non-compliance.
	Complete monitoring and reporting, including recommendation of any minor amendments to management actions, such as management of grazing regime, weed control and/or pest animal control.	Section 6.3.6 and Section 6.5	As outlined in Section 6.5 and for the first ten years (as a minimum) during implementation of this OMP.	Ecological consultancy	INTG TEC Offset Areas Monitoring Report completed in accordance with Section 6.3.6 and Section 6.5.	Project Owner to contact the ecological consultancy within 28 days of becoming aware of any identified non-compliance and ensure INTG TEC Offset Areas Monitoring Report is completed in accordance with Section 6.3.6 and Section 6.5.

Management aspect	Management action	Reference	Timing	Responsibility	Measurable outcome	Corrective action
	Project Owner (NEOEN) to direct the land manager (property owner) to implement minor amendments to management actions, such as management of grazing regime, upon advice from the ecological consultancy (if required).	Section 6.3.7	Prior to finalisation of the INTG TEC Offset Areas Monitoring Report by the ecological consultancy.	Project Owner	Record (i.e. email or letter) of any direction to implement minor amendments to management actions given to the land manager.	Project Owner to ensure they direct the land manager to implement minor amendments to management actions, such as management of grazing regime, upon advice from the ecological consultancy (if required), and keep a record of any direction to implement minor amendments to management actions given to the land manager.
	Submit INTG TEC Offset Areas Monitoring Report to the Department.	Section 6.3.6	Bi-annually for the first ten years.	Project Owner	INTG TEC Offset Areas Monitoring Report submitted to the Department on a bi-annual basis (for the first ten years).	Project Owner to ensure INTG TEC Offset Areas Monitoring Report is submitted to the Department when due in each year.
Adaptive management	Adapt management actions in response to results of the monitoring program and/or unforeseen threats and issues, or advances in management technologies.	Section 6.3.7	After the Monitoring Report (if required).	Project Owner	Management actions adapted if the need to do so is identified in the Monitoring Report.	Project Owner to ensure that management actions are adapted if the need to do so is identified in the Monitoring Report.
Corrective actions	Undertake corrective actions if measurable outcomes are not achieved or on track to being achieved.	Section 6.3.8	After the Monitoring Report (if required) and/or as required during implementation of the INTG TEC OMP.	Project Owner	Corrective actions undertaken if the need to so is identified in the Monitoring Report and/or during implementation of the INTG TEC OMP.	Project Owner to ensure that corrective actions are undertaken within 28 days of becoming aware that corrective actions are required.
Review and update of INTG TEC OMP	Complete a review and update of the INTG TEC OMP to identify any amendments to the management actions and/or the monitoring program that may be required to ensure the objectives are met.	Section 6.3.9	At five yearly intervals, for the first ten years (as a minimum), with the first review undertaken after the first five years of implementation of the INTG TEC Offset Areas.	Project Owner (delegate task to ecological consultancy)	Reviewed and updated (if required) INTG TEC OMP in accordance with Section 6.3.9.	Project Owner to contact the ecological consultancy within 28 days of becoming aware of any identified non-compliance and ensure the INTG TEC OMP is reviewed and updated (if required) as soon as possible.

6.3.1 Implementation of the INTG TEC OMP

NEOEN intend to commence implementation of the INTG TEC OMP immediately after receiving approval of the OMP from the Minister, prior to commissioning or operation of the action (as applicable). NEOEN propose to implement this INTG TEC OMP for a minimum of ten years, after which the need for ongoing management in accordance with this INTG TEC OMP will be reviewed and reconsidered.

While this INTG TEC OMP and the management actions within it are proposed to be implemented for a minimum of ten years, NEOEN propose to execute a Heritage Agreement over each INTG TEC Offset Area, which will provide protection in perpetuity (as outlined in Sections 4.8 and 4.8.1). Heritage Agreements are ongoing or perpetual and are binding on future landowners. Even if the property is sold or ownership is transferred, the conservation status of the land under agreement will continue. Native plants and animals within the specified Heritage Agreement area must be protected from the time the agreement is made. It will be the responsibility of the landowner to conduct weed and feral animal control and they must abide by relevant legislation such as the *Landscape South Australia Act 2019*.

As such, the land will be protected in perpetuity and must be managed for conservation by the landowner. The legal agreement with the landowner to establish and manage the proposed INTG TEC Offset Areas will include conditions on the management of grazing in the INTG TEC Offset Areas. Refer to Section 6.3.3 for more detail on management of livestock and grazing regime.

As the on-ground INTG TEC Offset Areas will be protected in perpetuity and managed for conservation by the landowner, in perpetuity, ongoing management in accordance with this INTG TEC OMP beyond the proposed 10 years, is unlikely to be required.

If monitoring undertaken as part of this INTG TEC OMP (as outlined in Section 6.3.6 and Section 6.5) determines that the future quality target score of 7 out of 10 (refer to Table 13) for the INTG TEC Offset Areas has not been achieved within the proposed ten-year management timeframe, then NEOEN will undertake further management in accordance with this INTG TEC OMP beyond the initial ten years proposed, until the future quality target score is achieved. Monitoring and reporting will also continue until the future quality target score is achieved.

6.3.2 Planning and establishment of the INTG TEC Offset Areas

As stated previously, NEOEN propose to enter into a legal agreement with the land manager to establish, protect and manage the INTG TEC Offset Areas. The legal agreement with the land manager will prevent known and/or potential threats to the proposed INTG TEC Offset Areas, such as, but not limited to, potential changes in land use (including altered grazing regimes), weed invasion, exotic animals and new infrastructure and developments and climate change (via adaptive grazing management) within the INTG TEC Offset Areas.

