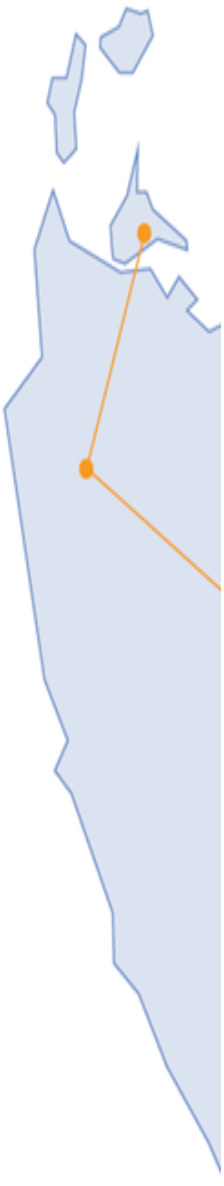
UPC AC Renewables AUSTRALIA

Jim's Plain & Robbins Island
Renewable Energy Parks



Robbins Island Renewable Energy Park

DPEMP
Supplementary Volume

July 2022

UPC Robbins Island Pty Ltd

Executive summary

This Supplementary Volume has been prepared in response to additional information requested from the Environment Protection Authority Tasmania (EPA). The Supplementary Volume considers comments and information requests by the Department of Agriculture Water and Environment (DAWE), Tasmanian Government agencies, and representations received during the public display period for the Development Proposal and Environmental Management Plan (DPEMP). The Supplementary Volume provides detailed information and a response to the summary of representations.

The report is structured to cover the key areas of additional information requested, namely:

- Matters of environmental significance – Tasmanian devil
- Matters of environmental significance – Orange-bellied parrot
- Wharf design and construction methodology
- Traffic impact assessment with updated data
- Additional requirements with Government agencies.

Appendix A presents a summary table of all representations received from the general public, the response from the EPA, and the response from UPC\AC Renewables.

Appendix B is an updated Traffic Impact Assessment using more recent traffic count data for projecting impacts.

Contents

Table index

Figure index

Appendices

1. Introduction

1.1 Purpose of this supplementary volume

This Supplementary Volume has been prepared in response to additional information requested from the Environment Protection Authority Tasmania (EPA). The Supplementary Volume considers comments and information requests by the Department of Agriculture Water and Environment (DAWE), Tasmanian Government agencies, and representations received during the public display period for the Development Proposal and Environmental Management Plan (DPEMP). The Supplementary Volume provides detailed information and a response to the summary of representations.

1.2 Assumptions

This Supplementary Volume is in response to requests for additional information from the EPA and provides responses to issues raised in the public submission process. It does not contain additional fieldwork study results but provides more detailed information based on data ascertained to date. Detailed design work has not been completed for the Robbins Island Renewable Energy Park, but conceptual designs and preliminary plans provide a sound basis for the impact assessment process. The Wind Farm Design Report, and the listed Management Plans will need to be approved by the EPA as compliant with legislative requirements and permit conditions applied if the development application is successful.

2. Matters of Environmental Significance – Tasmanian Devil

2.1 Methodology

2.1.1 Ecological surveys

The Project Site and surrounds have been assessed during iterative natural values surveys by North Barker Ecosystem Services (NBES), including field surveys undertaken in 2003 and 2008 as part of previous investigations for wind farm proposals on Robbins Island, and throughout 2017-2019 at a range of scales for the Project. The results of these surveys are collectively compiled in the most recent NBES Natural Values Report in Appendix C of the DPEMP.

Field survey work was informed by mapping vegetation communities, using the TASVEG 3.0 statewide mapping information, cross-referenced with satellite images with capture dates ranging from 1/12/2008 to 14/12/2015 (Appendix C). Homogeneous patches of vegetation (aerial signatures) were identified through a process of pattern analysis, alongside interpretation of environmental traits with associations to vegetation units, such as slope, aspect and elevation. Patches were manually assigned to TASVEG units based on correlation with existing polygons within the database. Ground sampling was then undertaken, traversing in a stratified manner throughout representative areas of Robbins Island, ensuring that the complete range of image signatures were ground sampled. Identification of vegetation communities using the descriptions and stepwise keys within the current TASVEG companion manual (DPIPWE 2015) provided a further refining of the data. Boundaries of vegetation communities were determined through image interpretation and point data recorded on a hand-held GPS unit. This detailed analysis provided a basis for the fauna survey work.

2.1.2 Tasmanian devil surveys

The Project Site has been subject to a range of terrestrial ecological and fauna investigations including:

- Broad-scale fauna habitat surveys by NBES during 2003, 2008, 2017-2019, as well as additional surveys in 2019 to incorporate new areas into the Project Site. The aim of these investigations was to provide an overview of the ecological values, including terrestrial fauna and associated habitat within the Project Site. Results are provided in Appendix C of the DPEMP.
- Tasmanian devils (*Sarocophilus harrisii*), Spotted-tailed quolls (*Dasyurus maculatus maculatus*) and Eastern quolls (Dasyurus viverrinus) have been investigated through multiple studies as detailed below. Survey methodologies were based on guidelines from DPIPWE's Natural and Cultural Heritage Division (2015).
- Diurnal searches for scats and tracks by NBES in 2017 of the entire Project Site to determine the presence of Tasmanian devils and quolls on Robbins Island. Devil footprints in nine locations and scats in 14 locations were documented and identified.
- Camera survey by NBES in 2017 using remote motion-detecting cameras at 5 sites for approximately 4 weeks confirmed the presence of Tasmanian devils on Robbins Island, with results of this survey provided in Appendix C of the DPEMP.
- Capture-mark-recapture survey by The Carnivore Conservancy (TCC) in 2018. This study surveyed Robbins Island using 45 trap sites (not all sites surveyed continuously), sampling for the equivalent of 400 trap-nights (over 10 nights trapping in total) with the aim of understanding the abundance and distribution of Tasmanian devils and whether Devil Facial Tumour Disease (DFTD) was present. Results of this survey are provided in Appendix D of the DPEMP.
- Genetics study by the Australasian Wildlife Genomics Group (University of Sydney) in 2018 using 60 samples collected during the capture-mark-recapture study. The aim of this study was to determine the genetic composition of Tasmanian devils on Robbins Island, and how the population differentiated from

the geographically close population on mainland Tasmania (Woolnorth). Results of this study are provided in Appendix D of the DPEMP.

- Denning habitat assessment by NBES in 2017 and 2018 using a combination of desktop assessment (multi-variate modelling) and systematic on-ground surveys of a minimum of 30% of potential denning habitat. These findings are presented in Appendix C of the DPEMP.

2.1.3 Impact assessment process

Using the survey work and relevant research studies on the species, a broad understanding of the Tasmanian devil and their use of Robbins Island was developed, including analysis of existing threats. The loss of habitat from the proposed development was investigated for potential impact to denning, foraging and ranging patterns. An assessment of impacts using the EPBC Significant Impact Guidelines was undertaken, with uncertainties detailed. Once proposed mitigations are implemented, the potential for residual impacts is outlined. Avoidance and mitigation strategies are presented in the DPEMP.

Input was sought from the following bodies with expertise in the management of the species:

- North Barker Ecosystems Services
- Policy and Conservation Advice Branch, Department of Natural Resources and Environment Tasmania (NRE Tas)
- Save the Devil Program, Department of Natural Resources and Environment Tasmania
- University of Tasmania, School of Natural Sciences

With the request for additional information regarding Tasmanian devils received as a component of the EPA's assessment process, this Chapter of the Supplementary Volume specifically addresses uncertainties and the potential for residual impacts to the species, particularly addressing issues raised by the Commonwealth Department of Agriculture, Water and the Environment (DAWE). The information is presented as a complete Chapter, bringing together previous documentation and new information and considerations.

2.2 Species status

2.2.1 Commonwealth status

Following advice to the Minister from the Threatened Species Scientific Committee (TSSC), the Tasmanian devil was listed as an endangered species under the EPBC Act in 2009. This decision was made on the basis that the species met criteria 1 and 5 of the eligibility criteria, that is

- The species has undergone and is likely to continue to undergo a severe decline in population numbers. This is predominantly due to the Devil Facial Tumour Disease (DFTD) and secondarily through road deaths.
- The probability of extinction in the wild was also considered relevant, with modelling indicating that extinction is a possibility within 25-35 years if trends in DFTD spread and population decline continue (TSSC, 2009).

2.2.2 State status

The Tasmanian devil has been protected under the Tasmanian *Threatened Species Protection Act 1995* since 2002, when it was listed as endangered.

The Tasmanian devil is found throughout mainland Tasmania, with historical records of occurrence on Flinders Island (sub-fossil evidence) and Bruny Island (written records from early Colonial period). More recently, the Tasmanian devil was introduced to Maria Island in 2012 and 2013 as part of a suite of initiatives for species conservation. In 1996 the Tasmanian devil was illegally released on Badger Island, but individuals were returned to the mainland by the Tasmanian Government.

Significant research efforts have focussed on combatting the ravages of the DFTD, studying a range of aspects such as vaccine development and genetic analysis to understand varying resilience levels and capacity to adapt amongst different populations. Secondary threats, including roadkill and habitat loss are also a part of ongoing research focus. The core research projects are undertaken through the University of Tasmania, Menzies Centre and the Save the Devil Programme.

2.2.3 Robbins Island status

The presence of Tasmanian devil on Robbins Island is attributable to the passage being able to be crossed at low tide, as evidenced by one individual from the trapping survey that had been marked previously on mainland Tasmania, and from observations by the landowner who has reported sightings of devils crossing at low tide. The investigations undertaken on Robbins Island indicate that Tasmanian devils are widespread and relatively abundant, with no devils recorded with DFTD within the Project Site (Appendix C of DPEMP).

The absolute population density was unable to be recorded due to the scale of the site and the inaccessibility of much of the habitat to vehicle access. However, by using an approximation method with comparative trapping data from other research sites, an estimate was established. A total of 108 or 109 unique individuals were captured over the trapping survey. Using comparative analysis, Carnivore Conservancy estimates an adult Tasmania devil density of 12.2 individuals / 10 km^2 (Appendix D of DPEMP). The highest trapping success rates were at sites along the ecotones between scrub and pasture.

2.3 Current land use

2.3.1 Historical farming practices

Robbins Island covers an area of approximately 9,900 ha separated from mainland Tasmania by Robbins Passage, an intertidal sand channel, ranging in width from 1.4 km, near Robbins Island Road, to over 6 km at its widest point. The Island is on a single land title (CT 110402/1) and is currently used for grazing beef cattle. Stock is managed as part of a farm at Montagu, with cattle moved between Montagu and Robbins Island via Robbins Passage at low tide. A small quarry in the south-west of the island provides material for existing farm tracks.

2.3.2 Changing farming practices and threats to Tasmanian devil population

Over the past fifteen years, improved pastures for raising Wagyu beef cattle have led to significant increases in macropod populations on the island. The ongoing investment in pasture improvement required protection by a culling program, with a crop protection permit allowing the permit holder to take Bennetts wallaby (*Macropus rufogriseus*), Tasmanian pademelon (*Thylogale billardierii*) and Brushtail possum (*Trichosurus vulpecula*). Regular shooting has been a farming practice since the 1980s. Carcasses from the culling program that are left in paddocks present an accessible and regular food source for the Tasmanian devil population.

Disposal of cattle carcasses takes place at two pits located outside of the Project site, which have ramp access to ensure that Tasmanian devils can exit the pit. The location of the carcass disposal pits is shown on Figure 1.

Since 2017, the culling operations have progressively decreased in parallel with a program to install wallaby-proof fencing. Within five years, all improved pasture areas will be fenced by the landowner, removing the need for shooting except for occasional incidents in parallel with ongoing fence maintenance. Limiting the pasture access for macropods will result in a decline in the population of wallabies.

As can be seen in Figure 1, fencing may impact the Robbins Island Tasmanian devil population by reduction of one food source (carrion) through the reduced culling practices, and by physical barriers removing access to pasture areas (reduced area of extent) and impeding ability to roam through the landscape (fragmentation). The pasture area covers approximately 2,000 ha, or 20% of the island. Figure 2 provides a photograph showing the structure of the fencing, with devils unlikely to be able to cross this barrier, representing an existing (and increasing) threat to the local population.

1:45,000 @ A3

0 0.3 0.6 0.9 1.2 1.5

Kilometers

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

N

LEGEND

- The Project Site
- WTG Exclusion Area
- Block Boundary
- Carcass Pits
- Proposed Solar Fencing Units
- Electric Fence
- Road / Laneway
- Drains
- Existing Fencing Boundaries

Proposed Additional Fencing Boundaries - Completion Date

- 2023
- 2024
- 2025
- 2026

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

Supplementary DPEMP - Farm operations - current / proposed fencing

Job Number	32-1855801
Revision	C
Date	28 Jun 2022

Figure 1

G:\32\1855801\GIS\Maps\Deliverables\Working\Fencing Plan\32_1855801_ProposedFencingPlan_A3L_RevA.mxd

Data source: UPC Renewables - Imagery, boundary. GHD - Development area, roads, causeway, wharf. NBES - Threatened fauna and habitat. Devil trap locations and trap density, CC. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com

Figure 2 *Wallaby-proof fencing installed on Robbins Island*

2.4 Current habitat and use

2.4.1 Denning habitat

Tasmanian devil presence in the Project Site was confirmed in 2017 by capturing images of Tasmanian devils using remote-motion operated cameras, examining scats and identifying tracks (footprints) (Figure 3). The capture-mark-recapture survey undertaken by the Tasmanian Carnivore Conservancy in 2018 provided more detailed information on potential densities and utilisation of the island. Actual den sightings have occurred

incidentally, with one confirmed den site outside of the Project area, located under the farmhouse. This is a building on the eastern side of Robbins Island and with the use of remote cameras, its use by a Tasmanian devil was confirmed. A rock shelter/shallow burrow was incidentally located in late 2021, with its location outside of the Project area, but assessed by ecologists as potential denning or sheltering habitat

Figure 3 Tasmanian devil direct and indirect evidence of presence within Project Site and surrounds

It is challenging to locate current denning habitat on Robbins Island due to the size of the island and the difficulty to locate dens, particularly natal dens. Females are careful to select dens that are well concealed, making it generally difficult for researchers to locate without the use of GPS / radio tracking devices on breeding females.

In a site of this scale, an assessment tool used in Tasmania is to understand structural features within the landscape, including vegetation, geology, drainage and aspect to predict likelihood of denning. Whilst some traits are fine-scale habitat attributes that require detailed site assessment, a number of traits can be assessed at a landscape scale (or have plausible proxies at the landscape scale). Potential denning habitat for the project area has been assessed using a multi-variate modelling procedure to stratify the site into unsuitable, sub-optimal and optimal denning habitat.

Within the Project Site of 8,254 ha, it is possible to rule out potential denning sites in 9.2 ha mapped as sand (tidal sand flats) and water. A further 2,674 ha was assessed as unsuitable for denning (Figure 4). This classification was based on the desktop assessment showing unsuitability for denning due to factors such as:

- not prone to cave formation or boulder clustering,
- prone to inundation, and
- not in the vicinity of likely prey source.

The remaining 5,571 ha of the Project site presents a range of habitat opportunities. Optimal denning habitat needs one or a combination of well-drained soil that is burrowable; sheltered overhangs such as cliffs, rocky outcrops or caves; or log piles with at least one passable entrance. For natal dens, females are careful to select well concealed dens that are dry, structurally stable, adequately sized (but with defendable entrances) and with nooks and crannies for imps to hide. Typically, the den contains a dry and defendable inner chamber where the very young are reared, and an outer chamber for socializing and play, which can be less sheltered (Natural and Cultural Heritage Division, 2015). Preferences also include direct sun, protection from predators at the entrances (noting there is usually more than one entrance), friable soil, and complex shelter elements such as cliffs or logs and earth banks.

1:65,000 @ A3

0 0.5 1 1.5 2

Kilometers

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

N

LEGEND

- The Project Site
- Construction footprint

Tasmanian Devil Den Habitat Suitability

- Optimal (3.4 ha impacted)
- Sub-optimal (75 ha impacted)
- Unsuitable (181.57 ha impacted)

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

Job Number 32-1855801
Revision A
Date 29 Apr 2022

Supplementary DPEMP
Proposed Construction Clearance impacts to Tasmanian Devil Habitat

Figure 4

G:\32\1855801\GIS\Maps\Deliverables\Working\Devil Habitat Footprint\32_1855801_Devil_Habitat_Clearance_Total_A3L_RevB.mxd

Data source: UPC Renewables - Imagery, boundary. GHD - Development area, roads, causeway, wharf. NBES - Threatened fauna and habitat. Devil trap locations and trap density, CC. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com

The assessment identified 449.6 ha of optimal denning habitat. A further 5,122 ha was classified as sub-optimal denning habitat, as the sites do not meet the criteria as described above for optimal denning habitat. Whilst less likely, it remains a possibility that dens may be located within the sub-optimal areas. It is standard practice to verify modelling results through undertaking den field searches. With the proposed radio/GPS tracking surveys as detailed in Section 2.6, and final den searches prior to construction, avoidance of dens will be prioritised. The denning habitat suitability modelling has provided a sound basis for preliminary assessment, with ongoing surveys to underpin detailed avoidance and mitigation measures.

Within Robbins Island, there is uncertainty about areas of habitat that may be under-utilised or represent niches that could be used in different ways by the Tasmanian devil population. Further pre-construction surveys are planned as a part of the staged mitigation approach. This will build a picture of habitat utilisation across the site, and where there may be opportunities to enhance habitat in under-utilised areas.

2.4.2 Foraging habitat and prey sources

Tasmanian devils are bone-eating carnivores, with opportunistic scavenging and hunting as the foraging ecology for the species. As the largest mammalian predator in Tasmanian eco-systems, devils can exclude scavenging competition through behaviour. Observations suggest that devils feed infrequently, with successful foraging events required every three to eight days (Pemberton & Renouf, 1993). Devils travel an average of eight km per night on foraging trips (Pemberton,1990).

Recent research using video-collars recorded foraging patterns and social interactions of Tasmanian devils in northwest Tasmania at the Arthur Pieman Conservation Area and adjacent livestock properties, providing a more nuanced understanding of foraging and prey sources. The footage was recorded over 45 deployments on 16 different adults (from September 2013 – February 2017 across three seasons), with a key finding that scavenging was the main source of prey, although hunting instances were observed in both native vegetation and pasture (Andersen et al, 2020). This study found that when active, devils run at a constant pace, and continually and opportunistically forage for carrion or live prey. The extent of their nocturnal foraging activities is dependent on the availability of prey in space and time. During the study period, most of the scavenging occurred in natural vegetation, although successful foraging was also filmed in pasture and along roads and fence lines. The frequency of foraging activities was inversely incremental with the size of prey, resulting in scavenging of small carcasses recorded most frequently.

Devils can be regarded as generalist carnivores as a population, but it has been found that individual devils show higher levels of specialisation in diet choices than previously assumed. A study using stable isotope analysis from whisker samples demonstrated that higher levels of dietary specialisation or preference is evident between individuals. This is linked to an overabundance of particular prey resources, with the research demonstrating that devils are capable of feeding generally where competition is higher and resources are likely more restricted (Lewis et al, 2021).

One of the key challenges for the devil population on Robbins Island is the ongoing reduction in the availability of carrion from macropod culling operations due to fencing investment. Currently, with the regular presence of carrion during peak periods of culling, it is likely that this would be a strong foraging preference, leaving significant opportunities for foraging elsewhere on the island that have potentially been under-utilised. As the culling practices decline, the capacity of the population to adapt is an important attribute for the species. Research indicates the potential for devils to adapt to a changing environment, with landscape modification unlikely to impact devils at the species level, although disturbance over a large area in a rapid timeframe may add to pressures on prey availability (Lawrence & Wiersma, 2019). It would be beneficial to monitor the adaptation of the Robbins Island population to actively manage population stability and conservation of the species on the island over time.

There is some uncertainty as to the location and diversity of alternative prey sources, which will be understood in more detail with the ongoing pre-construction survey work planned through scat analysis and GPS / radio tracking of individuals. Without any intervention, pasture areas are going to be permanently lost as foraging habitat for the Tasmanian devils on Robbins Island due to the fencing programme being undertaken by the landowner.

2.4.3 Dispersal and home range overlap

Tasmanian devils do not utilise habitats in a uniform way throughout a home range. Individuals are able to shift their ranges into an area with unutilised opportunities for foraging and dispersing, or in response to prey shifts (e.g. the creation of more edge habitat for prey species). Linear features such as roads can benefit carnivores through facilitating movement in the landscape (enabling further and faster travel) and through enhancing hunting or scavenging opportunities with edges between cleared land and native vegetation often rich in small vertebrates providing concentrated prey (Andersen et al, 2017).

The most significant factor in the movement of devils is the den location, with movements, range size and orientation partly controlled by the position of the primary den sites in relation to potential foraging areas. Devils use on average 3.8 dens, of which one is more frequently used than the others and is termed the primary den. However, the controlling influences of habitat and potential food availability are not static and change naturally over time in terms of their intensity relative to each other (Pemberton,1990).

On Robbins Island, population densities were unable to be directly measured with existing trapping survey data as regular or random trap distribution methods were not possible given access limitations. By using trapping data results in comparison with eight survey sites on mainland Tasmania, the Carnivore Conservancy projected that the Robbins Island devil population has an estimated average of 12.2 individuals/10 km^2. Results from the other eight study sites show population density varying between 6.8 to 17.9 individuals/10 km^2, although it is noted that the differences among sites are not statistically significant. The estimated 12.2 individuals/10 km^2 demonstrates a healthy population on Robbins Island (The Carnivore Conservancy, 2018).

The use of landscape by Tasmanian devils has been studied extensively, with devils exhibiting habitat plasticity and the ability to use edge habitat and linear features in the landscape to adapt to fragmented landscapes (Andersen et al, 2017). Research using GPS data in north-west Tasmania has found that the mean home range size is 14.4 km, with considerable overlap between home ranges (Andersen et al, 2020). In a broad sense, devils are spatially integrated, basing home range patterns on den location and prey rather than territory. As such, the way devils are dispersed throughout Robbins Island is not static. Given the broad ecological niche of the species, the entire island can be considered as viable habitat for dispersal, with home ranges likely to overlap.

An existing threat to the capacity to disperse and establish or maintain a home range on the island is the increasing use of farm fencing to protect pasture. Current and planned fencing creates landscape fragmentation and barriers to movement through and between pasture areas.

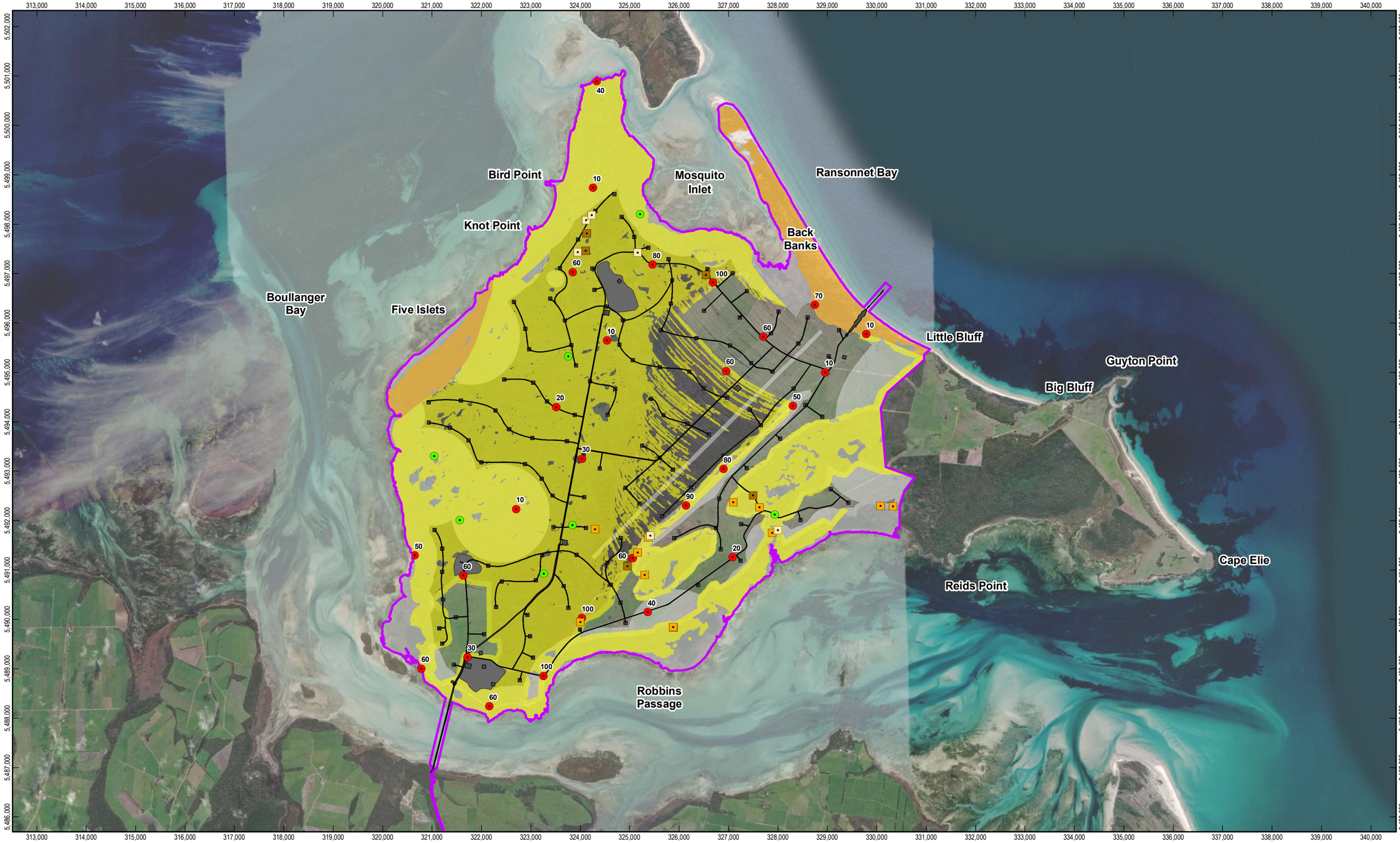
2.4.4 Carrying capacity

The carrying capacity of Robbins Island is likely to be at an artificially high level due to the abundance of macropods and the culling operations providing foraging resources. With this food resource in decline, it is unknown what the future carrying capacity is likely to be, but it may be lower than the carrying capacity of the island in a natural state on account of the roughly 20% of area lost to fenced off pasture. Applying research resources to understanding carrying capacity of Robbins Island and developing appropriate conservation measures in response to any reduction in carrying capacity over time, are viewed as critical to conservation outcomes of the Robbins Island devil population.

2.5 Description of the proposed action

2.5.1 Development footprint

The extent of the development is described fully in the DPEMP. In this section the development is described in terms of land clearance in relation to potential denning and foraging habitat. Figure 4 shows the entire construction footprint along with assessed denning habitat mapping for Tasmanian devils (optimal, sub-optimal and non-viable denning habitat). Figure 5 shows the Project footprint in relation to data on the Tasmanian devil use of the island.



1:70,000 @ A3

0 0.5 1 1.5 2

Kilometers

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

N

LEGEND

- The Project Site
- Operational footprint
- WTG exclusion zone

Threatened fauna

- Tasmanian Devil - Prints
- Tasmanian Devil - Scat
- Tasmanian Devil - Sighting

Tasmanian Devil trapping locations and relative density

- Trap success (%)
- No trap success

Tasmanian Devil denning habitat suitability

- Optimal
- sub-optimal

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

Job Number 32-1855801
Revision F
Date 23 Jun 2022

Supplementary DPEMP - Project Footprint in relation to data on Tasmanian Devil use of Robbins Island

Figure 5

G:\32\1855801\GIS\Maps\Deliverables\Working\Devil Habitat Footprint\32_1855801_DevilUtilisation_A3L_RevA.mxd

Data source: UPC Renewables - Imagery, boundary. GHD - Development area, roads, causeway, wharf. NBES - Threatened fauna and habitat. Devil trap locations and trap density, CC. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com

2.5.2 Clearance staging

Clearance will be staged over time, from June 2023 until May 2027 (48 months) as per the preliminary estimate provided in Table 1. The clearance will be interspersed amongst the landscape, which is a different scenario from land clearance across an entire area as required for a forestry or mining operation. The total construction timeframe is estimated at 66 months, with the turbine erection and commissioning stages requiring no further land clearance. As construction works are completed at each turbine site, some rehabilitation works will be undertaken to reinstate pre-existing conditions in areas such as lay-downs no longer required. The estimated clearance of 1 ha per turbine will be reduced to approximately .5 ha per site once construction is complete.

Table 1 Preliminary land clearance timeline

Stage 1			
Activity	**Commencement of Activity**	**Est time for vegetation clearance**	**Clearance Area**
Wharf access / Sand extraction & reclamation site SE1	Jun 2023	2 weeks	10.36 ha
Quarry QZ1 (43.72 ha) 50% of quarry established initially	Sep 2023	3 weeks	21.86 ha
Quarry SS1 (17.90 ha) 50% of quarry established initially	Sep 2023	2 weeks	8.95 ha
Construction facilities/laydown areas (26 ha) 50% established initially	Oct 2023	2 weeks	13 ha
Bridge access	Jan 2024	1 day	1.8 ha
Quarry QZ1 Remaining 50% established	May 2024	3 weeks	21.86 ha
Quarry SS1 Remaining 50% established	May 2024	2 weeks	8.95 ha
Roads (139.6 ha)* 68% of roads established	May 2024	12 months	94.93 ha
Quarry QZ2 (46.47 ha) 50% of quarry established initially	Jul 2024	2 weeks	23.23 ha
Construction facilities/laydown areas Remaining 50% established	Jul 2024	1 week	13 ha
Hardstands / foundations (68)**	July 2024	11 months	68 ha
Cable trench (4.8 ha) 50% established	Sept 2024	2 days	2.4 ha
Met masts (3)	May 2025	1 day	1.38 ha
Stage 2			
Quarry QZ2 Remaining 50% established	Sept 2026	2 weeks	23.23 ha
Roads* Remaining 32% established	Oct 2026	8 months	44.67 ha
Cable trench Remaining 50% established	Nov 2026	2 days	2.4 ha
Hardstands / foundations (54)**	Nov 2026	7 months	54 ha
Met masts (2)	May 2027	1 day	0.92 ha

*Roads will be progressively constructed. The roads will be built in 2 km sections, which means 2.8 ha of vegetation will be cleared, the road constructed, and roadside rehabilitation undertaken before moving onto the next 2 km of road.

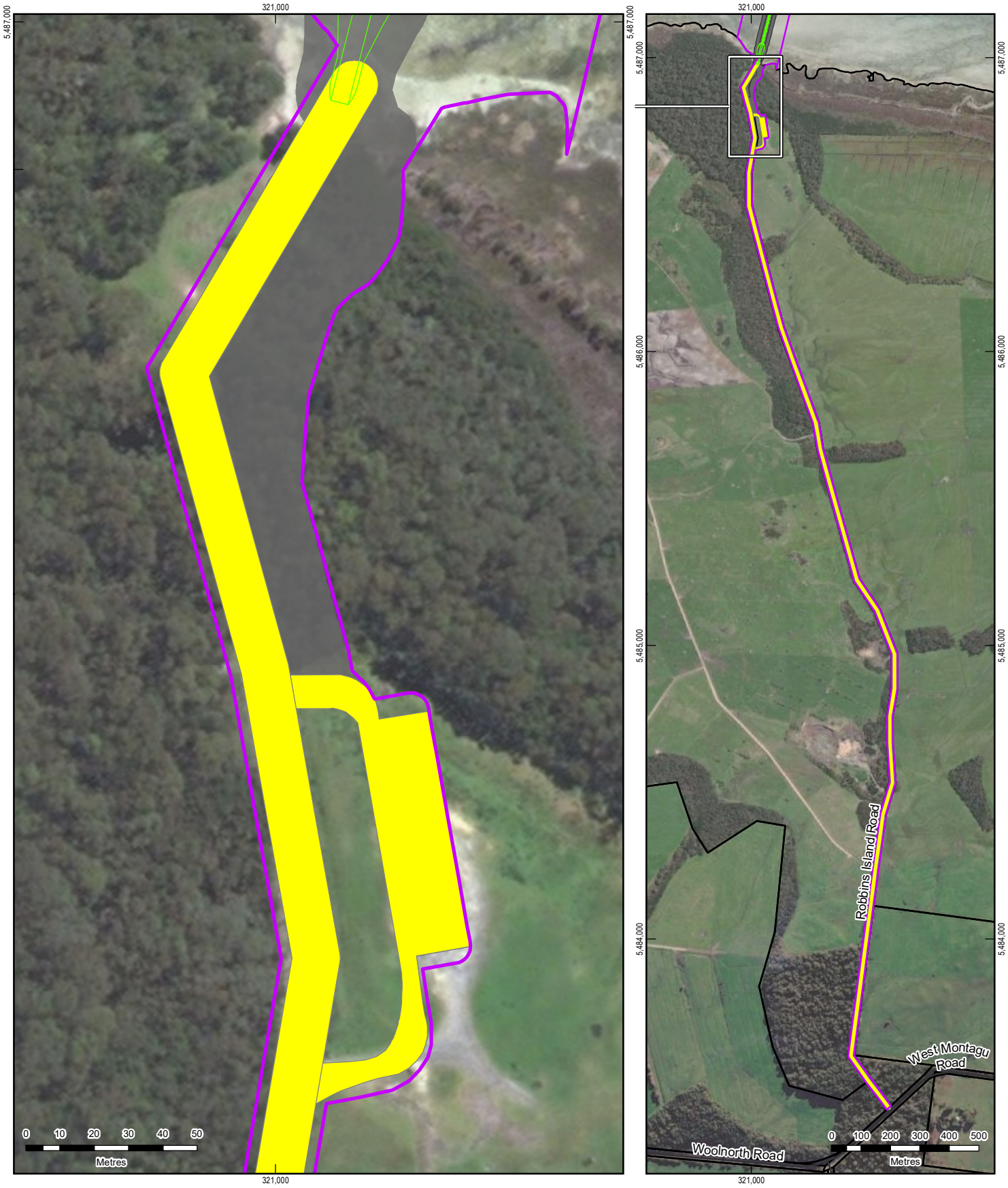
**The hardstands / foundations will be progressively constructed following the road construction. Rehabilitation of up to 50% of the clearance area will be undertaken following the erection of each turbine, noting that turbines will be erected immediately after the establishment of the hardstand and foundation.

The clearance of vegetation and partial rehabilitation will occur progressively at different locations across the project site, as shown in Figure 6.

Prior to the formal construction period, there will be a site mobilisation and establishment phase, involving minor upgrades and a small amount of vegetation clearance along Robbins Island Road in accordance with the Council's directions. This stage is outlined in the first map provided in Figure 6. The second and third maps provide footprints of progressive clearance during Stage 1, with the fourth map providing the footprint of the Project during State 2 construction. Correlating areas of progressive rehabilitation are included in these maps.

Stage 2 is contingent on external transmission infrastructure, e.g., the proposed Marinus Link, or an increase in electricity demand within Tasmania, such as would be required by the development of a hydrogen production facility.

The Project is closely monitoring the timing of Marinus Link and should Marinus Link timing align, Stage 1 and Stage 2 will be constructed concurrently over a 66 month period with Stage 2 constructed immediately following the completion of Stage 1 and construction estimated to finish in August 2028.



The Project Site

Construction footprint

Stage 1 Proposed Infrastructure & Constuction Clearance - Early 2023

Bridge alignment

Left pane 1:1,500 @ A4
Right pane 1:17,500 @ A4

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

N

GHD

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

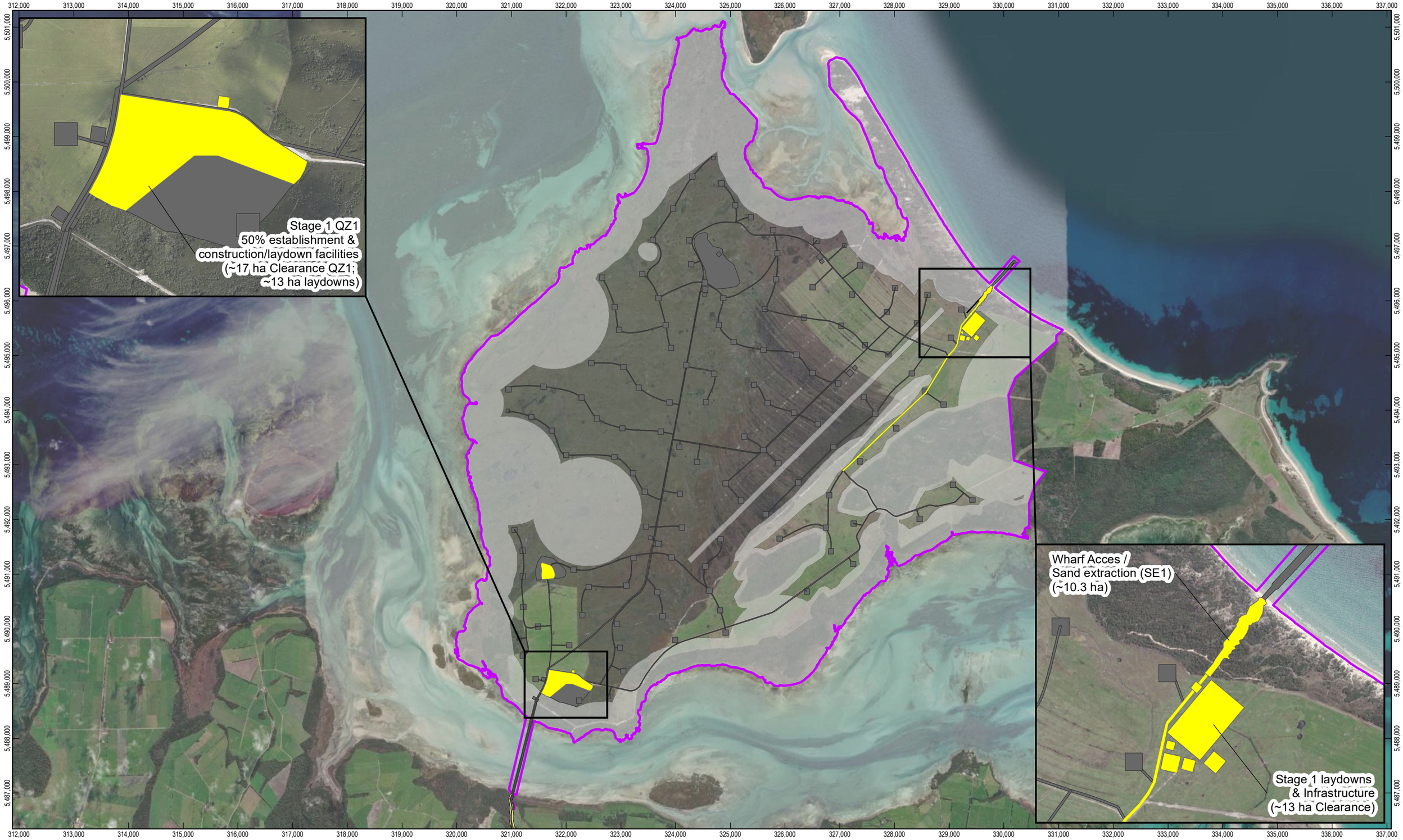
Supplementary DPEMP - Proposed construction staging and indicative clearance - 2023 (Early works)

Job Number	32-1855801
Revision	A
Date	16 May 2022

Figure 6.1

G:\32\1855801\GIS\Maps\Deliverables\Working\Construction Staging Plan\32_1855801_Stage1EW_RIRClearance2023_A3L_Rev1.mxd
2 Salamanca Square, Hobart Tasmania 7000 Australia T 61 3 6210 0600 E hbamail@ghd.com W www.ghd.com

Data source: UPC Renewables - Boundary, turbine layout. The List - Land boundary, access road. GHD - Infrastructure locations, roads, causeway. NBES - Threatened fauna and habitat. Created by:tdcoates
Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



1:63,000 @ A3

0 0.5 1 1.5 2

Kilometers

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

N

LEGEND

- The Project Site
- WTG exclusion zone
- Construction footprint
- Road access
- Stage 1 Infrastructure & Construction Clearance - 2023 Commencement (~50 ha)

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

Supplementary DPEMP - Proposed Construction Staging & Indicative Clearance - 2023

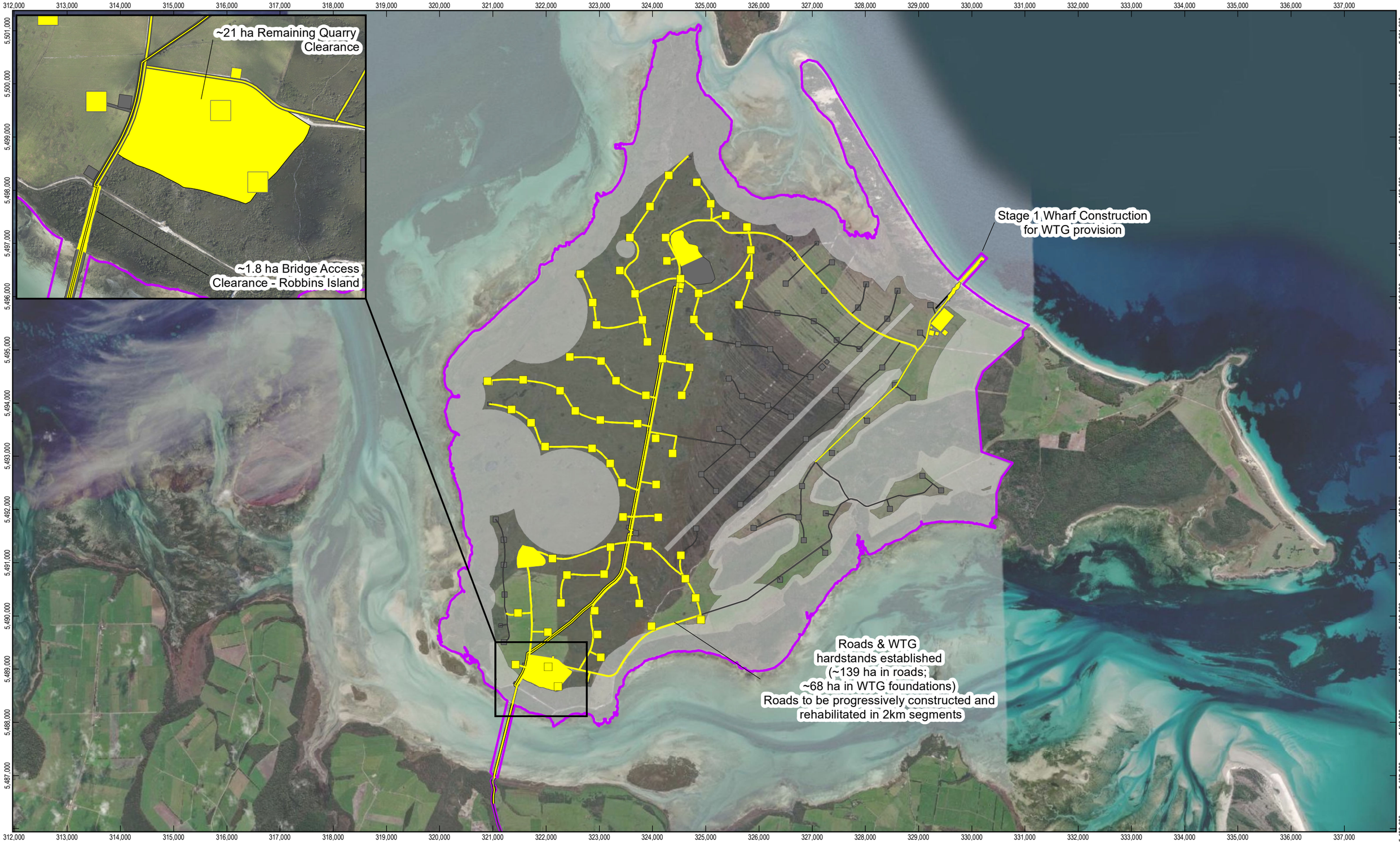
Job Number	32-1855801
Revision	B
Date	16 May 2022

Figure 6.2

G:\32\1855801\GIS\Maps\Deliverables\Working\Construction Staging Plan\32_1855801_Stage1_Clearance2023_A3L_RevA.mxd

Data source: UPC Renewables - Imagery, boundary. GHD - Development area, roads, causeway, wharf. NBES - Threatened fauna and habitat. Devil trap locations and trap density, CC. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com



1:65,000 @ A3

0 0.5 1 1.5 2

Kilometers

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

N

LEGEND

- The Project Site
- WTG exclusion zone
- Construction footprint
- Stage 1 Infrastructure & Construction Clearance - 2024 Commencement (~232 ha)
- Stage 1 220KV transmission cable

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

Supplementary DPEMP - Proposed Construction Staging & Indicative Clearance - 2024

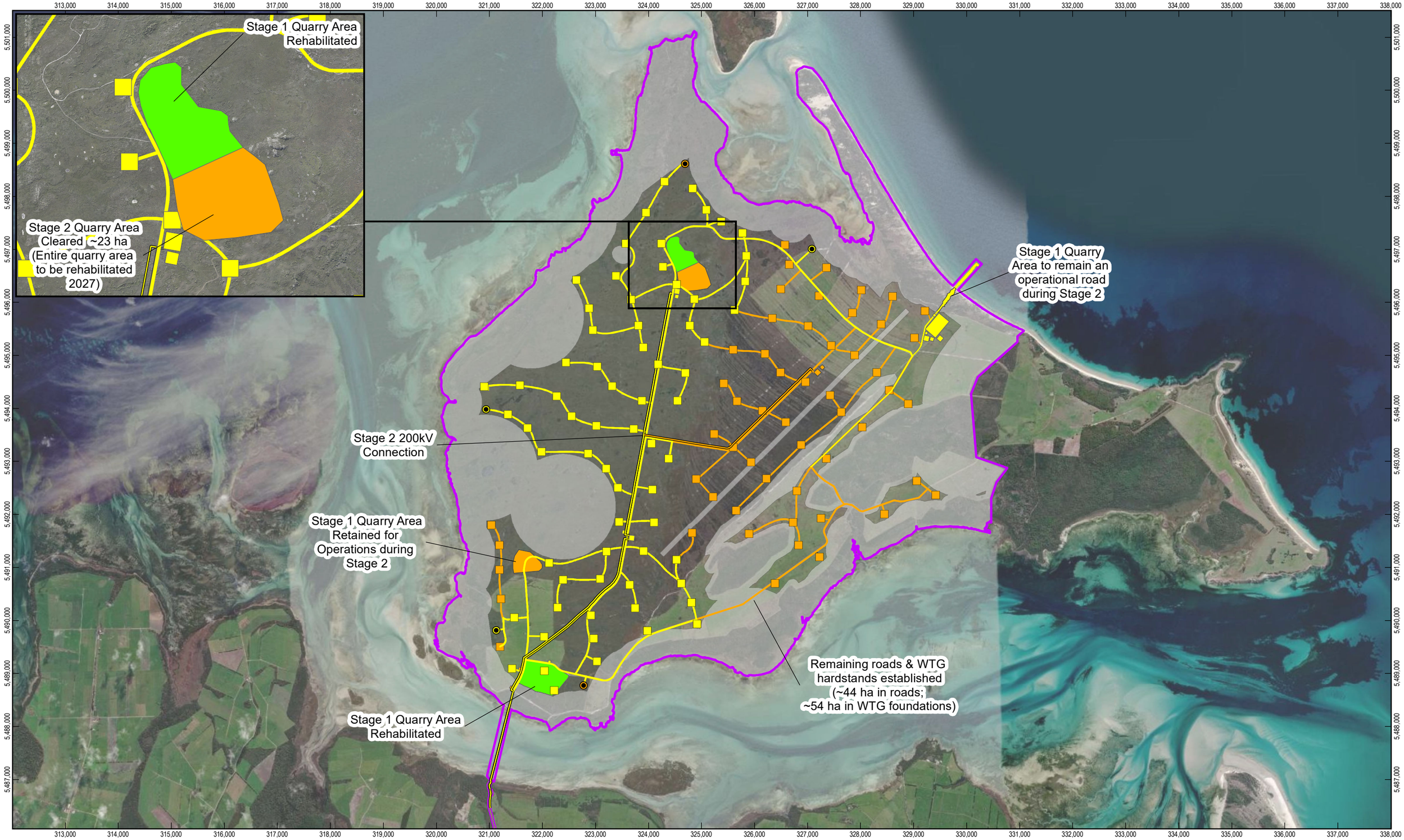
Job Number	32-1855801
Revision	A
Date	17 May 2022

Figure 6.3

G:\32\1855801\GIS\Maps\Deliverables\Working\Construction Staging Plan\32_1855801_Stage1_Clearance2024_2025_A3L_RevA.mxd

Data source: UPC Renewables - Imagery, boundary. GHD - Development area, roads, causeway, wharf. NBES - Threatened fauna and habitat. Devil trap locations and trap density, CC. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com



1:65,000 @ A3

0 0.5 1 1.5 2

Kilometers

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

N

LEGEND

- The Project Site
- WTG exclusion zone
- Construction footprint
- Stage 2 Infrastructure & Construction Clearance - 2026 Commencement (~124 ha)
- Stage 2 220KV transmission cable
- Stage 1 Infrastructure & Construction Clearance
- Stage 1 MET masts (Early 2025)
- Stage 2 MET masts (Early 2027)

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

Supplementary DPEMP - Proposed Construction Staging & Indicative Clearance - 2026

Job Number	32-1855801
Revision	A
Date	23 Jun 2022

Figure 6.4

G:\32\1855801\GIS\Maps\Deliverables\Working\Construction Staging Plan\32_1855801_Stage2_Clearance2026_A3L_RevA.mxd

Data source: UPC Renewables - Imagery, boundary. GHD - Development area, roads, causeway, wharf. NBES - Threatened fauna and habitat. Devil trap locations and trap density, CC. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com

2.5.3 Operational footprint

The construction phase footprint includes the clearance required to build all Project aspects and has a total ground disturbance of 366.2 ha (based on the 122 WTG layout, which has the largest ground footprint). Of the 366.2 ha of construction disturbance, the impact footprint on native vegetation units would be approximately 280 ha, with the balance being on non-native vegetation (agricultural land). Approximately 50% of the area at each WTG cleared to facilitate construction would be rehabilitated post construction, with the operational footprint reduced to 305.2 ha

2.6 Proposed avoidance and mitigation measures

2.6.1 Exclusion areas

The primary mitigation measure adopted by the Project to reduce the potential for impacts on terrestrial fauna is the planning of infrastructure layout. The WTG Development Zone has been chosen to avoid removal of critical fauna habitat and native vegetation as far as practicable. This includes minimising the development in optimal denning habitat. This approach of avoidance as the primary option will continue through the detailed design phase of the Project, with an ecologist advising on the micro-siting of infrastructure to minimise impacts wherever possible. Any natal denning locations identified during additional devil investigations can be added to the exclusion areas (or an offset or mitigation strategy devised if the location is not avoidable for some reason). The final infrastructure layout will be defined in the Wind Farm Design Report.