It is proposed to install fencing around the boundary of the INTG TEC Offset Areas to delineate the extent of the INTG TEC subject to this INTG TEC OMP (unless sufficient fencing already exists).

6.3.3 Management of livestock and grazing regime

Controlled movement of stock and implementation of correct grazing regime is a key part of managing an INTG TEC Offset Area to achieve the objectives. As outlined in Table 11 (in Section 4.4) the INTG TEC Recovery Plan (Turner 2012) states:

> *"Continuation of appropriate livestock grazing is one of the main tools available for long-term management, maintenance and protection of the ecological community. Studies in native grasslands in the Mid North of South Australia indicate that management practices such as low intensity grazing and time-managed rotational grazing can help maintain or improve the condition, structure and habitat values of grassland remnants whilst also benefiting agricultural production (Earl and Kahn 2003). Complete exclusion of stock after a long history of grazing can be detrimental to native grasslands and depending on the grassland species composition and condition, can lead to dominance by introduced annual grasses and other weeds.*
>
> *Natural grassland communities are adapted to regular disturbance by herbivore grazing and fire (Curry 1994). Introduced livestock have largely replaced native herbivores in the landscape, especially small mammals and invertebrates. Stock grazing in Iron-grass grasslands could be actively managed to provide some of the essential ecosystem functions previously controlled by the native herbivores, including timely reduction of dry biomass from native tussocks, nutrient recycling and redistribution, seed dispersal and maintenance of structural complexity such as inter-tussock spaces, patchiness of species distribution and different growth stages of plants in the grassland. Stock can also be managed to reduce the impacts of introduced pasture species and some weeds, by controlling biomass and reducing seed production.*"

As outlined in Section 4.7, the patches of Class B INTG TEC where the INTG TEC Offset Areas are proposed to be located (INTG Patch 12 or INTG Patch 15) are located within paddocks that are believed to be used for light grazing activities, primarily sheep. Current stocking levels and grazing regimes are unknown, but will be reviewed and revised, if required, to ensure that they are favourable to maintaining and increasing (where possible) INTG TEC condition/quality. For example, to allow for native grasses and forbs to grow and set seed and for sheep to graze on introduced grasses (e.g. *Avena barbata*), grazing is likely to be limited to May to September, with stocking rates likely to be equivalent to a maximum of 2.2 – 2.4 DSE/ha/annum (Dry Sheep Equivalent per hectare per annum).

No other domestic grazing stock, such as but not limited to, cattle or horses, may graze the INTG TEC Offset Area, as they are likely to cause a decrease in INTG TEC condition/quality.

To enable regeneration of native grassland species, the following grazing regime is likely to be implemented:

- Short duration, periodic high intensity grazing events of Offset area except during late spring / early summer when no grazing is to occur. An upper limit to grazing periods is likely to be required, i.e. duration of 1-4 days maximum at a time, with a minimum of 4 weeks rest afterwards.

- The duration of grazing will need to be monitored by the land manager so native vegetation is not grazed to less than 5 cm in height. This will be dependent on number of sheep used, height of vegetation and seasonal conditions.

The current duration of grazing and/or the current stocking rate may be altered (increased or decreased). The aim is that the sheep will graze the introduced annual species particularly hard after germination and prior to seed set. This allows for native grasses and herbs to grow and set seed and for sheep to graze on annual introduced grasses (i.e. Avena barbata (Bearded oat)) and hence reduce their dominance.

The introduced annual species will set less seed which, over time, will favour the native species. The native species will also be grazed, but as most perennial native species set seed later in the year (late spring / early summer), they will have sufficient growing time from the grazing event in August to set seed. Grazing of perennial native grass species will also reduce the amount of thatch and ensure the grassland area is reinvigorated each year. A short duration of grazing will reduce the impact of the hard sheep hooves on the soil as well.

6.3.4 Weed and pest animal control

Weed control

As outlined in Table 5 (in Section 3.4) weed invasion is one of the key threats to INTG TEC identified in the INTG TEC Recovery Plan (Turner 2012). This includes perennial grass weeds, perennial herbaceous weeds and woody weeds (Turner 2012). One of the threat abatement options associated with this threat is to "*Prepare and implement site-specific action plans for weed control and management*" (Turner 2012).

As such, weed control will be a key part of actively managing the INTG TEC Offset Areas to achieve the objectives. Weed control methods may include the use of grazing (at specific times), chemical control (i.e. spraying herbicide), mechanical control (i.e. slashing or hand-pulling) and/or biological control (i.e. releasing insects, mites or pathogens). Different weed species will require different control methods and more than one control method may be implemented. Furthermore, the land manager will decide which specific weed control method(s) to use and when to use them. The Northern and Yorke Landscape Board can provide technical support, information resources and in some cases incentives to help control pest plants (Landscape SA 2022a).

If bi-annual monitoring identifies weeds which are not being controlled or control is determined to be inadequate (due to weed levels), Neoen is likely to request the land manager to undertake further weed control activities.

Pest animal control

As outlined in Table 5 (in Section 3.4) exotic animals are one of the key threats to INTG TEC identified in the INTG TEC Recovery Plan (Turner 2012). This includes feral herbivores such as rabbits and hares, and feral carnivores such as foxes and cats (Turner 2012). One of the threat abatement options is to "*Undertake planned and coordinated local action for pest control*" (Turner 2012).

As such, pest/exotic animal control will be a key part of actively managing an INTG TEC Offset Area to achieve the objectives. Pest animal control methods may include shooting, baiting/poisoning/fumigating, trapping and/or destruction/filling in warrens or dens. Methods which avoid or minimise ground disturbance

should be used as much as possible. Different pest species will require different control methods and more than one control method may be implemented. Furthermore, the land manager will decide which specific pest control method(s) to use and when to use them. The Northern and Yorke Landscape Board can provide technical support and information to help control pest animals (Landscape SA 2022b).

If bi-annual monitoring identifies pest animals which are not being controlled or control is determined to be inadequate (due to pest animal occurrence levels), Neoen is likely to request the land manager to undertake further weed control activities.

6.3.5 Fire prevention

Fire is not currently used as a management tool on the property. The risk of uncontrolled / unplanned fire can be minimised via grazing to manage fuel loads. Gates within fence lines will be maintained in a trafficable condition, allowing for access for fire-fighting activities if required.

Any occurrence of a fire event within the INTG TEC Offset Areas should be reviewed as part of the monitoring and reporting process.

6.3.6 Monitoring and reporting

A collaborative monitoring and reporting approach involving the land manager, Project Owner (NEOEN) and a suitably qualified and experienced ecological consultancy is proposed to be implemented as outlined below, to enable an adaptive management approach.

Activity Record sheet

The land manager will be required to complete an Activity Record Sheet (Appendix 1) and provide it to the Project Owner (NEOEN) by the end of May each year, for the duration of the monitoring program, to assist with management and monitoring of weeds and feral animals within the INTG TEC Offset Areas.

Grazing record sheet

The land manager will be required to complete a Grazing Record Sheet (Appendix 2) and provide it to the Project Owner (NEOEN) by the end of May each year, for the duration of the monitoring program, to assist with management and monitoring of grazing levels within the INTG TEC Offset Areas.

Monitoring program

An effective monitoring program will be implemented by the Project Owner (NEOEN) and carried out by an independent, suitably qualified and experienced ecological consultancy, to audit the implementation of the management actions and to quantify and assess changes brought about by the management actions. Data will be collected with each INTG TEC Offset Area.

The results of each monitoring event will be analysed and used to assess the effectiveness of management actions associated with the INTG TEC Area and identify any management failures or areas for improvement.

The data collected during monitoring events will assist in making adaptive management decisions to ensure that INTG TEC condition/quality within each INTG TEC Offset Area is maintained and improving (where possible). Whilst there will be natural variation in INTG TEC condition/quality (due to climatic factors), the aim is to maintain and improve (where possible) INTG TEC condition/quality over the long-

term. If a reduction in INTG TEC condition/quality is observed and considered to be outside natural fluctuations, then management actions will be reviewed to determine possible causes. Management actions, where required, will then be altered and updated.

The landowner and Project Owner (NEOEN) will work with the suitably qualified and experienced ecological consultancy during to adapt management actions if required, for example a reduction or increase in stocking rates or grazing duration, to maintain and improve (where possible) the condition/quality of the INTG TEC Offset Area. Where appropriate, the Project Owner (NEOEN) will direct the landowner to implement minor amendments to management actions, such as grazing regime (stocking rates and/or grazing duration) and/or weed control effort, upon advice from the ecological consultancy.

Refer to Section 6.5 for more information on the monitoring program.

Bi-annual monitoring report

Monitoring results will be documented within an *INTG TEC Offset Areas Monitoring Report* which will be provided to the Department and used to direct the land manager's management of the INTG TEC Offset Area to work towards maintaining and improving (where possible) INTG TEC condition/quality.

The Project Owner (NEOEN) will submit the *INTG TEC Offset Area Monitoring Report*, which details the results of the monitoring program and any minor amendments to management actions, such as grazing regime (stocking rates and/or grazing duration) and/or weed control effort, to the Department, on a bi-annual basis, for the first ten years (as a minimum) of the INTG TEC Offset.

The *INTG TEC Offset Area Monitoring Report* will:

- summarise the status of measurable outcomes associated with each management action;
- summarise management actions (for example grazing regime, weed and feral animal control) undertaken in the INTG TEC Offset Area and the outcome of those actions (including whether actions are adequate or inadequate);
- detail the monitoring methodology;
- present and analyse the monitoring results;
- compare the monitoring results to previous monitoring results collected to date;
- identify any trends in the INTG TEC condition/quality;
- recommend any minor amendments to management actions, such as grazing regime (stocking rates and/or grazing duration) and/or weed control effort, for the Project Owner (NEOEN) to consider and if appropriate, direct the land manager to implement; and
- document any minor amendments to management actions, such as grazing regime (stocking rates and/or grazing duration) and/or weed control effort, that are to be implemented by the land manager (after consideration and approval by the Project Owner (NEOEN)).

Monitoring data will be prepared in accordance with the *Guidelines for biological survey and mapped data* (Commonwealth of Australia, 2018) and provided to the Department on a bi-annual basis, likely as an attachment to the *INTG TEC Offset Areas Monitoring Report*.

6.3.7 Adaptive management

An adaptive management approach will be adopted to ensure the objectives (Section 6.1) of the INTG TEC OMP Plan are being achieved. This involves adapting management actions associated with the management aspects outlined in Section 6.3 in response to the results of the monitoring program (Section 6.3.6 and Section 6.5) and to unforeseen or unplanned management threats and issues, as well as to reflect advances in ecological research and land management technologies that may arise during implementation of the Plan.

For example, if the results of the monitoring program suggest that INTG TEC condition within the INTG TEC Offset Area(s) are not being maintained, then it is likely that management aspects and actions associated with grazing regime and/or weed control will need to be reviewed and adapted to ensure that the INTG TEC is being maintained and/or improved.