2.6.2 Additional survey work to inform detailed design

The design process is one that is iterative, informed by survey work that will continue to take place prior to construction start-up. Whilst Tasmanian devils are wide-ranging, with foraging largely driven by prey occurrences rather than habitat types; breeding sites are more specific and therefore critical to avoid. The work will be staged to build on knowledge and to utilise the most efficient means to locate dens.

The next survey aims to build knowledge of the current distribution of devils on the island, with population structure and relative density mapped through a second ten night trapping survey. This survey was undertaken in June 2022, with animal ethics clearance and the required permit from NRE Tas granted to enable the survey at this time (with the focus on females with pouch young). The results of the survey re currently being collated and analysed. Understanding the number and distribution of females with pouch young will refine likely areas of natal dens in relation to the Project site. This stage of the survey work will provide the basis for the next planned stage, which will aim to detect natal den location via tracking of individual females. This more detailed understanding will then inform the windfarm design report, avoiding located dens wherever possible. In the potential scenario of locating a natal den which is within the footprint of infrastructure that cannot be moved (e.g. where the quarrying resource is, or at the access areas to the bridge or wharf), knowing where the den is ahead of construction will allow for adequate time to follow den decommissioning protocols as a last resort.

The scheduled trapping survey in June 2022 will use the same 45 sites previously used in the work by Carnivore Conservancy (if access constraints allow). Trapped devils will be scanned for existing micro-chips, and if there is not one in place, a micro-chip will be inserted. Devils will be sexed, weighed and aged using a combination of tooth and head measurements. All trapped devils will be examined for signs of DFTD. Females will be examined for their reproductive status based on an assessment of their pouch young. Data will also be ascertained on the number, sex and approximate age of pouch young.

Scats from traps (and any found opportunistically during the survey) will be collected and examined for evidence of diet, to further inform understanding of prey preference and to map changes over time.

In September/October 2022, further detailed survey work will be undertaken using radio and GPS tracking of individual females. This survey will use two methods – VHF tracking for locating natal dens and GPS tracking for understanding range and habitat use. The data will inform the following aspects:

- Mapping range and habitat use, providing further data on how the island is currently used.

- Understanding the impacts of the wallaby proof fencing, identifying 'bottlenecks' in travelling though the landscape.
- Locating natal dens, which is hard to achieve through ground surveys, to inform the detailed design.
- Provision of baseline data on current use of the island and priority conservation areas.

The data from the June 2022 and September 2022 surveys will not only inform detailed design but will be integral to the development of the proposed Robbins Island Tasmanian Devil Conservation Management Plan (TDCMP). All proposed survey methodologies will be prepared and submitted to the EPA and NRE Tas to obtain appropriate approvals.

2.6.3 Pre-clearance surveys

As a final measure to avoid dens wherever possible, pre-clearance surveys will be undertaken as per the following procedures:

- Pre-clearance den surveys will be undertaken in the areas that cannot be excluded from the final Project WTG Development Zone (and ancillary infrastructure footprint) one month prior to commencement of construction. The surveys will be coordinated with the construction schedule to ensure that each section of site clearance work is comprehensively searched within the one month prior to work commencing (with the standard timeframe given in pre-clearance survey permits being an 8 week window to undertake the clearance works – i.e. if works aren't completed within 8 weeks the remaining habitat within the particular site is typically required to be re-searched to cover the potential for re-colonisations).
- Surveys will follow the guidelines provided by the Natural and Cultural Heritage Division of DPIPWE (2015) (now Department of Natural Resources and Environment, (NRE Tas)). Detailed planning for den surveys will aim to minimise disturbance, seeking advice from the NRE Tas for the planning of this work.
- Any den that is discovered will firstly be monitored through a camera survey to confirm if it is in use or not.
- If an individual den can be retained, additional protection of the surrounding habitat will be applied to provide the mother and young with adequate access to foraging and other habitat within the home range.
- If it is not possible for retention of the discovered den, at least two remote cameras will be placed at the entrance for a minimum of seven nights to determine current use. Once vacancy is confirmed, an approval will be sought for a permit to take, with den destruction protocols followed as per advice from an ecologist and NRE Tas.
- In the event that a den is destroyed, creation of an artificial den site within the home range will be considered where appropriate, informed by advice from an ecologist and Tasmanian devil specialists from NRE Tas. Management measures will be included in the CEMP as will the specific details of how the pre-clearance survey and den monitoring protocol will be applied.
- Prior to commencement of quarry operations, pre-clearance den surveys would be undertaken as per the above procedures. Given the potential for disturbance through noise and vibration, a buffer area of 200 m will be searched, a significantly larger buffer than the required 50 m specified in the survey guidelines (Natural and Cultural Heritage Division, 2015). Management measures will be included in the Final Quarry Management Plan.

2.6.4 Roadkill avoidance, mitigation and offset

As part of the Project's CEMP, a Roadkill Monitoring and Adaptive Management Plan (RMAMP) will be developed to manage the impact of increases in traffic along the main access roads to Robbins Island during the construction period, namely, Mella Road, Montagu Road, West Montagu Road and Robbins Island Road, along with construction roads within Robbins Island. The access roads to Robbins Island are known problem areas for roadkill, with mitigation measures a topic of concern throughout the region. To complement other initiatives in place or planned in neighbouring areas, the RMAMP will be developed in consultation with NRE Tas, taking a holistic approach to mitigating roadkill in the area and working collaboratively to consider lessons learned to date.

The RMAMP will include the following measures:

- Prior to the construction period, the roadkill survey will be repeated to update baseline data and understand changes since the initial survey over six months in 2018. With the initial survey taking place from 6/6/2018 to 12/12/2018, the updated survey is proposed for January to June 2023 in order to provide a 12 month dataset. Data from the survey will be provided to NRE Tas and uploaded into the Roadkill Tas reporting app in real time.
- Installation of virtual fencing devices to discourage animal movement onto roads at higher density roadkill locations. These devices would be installed at appropriate intervals along a section of West Montagu Road, extending approximately 5 km eastward from the West Montagu Road – Robbins Island Road junction. These devices would be installed prior to the start of the construction phase of the Project. Given the ongoing research into the effectiveness of virtual fencing, the Proponent will work closely with the University of Tasmania and the Save the Devil Program to be informed of the latest findings to improve effectiveness (e.g. number of units within the target 'fence-line' and proximity to the ground).
- Systematic monitoring of roadkill, with construction roads on Robbins Island (including the bridge) and access roads on the mainland (Mella Road, Montagu Road, West Montagu Road and Robbins Island Road) to be surveyed daily during construction for roadkill, with daily removal and disposal of all roadkill carcasses during the construction period. The RMAMP would include an appropriate methodology for carcass disposal.
- To minimise the number of vehicles travelling on access roads to the Project Site, vehicle movements would be restricted to up to 82 Project-related vehicle movements per day during peak roadkill periods (i.e. dusk to dawn). This includes providing buses to transport up to 85% of construction staff to/from the Project Site.
- Training and construction protocols, including inductions for all construction staff in relation to fauna roadkill risk and its potential impact to local Tasmanian devil and Spotted-tailed quoll populations. A workplace culture that places wildlife conservation as a central site management focus will be promoted at all stages. A procedure will also be in place to respond to injured wildlife due to collisions.
- Vehicle movements would occur between 6 am – 6 pm, as far as practicable. When vehicles are travelling during winter with earlier dusk and later dawn, additional care would be required, including travelling below 80 km/h on access roads, where practicable.
- Vehicle speeds within the Project Site on Robbins Island and on the bridge would be limited to 40 km/h.
- Increased slashing of roadside vegetation, to maximise driver visibility of fauna
- To inform workers and other site visitors, wildlife signage will be installed at the entrance/exit to the Project Site.
- Other locations for installation of virtual fencing devices would be considered as an adaptive management measure, should higher density locations for roadkill be recorded during monitoring.
- Given the potential for an unanticipated increase in roadkill, the RMAMP would include a trigger for an adaptive management response. This trigger is defined as an increase of more than two Tasmanian devils, Spotted-tailed quoll or other listed threatened fauna species killed in a 12-month period.

Potential additional management measures through the RMAMP could include:

- Additional monitoring to better understand potential causes of roadkill incidents and develop appropriate management measures
- Targeted mitigation and management measures, including:
    - Additional virtual fencing
    - Wildlife signage along public roads at identified fauna roadkill hotspots
    - Further vehicle speed restrictions
    - Further modification to the transport schedules

The RMAMP will include reporting on roadkill to the EPA and DAWE, including provision of roadkill survey results every six months during construction.

Given the residual risk of loss through roadkill incidents, an offset has been proposed for any Tasmanian devil fatalities above the baseline, with a contribution of $8,000 per additional fatality to the Save the Tasmanian Devil Programme.

2.6.5 Tasmanian Devil Conservation Management Plan

Considering the existing threat to the Tasmanian devil population on Robbins Island through the physical barriers and prey source changes from the fencing and cull reduction activities, along with potential residual impacts from the habitat loss through the windfarm development, a Robbins Island Tasmanian Devil Conservation Management Plan (TDCMP) is an important mechanism to protect the population.

The TDCMP will be drafted following the radio/GPS tracking survey, which will provide improved data on habitat, foraging, utilisation and key points of landscape barriers. Understanding where the most critical habitat is, along with existing threats, will provide the basis for targeted conservation measures such as tunnels through the fencing or protection measures for critical sites.

The Plan will be developed in consultation with NRE Tas and Save the Devil Program. It will be submitted for approval from EPA and DAWE at least three months prior to construction (in alignment with the other Monitoring and Management Plans for eagles, shorebirds and Orange-bellied parrots).

The Plan will provide the means to monitor the population for any changes over time and implement active conservation measures. These measures are likely to include the following initiatives, along with further recommendations that arise from ongoing research outcomes and on-island observations:

- Installation of Tasmanian devil access tunnels through farm fences to allow continued access and egress through pasture areas. The radio/GPS tracking survey will provide information on how the devils are currently moving along fence lines and if there are any points of access into the pasture, or any key bottleneck areas. At least two types of tunnels would be trialled, one using a long drain pipe and the other a pipe with a bend, aiming to exclude macropods but allow Tasmanian devils to continue to utilise the pasture areas in Robbins Island. This method would commence on a trial basis, using cameras at both ends of the tunnels to record devil movements over a number of months. Based on the success of the trial, the TDCMP will consider expanding this programme to return access across priority parts of the landscape. This work is viewed as an important piece of research with broader applicability to the species, and as such collaboration with NRE Tas and Save the Devil Program will be beneficial.
- Protection and enhancement of denning habitat. Following the tracking survey, the most important denning habitats will be identified. Excising these areas from the impact area, with a 50 m buffer, will be the preferred option. An analysis of existing threats will also be undertaken, with potential measures such as cattle exclusion and no-go vehicle access the type of protection measures that could be applied based on den location and local risks.
- Creation of artificial dens where this is considered beneficial to population conservation, particularly in the event of the unavoidable loss of a natural den. This will be undertaken in collaboration with NRE Tas to understand efficacy and monitor results.
- Monitoring for population health, including any signs of DFTD. This will be achieved through ongoing trapping as per the DFTD monitoring sites overseen by the University of Tasmania and Save the Devil Program. To minimise handling, the population trapping survey is proposed over ten days on an annual basis in June/July after breeding, when DFTD is likely to be detectable. Population monitoring surveys will be undertaken for five years, after which the survey requirements will be reassessed in consultation with NRE Tas and EPA.
- Management measures in response to any unanticipated impacts on other species due to changing food resource availability on Robbins Island. At each trapping survey, scat analysis would be undertaken to detect significant dietary change. It is also possible to establish camera traps at sites deemed to be of high risk (eg burrowing birds in vicinity of high utilisation areas) to inform adaptive management actions.

- Monitoring outcomes from virtual fencing on West Montagu Road and modifying or extending based on results.
- Monitoring the bridge to understand success of any exclusion structures or deterrent devices installed and provide ongoing adaption measures if required. Camera traps at the bridge could be used to monitor for devils, ideally with image recognition software to reduce processing requirements.

Monitoring results and analysis will be regularly provided to NRE Tas and Save the Devil Program to share information and learnings and provide the opportunity for input, contributing to the knowledge base rather than for compliance. All monitoring results will be summarised and presented as a part of the Annual Environment Report to be submitted to EPA to ensure compliance with conditions and provide ongoing information in relation to impacts and mitigation measures.

2.6.6 Contribution to broader research efforts

Research of the Tasmanian devil and the long term conservation of the species is an ongoing focus, particularly through the University of Tasmania (UTas) and the Save the Tasmanian Devil Program (STDP). The Robbins Island population presents a research opportunity of a relatively isolated and naturally occurring island population. With the commitment to conservation measures on the island, the work that is being undertaken will be shared in the interest of building knowledge of the species and the success or setbacks of various conservation measures.

There will be opportunity for collaboration with researchers to continue to build on knowledge of the population, including genetic structure, and utilisation of habitat and prey on Robbins Island to understand carrying capacity and adaptation. With the Proponent committing resources to active conservation measures, research collaboration to understand successes and constraints will assist with broader conservation efforts for the species. Research partnerships can provide cost effective ways to monitor a population over time within a defined site (the island) and resources on the ground to provide data on an ongoing basis. Through the Tasmanian Devil Appeal administered by the University of Tasmania, there is a mechanism to establish industry partnerships that contribute to ongoing research priorities. The proposed conservation measures such as the fence access tunnels provide an opportunity to publish research results, thus contributing to the broader efforts for species conservation.

2.7 Significant impact assessment

The purpose of this section is to determine whether the proposed action is likely to have a significant impact on a matter of national environmental significance, that is on the population of Tasmanian devils on Robbins Island, following the Significant Impact Guidelines 1.1 (Commonwealth of Australia 2013).

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

- lead to a long-term decrease in the size of a population
- reduce the area of occupancy of the species
- fragment an existing population into two or more populations
- adversely affect habitat critical to the survival of a species
- disrupt the breeding cycle of a population
- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
- result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
- introduce disease that may cause the species to decline, or
- interfere with the recovery of the species.

Each of these aspects are explored below.

2.7.1 Risk of population decrease

Ecological assessments have identified that the Tasmanian devil is widespread throughout the Project Site, although the extent of utilisation of the island has some uncertainties and has not been re-assessed since the increase in wallaby-proof fencing. The population on the island is not genetically unique from the population on the mainland (Appendix D, DPEMP).

Surveys to date have not detected the DFTD, which is the most significant threat to the species. Although Tasmanian devils can cross to mainland Tasmania, the Project is unlikely to increase this occurrence as the bridge design will include mitigation measures to prevent devils using this infrastructure for crossing. The Proponent will work with the Save the Tasmanian Devil Program and NRE Tas to understand what has been successful to date, particularly in the work undertaken at the Forestier Peninsula, where various methods to contain the devils within the Peninsula were examined as a part of the work to maintain an insurance population. As the bridge will need to be designed to exclude cats as one of the mitigation measures to protect conservation values (along with ongoing eradication of existing cats on the island), excluding devils will also be part of the island access design. Measures such as fencing and rolling cattle grids are the types of design features that will be explored.

Increased traffic associated with construction of the Project has the potential for loss of individual devils due to incidents of roadkill, and therefore increased demographic pressure for the species. The Project has proposed measures to minimise traffic increases during construction to reduce the incidence of roadkill. Importantly, a pre-start roadkill survey will be undertaken prior to construction to confirm earlier analysis of the baseline incidence. Measures to reduce roadkill include using a staff bus to reduce traffic movements during construction and site speed limits.

The most significant factor affecting the population of Tasmanian devils on Robbins Island is the carrying capacity, determined by prey sources and the availability of den sites. The protection measures described to prevent impacts to den sites are considered adequate to maintain population persistence. Prey sources will not be impacted by the Project, with the increase in edge habitat, along with active conservation measures, viewed as adequate to preserve the ecological niche for the species. The risk of population decline is an existing risk due to changing farming practices. As a measure of stewardship, the Proponent will work with the land owners to address and mitigate this existing risk through measures developed in the TDCMP.

2.7.2 Risk of reduction in area of occupancy

As per the *Survey Guidelines and Management Advice for Development Proposals that may Impact on the Tasmanian Devil* (Natural and Cultural Heritage Division DPIPWE 2015), the Tasmanian devil has broad habitat requirements with large and overlapping home ranges and wide distribution. The area of occupancy is viewed as most of the entire island (9,900 ha). Site clearance and shaping will temporarily reduce occupancy during construction, but this will be staged over a minimum of four years if both stages proceed, and with progressive rehabilitation of construction laydown areas. The operational footprint of 305.2 ha is approximately 3% of the site with the majority of the clearance in areas assessed as sub-optimal denning habitat. Given the way that the Tasmanian devil occupies the landscape with the capacity to adapt in response to changes to prey sources, this reduction is not likely to create a significant impact to the population on the island.

The Project is unlikely to result in a measurable contraction of the species' range in Tasmania. Within Robbins Island itself, the broad niche of the species allows adaptation to landscape changes, particularly with the proposed conservation measures to enhance occupancy in under-utilised areas of the site.

2.7.3 Risk of population fragmentation

It is unlikely that the Project itself will result in the fragmentation of the population as the infrastructure would not create a barrier that divides the existing population. There is no indication that particular parts of the Project Site are significant dispersal corridors or critical links between habitat patches, nor that the Project elements will pose meaningful physical barriers (Appendix C of DPEMP).

There is an existing risk of population fragmentation through the fencing investment programme by the landowners at Robbins Island. The Proponent proposes to provide ecological expertise and physical resources to address this risk, installing tunnels at along fence lines at priority sites to provide continued access to pasture areas for

travelling through the landscape and for foraging and hunting. This programme will be developed based on identifying priority access points through the GPS tracking work, followed by a trial of access tunnel construction methods that is monitored with motion detection cameras for utilisation. Based on an understanding of success factors, the plan will then expand to high priority areas to reduce impacts to habitat access and dispersal corridors. Through these measures, it is expected that the Project has the potential to reduce risk of population fragmentation that currently exists.

2.7.4 Risk of impact to habitat critical to survival of species

Habitat for Tasmanian devils, as defined in the Draft Recovery Plan for the Tasmanian Devil (DPIPWE 2010), incorporates sheltering sites, hunting habitat, maternal denning sites and an adequate prey base within their home range to provide year-round food supply.

As stated in the Draft Recovery Plan for the Tasmanian devil, “Tasmanian devils are thought to be less susceptible to this threat (habitat loss), as they are highly mobile and generalists in terms of habitat preferences.” (DPIPWE, 2010). Tasmanian devils displaced by habitat loss have the capacity to adapt their home range or move to another home range, as they are not territorial. Population levels are linked to the limits of carrying capacity, which the TDCMP will be researching with the aim of providing greater certainty in relation to the sustainability of the population.

Whilst there will be habitat loss, this is interspersed in the landscape and the loss is not considered critical to the survival of the species on Robbins Island.

2.7.5 Risk of breeding cycle disruption

At a broad scale, breeding disruption is unlikely to result from the Project. While devils are distributed across Tasmania, two population management units have been identified, with devils in north-western Tasmania found to be genetically distinct from those found across the rest of the State (DotEE 2018). Genetic analysis of the Robbins Island devils has confirmed they are not distinct from the north-western population.

At an island population level, the location and avoidance of natal dens is a priority in the ongoing survey work to inform detailed design. The retention of the majority of optimal denning habitat is expected to maintain the normal breeding cycle of the population on Robbins Island. Precautionary measures will be undertaken to ensure disruptions do not occur to active maternal dens, with the radio-tracking survey to confirm den locations and inform the Wind Farm Design Report, and pre-clearance denning surveys to assist with micro-siting. NRE Tas protocols will be followed in the event of any unavoidable den de-commissioning. A broader search radius of 200 m will be used around the quarry sites given the potential for disturbance from blasting.

2.7.6 Risk of modifying, destroying, removing, isolating or decreasing quality and availability of habitat

This is the area of most significant impact, as the Project will modify the landscape and decrease the availability of habitat for the Tasmanian devil. Habitat for Tasmanian devils, as defined in the Draft Recovery Plan for the Tasmanian Devil (DPIPWE, 2010), incorporates sheltering sites, hunting habitat, maternal denning sites and an adequate prey base within their home range to provide year-round food supply. Whilst devils are highly mobile and viewed as generalists in terms of habitat (DPIPWE, 2010), if denning sites are sparse, den loss can have a significant effect on abundance (Owen & Pemberton, 2005). Therefore, the avoidance of denning habitat is viewed as the highest priority to mitigate the risk of impact.

The majority (99.2%) of optimal potential denning habitat on site would be avoided. The lower quality (or sub-optimal) habitat covers 5122 ha of Robbins Island, with an estimated 4865 ha not impacted by the development (95% of sub-optimal denning habitat will remain unaffected). There is uncertainty over location of natal dens, as they are very difficult to find using physical searches. The pre-construction survey efforts will reduce this uncertainty, with identification of breeding females narrowing down the high-risk areas as a first step, followed by VHS radio tracking to locate natal dens. This survey work will be developed and approved by NRE Tas and EPA prior to finalising the detailed design.

The loss of up to 366 ha (the Project construction footprint) of potential foraging habitat, which includes denning habitat, is not expected to significantly affect the species to the extent that it would decline, given the large area of habitat area remaining and the broad range of each individual.

Devils spent more time scavenging than hunting in recent research conducted in North-West Tasmania (Andersen et al, 2020), and clearly exhibited opportunistic and flexible foraging behaviours. Scavenging occurred mostly in natural vegetation but also in anthropogenic vegetation and linear features (roads and fence lines). Scavenging frequency was inversely incremental with size e.g. small carcasses were scavenged most frequently. There will be some loss of foraging habitat due to the windfarm development, but concurrently there will be an opening of new resource opportunities through creating linear features and edge habitat through the landscape.

The key issue that has been examined in this impact assessment is whether the vegetation clearance and habitat modifications will decrease available habitat to the extent that the species is likely to decline. Tasmanian devils have the capacity for individuals to shift their habitat in response to landscape change. This is because they are not territorial and can have over-lapping home ranges providing there is enough prey resource. Food resources are clearly in flux due to pre-existing land management decisions, and the ongoing ecological assessment and conservation management measures are viewed as an important means of reducing risk of impact from the combined changes through the farm fencing and the proposed development.

The loss of up to 366 ha of habitat is interspersed in the landscape and is thus unlikely to create a need for individual devils to significantly adapt their home range. The ongoing survey work prior to construction will continue to strengthen understanding of areas of high utilisation, and what conservation measures can be implemented to enhance underutilised areas, such as creation of artificial den sites or returning access through fenced areas.

2.7.7 Risk of invasive species becoming established in habitat

Not likely to impact on Tasmanian devils as a result of this Project.

2.7.8 Risk species decline through disease

As discussed in Section 2.7.1, the DFTD is the major threatening process to the Tasmanian devil, and the key rationale for its listing as an endangered species at a State and Commonwealth level. Intensive research efforts have been applied to understand beneficial genomes and the factors underpinning the development of natural resistance in populations, whilst other efforts continue to progress the objective to develop an effective vaccine. The species is estimated to have declined from a peak of 53,000 in 1996, to the population estimate of 17,000 remaining in the wild in 2020. The disease spread rapidly through high-density areas in the state, with the lower density populations in western Tasmania seeming to be a key factor in slowing the spread from the mid-2000s. Despite the devastating decline in a short period, there have been no recorded local extinctions. The research modelling has encouragingly forecast that “the population decline should level-off within the next decade, supporting conservation management focused on facilitating evolution of resistance and tolerance” (Cunningham et al, 2021).

However, whilst the outlook is improving, there remains a significant effort required to support research and conservation efforts.

The Project is unlikely to introduce the DFTD that may cause this species to decline. It should be noted that there is evidence of mainland devils occurring on Robbins Island already (one individual identified in earlier trap and release survey along with regular sightings recorded by the landowner), although crossing to the mainland is understood to be uncommon. Constructing the bridge to the mainland could potentially increase crossings due to the relative ease compared to low tide crossings. The Proponent will work with NRE Tas to develop measures to physically exclude Tasmanian devils from the bridge, with ongoing monitoring to measure the effectiveness of obstacles and deterrents and adapt if required. Potential measures include rolling cattle grids, fencing, and virtual fencing technologies. Noise and light deterrents are not recommended due to the potential to negatively impact birds.

2.7.9 Risk of substantial interference with species recovery

The Project is unlikely to interfere with the recovery of the species. Whilst there is some direct loss and modification of habitat, this is not expected to significantly impact the Robbins Island or mainland Tasmanian

population. The measures to improve the conservation of the species on the island, coupled with ongoing research opportunities and collaboration is seen as a potential benefit to species recovery.

2.8 Details of whether impacts are unknown, unpredictable or irreversible

The impacts to the population are largely predictable given the understanding from existing research demonstrating the capacity of Tasmanian devils to shift their ranges when an area has un-utilised foraging and dispersing habitats. What is uncertain is the location of dens within the development area. Given that populations are limited by the availability of den sites, the focus of efforts prior to construction are on refining the understanding of likely den areas, informed by the trap and release survey planned for June 2022, followed by radio tracking later in 2022 to locate individual natal dens prior to the detailed design phase.

As a last step in avoiding and managing the loss of any dens, pre-clearance den surveys will be undertaken, with protocols implemented as described in Section 2.6.3. Loss of a den site through clearance is irreversible, although this loss does not equate to the loss of individuals. However, any den loss could contribute to a progressive diminishing of den quality, hence the mitigation of creating high quality artificial dens if required.

A further uncertainty is the extent of un-utilised foraging and denning habitat on Robbins Island, information that will be provided through the planned June 2022 survey and follow-on GPS tracking research to provide a more detailed understanding of the use of the island. This will be important to not only inform the detailed design, but also as a basis for the Robbins Island TDCMP and any ongoing research collaborations.

It is certain that changing farm practices will be creating impacts to the population due to prey source decline and fragmentation of the landscape. These impacts are only irreversible with the do-nothing approach. However, through the creation of access points to the pasture areas for movement through the landscape and access to prey, these pre-existing impacts can be mitigated to some extent. The success of these measures will be built on scientific trials to inform design and placement.

The loss of Tasmanian devils through incidents of roadkill is not predicted to have an irreversible impact on the population, with impacts that are relatively predictable, and management options to further reduce the risks. With significant efforts to reduce wildlife collisions, and with the proposed offset in the event of a roadkill incident, the impacts are considered manageable.

The spread of DFTD to Robbins Island is an irreversible event in terms of impact to the species. However, this risk is an existing one, with devils known to cross to mainland Tasmania, albeit not frequently. Through designing the bridge to prevent increased crossings, this irreversible risk is one that will not be increased by the Project. The other aspect of managing this risk is the implementation of active conservation measures to maintain a healthy population on island. This includes understanding carrying capacity, unutilised foraging and denning habitats, and working with NRE Tas, the University of Tasmania and Save the Devil Programme to increase research efforts and actively manage the devil population across the whole island.

2.9 Residual impacts and mitigations

As stated, the denning and foraging patterns of the species are well understood, and their capacity to adapt are important when considering impacts. However, there are some uncertainties in the utilisation of the island as a whole, and its ultimate carrying capacity. Changing farming practices are increasingly impacting food sources and access through the landscape. With the additional impacts from habitat loss from the Project, it is important to consider a tangible means to understand and minimise any residual impact. A conservation covenant was considered as a habitat protection measure, but the habitat is not at risk, except through the fencing programme, which would not be altered by the conservation covenant.

An alternative proposed is a combination of measures that will improve the ecological niche of the Tasmanian devil population on Robbins Island. The proposed TDCMP will be developed in collaboration with researchers to provide a means to minimise threats to the population, including to:

- Document and monitor the Robbins Island Tasmanian devil population, understanding use of the island for denning and foraging, and the carrying capacity of the island.

- Based on data from ongoing survey work prior to construction, the TDCMP will map priority areas and measures to enhance under-utilised areas for foraging and denning.
- Additional trapping surveys targeting breeding females will highlight likely areas for natal dens, and where these are in relation to proposed infrastructure. Further radio tracking work will locate the dens prior to the detailed design and inform the siting of infrastructure to avoid natal dens wherever possible.
- Where dens are located, particularly natal dens, conservation measures will be developed to enhance protection measures.
- In instances where the loss of a den is unavoidable, prioritising areas for the creation of artificial dens, and ensuring these sites are protected from impacts.
- Mapping the home ranges of individuals (through GPS tracking) and understanding priority sites of impacts from farm fencing. Trial installation of tunnels to allow access to pasture areas for devils to continue foraging and egress through these areas, whilst excluding fauna that impact on farming operations. Based on results of trials, expand tunnel installation to identified high priority sites.
- Ongoing monitoring for DFTD, and measures to exclude devils from the bridge through design features such as rolling grids and fencing.
- The RMAMP and measures to reduce risks of roadkill will be incorporated into the Robbins Island TDCMP, with ongoing monitoring and adaptive management, and off-set payments for any fatalities implemented as a part of broader conservation management for the population on Robbins Island.

The measures in the TDCMP will be defined more fully in response to ongoing population research and confirmed risks. The Plan will provide practical measures to reduce residual risk to the Robbins Island Tasmanian devil population with applied research and conservation across the entire island to protect the species.

3. Matters of Environmental Significance – Orange-bellied Parrot

3.1 Methodology

3.1.1 Ecological surveys

The Project Site and surrounds have been assessed during various natural values surveys by North Barker Ecosystem Services (NBES), including field surveys undertaken in 2003 and 2008 as part of previous investigations for wind farm proposals on Robbins Island, and throughout 2017-2019 at a range of scales for the Project. The results of these surveys are collectively compiled in the most recent NBES survey report in Appendix C of the DPEMP.

3.1.2 Orange-bellied parrot surveys

The Project Site has been subject to a range of avifauna investigations, including:

– Nature Advisory undertook four separate surveys between March and June 2003, along with surveys in October 2003 and April 2004. Orange-bellied parrot (OBP) searches were undertaken along the west and south coasts of Robbins Island, Walker Island, Mosquito Inlet, Kangaroo Island, Wallaby Island, Montagu Island and nearby mainland Tasmanian coasts. Incidental counts and other information on blue-winged parrots were also recorded during these surveys.
– Nature Advisory undertook five separate surveys between March and May 2009 targeting OBPs along the west and south coasts of Robbins Island, Walker Island, Mosquito Inlet, Kangaroo Island, Wallaby Island, Montagu Island and nearby mainland Tasmanian coasts. Incidental counts and other information on blue-winged parrots were also recorded during these surveys.

This species was observed in surveys in 2003 and 2004 on Robbins Island, with one observation from the west coast of Robbins Island, and three recorded at the Wallaby Islands near the south-west coast of Robbins Island. No OBPs were recorded on Robbins Island during targeted surveys in 2009.

3.1.3 Impact assessment process

Using the survey work and relevant research studies on the species, a broad understanding of the OBP and their potential use of Robbins Island was developed, including analysis of existing threats. Habitat availability, the potential for disruption to migration activities and collision risks with Project infrastructure were investigated. An assessment of impacts using the EPBC Significant Impact Guidelines was undertaken, with uncertainties detailed. Once proposed mitigations are implemented, the potential for residual impacts are outlined. Avoidance and mitigation strategies are presented in the DPEMP, and in this Supplementary Volume. Input was sought from the following bodies with expertise in the management of the species:

- Policy and Conservation Advice Branch, Department of Natural Resources and Environment Tasmania (NRE Tas)
- Orange-bellied Parrot Recovery Team
- Biosis Pty Ltd

3.2 Species status

3.2.1 Commonwealth and state status

The OBP is listed as Critically Endangered under the EPBC Act (1999) as a ‘migratory species’ and as a ‘marine species’ (because it migrates over a marine area). The OBP is listed as Endangered in Schedule 3 of the Tasmanian Threatened Species Protection Act 1995 and is also listed as Threatened under the Victorian Flora

and Fauna Guarantee Act 1988, Endangered in Schedule 1 of the New South Wales Threatened Species Conservation Act 1995 and Endangered in Schedule 7 of the South Australian National Parks and Wildlife Act 1972.

The current National Recovery Plan for the Orange-bellied Parrot, *Neophema chrysogaster* has been in effect under the EPBC Act from 06 May 2016.

3.2.2 Robbins Island status

Robbins Island is located on the known OBP migration pathway with confirmed, and potential foraging habitat present on the island.

One OBP was recorded in 2003 in the Little Creek area on the western side of Robins Island and three were recorded at Wallaby Islands (located immediately off the south-west coast of Robbins Island) in 2004. While OBPs have not been recorded during any of the surveys conducted for the Project since 2004[1], it is assumed that individuals could use the island during migration.

Since OBPs have been recorded in the area since the year 2000, Robbins Island is considered essential for the survival of the species (DELWP 2016).

3.2.3 Potential habitat and use

Non-breeding habitat is required at several locations along the migration route and mainland range to support migration and local movements to exploit fluctuating food sources throughout the winter period. During migration, OBPs forage on seeds of a range of coastal and saltmarsh plants, as well as exotic plants in degraded pasture adjacent to saltmarsh. This species is thought to occur in a range of coastal habitats, including dunes, heathland, coastal grassland, saltmarsh and pasture. Almost all of these habitats are present along the northwest coast of Tasmania (migration route), including Robbins Island. Some habitats on Robbins Island will be impacted by the Wind Turbine Generator (WTG) Development Zone (Figure 7).

Vegetated dunes

For construction of a road access to the wharf on Back Banks beach, alteration to a section of the Back Banks – Walker Island Dunes would be required. The maximum total area of the site requiring alteration is up to 3 ha. However, this area has been identified as marram grass (FMG), which is considered a species of concern in relation to OBPs as it is an aggressive coloniser, salt-tolerant and has the capacity to swamp native food plants within saltmarshes, coastal herbfields and coastal dune systems. Given the species present in this area and the alteration to the dune system is a relatively thin strip perpendicular to the beach area, it is not anticipated to significantly affect the overall dune complex or potential OBP habitat.

Coastal heathlands

Approximately half the Project Site is coastal heathland (SCH). The Project proposes clearance of heathland across White Rock Ridge. Most of the clearance of such vegetation occurs in areas further than 500 m from the coast, and the maximum area that would be impacted by the Project is estimated at 247.3 ha.

Grassland

Marram grassland (FMG) is present within the Project site (59.8 ha). Monitoring and management of marram grass within saltmarsh communities (i.e., preferred OBP foraging habitat) will be included as part of the Weed and Hygiene Management Plan and as a mitigation measure to reduce impacts to OBPs.

No other grassland communities are present on Robbins Island.

[1] The Natural Values Atlas of Tasmania includes a record of one OBP at Wallaby Island (off the south-west corner of Robbins Island) on 20 March 2011

Saltmarsh

The TASVEG coastal vegetation communities present on Robbins Island that are generally considered to be preferred foraging habitat for the OBP are:

1. Saline Sedgeland/rushland (ARS) - The community is dominated by a high percentage cover of tussocks of Coast Speargrass (*Austrostipa stipoides*), Chaffy Saw-Sedge (*Gahnia filum)* and Sea Rush (*Juncus kraussii ssp. Australiensis)* up to one metre high.
2. Succulent Saline Herbland (ASS) - This is a saltmarsh community that occurs in a few tidally inundated areas bordering the ARS. On Robbins Island it is dominated by Beaded Glasswort (*Sarcocornia quinqueflora*) and salt tolerant Shrubby Glasswort (*Tecticornia arbuscula*)

Outside the Project Site (not covered by the Natural Values Assessment), the TASVEG 4.0 mapping denotes several areas of ASS on islets and islands along the southern third of the west coast of Robbins Island. These have a combined area of approximately 48 ha, with the largest areas located in the Wallaby Islands Conservation Area, and at an unnamed islet.

Within the Project Site itself:

– There is a small area (0.8 ha) of high-quality saltmarsh habitat (ASS) that was mapped by North Barker Ecological Services in their vegetation assessment, using data from the 2017/18 field surveys and previous data (Appendix C of the DPEMP).
– There are small patches of ASS along the southern coast in front of and mixed in with the ARS.
– Poor quality (degraded due to cattle) ASS (only Beaded Glasswort (*Sarcocornia quinqueflora*)) near the ARS in the Back Banks area.

However, these are all located outside of the WTG Development Zone and lie within the coastal exclusion zone around Robbins Island (see Figure 8).

Other areas of potential habitat on Robbins Island located within the Project Site, but are in the coastal exclusion zone (i.e., outside the WTG Development Zone), include saline sedgeland/rushland (ARS), at a range of locations as detailed below:

– South-west coast of Robbins Island, near the Wallaby Islands – 58.6 ha
– South coast of Robbins Island – 86.4 ha
– West coast of Robbins Island, near Five Islets and Knot Point - 29.9 ha
– Mosquito Inlet and Eel Flat – 56.1 ha

These ARS vegetation communities have a combined area of approximately 231 ha and provide a potential foraging source.

Swamp forest

Swamp Paperbark (NME) roosting habitat immediately associated with ASS and ARS has been buffered in the OBP-specific 300 m habitat buffer, excluding them from any impact associated with construction and operation of the Project. There is some ‘non-contiguous’ NME within the turbine zone on the eastern side of Robbins Island but it is considered that these areas are unlikely to be used by OBPs given their distance from the foraging habitat closer to the coast (Nature Advisory 2021, Appendix G DPEMP). The maximum footprint potentially impacted by construction is 0.04 ha (400 m^2), which is located directly adjacent to the existing Robbins Island Road alignment on mainland Tasmania. Road widening needs to occur to provide sufficient width for safe movement of vehicles associated with construction of the Project.

Pasture

Orange-bellied Parrots are known to forage in pastures (FAG) with key introduced food plants including Wireweed (*Polygonum aviculare*), Cape Weed (*Arctotheca calendula*), Fat Hen (*Chenopodium* spp.) and Plantain (*Plantago* spp.) (Ehmke et al. 2009). The OBP mainland release trial in 2017 (Unpub report, 2020) also noted that two birds that failed to migrate were regularly observed foraging on abundant introduced weeds including Carpet Weed (*Galenia pubescens*), Wimmera Rye-grass (*Lolium rigidum*), Buck’s-horn Plantain (*Plantago coronopus*), Curled Dock (*Rumex crispus*), Giant Mustard (*Rapistrum rugosum*) and Toowoomba Canary-grass (*Phalaris aquaticus*).

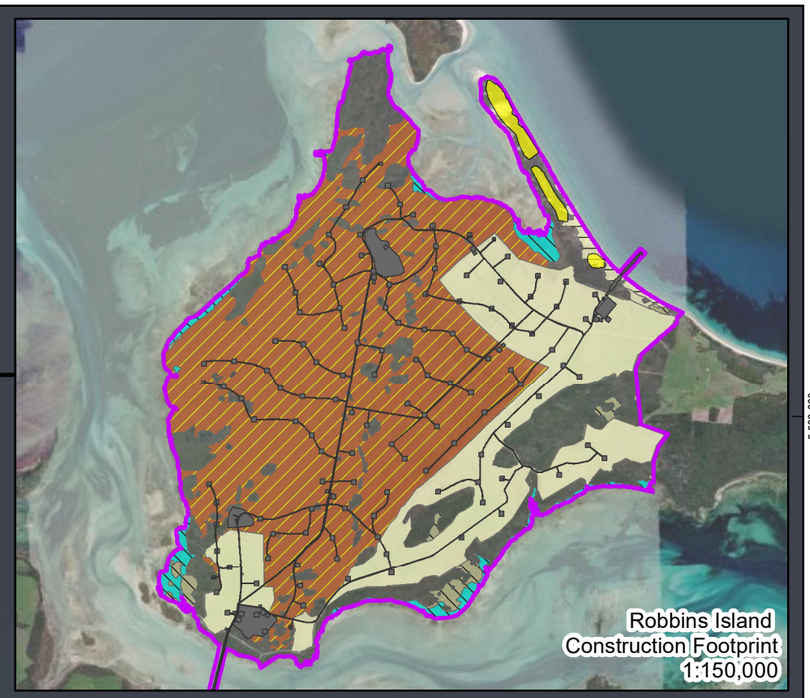
While it is possible that OBPs could forage in the pasture in the central portion of Robbins Island where turbines are proposed, most pasture on Robbins Island is managed for Wagyu cattle and comprises common pasture species that are not preferred food plants for the species. There may be small areas of Cape Weed and Curled Dock that could be used by OBPs, but observations during fieldwork in 2017-2019 indicated that these are very limited in occurrence and unlikely to constitute a significant food resource compared with the small areas of coastal saltmarsh along the southwest and west coast of Robbins Island (Nature Advisory 2021, Appendix C DPEMP), and other potential foraging habitat (e.g., coastal heathlands). However, it should be noted that there are areas of rushes in the pasture on the Remarkable Banks (e.g., near the Met Mast) and in the southwest corner of the island that is not degraded and could offer a potential food source for OBPs.

The Project proposes clearance of pasture areas and would result in the permanent loss of 54 ha of pastureland. Most of the clearance of such vegetation occurs in areas further than 500 m from the coast.

300,000

350,000

5,500,000



Vegetation communities

Non-eucalypt forest and woodland

- NME - *Melaleuca ericifolia* swamp forest (threatened)

Saltmarsh and wetland

- ARS - Saline sedgeland/rushland (threatened)
- ASS - Succulent saline herbland (threatened)

Scrub, heathland and coastal complexes

- SCH - Coastal heathland

Agricultural, urban and exotic vegetation

- FAG - Agricultural land
- FMG - *Marram* grassland
- Geomorphic Dune Landforms - Vegetated Dunes (undifferentiated)

1:250,000 @ A3

0 2 4 6 8

Kilometers

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

N

- The Project Site
- Construction Footprint
- Circular Head LGA Boundary

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

Supplementary DPEMP

Availability of suitable Orange-bellied Parrot habitat relative to Local Government Area

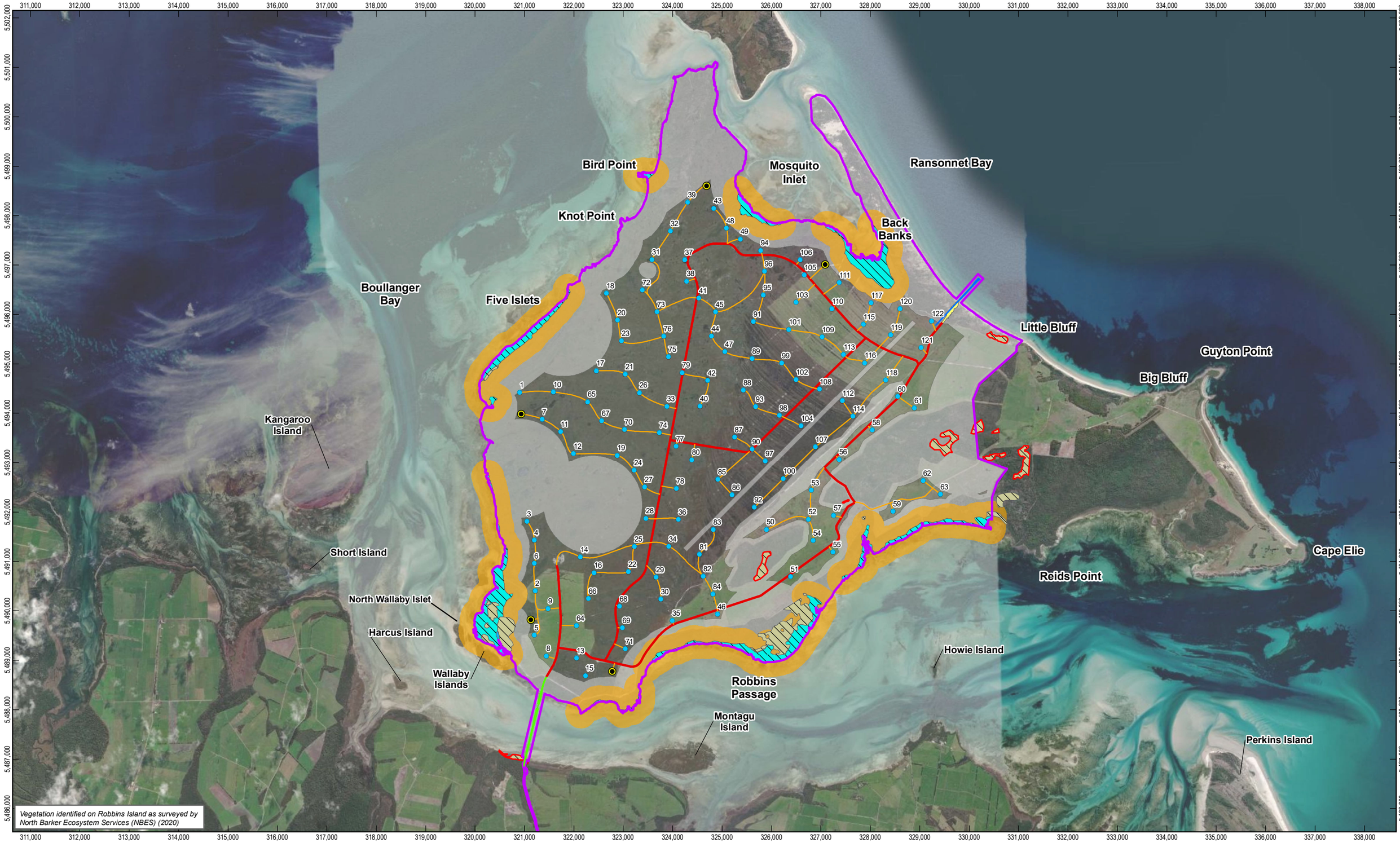
Job Number	32-1855801
Revision	A
Date	13 Apr 2022

Figure 7

G:\32\1855801\GIS\Maps\Deliverables\Working\OBP Habitat Suitability Plan\32_1855801_IdentifiedOBPHabitat_RevA.mxd

Data source: UPC Renewables - Imagery, boundary, infrastructure locations, turbine layout. GHD - Environmental constraints, roads, transmission line, causeway, boat launch. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com



1:70,000 @ A3

0 0.5 1 1.5 2

Kilometers

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

N

LEGEND

- The Project Site
- WTG Exclusion Area
- Wharf access
- WTG Layout
- Met mast
- Bridge alignment
- Wharf

Potential foraging & roosting habitat for Orange-bellied Parrot

- ARS - Saline sedgeland/rushland (Optimal foraging habitat)
- ASS - Succulent saline herbland (Suitable foraging habitat)
- NME - *Melaleuca ericifolia* Swamp Forest (Roosting habitat - 300m Buffer)
- Identified Non-contiguous Roosting Habitat (Unbuffered)
- Identified Orange-bellied Parrot Habitat - 300m Buffer

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

DPEMP
Orange-bellied Parrot Habitat and Exclusion/Buffer Zones

Job Number 12533716
Revision A
Date 14 Oct 2021

Figure 8

G:\32\18558011\GIS\Maps\Deliverables\Coastal Veg Buffer Assessment\321855801_Coastal_Veg_Buffer_RevB.mxd

Data source: UPC Renewables - Boundary. GHD - Causeway, wharf, env. constraints. North Barker Environmental Systems (NBES) - Threatened fauna habitat, 2019. Nature Advisory - Orange-bellied Habitat and suitable roosting habitat buffer, 2021. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com

3.3 Known and potential threats

Evidence for impact refers to the available evidence that the threatening process is currently, or will in the future, limit recovery of the species (DELWP 2016). Potential threats associated to the proposed Project are listed below.