The suitably qualified and experienced ecological consultancy will review the results of the monitoring program and, if required, recommend changes to relevant management actions. For example, a reduction or increase in the stocking rate (DSE) and/or grazing duration associated with the grazing regime, or increased effort on weed control. Where appropriate, the Project Owner (NEOEN) will direct the land manager to implement minor amendments to management actions, such as adjusting the grazing regime and/or increasing weed control effort, upon advice from the ecological consultancy.

This adaptive management approach will assist with managing short-term changes in condition of the INTG TEC associated with poor climatic conditions such as drought and/or good climatic conditions such as above average rainfall, so that the INTG TEC is being maintained and/or improved.

6.3.8 Corrective actions

In the event that measurable outcomes are not being achieved, corrective actions associated with each specific management action and measurable outcome, will be undertaken, as outlined in Table 16.

As stated in Section 6.3.6, the monitoring report will summarise the status of measurable outcomes associated with each management action (detailed in Table 16). If any measurable outcomes are not achieved or on track to being achieved, this will be documented, along with appropriate corrective action to ensure that the measurable outcome will be achieved, within the monitoring report which is submitted to the Department.

6.3.9 Review and update of the INTG TEC OMP

The INTG TEC OMP is proposed to be reviewed and updated (if required), at five yearly intervals, for the first ten years (as a minimum). The first review will be undertaken after the first five years of implementation of the INTG TEC Offset Area and will use the monitoring data collected to date, together with land manager and Project Owner (NEOEN) input. The results or findings of the review will determine the overall success of existing management actions and identify any amendments that may be required to the management actions and/or the monitoring program, to ensure the objectives are met.

Each review will be documented within an amended version of the INTG TEC OMP and include:

- the review process;

- the status of measurable outcomes associated with each management action;
- the monitoring results to date;
- the status of achieving the INTG TEC OMP objectives (Section 6.1);
- any amendments to the management actions, if required;
- any amendments to the monitoring program (Section 6.5); and
- any recommendations for future reviews.

The amended version of the INTG TEC OMP will be provided to the land manager and submitted to the Department for reference. Any significant changes to the INTG TEC OMP may require approval from the Department.

6.4 Risk management

Despite good planning, there are still potential risks to achieving the objectives of the INTG TEC OMP and the successful management of the INTG TEC Offset Areas. The following potential risks have been identified for the INTG TEC Offset and/or INTG TEC Offset Areas:

- Inadequate implementation of the INTG TEC OMP;
- Sale of the property; and
- A decrease in INTG TEC condition within the Offset Area.

Each of the above risks are described below, together with the contingency measures that should be implemented to avoid and/or mitigate them.

Inadequate implementation of the INTG TEC OMP

It is possible that inadequate implementation of the INTG TEC OMP may potentially occur due to the land manager not having or allocating sufficient resources (i.e., staff) or time to implementing the management actions that they are responsible for (as outlined in Section 6.2 and throughout Section 6.3).

However, the Project Owner (NEOEN) will implement a legal agreement with the land manager to manage the proposed INTG TEC Offset Areas in accordance with the INTG TEC OMP for a minimum of ten years. Furthermore, NEOEN will be providing an annual budget to the land manager to manage the proposed INTG TEC Offset Areas in accordance with the INTG TEC OMP for a minimum of ten years. As such, the risk of the land manager not having or allocating sufficient resources (i.e., staff) or time to implement the management actions that they are responsible for (as outlined in Section 6.2 and throughout Section 6.3 is considered to be low.

If it is found that the land manager is not adequately implementing the INTG TEC OMP, then the Project Owner (NEOEN) will act and potentially engage a separate party to carry out the land manager responsibilities outlined within the INTG TEC OMP.

Sale of the Property

It is possible that the land parcel(s) containing the INTG TEC Offset Area may be sold in the future and the new owner(s) is unlikely to understand the requirements of this Plan, which threatens implementation of this Plan and introduces the potential for a change in land use. However, to ensure continued

implementation of this Plan, the Project Owner is seeking to enter into a legal agreement with the landholder to establish and manage the INTG TEC Offset Area for a minimum of ten years. The proposed legal agreement will include appropriate measures to protect the INTG TEC Offset Area in any proposed change of land ownership or control over the land. For example, the new owner(s) will be informed of the legal agreement and associated INTG TEC OMP.

Furthermore, the formal legal protection of the INTG TEC Offset Area (via Heritage Agreement as outlined in Section 4.8) will be applied to the land parcel(s) containing the INTG TEC Offset Area(s), which will ensure that any new owner(s) will be required to meet the requirements of the agreement.

A decrease in the condition of the INTG TEC Offset Area

It is possible that the condition of the INTG TEC Offset Area may decline over time despite implementation of the INTG TEC OMP, due to climatic conditions, particularly drought. Alternatively, it is also possible that implementation of the management actions within the INTG TEC OMP, for some reason, result in a decline in condition of the INTG TEC Offset Area over time.

A baseline assessment of the condition of the INTG TEC within the proposed INTG TEC Offset Areas will be undertaken to establish a baseline INTG TEC condition, prior to implementation of the management actions including management of grazing regime, and weed and feral animal control, detailed in this INTG TEC OMP (specifically Section 6.3 and sub-sections).

The INTG TEC Areas monitoring program (outlined in Section 6.5) will be used to quantify and qualify any changes, including a potential decline, in INTG TEC condition over time within the INTG TEC Offset Areas.