3.3.1 Degradation and loss of habitat

Throughout the non-breeding range, the OBP requires a diversity of foraging opportunities, in saltmarshes, dunes and adjacent shrubby areas and weedy pastures (DELWP 2016). Despite significant work detailing the habitat preferences of the species (Holdsworth 2006; Ehmke & Tzaros 2009) it is still not known how much habitat is required to support a viable wild population. However, given the small population size now, it is probable that there is ample habitat extent on the west and northwest coast of Tasmania (Figure 7) for migration for the current population (although further work will be required to assess habitat requirements of a larger population).

The mobility of this species, and its use of very remote locations, renders detailed habitat use studies logistically difficult (DELWP 2016).

3.3.1.1 Development and land use change

Development and land use change along the populated coastline of western Tasmania, King Island, and south-eastern mainland Australia continues to either permanently remove non-breeding habitat or render non-breeding habitat unsuitable through off-site impacts. For example, a significant reduction in the extent of saltmarsh would be likely to have a significant impact on the wild population within the non-breeding range (DELWP 2016).

3.3.1.2 Invasive weeds

Invasive weeds alter the structure and productivity of non-breeding habitat and have the potential to cause loss of habitat through significant changes in vegetation communities (Boon et al. 2011). Species of concern with the potential to impact OBP foraging habitats include:

– Tall Wheat Grass (*Lophopyron ponticu*)
– Rice Grass (*Spartina anglica*)
– Coast Barb-grass (*Parapholis incurve*)
– Sea Barley-grass (*Critesion marinum*)
– Marram Grass (*Ammophila arenaria*)
– Sea Spurge (*Euphorbia paralias*)

Rice grass, marram grass and sea spurge have all been identified on Robbins Island.

3.3.1.3 Disturbance from human activities

Orange-bellied Parrots are known to be sensitive to noise disturbance and will interrupt feeding and flush to cover in response to noise from humans, vehicles and light aircraft including helicopters (Bezuijen et al. 2000, Quin & McMahon 2001, but see Bezuijen & Lane 1997). It is unknown what frequency of disturbance will create energetic stress for birds or lead to abandonment of a site.

3.3.2 Barriers to migration and movement

Theoretically, birds approaching a wind farm may:

– pass through the wind farm
– increase flying altitude and pass above the wind farm
– change direction and pass around the wind farm

Therefore, individuals may be killed by flying into barriers, or behaviour may be modified by the presence of barriers, leading to avoidance of some habitat. For the Project, barriers may include turbines and associated infrastructure. The impacts of these barriers may be greatest where they occur on migration routes, where a large portion of the population may be exposed to the barrier during a key life stage.

3.4 Recovery actions

Recovery actions of the OBP Recovery Plan (DELWP 2016) are based on the groups of tasks required to implement the strategies and achieve the objectives of the Plan. Recovery actions that are relevant to the Project or that the Project may contribute to include:

- **Action 2. Manage direct threats to birds in the wild (High priority)**
  - Identifying the causes of low and variable survival may include, where technology allows, tracking the fate of individual birds. The outcomes of these investigations will influence management priorities within this action.
- **Action 5. Retain Habitat (High priority)**
  - Retain habitat, in particular by protecting non-breeding habitat from threats likely to result in permanent loss.
- **Action 6. Manage threats to habitat quality (High Priority)**
  - Management of threats to habitat quality should aim to avoid further reductions in habitat quality and to actively improve habitat at priority sites e.g., management of invasive weeds.
- **Action 7. Monitor the wild population and habitat (Very High Priority)**
  - Monitor migratory habitat for use, numbers and identity of birds.
- **Action 8. Conduct research essential for future management (Moderate Priority)**
  - Identify and map all habitat critical for survival. Investigations may include tracking the migration movements of birds when suitable technology is available.
- **Action 10. Secure resources for implementation**
  - Secure sufficient resources for implementation of very high and high priority actions and seek additional resources for all other recovery actions.

3.5 Proposed avoidance and mitigation measures

3.5.1 Habitat monitoring and maintenance

One of the primary objectives of the OBP Recovery Plan (DELWP 2016) is *to protect and enhance habitat to maintain, and support growth of, the wild population*. The strategies employed to achieve this objective are to:

- Maintain the extent of habitat throughout the breeding and non-breeding range
- Increase the extent of high quality of habitat throughout the breeding and non-breeding range.

It is important, for the long-term viability of the wild population, that further habitat degradation and loss is prevented, and that management improves the quality of habitat to support population growth. In this Plan, ‘high quality’ habitat refers to habitat that matches the OBP’s natural habitat preferences in location, structure, productivity and floristic composition.

3.5.1.1 Exclusion areas

Within the Project Site, the WTG Development Zone has been designed to minimise impacts to native vegetation wherever possible. A 500 m coastal buffer applied to the WTG Development Zone would prevent the direct loss of coastal and near coastal vegetation from turbine construction and most of the ancillary infrastructure. Additionally, most forest communities have been defined as exclusion zones.

- All saltmarsh vegetation communities (ARS and ASS), considered to be high priority areas lie within the 500 m exclusion zone
- 1295.2 ha (30.4% of the Project Site) of coastal heathland (SCH) lies within the 500 m exclusion zone
- 770.4 ha (40.8% of the Project Site) of pastureland (FAG) lies within the 500 m exclusion zone
- Swamp Paperbark (NME) roosting habitat immediately associated with ASS and ARS has been buffered in the OBP-specific 300 m habitat buffer, excluding them from any impact associated with construction and operation of the Project. The maximum footprint potentially impacted by construction is 0.04 ha (400 m^2).

There is some ‘non-contiguous’ NME within the turbine zone on the eastern side of Robbins Island but it is considered that these areas are unlikely to be used by OBPs given their distance from the foraging habitat closer to the coast (Nature Advisory 2021, Appendix G DPEMP).

This 500 m coastal buffer was established based on analysis of counts of over 13,000 individuals of the species in the Victorian Biodiversity Atlas and from the Birdlife Australia database from 1978 onwards that showed OBPs preference for coastal areas. Only 2% of individuals in Victoria were recorded greater than two kilometres from the coast and most were found within 500 m of the high-water mark (Figure 9).

The 500 m buffer established in designing the Robbins Island Renewable Energy Park is from the inland edge of preferred habitats and it includes many areas further than 500 m from the actual coast of those habitats. The buffer therefore protects the habitat as well as the majority of likely OBP coastal movements.

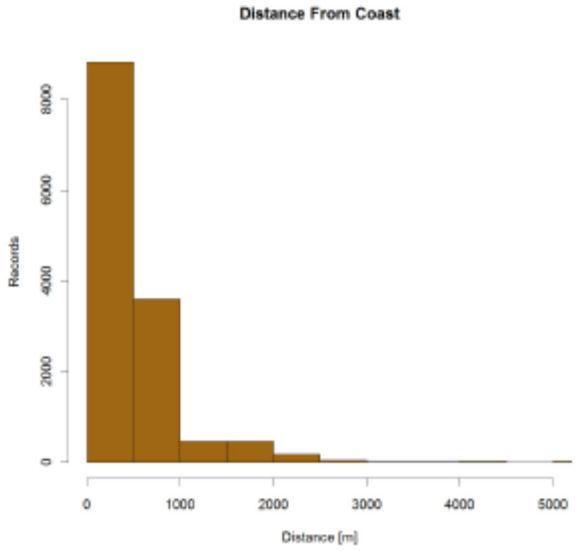


Figure 9 Total number of individual OBPs counted in relation to distance from coast

3.5.1.2 Habitat monitoring

Monitoring of OBP habitat state focuses on attributes that are most important for the OBP.

Saltmarsh is subject to invasive pressure from native or exotic plant species that are known to displace OBP food species. Site management will depend heavily on the ability to detect changes in the abundance of plants detrimental to the availability of OBP food sources. Therefore, monitoring protocol to identify invasive species that out-compete food plants (both native and exotic) will be developed as part of the Weed and Hygiene Management Plan, which will also be integrated into mitigation measure for the OBP Monitoring and Management Plan.

While pasture areas are identified as a potential foraging habitat for OBPs, observations during fieldwork in 2017-2019 indicated that identified small areas of Cape Weed and Curled Dock that could be used by OBPs, are very limited in occurrence and unlikely to constitute a significant food resource. Baseline OBP habitat condition monitoring will be undertaken prior to construction commencing and will focus on confirmed and potential foraging and roosting habitat. A representative survey methodology (e.g., transects, quadrats) for pasture composition will be developed as part of the final habitat condition monitoring methodology and agreed with the EPA and DAWE. Pasture surveys will be done to correspond with the OBP northern and southern migration.

Given the eastern section of the WTG Development Zone is dominated by pasture areas, and if pasture surveys confirm that the average ground cover of known OBP foraging species either flowering or producing seed exceeds an average of 10% across the area surveyed, the most appropriate option is for management of these species to reduce the risk of injury to OBPs during construction and development. Part of the landowner’s existing farming

operations currently involves weed control. In addition to this, potential food sources (weed food plants[2]) will be further managed to reduce the attractiveness of pastures and vegetation to OBPs within the wind turbine areas.

Given that weed control already exists, the Project will not significantly increase impacts to OBPs by reducing pasture foraging areas within the WTG Development Zone, but targeted management will include the benefit of reducing the potential for collisions.

3.5.2 Targeted OBP surveys

Much of the range of OBPs remains poorly surveyed or monitored due to remoteness and/or the low detection rate expected. Data collected during population monitoring and survey activities have been critical to the recovery program by providing data on the trajectory of the species and informing the considerations of the recovery team and management agencies.

Following the release of 117 captive-bred OBPs in 2020 and 2021 as part of the conservation program for the species, there is potential for an increased occurrence of OBPs on Robbins Island with planned future releases from 2021- 2022 onward and if the wild population continues to increase.

To identify potential OBP use of Robbins Island, a combination of radio-tracking and visual surveys will be employed. Combined use of tracking and visual observations may provide species specific information on bird movements and orientations to assess potential avoidance behaviour and impacts.

3.5.2.1 Radio telemetry trial

Radio telemetry is one technique that has enabled critical insights into movement patterns, behaviour and survival of many species. Telemetry can provide a history of detailed movements that is not possible with simpler mark-recapture or mark-resight studies. Radio-tags remain the most appropriate or only feasible option for tracking small, highly mobile species like the OBP (Saunders et al. 2022). For Robbins Island, radio tracking will allow a much wider and cost-efficient spatiotemporal coverage of potential critical areas, even in the most hazardous sites (i.e., difficult to reach on foot).

UPC\AC is committed to a radio telemetry trial of OBPs to track migration movements and habitat utilisation in relation to Robbins Island, to help identify critical habitat and inform management strategies. This will be contingent on animal ethics approval.

To date, UPC\AC has identified two forms of cellular tracking technologies that may be appropriate for tracking migrating OBPs, given their small size:

– Coded VHF tags
– Standard VHF tags

Each of these technologies has been and is continuing to be trialled in Victoria on OBPs. VHF transmitters have also been trialled in Tasmania in the spring of 2018 and 2019.

For the northern migration, a select number of OBPs, as determined by the NRE Tasmania OBP Conservation Program, will have a transmitter attached at Melaleuca before the migration commences. Previous trials indicate that tags are usually lost during moulting, before the southern migration commences. Given that the southern migration is considerably shorter in duration (days), only the northern migration will be tracked.

Initially, stationary receivers will be positioned at selected locations on the island to detect tagged birds flying by or landing/using the island. Appropriate receiver locations will be identified based on receiver sensitivity and through consultation with the EPA, DAWE and the NRE Tasmania OBP Conservation Program. This method will primarily identify the presence of OBPs on Robbins Island during the northern migration period. If OBPs have been positively detected, and if feasible, drone-based receivers may be introduced to narrow down locations and potential movements while on the island. However, if drone-based receivers are not available or prove to be unreliable, handheld receivers will be utilised to enhance signals to narrow down locations. Each of these technologies has been and is continuing to be trialled in Victoria on OBPs.

[2] Potential OBP weed food plants in pasture on Robbins Island are Wireweed (*Polygonum aviculare*), Cape Weed (*Arctotheca calendula*), Fat Hen (*Chenopodium* spp.) and Plantain (*Plantago* spp.)

Cellular tracking

Coded tags

Coded VHF tags allow identification and monitoring of hundreds of individuals on a single frequency, ideal for studying attendance or passage at a specific location or to study migratory movements. This reduces the probability of missing individuals due to listening on a different frequency.

Standard tags

Standard tags are a solution for fine-scale studies of migration-connectivity, survivorship and breeding /wintering home range of specific individuals.

Receivers

Stationary receivers

Automated radio telemetry uses receivers that automatically record signals from radio transmitters attached to wildlife. It is used in a wide variety of ecological applications particularly for tracking migration of small animals or determining fine scale temporal information about movement or behaviour. If the presence of OBPs are detected, and if advised through consultation with the relevant agencies, Yagi antenna(s) (i.e. handheld receivers), which are highly directional, may also be used to narrow down locations of OBPs on the island.

Drone-based receivers

Drone based sensors are increasingly being used to enable flexible spatial and temporal data collection, to attain unique perspectives on wildlife and their habitats. Using a drone mounted radio-tracking system creates a high point wherever the drone is launched, overcoming many of the challenges experienced when radio-tracking with hand-held devices.

Saunders et al. (2022) trialled drone-based radio-tracking with captive-bred OBPs released into the coastal saltmarsh habitat at Port Phillip Bay, Victoria (note: not during migration). In this study, drone-based radio-tracking was compared to hand-held surveys to compare spatial extent of each technology. Results indicated that drone-based detection distances were greater (double) than hand-held detection distances for OBPs, and that intertidal saltmarsh habitats for this species were accessible only with drone radio-tracking and had not previously been surveyed.

Coupled with advances in sensor technology, drones will enable faster and less resource-intensive integration of different types of monitoring data, including radio-tracking, visual (both thermal and RGB) and acoustic data, presenting significant opportunities to improve the design and implementation of wildlife and environmental monitoring programs.

Evaluation

The final selection of the most appropriate radio telemetry hardware and trial will occur after consultation with the NRE Tasmania OBP Conservation Program, EPA and DAWE.

Implementation

The responsibility of fitting tags to OBPs rests with the NRE Tasmania OBP Conservation Program. As such UPC\AC will work in collaboration with the NRE Tasmania OBP Conservation Program to provide the necessary financial support for components such as procurement of the tags, gaining animal ethics approval and undertaking fieldwork at Melaleuca. The details of the radio telemetry trial will be finalised in the OBP Monitoring and Management Plan in conjunction with the NRE Tasmania OBP Conservation Program.

UPC\AC is proposing to fund a tracking program for 3 years at which point the program will be reviewed in conjunction with the NRE Tasmania OBP Conservation Program, the EPA and DAWE to determine if the program should be extended. It is anticipated that at least one and up to two years' worth of tracking data may be available prior to construction commencing (due to changes in original project timing listed in the DPEMP).

The results of the tracking program may influence the final design of the OBP survey program on Robbins Island.

3.5.2.2 Visual surveys

The objective of visual searching surveys for OBPs is limited to the potential to document presence, if the species is detected, but can never determine absence. Surveys will have the intent of improving certainty about use of the island by OBPs but based on past experience it is realistic to anticipate that OBPs will not be detected and that results will not provide significant additional certainty.

Noting the likely limitations on surveys for the species, a nominal survey program is proposed with targeted surveys being carried out during the annual northward migration, spanning the period from February to May. Given tracking technology has yet to be used on migrating OBPs, visual surveys will be undertaken simultaneously, both commencing in 2023, prior to construction starting, to establish a baseline. The survey program may be updated and amended based on the results of visual and tracking surveys and in consultation with the EPA and DAWE.

Prior to commencement of the migration, a reconnaissance survey will be undertaken, at least once, to select survey locations and ensure that all specifics of the surveys are practicable and achievable.

Timing

UPC\AC will liaise with the NRE Tasmania OBP Conservation Program to determine when OBPs are leaving Melaleuca and any additional information about the birds elsewhere in western Tasmania on the start of their northern migration. Start time of the survey program may be adjusted accordingly based on this information. Initial surveys are proposed to be carried out every day for five days at all pre-selected survey locations in the aim of covering the likely peak period in which OBPs may be present or passing through Robbins Island.

Subsequent surveys will be conducted at least weekly at all pre-selected survey locations. This frequency is intended to complement tracking studies, so that there will be potential for data to come from both sources. Weekly surveys will continue until a survey has been conducted between 8th and 15th May.

Habitats to be surveyed

Optimal habitat for OBPs on Robbins Island is considered to be saltmarsh (for diurnal foraging) and swamp forest (as overnight roosting habitat). However, all potential vegetation types that may be used are described in Section 3.2.3.

Surveys will be designed to monitor sites in each of the vegetation communities to ensure appropriate coverage. Areas of optimal habitat will be prioritised so that, for example, all the larger areas of saltmarsh and swamp forest around the coastal perimeter of the wind farm site will be surveyed. Areas of coastal heathland, pasture and dunes are substantially greater in area but represent less preferred habitat and will require a sampling process to select representative areas for survey.

Most of the survey areas for ARS and ASS are only accessible at low tide via the coast. Visual surveys are dependent on logistics, tides and accessibility and safety considerations. Preferred areas will be selected to minimise disturbance required for access (i.e., clearing of paths through thick scrub and heath). SCH coastal heathland and FAG agricultural land are easily accessible. NME swamp forest will be surveyed from the edge to reduce disturbance, given the likely difficulty in observing OBPs.

Methods

Various survey methods may be used, including random area searches and point counts. However, we consider that walked transects will offer the optimal capacity to detect OBPs. While they are linear, it is probable that observers will leave a vehicle and be required to walk back to it, so transect alignments can be selected to cover different terrain on the outbound and inbound routes. Observers walking transects are also more likely to flush birds, which is often a key to detecting *Neophemas*.

To meet occupational health and safety requirements, a minimum of two observers will work together, but can walk apart to cover a greater area of terrain if they remain within visual distance of each other. Observations will be carried out during daylight hours. Surveys of swamp forest will be concentrated on dawn and dusk with a view to detecting birds moving in or out of roosting habitat. All observers will carry GPS devices and all survey transects will be GPS logged.

Detection of OBPs may mean that it becomes more important to apply sufficient time and effort to observing them at the expense of some transect surveys and similarly, locality data from remotely tracked OBPs may provide information about OBPs on the island that require on-ground visual survey in particular locations as a higher priority than routine transect surveys. These aspects will entail an adaptive approach in which the team on-site will be required to determine priorities during a given survey session. In addition, particular attention will be given to any Blue-winged Parrots detected because OBPs may form combined groups with Blue-wings.

The final survey methodology will be developed in conjunction with the EPA and DAWE and will be based on the OBP-specific methodologies currently being used by BirdLife Australia for the mainland winter OBP surveys. It is likely that the surveys will consist of area searches and point observations. They will be undertaken in accordance with the survey guidelines for Australia's threatened birds (DEWHA 2010).

Observers

Availability of observers with a high level of experience in surveying for OBPs will need to be determined and guaranteed well prior to commencement of surveys. This will include back-up capacity to cover for any contingencies. It will be important that all observers have ability to correctly identify OBPs (particularly to distinguish them visually and audibly from Blue-winged Parrots).

3.5.3 Collision mitigation

Collisions between OBPs and wind turbines or associated infrastructure are a potential impact from the Project. There is some information from other wind farm developments regarding the likely ability of OBPs to avoid turbine collisions; however, increasing this knowledge is essential to more accurately assessing the potential risk to the species from the Project.

3.5.3.1 Pre-construction survey results

Visual and cellular tracking surveys (1-2 years) prior to construction may provide valuable information on which habitats are preferred, being used and if/how migrating OBPs traverse the island. This information will be taken into consideration during the micro-siting and detailed design stage of the Project. If visual surveys and tracking information provide clear evidence that OBPs are utilising the southwest ARS/ASS and pastured area of the island (i.e., where turbines 3,4,6,2 & 5 will be located), then UPC\AC will forgo erecting turbines in this area.

3.5.3.2 Turbine curtailment

The rotor swept area for the range of turbines being considered for Robbins Island is 30 metres to 270 metres above ground level and this is considered to represent the zone of greatest danger to flying birds.

Flight height is likely to vary according to the activity being undertaken. Parrots moving about a location during routine foraging generally seem to do so at quite low heights whilst less frequent movements between sites, between feeding and roosting areas and on migration, may be higher (Smales et al. 2005). It is generally assumed that OBPs will actively avoid turbines and are unlikely to fly in conditions of poor visibility or stormy weather (Smales et al. 2005).

The potential for OBPs to collide with turbines is greatest during the species' northward migration in autumn because the birds tend to spread out over a greater geographical area on their 'take off' from the Tasmanian mainland and this migration occurs over several months in autumn (DELWP 2016). However, flight paths on their migration south are concentrated down the Tasmanian west coast and occur over a very short timeframe (days). While OBPs may frequent Robbins Island on their southward migration, the potential for this is considered to be lower than for the northern migration.

The following measures will be undertaken to mitigate the likelihood of collision during this period.

1. If there is clear evidence from visual and tracking surveys that OBPs are at increased risk of collision due to their habitat and island use patterns, final curtailment methodology and conditions will be determined after consultation with the EPA and DAWE.
2. If OBPs are observed within the WTG Development Zone during the targeted OBP surveys or at any other time, the field observer will notify the site operator immediately and all turbines within 500 metres of the bird(s) will be shut down.

3. The observer will monitor the movement of the bird(s) across the WTG Development Zone and turbines will only be re-started when the bird(s) are no longer evident in the WTG Development Zone.
4. UPC\AC will advise the EPA and DAWE in writing of all circumstances associated with the shutdown within 24 hours of the shutdown occurring in a Turbine Shutdown Incident Report.
5. The 'WTG Development Zone' is defined as the area occupied by turbines and other wind farm infrastructure out to the boundary of the turbine exclusion zone (as shown on Figure 2.2 of the DPEMP).

Consultation with the EPA and DAWE immediately following the shutdown event will determine if:

– Shutdown of particular turbines is required in the future
– Additional carcass searches around particular turbines are required, beyond those specified in the Final Avian Mortality Monitoring Plan
– There are any other species-specific mitigation measures that can be implemented.

As noted previously, data from the OBP tracking and survey program may provide extra information on OBP use of Robbins Island which may inform appropriate turbine shutdown mitigation strategies.

All site operations staff will be briefed on OBP identification and will initiate the same turbine shutdown procedures and reporting requirements as detailed above. Site management procedures and inductions will include information on OBP identification and turbine shutdown requirements. This information will also be displayed on notice boards in the site office and provided for service staff inside the door at the base of each turbine.

3.6 Significant impact assessment

The purpose of this section is to determine whether the proposed action is likely to have a significant impact on a matter of national environmental significance, that is, on any Orange-bellied parrots that use Robbins Island, following the Significant Impact Guidelines 1.1 (Commonwealth of Australia 2013).

3.6.1 Significant impact criteria - Critically endangered and endangered species

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

– lead to a long-term decrease in the size of a population
– reduce the area of occupancy of the species
– fragment an existing population into two or more populations
– adversely affect habitat critical to the survival of a species
– disrupt the breeding cycle of a population
– modify, destroy, remove, isolate, or decrease the availability or quality of habitat to the extent that the species is likely to decline
– result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat
– introduce disease that may cause the species to decline, or
– interfere with the recovery of the species.

3.6.1.1 Risk of population decrease

Due to collision risk with turbines and other Project infrastructure or indirect mortality due to changes in behaviour, and the relatively small size of the OBP population, even the mortality of one individual could represent a long-term decrease in the size of the overall population.