If a significant decline is identified and attributable to the management actions within the INTG TEC OMP, then those management actions will be reviewed and amended to ensure the most appropriate management is implemented. For example, and as stated previously, this could involve a reduction or increase in the stocking rate (DSE) and/or grazing duration associated with the grazing regime, or increased effort on weed control to allow INTG TEC condition to be maintained and/or improved. This adaptive management approach is considered critical to achieving the objectives of the INTG TEC OMP.

6.5 INTG TEC Offset Areas Monitoring Program

An effective monitoring program will be implemented by the Project Owner (NEOEN) and carried out by an independent, suitably qualified and experienced ecological consultancy, to audit the implementation of the management actions (Section 6.3) and to quantify and assess changes brought about by the management actions. Data on INTG TEC condition is proposed to be collected at six 0.25 ha (50 m x 50 m) monitoring sites within the INTG TEC Offset Areas and at two control sites outside of the Offset Areas.

The data collected during monitoring events will assist in making adaptive management decisions to ensure that INTG TEC condition within the INTG TEC Offset Areas is maintained and improved, where possible. Whilst there will be natural variation in INTG TEC condition, the aim is to maintain and improve (where possible) INTG TEC condition over the long-term. If a reduction in INTG TEC condition is considered to be outside natural fluctuations, then management actions will be reviewed, in conjunction with the climatic and vegetation data, to determine possible causes. Management actions, where required, will then be altered and updated.

Monitoring results will be documented within the *INTG TEC Offset Areas Monitoring Report* which will be provided to the Department for reference and used to direct the land manager's management of the INTG TEC Offset Areas to work towards continued maintenance and, where possible, improvement of INTG TEC condition.

The monitoring program will enable for adaptive management, where management actions, such as, but not limited to, management of grazing regime and/or weed control effort, may be subject to minor amendment or adjustment, to ensure the objectives of the INTG TEC OMP are being met. For example, and as stated previously, this could involve a reduction or increase in the stocking rate (DSE) and/or grazing duration associated with the grazing regime, or increased effort on weed control to allow INTG TEC condition to be maintained and/or improved.

Furthermore, if unforeseen or unplanned management threats and issues, or advances in ecological research and land management technologies arise during the monitoring program, these can also be addressed.

6.5.1 Frequency and timing of monitoring

Monitoring events are proposed to be undertaken once every two years for ten years, after which the need for ongoing monitoring will be reviewed and discussed with the Department. As outlined in Section 6.3.1, if monitoring determines that the future quality target for the INTG TEC Offset Areas has not been achieved within the proposed ten year management timeframe, then NEOEN will undertake further management in accordance with this INTG TEC OMP beyond the initial ten years proposed, until the future quality target score is achieved. Monitoring and reporting will also continue until the future quality target score is achieved.

Field work for monitoring events will be undertaken in Spring (i.e., September/October/November), with the results of each monitoring event analysed post field survey and used to assess the effectiveness of management actions and identify any management failures or areas for improvement in a timely manner. However, the very first monitoring event is likely to be a baseline survey which records the status of the INTG TEC within the six 0.25 ha (50 m x 50 m) monitoring sites and two control sites prior to implementation of management actions including management of grazing regime, and weed and feral animal control detailed in the INTG TEC OMP (Section 6.3).

6.5.2 Ecological indicators to be monitored

The objective to manage the INTG TEC Offset Areas in order to maintain and increase (where possible) the condition/quality of the INTG TEC Offset Areas is likely to be assessed via collection of data on the following specific ecological indicators:

- Density;
- Ground cover;
- Plant height;
- Dead material;
- Relative importance;
- Percentage (%) cryptogams;

- % litter;
- % bare ground;
- % total native cover;
- Frequency of *Lomandra* species; and
- Weed species and coverage.

The purpose of collecting data on these ecological indicators is summarised in Table 17 (on the following page), along with the desired add undesirable trends.

Table 17. Ecological health indicators, purpose, desired and undesirable trends.

Attribute	Purpose	Desired trend	Undesirable trend
Density	Determine the number of perennial plants per hectare.	Stable or slight increase.	Significant increase or decrease.
Cover	Determine basal cover (m^2) of perennial plants.	Stable or slight increase.	Significant increase or decrease.
Plant height	Aims to detect changes in height – useful for determining grazing pressure.	Stable or increasing height.	Decreasing
% dead material	Determine tussock dieback, a useful indicator in grassland health.	Stable or decreasing.	Increasing
Relative importance	Data collected is used to calculate an 'importance value' which provides an indication of distribution of species across the site.	Stable or increasing.	Decreasing.
% cryptogams	Presence of cryptogams indicates soil health, stability and nutrient cycling.	Increasing/benchmark.	Decreasing. The unofficial benchmark values for cryptogams (with moss and lichen cover) comprises up to 50% for Grasslands in the Northern Lofty botanical region (Pedler, Croft & Milne, 2007).
% litter including exotic annual grass (the majority of litter)	Will monitor percentage of the site covered in dead annual grass material which indicates a high % of weeds, some loss of patchiness and may inhibit germination of native species.	Decreasing.	Increasing (generally indicates increased weeds in the grassland system). The unofficial benchmark values for % litter for Grasslands in the Northern Lofty botanical region is approximately <25%.
% bare ground (meaning exposed dirt free of litter, moss, plants (dead or alive), rock or cryptogams)	Will monitor soil disturbance and potential for soil loss or erosion. Can increase due to dry conditions, increased livestock or weed invasion.	Decreasing/ benchmark (native species often germinate in bare ground so some may be desirable).	Increasing. The unofficial benchmark values for % bare ground in Grasslands in the Northern Lofty botanical region is approximately <5% (Pedler, Croft & Milne, 2007).
% total native cover (all perennial and annual species)	Will determine trends in the total native cover and determine if site becomes overgrown or experiences significant losses of vegetation.	Stable or slight increase.	Significant increase (loss of patchiness) or significant decrease.
Frequency of Lomandra (% of quadrats)	Data collected to supplement PCQM when prevalence of perennial tussock grasses limit recording of Lomandra tussocks.	Stable or increasing.	Decreasing.
Weed species and coverage	Determine weed presence and coverage.	Stable or decreasing.	Increasing.

More specific targets for each ecological indicator will be applied and included in the INTG TEC OMP once the final location of each INTG TEC Offset Area is known.

The status of each of the ecological indicators and associated desired trends will help determine if the objective to manage each INTG TEC Offset Area, in order to maintain and increase (where possible) INTG TEC condition/quality, is being achieved or not. If required, corrective action, will be undertaken to ensure the objective is being met. Undesirable trends will be triggers for adapting management actions, which are likely to include:

- Review climatic data to determine likely cause of undesirable trend;
- Review grazing and/or weed control records;
- If required, adjust management actions (such as, but not limited to, grazing regime and/or weed control) as determined by the suitably qualified and experienced ecological consultancy.

6.5.3 Monitoring methodology

The methodology for monitoring the ecological indicators outlined in Section 6.5.2 is likely to involve the Point-centred Quarter Method (PCQM) as well as an EPBC Condition Assessment Ramble Survey and opportunistic observations, as explained below.

Point-centred Quarter Method (PCQM) – Quadrat Sampling

PCQM involves surveying ten (10) sample points (quadrats) along a 50 m transect, assessing perennial plant parameters at five metre intervals (starting at zero metres) (Figure 11). Each sample point (quadrat) is further divided into four quarters by placing a range pole (or similar) perpendicular to the transect line, then the distance from the sample point to the nearest native perennial plant in each of the four quarters is measured and recorded (Figure 12), resulting in assessment of 40 perennial plants per 50 m transect (Tongway & Hindley 2005). At each sample point along the transect, the four distance measures are averaged to represent the distance (*d)* at each sample point, and then these distances are averaged to calculate the average distance of all sample points on a transect.

The PCQM is used instead of other methods, for example tussock counts in 1x1 m^2 quadrats, due to the number of small grasses (i.e., *Rytidosperma* spp.) making counts very time consuming. It is recommended that measurements are limited to the most dominant perennial grass species (which are likely to be *Lomandra* spp, *Rytidosperma* spp. and *Austrostipa* spp.), rather than any native perennial plant species, to enable more robust analysis.

In addition to the species, the canopy width (spread) in centimetres (cm), plant height (cm) (to the top of the leaves) and basal width (cm) (rootstock width of tussock at the ground) of each of the 40 perennial plants is recorded (Tongway & Hindley 2005). From the data collected the following indices can be derived:

- The density of plants per unit area for each species.
- Basal cover per unit area (m^2/ha).
- Importance value of each species, where:
    - *Relative density*: percentage of points a species is recorded at (maximum n = 40 per site).

- *Relative cover*: basal area as a percentage of all species recorded at the site.
- *Relative frequency*: normalised *absolute frequency* which is the percentage of sample points at which a species occurs (maximum n = 10) (may total over 100 given that up to four species may be present at each sample point for an absolute frequency of 400).
- *Relative importance*: Gives weight to three factors of relative density, cover, and frequency. This means that plants with a small basal area can be dominant only if there are enough of them widely distributed across the transect.

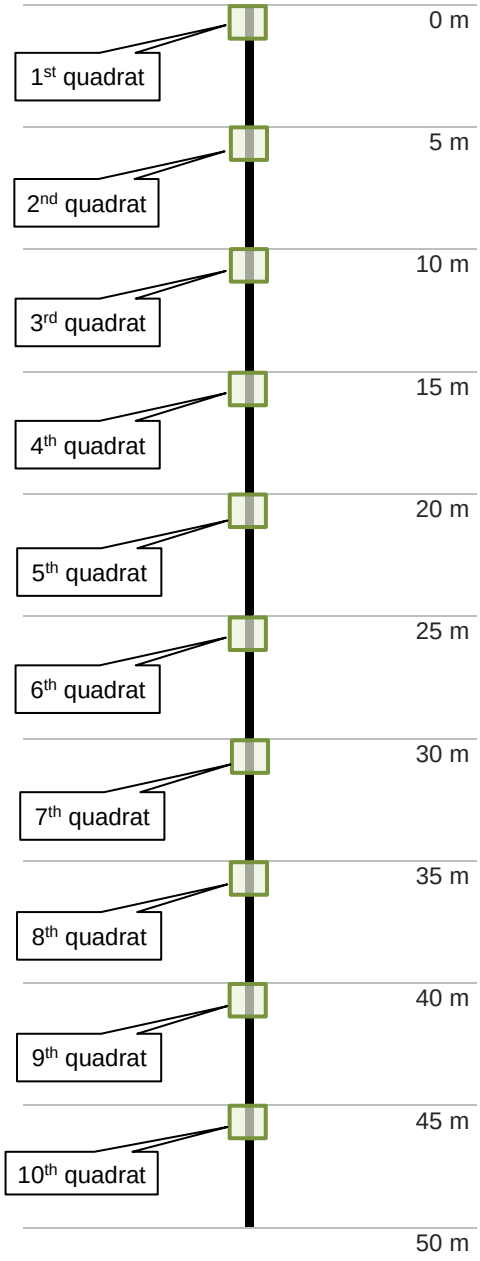

Figure 11. Schematic of a 50 m long transect with ten 1 m^2 quadrats, surveyed at 5 m intervals (not to scale).