Flight behaviour, in particular maximum flight heights, frequency and OBP movement patterns on Robbins Island are unknown. Bird utilisation surveys recorded that there were no flights of these birds over the Project Site and all historical records of this species occurred on the west coast of Robbins Island in saltmarsh habitat (Appendix G in the DPEMP). However, given low population numbers, this does not accurately represent possible OBP use of the

island as individuals could have been overlooked during surveys. It is assumed that OBPs could use Robbins Island during migration. Also, given that this species is thought to occur in a range of coastal habitats, including dunes, heathland, coastal grassland, saltmarsh and pasture (almost all present on the island), there is a risk that OBPs could collide with turbines during operation of the Project.

The Project has proposed a number of measures to reduce the risk of direct and indirect mortality to OBPs:

1. To reduce the likelihood of collision with turbines, coastal habitat (saltmarsh) typically preferred by this species, has been excluded from the WTG Development Zone, through the broad coastal exclusion zone for turbines, extending 500 m from the entire coast around the Project Site. Additionally, the Project has placed an OBP-specific 300 metre buffer from Saline sedgeland/rushland (ARS and ASS) vegetation communities on Robbins Island, and no turbines will be placed within this zone. This buffer also includes immediately adjacent Swamp Paperbark (NME) roosting habitat. There is some 'non-contiguous' NME within the turbine zone on the eastern side of Robbins Island but it is considered that these areas are unlikely to be used by OBPs given their distance from the foraging habitat closer to the coast (Nature Advisory 2021, Appendix G DPEMP).

   The Project site is dominated by coastal heathland (SCH) and pastureland (i.e., agricultural land; FAG). The maximum area of SCH impacted is only 5.8%, leaving over 4000 ha not affected, of which 1295 ha are in the exclusion zone. For FAG, only 2.9% will be permanently removed leaving over 1800 ha, of which 770 ha are located within the exclusion zone.

   The Bluff Point and Studland Bay Wind Farms at Woolnorth are also located within the migration path for OBPs and have been in operation since 2002 and 2007 respectively. Coastal buffer zones of 500 m, similar to those proposed for this Project, are in place at the Woolnorth wind farms, and carcass surveys have not recorded any OBPs as casualties of collisions with turbines. There are also no known fatalities at the Yambuk Wind Farm in south-west Victoria, where this species is known to feed within 1 km of operating turbines in winter (Appendix G in DPEMP).
2. In addition to exclusion zones, the Proponent is committed to work with the NRE Tasmania OBP Conservation Program to develop and fund an appropriate and permitted survey program (visual and tracking) to detect flight movement patterns on Robbins Island, to reduce uncertainty around presence and utilisation, and inform management decisions.
3. Further, monitoring will be undertaken within the wind farm pasture areas for the preferred weed food plants of the OBP. The principal objective of the monitoring is to identify potential weed areas in the WTG Development Zone, and if necessary, reduce the attractiveness to OBPs. This is in line with current pastoral land management practices by the landowners and a strategy currently being used at Woolnorth wind farms.
4. Turbine curtailment is also proposed as a potential mitigation measure if there is clear evidence from visual and tracking surveys that OBPs are at increased risk of collision due to their habitat and island use patterns or an observer has positively identified an OBP within 500 m of a turbine. Final curtailment methodology and conditions will be determined after consultation with the EPA and DAWE.

Appropriate mitigation strategies at construction and operation will serve to reduce the risk to the species of long-term decrease in population size.

3.6.1.2 Risk of reduction in area of occupancy

There is currently no information on whether operating wind turbines similar to those proposed act as a barrier to the movement of OBPs. This species is thought to occur in a range of coastal habitats, including dunes, heathland, coastal grassland, saltmarsh and pasture, which occur up the west coast of Tasmania (Figure 7).

Optimal foraging and roosting habitat for this species has been excluded from the WTG Development Zone, but there is potential for a reduction in the area of occupancy for the species should OBPs use other habitat types (i.e., heathland or pasture) within the WTG Development Zone. The construction of the proposed windfarm infrastructure will result in the permanent loss of a maximum 247.3 ha of coastal heathland and 54 ha of pasture. This represents 5.8% and 2.9% of the total area of the Project Site, respectively.

The loss of foraging habitat could potentially be significant if OBP utilisation of these areas is high. The Project acknowledges the uncertainty around the use of Robbins Island by OBPs. Targeted visual surveys and tracking aim to reduce this uncertainty and inform mitigation measures to avoid impacts on the species. Proposed mitigation measures include a 500 m coastal buffer applied to the WTG Development Zone which would prevent

the direct loss of key coastal and near coastal vegetation from turbine construction and most of the ancillary infrastructure. Additionally, most forest communities have been defined as exclusion zones. Monitoring and management of weed species of concern within saltmarsh communities (i.e., preferred OBP foraging habitat) will also be included as part of the Weed and Hygiene Management Plan to mitigate area reduction and improve habitat quality.

Given only relatively small areas of two habitats will be directly impacted and that these habitats are represented along the whole coast of northwest Tasmania (Figure 7), the project is unlikely to reduce the area of occupancy of the species.

3.6.1.3 Risk of population fragmentation

The Project Site is situated within the OBP migratory path between breeding grounds in south-west Tasmania and over-winter habitat in mainland Australia. However, there is limited information about the extent of utilisation of Robbins Island by OBPs during migration, although all sightings to date have been in their preferred habitat on the west and southwest coast. Given that optimal (preferred) habitat for this species has been excluded from the WTG Development Zone, it is anticipated that this species would be able to continue to use the west coast of Robbins Island during migration, and that the Project would not fragment the existing population of this species. In addition, UPC\AC is committed to continuing weed control measures for species of concern for OBPs (e.g., rice grass), thereby improving quality of optimal habitat. However, should OBPs use other habitat types besides the preferred saltmarsh (i.e., heathland or pasture) then Project infrastructure could create a barrier. Nevertheless, it is unlikely the population is restricted to the Project Site given the occurrence of potential habitat types in the wider region (Figure 7).

Targeted OBP visual and tracking surveys prior to construction commencing may provide data on habitat utilisation and inform micro-siting and detailed design stage of the Project. This in turn will inform management decisions, including a final curtailment methodology if there is clear evidence that OBPs are at increased risk of collision.

3.6.1.4 Risk of impact to habitat critical for survival

Throughout its non-breeding range, the OBP requires a diversity of foraging opportunities, in saltmarshes, dunes and adjacent shrubby areas and weedy pastures (DELWP 2016). Migratory habitat critical for survival on Tasmania's west coast has yet to be mapped (DELWP 2016), although potential foraging and roosting habitats have been identified as occurring along the northwest coast and in the region of Robbin's Island (Figure 7).

For the Project Site, optimal foraging habitat has been identified as areas of saltmarsh in two vegetation community types: saline sedgeland/rushland (ARS) and succulent saline herbfield (ASS). Other foraging areas include coastal heathland, vegetated dunes and pasture, while preferred roosting areas have been identified as swamp forest community.

– ARS occurs in numerous locations on the coastline where tidal movements result in influxes and refluxes of salt water. The community is dominated by a high percentage cover of grass and sedge tussocks, with the spaces between tussocks occupied by small salt tolerant species, in some areas forming mats, but in other areas only seedlings within patches of regularly flushed mud. This community is the most common type of saltmarsh within the Project Site, with 231 ha mapped, representing 2.8% of the Project Site (Appendix C of the DPEMP). The Project would not directly impact any mapped ARS saltmarsh communities within the Project Site as saltmarsh habitats have been excluded from the area proposed for development
– ASS is a saltmarsh community that occurs in a few tidally inundated areas bordering the ARS. This community is thought most likely to provide foraging habitat for the OBP, because it has succulent species more commonly associated with foraging areas for this species. In the vicinity of the Project Site, including mainland Tasmania and other offshore islands, the most recent TASVEG mapping denotes a number of areas near the west coast of Robbins Island, especially around Wallaby Islands. These have a combined area of approximately 48 ha, with the largest areas located in the Wallaby Islands Conservation Area, and at an unnamed islet (Figure 8). Within Robbins Island itself, there is only a single patch of this community mapped within the Project Site, measuring 0.76 ha, representing <0.1% of the Project Site (Appendix C of the DPEMP). The Project would not directly impact any mapped ASS communities within the Project Site as

saltmarsh habitats have been excluded from the area proposed for development. If any additional areas are identified during the detailed project design; wherever practicable, ASS will be avoided during construction.

– The Project Site is dominated by coastal heathland with 4,258.8 ha mapped, representing 52.1% of the Project Site. Of this, 1295 ha is in the 500 m exclusion zone. The construction of the proposed wind farm infrastructure will result in the loss of a maximum 247.3 ha of coastal heathland.
– The Project Site is also dominated by pasture with 1,888.8 ha mapped, representing 23.1% of the Project Site, of which 770 ha is in the 500 m exclusion zone. The construction of the proposed wind farm infrastructure will result in the loss of a maximum 54 ha of pastureland.
– Additionally, Swamp Paperbark (MNE) roosting habitat immediately associated with ASS and ARS has been buffered in the OBP-specific 300 metre habitat buffer.

There are a number of potential indirect impacts to this species' habitat related to the Project, including changes to hydrodynamic regimes, increased stormwater run-off, invasive weeds, predators and competitors.

– In terms of hydrodynamic regimes, hydrodynamic and sediment transport modelling was undertaken for the proposed bridge to inform design and to understand the potential short and long-term coastal process impacts. The proposed bridge design minimises changes to coastal erosion processes and is unlikely to have an impact on any habitat for this species. More information on these potential impacts is provided in Section 6.13 of the DPEMP.
– In terms of increased stormwater run-off, prior to construction of roads and other infrastructure, existing and proposed site drainage patterns would be identified and permanent and temporary sediment holding ponds and diffusion paths would be installed, where required. This minimises the potential for any impacts to saltmarsh habitat for this species.
– Potential impacts to habitat of OBPs from weed species is discussed further below.

Considering the above measures (exclusion zone, informed design etc), the location of optimal habitat in relation to the Project's key activities, and the availability of similar habitat in northwest Tasmania (Figure 7), it is considered that the Project would not adversely impact habitat critical to the survival of this species.

3.6.1.5 Risk of breeding cycle disruption

The mortality of even one individual or altering migration behaviour has the potential to disrupt the breeding cycle of the population of this species, given the low numbers of wild individuals.

Proposed mitigation measures to reduce the likelihood of a turbine collision or modifying behaviour of an OBP include:

– Visual and tracking surveys to determine potential presence and island utilisation, which will inform Project design and management decisions.
– Exclusion zones including, if visual surveys and tracking information provide clear evidence that OBPs are utilising the southwest ARS/ASS and pastured area of the island (i.e., where turbines 3,4,6,2 & 5 will be located), then UPC\AC will forgo erecting turbines in this area.
– Turbine curtailment

Implementation of proposed mitigation measures, if suitable, will reduce the likelihood of disruption to the breeding cycle of the OBP population.

3.6.1.6 Risk of modifying, destroying, removing, isolating or decreasing quality and availability of habitat

In northwest Tasmania, records exist of migrating OBPs from a range of habitats, including vegetated sand dunes, heathland, grasslands, saltmarsh and nearby pasture, generally within 5 km of the coast (DELWP 2016).

The Project would not impact key saltmarsh habitat for this species, as discussed above. A broad coastal buffer of 500 m has been placed from the coast, and an OBP-specific buffer of 300 metres has been placed around key OBP feeding and roosting habitat.

The Project proposes clearance of heathland across White Rock Ridge, along with pasture areas. Most of the clearance of such vegetation occurs in areas further than 500 m from the coast, and the majority of these areas

would remain intact, as discussed above. While these areas will be modified, they also represent lower quality habitat, compared to saltmarsh habitats along the coast and within the rest of the region, as discussed earlier.

Visual and cellular tracking surveys (1-2 years) prior to construction may provide valuable information on which habitats are preferred, being used and if/how migrating OBPs traverse the island. This information will be taken into consideration during the micro siting and detailed design stage of the Project. In addition, UPC\AC is committed to continuing weed control measures for species of concern for OBPs (e.g., rice grass), thereby improving quality of optimal habitat.

The Project is not anticipated to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.

3.6.1.7 Risk of invasive species becoming established in habitat

The Project could potentially introduce invasive species, or encourage the spread of existing infestations, into habitat for the OBP.

Invasive weeds can alter the structure and productivity of non-breeding habitat and have the potential to cause loss of habitat through significant changes in vegetation communities. Significant known weeds on Robbins Island include Rice grass (*Spartina anglica*), Marram grass (*Ammophila arenaria*) and Sea spurge (*Euphorbia paralias*).

Construction works have the potential to introduce new weeds or enlarge existing infestations. Most of the coastline around the Project Site has been excluded from development of turbines and ancillary infrastructure (e.g., roads), meaning that there are limited locations along key coastal habitats where expansion of weeds could occur.

Hydrodynamics changes, associated with the proposed bridge over Robbins Passage, have the potential to spread Rice grass into areas of OBP habitat. Rice grass is present within Robbins Passage, and changes in sedimentation could result in creation of additional habitat for this species. Hydrodynamics and sedimentation modelling of the changes associated with the proposed bridge (Section 6.13 of the DPEMP) indicate that this structure would have a minimal impact on the coastline within Robbins Passage, and any changes would be relatively localised, meaning limited expansion of potential habitat for Rice grass.

A Weed and Hygiene Management Plan will be implemented, with a range of measures to reduce the risk of introduction of new weeds and eliminate the spread of existing infestations. Monitoring protocol to identify invasive species that out-compete food plants of OBPs (both native and exotic) will be developed. Based on the above, the risk of introduction of additional weed species, and expansion of existing infestations that are harmful to OBP and its habitat, is anticipated to be low.

Construction of the bridge structure may result in the further introduction of terrestrial predators, including feral cats, which may impact avifauna. It should be noted that feral cats have previously been seen on Robbins Island, and there is potentially a very small feral cat population already established (John Hammond pers. comm.).

Mitigation measures include installation of fauna-proof gates or rolling cattle grids (or a combination of these measures) at relevant locations on the proposed bridge. A feral cat eradication programme, including the potential trial and use of Felixer devices[3], will be implemented as a measure to enhance protection of OBPs and shorebirds. With mitigation measures in place, it is anticipated that the risk of establishment of terrestrial predators is low on Robbins Island.

3.6.1.8 Risk of disease causing species decline

The Project is unlikely to result in the introduction of a disease that could cause this species to decline.

3.6.1.9 Risk of substantial interference with species recovery

Given the low numbers of OBPs in the wild, if barriers to migration and movement, behaviour change or direct mortality were to occur in the Project site, it could interfere with the recovery of the species. However, with visual

[3] Felixer feral cat grooming traps distinguish cats from non-target species through rangefinder sensors and spray a measured dose of toxic gel onto the fur of detected cats. All detected species are photographed, providing a data record to monitor effectiveness.

and tracking surveys to inform effective mitigation measures (e.g., exclusion zones, turbine curtailment) it is expected that this risk may be minimised.

3.6.2 Significant impact criteria - Listed migratory species

An action is likely to have a significant impact on a migratory species if there is a real chance or possibility that it will:

– substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species
– result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or
– seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

3.6.2.1 Risk of modifying, destroying or isolating an area of important habitat

Refer to Section 3.6.1.6.

3.6.2.2 Risk of invasive species becoming established in habitat

Refer to Section 3.6.1.7.

3.6.2.3 Risk of disrupting the lifecycle of a significant proportion of the population

Given the low numbers of wild individuals, the mortality of even one individual or altering migration behaviour has the potential to disrupt the life cycle of a significant proportion of the population of this species.

Proposed mitigation measures to reduce the likelihood of a turbine collision or modifying behaviour of an OBP include:

– Visual and tracking surveys to determine potential presence and island utilisation, which will inform Project design and management decisions
– Exclusion zones
– Turbine curtailment

Implementation of proposed mitigation measures, if suitable, will reduce the likelihood of disruption to the life cycle of a significant proportion of the OBP population.

3.7 Residual impacts

Implementation of appropriate mitigation measures will minimise the majority of impacts to acceptable levels. The impacts which remain significant after all appropriate measures are applied are as follows:

– Potential barriers to migration and movement
– Turbine collision

It is anticipated the preconstruction and construction visual and tracking surveys will fill information gaps such that the proposed mitigation strategies for these residual moderate impact risks can be fine-tuned, resulting in a significant reduction in residual risk. Offset strategies for the residual impacts of the project are discussed in Section 3.8.

3.8 Proposed offset

The implementation of an offset for the Robbins Island Renewable Energy Park has been carefully considered as a part of managing the overall and potential impacts to the OBP from the operation of the wind farm. Through the visual and tracking surveys and the Avian Mortality Monitoring Plan, impact will be monitored. However, given the difficulty in detecting behavioural changes and carcasses for small birds, there will be some uncertainty in the precise level of impact. Based on this uncertainty, UPC\AC is committed to an offset that mitigates potential

impacts to OBPs from the wind farm during migration. The offset aims to increase knowledge of OBP migration ecology, which has the potential to make a meaningful contribution to the recovery of the species. UPC\AC proposes to fund this offset regardless of whether the Project has any detectable effect on the species.

As indicated in Section 3.5, mitigation actions will be undertaken to manage and reduce the level of impact. These mitigations may be insufficient until more data can be collected on the use of Robbins Island by OBPs. The offset will therefore operate in a complimentary and compensatory manner to the mitigation program and is intended to address the various uncertainties.

Research projects can add significant value to the outcomes of on-ground management and the understanding of the environmental value being impacted. However, the research must be designed to result in positive conservation outcomes. A lack of comprehensive knowledge surrounding survival of OBPs, specifically during migration and winter has been a key limiting factor affecting the recovery effort (OBPRT 1999; DELWP 2016; Stojanovic et al. 2020). This uncertainty hinders the species management because recovery strategies that directly target the most important threats are difficult to develop and prioritise (DELWP 2016). Most direct management of OBPs is implemented at Melaleuca, and includes provision of nest boxes, supplementary food, predator control, and release of captive-born birds to increase the number of breeding pairs, correct adult sex ratio bias and maximise reproductive success (Troy and Hehn 2019). However, although more OBPs are born into the wild as a result of these recovery efforts in Tasmania, these benefits do not support population recovery, as individuals succumb to different threats during migration and winter, that are currently unidentified and unaddressed. Unless this lack of knowledge can be addressed, wild OBPs will remain dependent on management interventions and juvenile mortality rates will not improve.

The Robbins Island Renewable Energy Park proposes to fund the following offset:

– Investment into OBP tracking in Tasmania to inform understanding of the migration ecology, in particular the causes of mortality, and to directly inform management and targeted mitigation strategies. This would involve installing stationary receivers in pre-determined locations along the Tasmanian migration range to monitor habitat use and movement patterns of OBPs during the northern migration. In addition, the offset involves fitting trackers to OBPs at Melaleuca for three years, at which point a review by UPC\AC, the NRE Tasmania OBP Conservation Program, the EPA and DAWE will be undertaken to determine if further tracking is considered a suitable offset. If the tracking program is deemed worthy of continuation it will extend for up to seven years.
– The development of the OBP tracking offset program would be done in conjunction with the NRE Tasmania OBP Conservation Program. If three years of tracking do not deliver the anticipated results, the principles of adaptive management will be used to develop an alternative offset program. This alternative program will be developed in conjunction with the NRE Tasmania OBP Conservation Program, the EPA and DAWE.
– It is proposed that the stationary receivers would be operational to coincide with the wind farm commencing operations.

While this is considered an indirect offset, research into this species migration behaviour forms a critical part of the recovery action and management decisions. Research aligned to the priority actions of the species is aimed at providing an offset equivalent to a direct offset.

This proposed offset will be in addition and complementary to the ongoing monitoring program proposed to be undertaken on Robbins Island. Should other offset options arise because of new knowledge or a change in the recovery strategy for the species, these will also be considered in consultation with the NRE Tasmania OBP Conservation Program, the EPA and DAWE.

4. Additional Information Requests

4.1 Wharf design and construction methods

Construction of the wharf access involves a significant volume of excavation in the sand dunes behind Back Banks Beach. The excavation will follow the topography of the dunes as illustrated by the attached Plans – Wharf Access and Longitudinal Section – Wharf Access drawings (Figure 10 to Figure 12)

The design requires approximately 105,000m3 of excavation, up to 14m deep and with 1:3 batter slopes as illustrated by the attached Cross Section drawing (Figure 11). The vertical alignment as shown in Figure 12 has been designed with a maximum 8% grade.

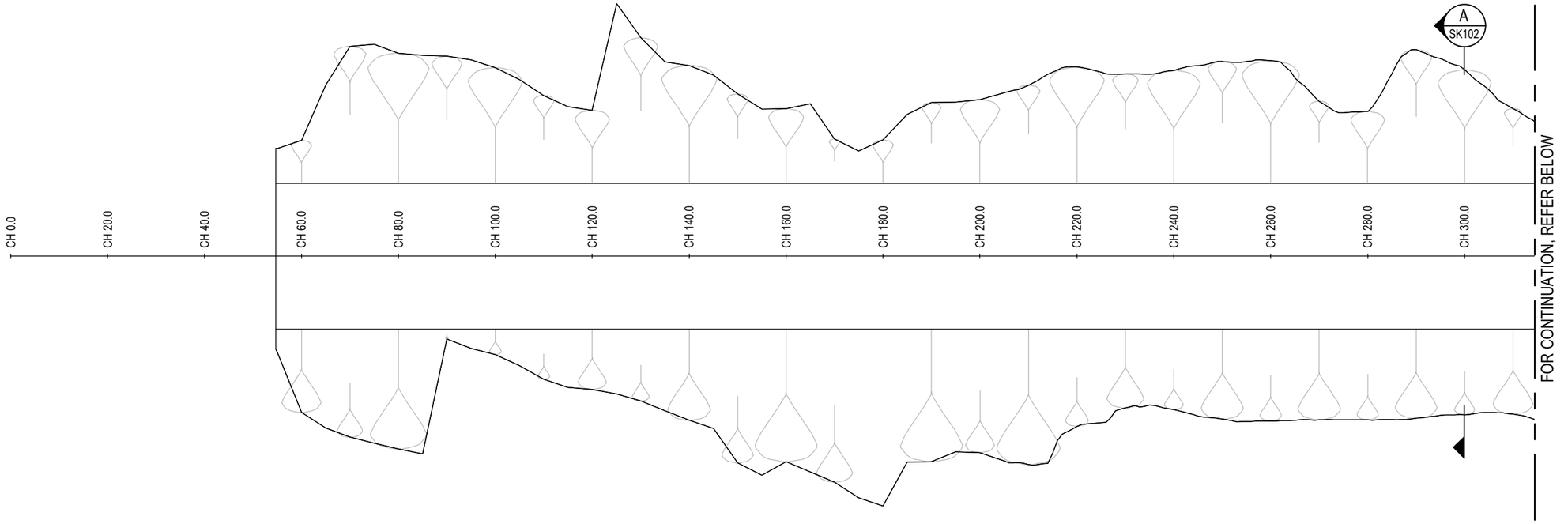
The area is highly susceptible to wind and water erosion and, as such, construction methodology needs to be carefully planned and programmed.

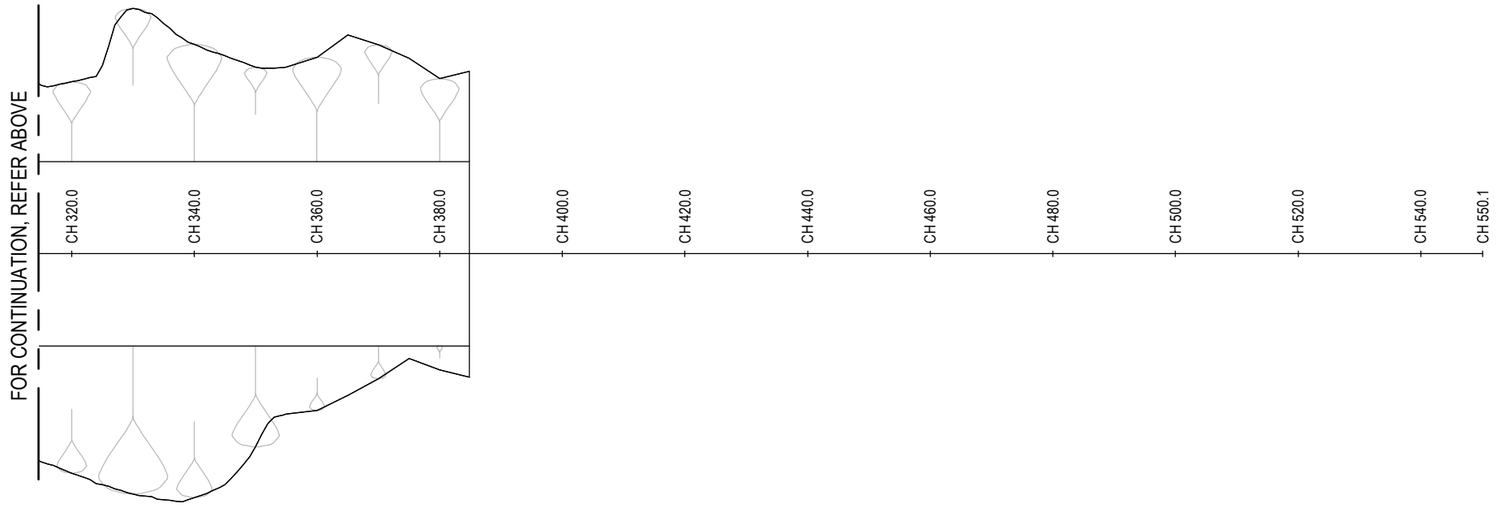
It is envisaged that the excavation of the wharf access will be carried out by conventional tracked excavators loading into off-road articulated dump trucks. To minimise erosion both during and post-construction, the following measures will be put in place for the duration of the works:

- A v-drain will be constructed at the top of the excavation to minimise water erosion down cut batters during heavy rains
- Construction plant will remain within the wharf access footprint at all times, with excavation commencing at the beach and progressing inland to the major laydown area. No construction plant will traffic final cut surfaces.
- Water carts will be utilised to dampen exposed surfaces during excavation works for dust control and to reduce short term wind-blown erosion
- Consideration will be given to ceasing excavation work on days excessive wind is forecast
- As the excavation advances, the cut batters will be progressively covered to protect against erosion. A combination of widely accepted treatments will be considered to provide this cover, ranging from overlapping rolls of jute matting pinned into the slope to spray-on ‘hydromulch’ style treatments, such as Geospray. These products provide immediate short term protection against erosion and allow for seed to be incorporated to facilitate prompt re-growth of vegetation on the slopes.
- Temporary sand fencing may be installed immediately behind the beach at the start of the wharf access to minimise short term wind erosion of sand prior to establishment of longer-term measures.
- Once the base of the excavation is reached it will immediately be covered with geotextile fabric and an initial layer of crushed rock to provide a solid running surface and reduce the likelihood of erosion. This will then be covered with road pavement consisting of finer crushed rock.
- On completion of the wharf access final re-vegetation will be undertaken ensuring that long term erosion controls are established as early as possible.

Following the excavation of the wharf access the wharf ramp will be constructed. This will involve:

- Erecting temporary flagging on the beach to identify the 45 m wide construction corridor
- Covering the sand with geotextile fabric and a layer of crushed rock and fill to construct the foundation of the ramp
- The ramp will be sealed with concrete to prevent erosion.





PLAN - WHARF ACCESS

SCALE 1:1000

Rev	Description	App'd	Date
A	ISSUED FOR DISCUSSION		

0 10 20 30m

SCALE 1:1000 AT ORIGINAL SIZE

GHD
2 Salamanca Square Hobart TAS 7000 Australia
GPO Box 667 Hobart TAS 7001
T 61 3 6210 0600 **F** 61 3 6210 0601
E hbamail@ghd.com **W** www.ghd.com
www.ghd.com

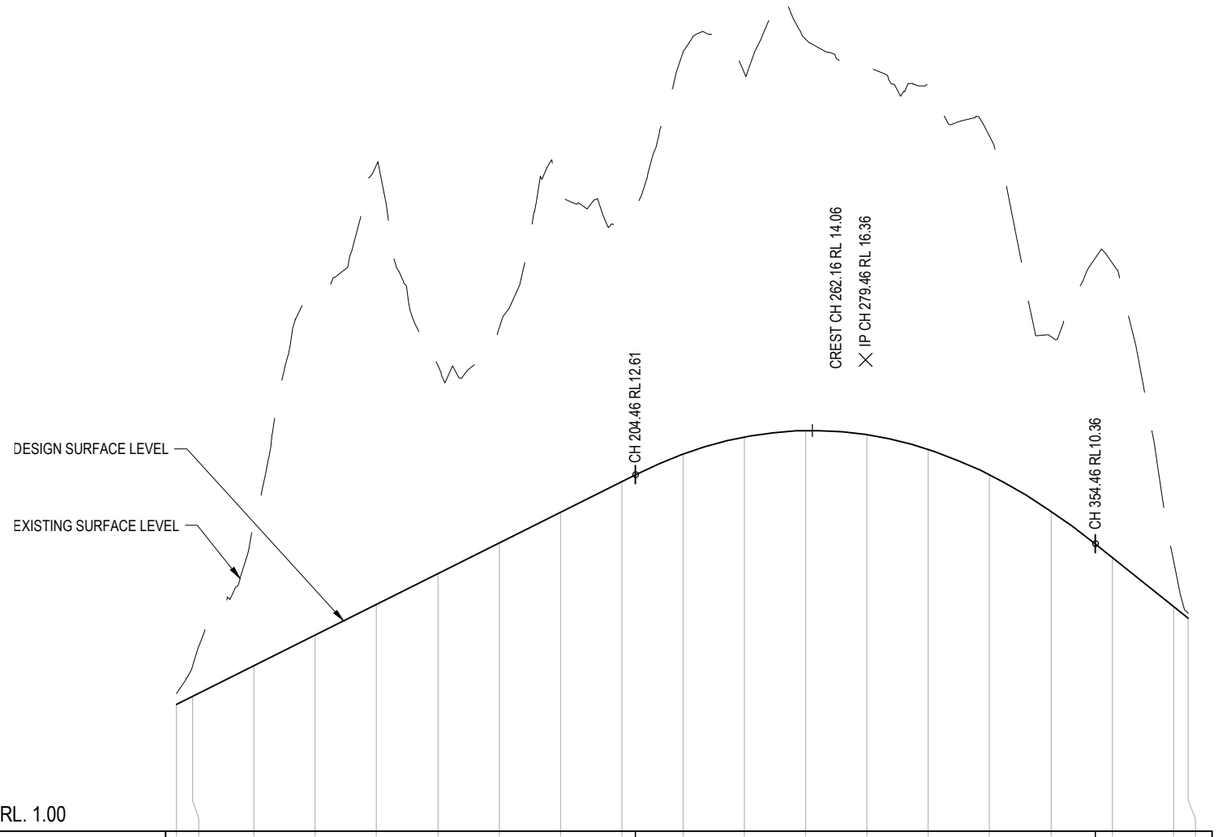
Scale for A3

ROBBINS ISLAND RENEWABLE ENERGY PARK
PLAN - SAND SOURCE

Figure 10
Wharf Access - Plan View

Status code	Project No.	Sketch no.	
S3	32-1855801	32-1855800-SK100	A

Plot Date: 28 April 2022 - 10:28 AM Plotted by: Kris Kreiel Adrias File Name: C:\12d\SW\data\P-00-12D-001\32-1855801 - Robbins Island_732\CADD\Drawings\32-1855800-SK100.dwg



DATUM RL. 1.00

VERTICAL ALIGNMENT	L=204.46m G=5%									K=11.54 L=150m							L=58.34m G=-8%		
HORIZONTAL ALIGNMENT	L=550.12m																		
LEVEL DIFFERENCE CUT - / FILL +	-0.35	-0.99	-4.65	-10.96	-14.33	-6.80	-7.00	-10.51	-8.44	-13.10	-11.85	-12.77	-11.90	-11.93	-11.04	-5.69	-9.59	-1.47	-0.15
DESIGN SURFACE LEVEL	5.126	5.390	6.390	7.390	8.390	9.390	10.390	11.390	12.390	13.285	13.842	14.053	13.917	13.435	12.605	11.429	9.920	8.320	7.932
EXISTING SURFACE LEVEL	5.48	6.38	11.04	18.35	22.72	16.19	17.39	21.90	20.83	26.38	25.69	26.82	25.81	25.36	23.65	17.12	19.51	9.79	8.08
CHAINAGE	54.737	60.000	80.000	100.000	120.000	140.000	160.000	180.000	200.000	220.000	240.000	260.000	280.000	300.000	320.000	340.000	360.000	380.000	384.853

LONGITUDINAL SECTION - WHARF ACCESS

SCALE: H 1:2000 V 1:200

Rev	Description	App'd	Date
A	ISSUED FOR DISCUSSION		

VERTICAL SCALE 1:200 AT ORIGINAL SIZE
HORIZONTAL SCALE 1:2000 AT ORIGINAL SIZE
0 2 4 6m
0 20 40 60m

GHD
2 Salamanca Square Hobart TAS 7000 Australia
GPO Box 667 Hobart TAS 7001
T 61 3 6210 0600 F 61 3 6210 0601
E hbamail@ghd.com W www.ghd.com
www.ghd.com

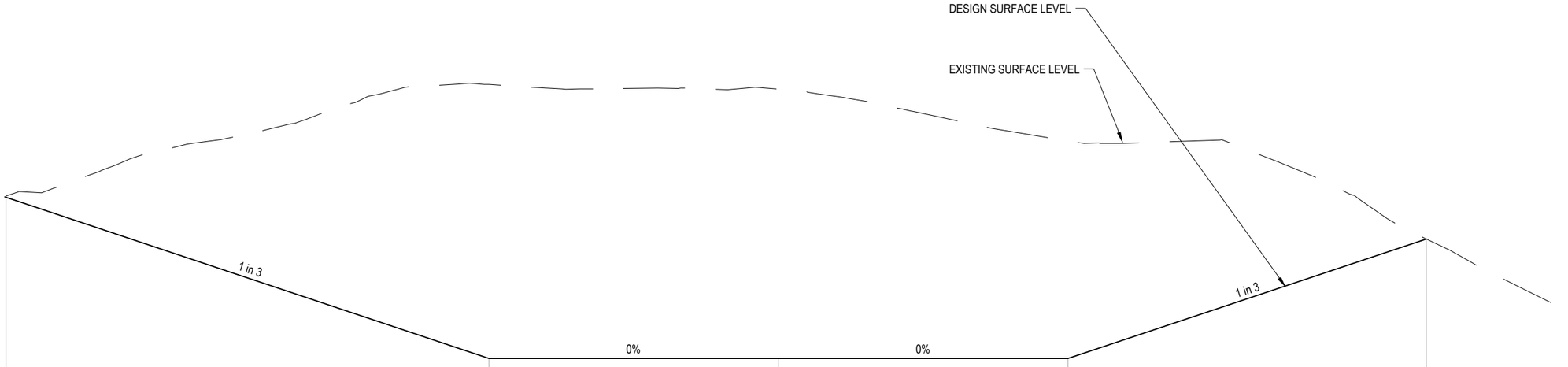
Scale for A3

ROBBINS ISLAND RENEWABLE ENERGY PARK
LONGITUDINAL SECTION

Figure 11
Wharf Access - Cross Section

Status code	Project No.	Sketch no.	
S3	32-1855801	32-1855800-SK101	A

Plot Date: 28 April 2022 - 10:34 AM Plotted by: Kris Kreiel Adrias
File Name: C:\12d\SW\data\P-00-12D-001\32-1855801 - Robbins Island_732\CADD\Drawings\32-1855800-SK101.dwg



DATUM R.L. 12.00							
DESIGN SURFACE LEVEL	22.324	13.991	13.991	13.991	20.179		
LEVEL DIFFERENCE CUT - / FILL +	-0.07	-14.17	-13.94	-11.26	0.00		
EXISTING SURFACE LEVEL	22.40	28.17	27.93	25.25	20.18	16.90	
OFFSET FROM CONTROL LINE	-40.000	-15.000	0.000	15.000	33.564	40.000	

A / SK100 SECTION - CH300

SCALE 1 : 250

Rev	Description	App'd	Date
A	ISSUED FOR DISCUSSION		

0 2.5 5.0 7.5m

SCALE 1:250 AT ORIGINAL SIZE

GHD
2 Salamanca Square Hobart TAS 7000 Australia
GPO Box 667 Hobart TAS 7001
T 61 3 6210 0600 F 61 3 6210 0601
E hbamail@ghd.com W www.ghd.com
www.ghd.com

Scale for A3

Status code S3

Project No. 32-1855801

ROBBINS ISLAND RENEWABLE ENERGY PARK
CROSS SECTION - CH300

Figure 12
Wharf Access - Long Section

Sketch no. 32-1855800-SK102 A

Plot Date: 28 April 2022 - 10:40 AM Plotted by: Kris Kreiel Adrias
File Name: C:\12d\SW\data\P-00-12D-001\32-1855801 - Robbins Island_732\CADD\Drawings\32-1855800-SK102.dwg

4.2 Traffic impact

The Traffic Impact Assessment (Appendix DD of the DPEMP) used data from traffic counts in March 2016 for Montagu / West Montagu Roads, and a traffic count for Nelson Street in April 2017. This data is outdated, with a request from the EPA to provide updated vehicle data. Circular Head Council were able to provide more recent data, and the updated Traffic Impact Assessment has been provided in Appendix B.

The following information sources were used as a basis for the updated assessment:

- Average Annual Daily Traffic and percentage of heavy vehicles for the Bass Highway, 437 m east of Nelson Street (Station A0249890), provided by the Department of State Growth for 2021.
- Average Annual Daily Traffic and percentage of heavy vehicles for the Bass Highway, 416 m west of Nelson Street (Station A0249900), provided by the Department of State Growth for 2021.
- Two-way traffic counts for Nelson Street provided by Circular Head Council for April 2017.
- Two-way traffic counts for Mella Road, north, provided by Circular Head Council for February 2020.
- Two-way traffic counts for Mella Road, south, provided by Circular Head Council for February 2020.
- Two-way traffic counts for Montagu Road, 150 m west of Bens Hill Road, provided by Circular Head Council for January-February 2021.
- Two-way traffic counts for Montagu Road, Montagu, for March 2016, reviewed for relevance and to determine growth rates on Montague Road, Montagu.
- Two-way traffic counts for Montagu Road, at Smithton High School, provided by Circular Head Council for January-February 2021.
- Two-way traffic counts for Montagu Road, at Smithton High School, for March 2016, reviewed for relevance and to determine growth rates on Montagu Road, at Smithton High School.
- Two-way traffic counts for West Montagu Road provided by Circular Head Council for March 2016.
- *Robbins Island Renewable Energy Park - Planning Report (July 2021)*

Whilst the impact assessment has been updated with recent data, it is noted that the difference in terms of projected impacts is not significant.

As described in Section 2.5.2, the construction will be staged over time, with the peak from June 2023 until May 2027 (48 months) as per the preliminary estimate provided in Table 1. The total construction timeframe is estimated at 66 months, including the period for WTG commissioning.

4.3 Additional consultation requirements

There were some issues raised by Marine and Safety Tasmania (MAST), Tasmanian Ports Corporation (TasPorts), Mineral Resources Tasmania (MRT) and Aboriginal Heritage Tasmania (AHT) in response to the DPEMP. These items are outside of the EPA Board's jurisdiction but have been looked at carefully by UPC\AC Renewables and will be followed up as part of the ongoing development process.

Specifically, UPC\AC Renewables will consult with MAST in relation to the declaration of Port waters surrounding the proposed wharf, along with discussion of safe navigation for vessels through Robbins Passage and ensuring adequate radio coverage is maintained for existing services and is adequate for the new proposed port. It is understood that these aspects are critical safety issues and will be given high priority in ongoing planning and design.

The same applies to the issue of VTS and VHS coverage in the vicinity of Robbins Island. UPC\AC Renewables will consult with TasPorts to ensure there is no interference with adequate VTS and VHF coverage.

UPC\AC Renewables will also meet the requirements of the *Mineral Resources Development Act 1995*, submitting a Mining Plan to MRT for approval prior to commencement of any quarrying. This will essentially be upgrading the

Preliminary Quarry Management Plan to a final document, ensuring that this Plan meets the MRT requirements under the Act. The approved Mining Plan will be complied with during the detailed design, operational and closure phases of the quarries.

As per the comment from AHT, a Phase 3 Aboriginal heritage assessment will be undertaken once the proposed infrastructure layout has been confirmed. UPC\AC will consult with AHT to ensure that the methodology for this assessment is reviewed and endorsed prior to the commencement of the assessment work.

5. Scope and limitations

This report: has been prepared by GHD for UPC\AC Renewables and may only be used and relied on by UPC\AC Renewables for the purpose agreed between GHD and UPC\AC Renewables as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than UPC\AC Renewables arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 1.3 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

References

Andersen GE, McGregor HW, Johnson CN, Jones ME (2020) Activity and social interactions in a wide-ranging specialist scavenger, the Tasmanian devil (Sarcophilus harrisii), revealed by animal-borne video collars. PLoS ONE 15(3): e0230216. https://doi.org/10.1371/journal.pone.0230216

Andersen GE, Johnson CN, Jones ME (2020): Space use and temporal partitioning of sympatric Tasmanian devils and spotted-tailed quolls. Austral Ecology. Volume 45. Issue 3. May 2020. Pages 355-365

Andersen GE, Johnson CN, Barmuta LA, Jones ME (2017): Use of anthropogenic linear features by two medium-sized carnivores in reserved and agricultural landscapes. Scientific Reports 7:11624: doi:10.1038/s41598-017-11454-z

Bezuijen M. R. & B. A. Lane (1997). The effects of truck traffic on the Orange-bellied Parrot (Neophema chrysogaster). Unpublished report to the Department of Defence

Bezuijen M. R., McMahon A. R. G. & D. G. Quin. (2000). Aircraft and human activity at Melaleuca and the Orange-bellied Parrot (Neophema chrysogaster). Unpublished report to the Parks and Wildlife Service Tasmania.

Boon P. I., Allen T., Brook J., Carr G., Frood D., Harty C., Hoye J., McMahon A., Matthews S., Rosengren N., Sinclair S., White M. & J. Yugovic. (2011). Mangroves and coastal saltmarsh of Victoria: distribution, condition, threats and management. Institute for Sustainability and Innovation, Victoria University, Melbourne

Cunningham C, Comte S, McCallum H, Hamilton D, Hamede R, Storfer A, Hollings T, Ruiz-Aravena M, Kerlin D, Brook B, Hocking G, Jones M (2021). Quantifying 25 years of disease-caused declines in Tasmanian devil populations: host density drives spatial pathogen spread. Ecology Letters. Volume 24, Issue 5. Pages 958-969.

Department of Environment, Land, Water and Planning (2016). National Recovery Plan for the Orange-bellied Parrot, *Neophema chrysogaster.* Prepared by the DELWP with support from the Orange-belied Parrot National Recovery Team. Australian Government, Canberra.

Department of Environment, Water, Heritage and the Arts (2010). Survey guidelines for Australia's threatened birds: Guidelines for detecting birds listed as threatened under the EPBC Act. Commonwealth of Australia, Canberra.

Department of Primary Industries, Parks, Water and Environment (2010). Draft Recovery Plan for the Tasmanian Devil (Sarcophilus harrisii). Department of Primary Industries, Parks, Water and Environment, Hobart.

Ehmke G. & Tzaros C. (2009). Assessments of Orange-bellied parrot non-breeding foraging habitat (2006-2007). Birds Australia, Melbourne Team. Australian Government Department of the Environment, Canberra.

Holdsworth, MC (2006). Reproductive success and demography of the Orange-bellied Parrot Neophema chrysogaster. Research Master thesis, University of Tasmania.

Lawrence, C and Wiersma H (2019). DFTD is a killer but what about other threats? Chapter 11 in Saving the Tasmanian Devil: Recovery through Science-Based Management CSIRO Publishing, Clayton South.

Lewis, A.C., Hughes, C. and Rogers, T.L. (2021). Effects of intraspecific competition and body mass on diet specialization in a mammalian scavenger. Ecology and Evolution 12:e8338

Natural and Cultural Heritage Division (2015). Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil (Sarcophilus harrisii). Department of Primary Industries, Parks, Water and Environment.

Owen D. and Pemberton D. (2005). The Tasmanian Devil: a unique and threatened animal. Allen and Unwin, Australia.

Pemberton, D., and Renouf, D. (1993). A field-study of communication and social-behavior of the Tasmanian devil at feeding sites. Australian Journal of Zoology 41, 507–526.

Pemberton, D. (1990) Social Organisation and Behaviour of the Tasmanian Devil, Sarcophilus harrisii. PhD Thesis

Quin D. G. & A. R. G. McMahon (2001). Aircraft and human activity at Melaleuca and the Orange-bellied Parrot (Neophema chrysogaster): the effects of helicopters. Unpublished report for Nature Conservation Branch Department of Primary Industries, Water and Environment.

Saunders D, Nguyen H, Cowen S, Magrath M, Marsh K, Bell S, Bobruk J (2022). Radio-tracking wildlife with drones: a viewshed analysis quantifying survey coverage across diverse landscapes. Wildlife Research, 49.

Smales I, Venosta, M (2005). Risk level to select species listed under the EPBC Act, of collision at wind farms in Gippsland, Victoria.

Stojanovic, D, Alves de Amorim, F, Webb, M et al. (2020). Nestling growth and body condition of critically endangered orange-bellied parrots Neophema chrysogaster, Emu - Austral Ornithology, vol. 120, no. 2, pp. 135-141.