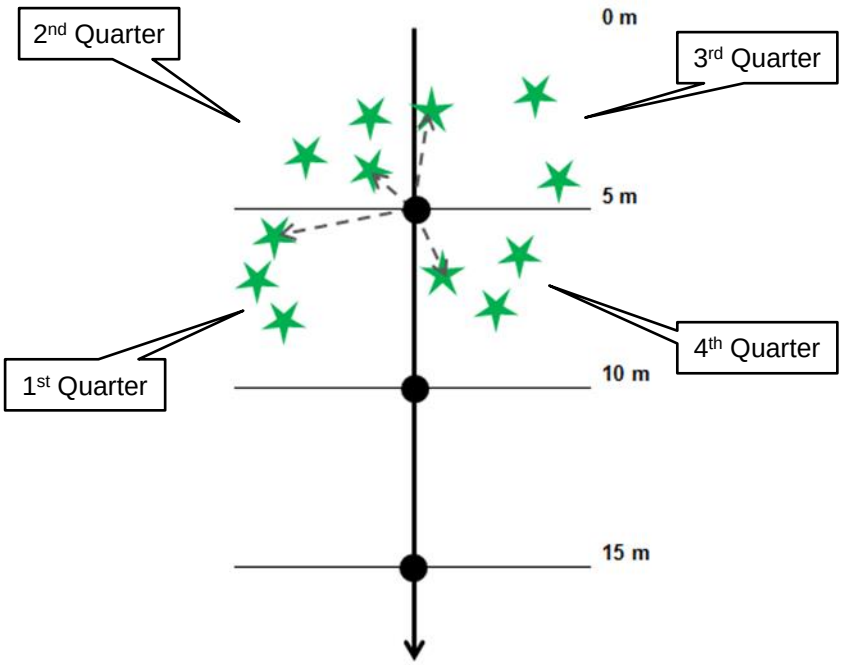

Figure 12. The Point-centred Quarter Method involves collecting data on the closest native perennial plant (indicated by a green star) in four quarters at each sample point (image adjusted from Tongway & Hindley, 2005).

EPBC Condition Assessment Ramble Survey

In addition to the PCQM, a Ramble Survey is recommended to be undertaken across each 0.25 ha (50 m x 50 m) monitoring site and control site, in accordance with the *EPBC Act Policy Statement 3.7: Nationally Threatened Species and Ecological Communities: Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia and Iron-grass Natural Temperate Grassland of South Australia* (DEWR, 2007), to record and monitor the status of the INTG TEC condition class parameters (Table 18).

Table 18. Condition classes for INTG TEC (DEWR 2007).

Condition Class	Minimum size	Diversity of native plant species[1]	No. of broad-leaved herbaceous species[1] in addition to identified disturbance resistant species[2]	No. of native perennial grass species[1]	Tussock count[3]
Listed ecological community (protected by the EPBC Act)					
A	≥ 0.1	> 30	≥ 10	≥ 5	≥ 1/m
B	≥ 0.25	> 15	≥ 3	≥ 4	≥ 1/m
Degraded patches amenable to rehabilitation (not protected by the EPBC Act)					
C		> 5	No minimum	≥ 1	No minimum

1: As measured in a 50 m x 50 m quadrat (or equivalent).
2: The following species are identified as disturbance resistant species: Ptilotus spathulatus forma spathulatus; Sida corrugata; Oxalis perennans; Convolvulus angustissimus; Euphorbia drummondii; and Maireana enchylaenoides.
3: As measured along a 50 m transect.

Opportunistic observations

Any opportunistic observations, for example, of native grazers (kangaroos) or their scats along with feral animals such as foxes or rabbits (including their tracks, scats, and warrens), or of significant weed outbreaks or infestations, which are observed within the monitoring quadrats, or within the surrounding landscape when moving through the INTG TEC Offset Areas and area(s) containing the control sites, will be recorded (type and location) and reported upon.

7 REFERENCES

Commonwealth of Australia (2018) *Guidelines for biological survey and mapped data*. Commonwealth of Australia. Available at: https://www.dcceew.gov.au/environment/environmental-information-data/information-policy/guidelines-for-biological-survey-mapped-data [Accessed 8/09/2023].

DAWE (2021) Guide to providing maps and boundary data for EPBC Act projects. Department of Agriculture, Water and the Environment, Canberra. Available at: https://www.dcceew.gov.au/sites/default/files/documents/epbca-maps-data-guidelines.pdf [Accessed 28/10/2022].

DCCEEW (2022) *Iron-grass Natural Temperate Grassland of South Australia* in Community and Species Profile and Threats Database, Department of the Environment, Canberra. Available at http://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=37 [Accessed 28/10/2022].

DEWHA (2008) *Approved Conservation Advice for Iron-grass Natural Temperate Grassland of South Australia*. Canberra: Department of the Environment, Water, Heritage and the Arts. Retrieved from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/37-conservation-advice.pdf

DEWR (2007) *EPBC Act Policy Statement 3.7: Nationally Threatened Species and Ecological Communities: Peppermint Box (Eucalyptus odorata) Grassy Woodland of South Australia and Iron-grass Natural Temperate Grassland of South Australia*. Department of the Environment and Water Resources. Retrieved from: http://www.environment.gov.au/cgi-bin/sprat/public/publicshowcommunity.pl?id=37&status=Critically+Endangered

DoE (2014) *Environmental Management Plan Guidelines*. Department of the Environment. Available at: https://www.dcceew.gov.au/environment/epbc/publications/environmental-management-plan-guidelines [Accessed 28/10/2022].

DoE (2013) *Matters of National Environmental Significance: Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999*. Department of the Environment.

DPI (2022) Using DSEs and carrying capacities to compare sheep enterprises. Department of Primary Industries, NSW Government. Available at: https://www.dpi.nsw.gov.au/agriculture/budgets/livestock/sheep-gross-margins-october-2015/background/dse [Accessed 18/02/2022].

DSEWPC (2012a) *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*. October 2012. Department of Sustainability, Environment, Water, Population and Communities, Canberra.

DSEWPC (2012b) *Offsets Assessments Guide*. 2 October 2012. Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available at:

https://www.environment.gov.au/system/files/resources/12630bb4-2c10-4c8e-815f-2d7862bf87e7/files/offset-assessment-guide.xlsm [Accessed 31/01/2020].

DSEWPC (undated) *How to use the Offsets Assessment Guide*. Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available at: https://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy [Accessed 31/01/2020].

EBS Ecology (2020) *Goyder South Hybrid Renewable Energy Facility: Flora and Fauna Assessment*. Report to NEOEN. EBS Ecology, Adelaide.

EBS Ecology (2021) *Goyder South Hybrid Renewable Energy Facility Flora and Fauna Assessment Addendum*. Report to NEOEN Australia Pty Ltd. EBS Ecology, Adelaide.

EBS Ecology (2022a) *Goyder South Hybrid Renewable Energy Facility: Stage 1A Preliminary Documentation (EPBC 2021/8958)*. Report to NEOEN Australia Pty Ltd. EBS Ecology, Adelaide.

EBS Ecology (2022b) *Goyder South Hybrid Renewable Energy Facility: Overhead Transmission Line and Substation West Preliminary Documentation (EPBC 2021/8959)*. Report to NEOEN Australia Pty Ltd. EBS Ecology, Adelaide.

EBS Ecology (2022c) *Goyder South Overhead Transmission Line EPBC Assessment*. Report to NEOEN. EBS Ecology, Adelaide.

EBS Ecology (2023) *Goyder South Hybrid Renewable Energy Facility INTG TEC Management Plan*. Report to NEOEN. EBS Ecology, Adelaide.

Landscape SA (2022a) Landscape South Australia Northern and Yorke: Pest Plants (Weeds). Available at: https://www.landscape.sa.gov.au/ny/plants-and-animals/pest-plants-and-animals/pest-plants-weeds [14 November 2022].

Landscape SA (2022b) Landscape South Australia Northern and Yorke: Pest animals. Available at: https://www.landscape.sa.gov.au/ny/plants-and-animals/pest-plants-and-animals/pest-animals [14 November 2022].

Maseyk, F., Evans, M. and Maron, M. (2017) *Guidance for deriving 'Risk of Loss' estimates when evaluating biodiversity offset proposals under the EPBC Act*. Report to the National Environmental Science Programme, Department of the Environment and Energy. Threatened Species Recovery Hub.

MNGWG (2019) Mid North Grasslands Working Group. Retrieved from: http://www.nativegrass.org.au/benefits.htm

Succession Ecology (2023a) Goyder Wind Farm, Construction Environmental Management Plan. Version 15, 02/03/2023 Succession Ecology report ES0522-02 prepared for GLC.

Succession Ecology (2023b) Flora and Fauna Management Plan: Goyder South Hybrid Renewable Energy Facility Sub-Stage A: Windfarm Stages 1A and 1B. Version 5, 02/03/2023. Succession Ecology report ES1221 – 01 prepared for GLC, Elecnor Group.

Threatened Species Scientific Committee (TSSC) (2007) Commonwealth Listing Advice on Iron Grass Natural Temperate Grassland of South Australia. Department of the Environment, Water, Heritage and the Arts.

Tongway, D.J., and Hindley, N.L. (2005). Landscape Function Analysis: Procedures for monitoring and assessing landscapes. With special reference to Mine sites and Rangelands. CSIRO Sustainable Ecosystems, Canberra.

Turner, J., (2012) *National Recovery Plan for the Iron Grass Natural Temperate Grassland of South Australia ecological community 2012*. Department of Environment and Natural Resources, South Australia.

8 APPENDICES

Refer to the following pages.

Appendix 1. Activity Record Sheet

Activity Record Sheet - To be filled in by land manager as work progresses and issued to NEOEN at the end of May each year.

Management Action (e.g. feral animal control / weed control – specify species targeted and method used, including poison / herbicide type and concentration etc as well as location)	**Date**	**Time spent on task** (hrs / days)	**Comments** (Completed / more remaining / follow up required – provide estimate of time remaining)

Appendix 2. Grazing Record Sheet

Grazing Record Sheet - To be filled in by the land manager as grazing management progresses and issued to NEOEN at the end of May each year.

Paddock Name:..... Paddock Size:……										
Date in	**Date out**	**A. Grazing Days**	**B. Estimate of feed left (kg / DM / ha)**	**C. Sheep number and type**	**D. DSE rating**	**E. Total DSE of mob**	**F. Feed utilised (kg)**	**G. Rest Period (days)**	**H. DSE days/ha**	**I. DSE days/ha/yr**

EBS Ecology
112 Hayward Avenue
Torrensville, SA 5031
www.ebsecology.com.au
t. 08 7127 5607