The Carnivore Conservancy (2018): Robbins Island Tasmanian Devil Survey 17-27 May 2018. Appendix D of DPEMP

Troy S, Hehn K (2019) Report on the Melaleuca wild population 2018/19, Tasmanian Orange-bellied Parrot Program. Tasmanian Department of Primary Industries, Parks, Water and Environment (DPIPWE), Melbourne, Australia

Appendix A

Summary of representations and proponent responses

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
Wedge-tailed eagles					
2,16,21,29,95,183,190,194,197,198,244,279,296,307,317,320,323,332,334,346,37033,34,35,36,37,38,39,40,41,42,4, 44,45,46,47,48,49,50,51, 53, 54, 55, 6, 58, 59, 60, 61, 62, 63, 64, 65, 66, 7,68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131,132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148,149,150,153,154,155,156,160,161, 162,163,164,166,167,168,169,170,173, 174,175,177,179,180,18,2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231, 33,234,235,236,239,240,241,245,246,247,249,253,254,255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329,330,331,333,335,336,337,338,339,340,341,342,344,347,348,349,351,352,353,354,355,356,357,35,8,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383	241	Increased risk to Wedge-tailed eagles from potential collision with Wind Turbine Generators (WTGs). For example, concerns raised included: Eagle species at Robbins Island were observed flying within the rotor swept area (between 30 m and 270 m) There is little scope for resident wedge-tailed eagles to change nesting sites and their main foraging sites, as the proposal covers 84% of island.	no	Covered in S6.3 of DPEMP	Nesting sites have buffers applied, with a Preliminary Eagle Monitoring and Management Plan (EMMP) outlining management measures, which will be finalised in the Wind Farm Design phase (in consultation with EPA and DAWE) The proposed curtailment system, in addition to buffer zones, is viewed as a sound mitigation to prevent eagle collision. Since the release of the DPEMP, further research results have been published on the effectiveness of the Identiflight system installed at Cattle Hill Wind Farm (CHWF) (published February 2022). This report outlines the first 18 months of full-scale operations of the CHWF and the associated Identiflight system. The report concludes that compared to the predicted WTE mortalities (approximately 15 mortalities for the study period of the first 27 months), there were 3 WTE mortalities. This significant reduction is firmly believed to be as a result of the Identiflight system. It is also encouraging to note that the 3 fatalities that did occur informed further mitigations, with one mortality due to human error, and the other two in areas where there was major vegetation occlusion resulting in only partial coverage of the system. No fatalities occurred in 45 out of 48 turbines, including those with the highest activity and curtailment counts. These results build confidence in the effectiveness of this mitigation measure and provide learnings that will be applicable at the Robbins Island site.
56, 242, 259,277, 287,	6	Impact to WTE and potential impact to WTE nests in close proximity to WTGs	no	Covered in S6.3 of DPEMP	The Project has included numerous avifauna surveys over a 20 year period; inclusive of three rounds of bird utilisation surveys and targeted eagle surveys. These have included extensive ongoing assessment of the potential impacts to

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					the WTE and WTE nests (covered in Section 6.3.3 of the DPEMP). An array of mitigation measures have been proposed to manage these impacts (refer Section 6.3.4 of the DPEMP); inclusive but not limited to the following key measures; 1km exclusion zone for known nests to provide an adequate buffer and ensure no close proximity of WTG to nests, pre-construction nest survey as part of micro-siting process and report submitted to EPA, construction period undertaken in accordance with FPA 2015 management guidelines; nest activity and productivity assessments for all known nests prior to commencement of works and every year of construction in addition to the first three years of operation, these reports will be submitted to the EPA. Further mitigation measures include those listed in Section 6.3.4 of the DPEMP. Automated detection and WTG curtailment system will be installed for the operational period of the Project. This system has been assessed as one of the most effective measures to reduce avian collision risk. Ongoing eagle monitoring is committed for the Project Site in accordance with the Preliminary Eagle Monitoring and Management Plan. Finally, the Project also includes the provision of environmental offsets in the event of a collision event, in accordance with EPBC Act requirements.
95,165,183,201, 204, 238, 248 ,251,277,284,287,290,317,320,323,332 ,346,370,37633,34,35,36,37,38,39,40,4 1,42,43,44,45,4, 6,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109,	239	Buffer zone of 1km considered insufficient for species protection. Concerns raised included: The DPEMP lacks assessment demonstrating that the buffer zone mitigates potential impacts. Robbins Island is a significant hunting, feeding and nesting zone for raptors.	no	Covered in S6.3 of DPEMP	The key measure for minimising impact to eagle nests is putting buffer zones in place around existing nests to avoid disturbance to birds during breeding season, and more generally during operation of the wind farm (refer Appendix H – Eagle Nest Survey report), coupled with the automated curtailment system proposed. The Murgatroyd research is useful, particularly in regard to modelling of the peak flight areas within

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18, 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26, 5,266,268,278,280, 282,272,290,291,297,300,306,313,316, 318,319,321,322,324,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35, 8 ,359,360,361,362,363,364,365,366,367 ,369,371,372,373,374,375,383		Buffer zones should be larger, with reference to Murgatroyd research.			the typical circular buffer zones. However, the research has not been replicated with WTEs, and there remain some uncertainties in its applicability in the Tasmanian context. However, with the GPS tracking of resident eagles currently undertaken, buffers may be able to be further optimised in the final Wind Farm Design Report, as per the research from South Africa. For windfarms, the previously accepted eagle nest buffer zone in Tasmania has been a 1 km buffer around each nest for development of wind turbines and ancillary infrastructure. We believe that this, in combination with the automated curtailment system, provides a sophisticated approach to reducing risk of collision. All known eagle nests on Robbins Island have a 1 km exclusion zone for all Project infrastructure along with exclusion zones for some areas of higher eagle utilisation. Given the exclusion of the remnant areas of eucalypt forest (i.e. potential nesting habitat for Wedge-tailed eagle) on Robbins Island from the WTG Development Zone, and the 1 km exclusion zones delineated around all eagle nests within the Project Site, it is considered that the buffer zones are adequate (refer Section 2.6.1 DPEMP), and combined with the curtailment, provides a robust system to reduce collision risk.
243,251	2	A 1 km buffer has no basis for collision risk reduction. GPS tracking should be used for establishing data-based assignment for buffers in different landscapes. Use of automated WTG curtailment for reducing collision with WTGs is encouraging.	no	Covered in S6.3 of DPEMP	As above. For the operational period an automated detection and WTG curtailment system will be installed for the Project. This system is viewed as one of the most effective measures to reduce avian collision risk. Agree that GPS tracking is an important tool to attain data from tracked Wedge-tailed eagles on Robbins Island. This has been utilised to identify exclusion zones for some areas of higher eagle utilisation; i.e. around Little Bluff, due to higher density of White-bellied sea eagle and Tasmanian

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					wedge-tailed eagle flights (refer Section 4 of Appendix M PEMMP). Refer to Section 6.3 of DPEMP for avifauna assessment and 6.25.1 of the DPEMP for cumulative impact assessment on Wedge-tailed eagles. James Pay from the University of Tasmania has secured additional funding which will enable GPS trackers to be fitted to a further 20 Wedge-tailed eagles. Once this occurs 50 eagles will be tracked around Tasmania, the data to be used to: 1. Improve the understanding of eagle behaviour 2. Develop **collision risk models** 3. Estimate the territory capacity of Tasmania and the breeding population 4. Develop population viability analysis from mortality data Participating in this research will provide an increased understanding of collision risk and will inform the final EMMP.
183,197,198,251,376,317,320,323,332, 346	10	Curtailment technology based mitigation measures are considered insufficient and unproven in Tasmania, as - the DPEMP does not provide evidence demonstrating that curtailment technology is effective - the DPEMP does not provide information about success of technology from other Tasmanian windfarms (using different systems) - the benefits claimed of the system proposed is based on a single study from the USA and is not representative - The DPEMP does not commit to automated detection and WTG curtailment.	no	Covered in the preliminary Eagle Monitoring and Management Plan (EMMP). To be addressed in the final EMMP prior to construction, this will be required as a permit condition if the project is approved.	In 2021 UPC\AC undertook a literature review of the three systems and found that the efficacy of IdentiFlight has been independently verified. The key findings include the US study; in addition to ongoing discussions with users of this system, although results were unpublished at the time of the DPEMP. As outlined above, the now published results from the monitoring of the Identiflight system at Cattle Hill Wind Farm (Goldwind, 2022) indicate sound results, with fewer than expected mortalities. Of the 3 WTE mortalities, one was through human error (resulting in improved mitigation measures) and the other two were from vegetation reducing the effectiveness of the system at the particular sites (resulting in improved understanding of line-of-sight requirements). No mortalities occurred at the sites with highest utilisation and curtailment. The Automated detection and WTG curtailment system will be installed for the Project as detailed

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					throughout the DPEMP (e.g. pgs iv, 22, 46, 160, 161, 174, 176-181). Commitment No 10 in the Preliminary EMMP states “Prior to construction commencing, the Project will evaluate the detection and curtailment systems currently available and select a technology that is appropriate for use at the Robbins Island site”. Commitment No 11 states “Information on the detection and curtailment system selected will be provided to the EPA and DAWE prior to construction commencing in an Eagle Detection and Collision Avoidance Plan and the infrastructure for the curtailment system will be detailed in the Wind Farm Design Report”. Commitment No 13 states “The ongoing performance of the detection and curtailment system will be reported in the Annual Environmental Report”. Options for automated detection and curtailment systems were assessed by UPC\AC after extensive discussions within the industry, as one of the most effective measures to reduce avian collision risk. This is relatively new technology and whilst long term research is not publicly available, the data provided to date from international and local trials provides very positive results to date. Prior to the purchase of the system, the assessment (as covered in the Preliminary EMMP) will review all potential Avifauna Detection and Collision Avoidance Strategy technology prior to construction to identify the most effective technological solution, as there is likely to be advancements in this technology in the interim approvals period (refer section 4.1.1 Preliminary EMMP). For this reason, UPC\AC have not committed to one technology, but have certainly committed to installing an automated detection and curtailment system.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					The commitment will be included in the final EMMP prior to construction, this will be required as a permit condition if the project is approved.
197, 323	2	The DPEMP does not provide evidence demonstrating that painting a blade black is effective, and effectiveness of the measure is unproven.	no	Covered in the preliminary EMMP.	Referring to Section 4.3 of the Preliminary EMMP, there is emerging research on reduction of bird collisions with turbines through provision of visual cues to enhance the visibility of rotor blades. At Smola Wind Farm in Norway, the annual fatality rate for avifauna was significantly reduced (over 70%) at turbines with a single black blade, relative to the neighbouring control (i.e. unpainted) turbines (May et al. 2020). Various attempts to increase blade visibility and consequently reduce avifauna collision have been made by using patterns and colours that are more conspicuous to avifauna (Marques et al. 2014). While increasing visibility has been shown to reduce bird collision with objects, its efficacy in wind farms in Australia hasn't been fully quantified yet. Increasing turbine visibility may reduce avifauna collision risk and this management measure will be reviewed as part of the Wind Farm Design Report (refer Section 4.3 Preliminary EMMP).
243	1	Representor has concerns with assessment methods being outdated and inadequate. A moratorium on windfarm approvals should be imposed until the Threatened Tasmanian Eagle Recovery Plan is updated and publicly available. Strategic planning for siting of large developments and impacts to threatened species (i.e. WTEs) should be undertaken. WTE densities across the landscape should be a requirement for proponents to demonstrate a low impact site.	no	Covered in S6.3 of DPEMP and the preliminary EMMP. Updated surveys will be required prior to construction and the final design and will be required by a permit condition if approved.	Statewide infrastructure planning is beyond scope of DPEMP. GPS utilisation data assessment will inform Wind Farm Design Report. Updated eagle nest surveys will be required prior to construction and the final design and will be required by a permit condition if approved.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		Bird utilisation survey methods are inadequate. Representor questions the accuracy in determining the number of WTEs on Robbins based on utilisation data. Eagle nest data is outdated with the last eagle survey undertaken in July 2018.			
243	1	1) October 2018 activity checks should have been undertaken by air, not ground based checks. 2) Deployment of cameras at some eagle nests is concerning as is the lack of detail on the purpose of camera installation.	no	Updated surveys will be required prior to construction and prior to the final design. This will be required by a permit condition if approved.	On Monday 4 June 2018, a helicopter was used to survey the areas identified as potential eagle nesting habitat, for all areas within one kilometre of Robbins Island (refer Eagle Nest Survey Report Appendix H). The condition assessment was based on visual inspection of each nest from the helicopter, with observations of nearby eagle activity noted to assist identification of which species is likely to use each nest. Targeted Eagle Utilisation Surveys undertook activity checks by ground-based methods (less invasive and less disturbance to WTE than air survey methods). Field methods included (as required to generate the needed spatial data) evenly spaced observation points were chosen with good visibility over the proposed wind farm sites as far as practicable. The finalisation of observation point locations was based on logistics, visibility, and OH&S considerations (refer Bird Impact Assessment Appendix G). The field methodology and final set up of the observation points were prepared by implementing the guidelines provided in the Guidelines for Natural Values Surveys–Terrestrial Development Proposals (Prepared by the NCH division of DPIPWE), the Technical Guide–Terrestrial Vertebrates Fauna Surveys for Environmental Impact Assessments (EPA 2016). The current surveys were considered to include sufficiently high number of observations from bird utilisation surveys and targeted surveys utilising air and ground-based methods (which has a broader, more representative geographical scope)

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					to get a clear picture of eagle distribution and movements on Robbins Island. Furthermore, the eagles are large and could be seen at distances up to two kilometres, so any birds within two kilometres of coastal areas would have been detected, sufficiently by ground-based methods (refer Bird Impact Assessment Appendix G). Wherever appropriate, a precautionary approach has been adopted in the discussion of implications. That is, where insufficient evidence is available on the occurrence or likelihood of occurrence of a species, it is assumed that it could be in an area of habitat, if suitable, and the implications under legislation and policy are considered accordingly (refer Bird Impact Assessment Appendix G). Updated surveys of nest activity will be required prior to construction and prior to the final design. This will be required by a permit condition if approved. These surveys will be undertaken in accordance with the Forest Practices Authority's eagle nest search guidelines (FPA 2014) which detail; ground surveys as being suitable to the site conditions and topography. Eagle Nest Camera Field Deployment Report (refer Appendix L) was prepared and includes rationale and purpose of camera installation at all nests; some nest sites were not located due to lack of location data and weather conditions. Cameras were utilised for the nest activity and productivity surveys. For all nests identified, eagle nest activity and productivity surveys will occur: 1. prior to construction 2. every year during construction 3. for the first three years of Project operation. The surveys will be undertaken by suitably qualified persons. The aim of nest activity and

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					productivity surveys is to determine nest utilisation and breeding success.
243	1	Offsets Attempts to count and monitor population trends of eagles should be a requirement of developments to properly assess impacts. Likewise a population viability assessment should be undertaken. A direct offset for eagles should consider making power lines and poles 'bird safe' since collision with powerlines and electrocution on poles is the most common known anthropogenic cause of WTE death in Tasmania.	no	To be addressed in the EMMP prior to construction, this will be required as a permit condition if approved.	The Eagle Offset Strategy outlined in the Preliminary EMMP is proposed in accordance with the EPBC Act Environmental Offsets Policy 2012 (DSEWPaC 2012). A State offset is also required for Tasmanian Wedge-tailed Eagle and White-bellied Sea-Eagle mortalities associated with the Project. The eagle offsets strategy to be finalised in the EMMP, will set forth the offsets methods/program including; DPIPWE/NRM South Eagle Funds, an offset amount per eagle mortality. Requirements for reporting and monitoring are also included. UPC\AC is committed to an eagle offset program that is scientifically based, adds to the overall knowledge of the species, and has conservation outcomes in Tasmania. The Robbins Island Project proposes to use the Threatened Tasmanian Eagles Conservation Fund administered by NRM South as an offset for any Wedge-tailed Eagle and White-bellied Sea-eagle mortalities associated with the wind farm.
277, 346	2	The proposed use of offsets is not adequate, as it does not equal or exceed potential impacts. For example, if funds are directed to offset programs they should be used to create and manage covenants, and commitments should include prescriptions for how nest sites are chosen and managed.	no	Offsets will be outlined in the EMMP as required by a permit condition if approved.	The Eagle Offset Strategy outlined in the Preliminary EMMP is proposed in accordance with the EPBC Act Environmental Offsets Policy 2012 (DSEWPaC 2012). The eagle offsets strategy will set forth the offsets methods/program including; DPIPWE/NRM South Eagle Funds, an offset amount of $100,000 per eagle death (this amount is derived from the equivalent cost of establishing a conservation covenant for one nest) and reporting and monitoring. Research (EMMP Section 5, Sims *et al* 2015; Harris 2019) has indicated that conservation covenants to protect nests are not necessarily more effective than non-protected properties in outcomes; with existing legislative mechanisms key to protections. By directing offsets to a fund administered by the most

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					appropriate bodies for broader species conservation (e.g., NRM South) funds can be directed to highest priority offset methods based on evidence. Final offset method in EMMP will require EPA approval.
243	1	No useful assessment in the DPEMP on possible impact on the population of WTE or WBSE, with no cumulative impact assessment. It seems likely that windfarms may create population sinks. More tagged eagles on and adjacent to windfarms may be able to measure this.	no	Proponent to note	Refer to Section 6.3 of DPEMP for avifauna assessment and 6.25.1 of the DPEMP for cumulative impact assessment on Wedge-tailed eagles. James Pay from the University of Tasmania has secured additional funding which will enable GPS trackers to be fitted to a further 20 Wedge-tailed eagles. Once this occurs 50 eagles will be tracked around Tasmania, the data to be used to: 1. Improve the understanding of eagle behaviour 2. Develop collision risk models 3. Estimate the territory capacity of Tasmania and the breeding population 4. Develop population viability analysis from mortality data UPC\AC is committed to supporting ongoing monitoring of eagle populations.
317,320,332,248	4	Noise from construction and operation will negatively impact Wedge-tailed eagles. For example, due to blasting, pile driving, heavy vehicles and industrial lighting.	no	To be addressed in the Construction Environmental Management Plan (CEMP) and the Operational Environmental Management Plan (OEMP) prior to construction, these will be required by permit conditions if approved.	There are provisions in the mitigation measures for the construction period outside the breeding seasons. Mitigation for noise emissions during construction and operation are set forth in Section 6.3.4 and 6.8.4; these are committed for the CEMP. To be addressed in the Construction Environmental Management Plan (CEMP) and the Operational Environmental Management Plan (OEMP) prior to construction, these will be required by permit conditions if approved.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
271	1	Unacceptable risk to the WTE - the wind farm of the scale and specifications proposed will cause significant eagle mortality no commitment by the proponent to install technology to mitigate eagle mortality The development poses unacceptable risk to the population of WTE.	no	Proponent has committed to install an automated detection and curtailment system and this will be required by permit conditions if approved.	UPC\AC have committed to install an automated detection and curtailment system and this will be required by permit conditions if approved. An automated detection curtailment system, in combination with buffers, is assessed to be one of the most effective measures to reduce avian collision risk. This is new technology and whilst long term datasets are not available, the data provided to date from international and local (i.e., Cattle Hill Wind Farm) examples demonstrates its desirability as a successful mitigation measure. The commitment will be included in the final EMMP prior to construction, this will be required as a permit condition if the project is approved.
189, 194,277,290	4	The DPEMP does not evaluate cumulative impacts of windfarms on Wedge-tailed eagles and White-bellied sea eagles at nearby windfarms.	no	Proponent to note.	Refer to Section 6.25.1 of the DPEMP for cumulative impact assessment on Wedge-tailed eagles. James Pay from the University of Tasmania has secured additional funding which will enable GPS trackers to be fitted to a further 20 Wedge-tailed eagles. Once this occurs 50 eagles will be tracked around Tasmania, the data to be used to: 1. Improve the understanding of eagle behaviour 2. Develop collision risk models 3. Estimate the territory capacity of Tasmania and the breeding population 4. Develop population viability analysis from mortality data
189,346	2	Mitigation measure to remove macropod carcasses over 200 m from turbines are inadequate. For example: Depositing carcasses will attract individual eagles to vicinity, placing them at risk, particularly when distracted by aggressive behaviour of territorial eagles. It is not a practical management	no	Macropod carcass management will be addressed in the EMMP, this will be required by permit condition if approved.	Covered in Section 4.4 Appendix M; Preliminary EMMP. Carcasses would be disposed using appropriate methods, including: - Disposal to a dedicated mortality waste container (i.e. aquaculture mortality bins) and collected on a weekly basis by a waste contractor. Carcasses would have agricultural lime added to reduce odour emission.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		measure, as it is very labour intensive and expensive.			- Buried at a suitable depth at a location nearby, further than 1 km from any WTG, to prevent scavenging. Carcass disposal will also be determined in consideration of food sources for the Tasmanian devil, with the potential for disposal in a protected devil habitat area that is located well away from the turbines. All management measures proposed are mindful of labour and costs but considered as worthwhile to improve conservation outcomes.
277,320	2	The Tasmanian Eagle Recovery Plan 2006-2010 is outdated, however DPEMP does not demonstrate that the proposal will meet the recovery objectives.	no	Proponent to note.	The Recovery Plan is 12 years out of date and is widely acknowledged to be inadequate. UPC\AC has raised this with the Department of Natural Resources & Environment (NRE Tas) and the Department of Agriculture, Water & Environment and advocated for the Recovery Plan to be updated. Given UPC\AC's commitments within the DPEMP and Preliminary EMMP, it is UPC\ACs view that this is in alignment with recovery objectives.
290	1	Mortality monitoring inadequate	no	Mortality monitoring will be further defined in the final EMMP, this will be required by permit condition if approved.	Refer to Commitment 7 and 8 of the Preliminary EMMP. 7) A Final Avian Mortality Monitoring Plan will be developed prior to construction commencing and will be submitted to the EPA and DAWE for approval. The Plan will include details of the final search methodology to be used on site for wind turbines and met masts, mortality reporting, avian carcass removal and the management of injured avian species. Details on the calculation of undetected mortalities for EPBC-listed species will also be provided. 8) Avian mortality monitoring (including undetected mortality estimates) will be reported in the Annual Environmental Report.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					Mortality monitoring will be further defined in the final EMMP, this will be required by permit condition if approved.
290	1	Out of date nesting data	no	Updated surveys will be required prior to construction and will be required by a permit condition if approved.	Eagle nest activity and productivity surveys will occur; prior to construction; every year during construction; and for the first three years of Project operation. These additional surveys will provide ongoing nesting data and are commitment by UPC\AC.
290	1	No qualitative data on eagle flight heights.	no	Proponent to note.	Refer to Appendix G - Bird Impact Assessment of the DPEMP. Flight heights were recorded during surveys in 2002, 2004, 2004, 2008 and 2009. Flight heights were recorded during the 2018 & 2019 surveys as indicated in Section 6.4.2 of the Bird Impact Assessment; however, the heights of each individual observation were not included in this report.
251	1	No discussion in DPEMP about the disturbance to bird life during construction stage, with 66 months of construction. Migratory birds may be disturbed and cause them to lose weight and not be able to make the distance of their migration. Impact on shy albatross population from turbine collision.	no	Potential impacts on birds considered in S6.3 of the DPEMP.	There are provisions in the mitigation measures for the construction period outside the breeding seasons (refer Section 6.3 of the DPEMP). Further details on the construction schedule are included in Section 2.5.2 of this Supplementary Volume, demonstrating that the 66 months of construction is staged, and will not be 66 months of consistent disturbance. Mitigation measures for the construction period are set forth in Section 6.3.4 and 6.8.4; these are committed for the CEMP. To be addressed in the Construction Environmental Management Plan (CEMP) prior to construction, these will be required by permit conditions if approved. Collision risk for Shy albatross population assessed as low due to minimal flights expected across the island (pg. 183 DPEMP).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
52,185,317,327	4	26.4.2 - Impact on birds (WTE, WBSE, migratory birds) though collision with WTGs	no	Covered in S6.3 of DPEMP	There are provisions in the mitigation measures for the collision risk (refer Section 6.3 of the DPEMP). The Automated detection and WTG curtailment system will be installed for the Project. This system in combination with buffer zones, is assessed as one of the most effective measures to reduce avian collision risk for eagles. Impact on migratory birds assessed in Appendix G, and in S6.3 of DPEMP, specifically pages 136-147.
346	1	Commitments 1,2,4,5,6,7,8,11,12,13,16 rely on reports produced after approval. Threatened status of eagles requires prescriptive actions before approval.	no	Proponent to note.	Noted. Reports such as the Wind Farm Design Report are detailed design work and represent a significant cost without the certainty of an approval. This report requires EPA approval, and as such is still subject to regulatory scrutiny. Conceptual through to detailed design work is an iterative process, with detailed design informed by a range of ecological as well as technical studies. The CEMP and OEMP need to be informed based on detailed design, and again require approvals. The same applies for all management plans. It is not possible, or desirable, to finalise all of these plans until detailed ecological and technical work is complete. Management Plans need to be evidence based and linked to final design. This is in line with the process used to assess other wind farms in Tasmania. No preferred/optimal habitat will be cleared
White-bellied sea eagles					
95,145,194,197,198,317,334,27933,34, 35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105,	228	Increased risk to white-bellied sea eagles for potential collision with WTGs.	no	Covered in S6.3 of DPEMP	There are provisions in the mitigation measures for the collision risk (refer Section 6.3.4 of the DPEMP). The Automated detection and WTG curtailment system will be installed for the Project. This system, in combination with coastal buffer zones, is assessed as one of the most effective measures to reduce avian collision risk. This is

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383					relatively new technology, but the data provided to date from international and local (i.e. Cattle Hill Wind farm) examples demonstrates its desirability as a successful mitigation measure. The final technology assessment (as covered in the Preliminary EMMP) will review all potential Avifauna Detection and Collision Avoidance Strategy technology prior to construction to identify the most effective technological solution, as there is likely to be advancements in this technology in the interim approvals period (refer section 4.1.1 Preliminary EMMP).
197,198,317,25133,34,35,36,37,38,39, 40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226,	224	Potential disturbance to WBSE nest in proximity to bridge through traffic movements	no	Covered in S6.3 of DPEMP	There are provisions in the mitigation measures for implementing the construction period outside the breeding seasons for this location (refer Section 6.3.4 of the DPEMP). Mitigation measures for the construction and operational period are set forth in Section 6.3.4 and 6.8.4; these are committed for the CEMP. To be addressed in the Construction Environmental Management Plan (CEMP) and the Operational Environmental Management Plan (OEMP) prior to construction, these will be required by permit conditions if approved.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
227,228,229,230,231,233,234,235,236,239,240,241,245,246,247,249,253,254,255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329,330,331,333,335,336,337,338,339,340,341,342,344,347,348,349,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383					
16,56,242	3	Impacts to White-bellied sea eagle population	no	Covered in S6.3 of DPEMP	An array of mitigation measures has been proposed to manage these impacts (refer Section 6.3.4 of the DPEMP) Automated detection and WTG curtailment system will be installed for the operational period of the Project. This system combined with coastal buffers, is assessed as one of the most effective measures to reduce avian collision risk. Ongoing eagle monitoring is committed for the Project Site in accordance with the Preliminary EMMP. Finally, the Project also includes the provision of environmental offsets in accordance with EPBC Act requirements.
346	1	Buffer zone of 1km considered insufficient for species protection. The DPEMP lacks assessment demonstrating that the buffer zone mitigates potential impacts.	no	Covered in S6.3 of DPEMP	The key measure for minimising impact to eagle nests is putting buffer zones in place around existing nests to avoid disturbance to birds during breeding season, and more generally during operation of the wind farm (refer Appendix H – Eagle Nest Survey report). For windfarms, the previously accepted eagle nest buffer zones in Tasmania has been a 1 km buffer around each nest for development of wind turbines and ancillary infrastructure. Utilisation surveys from other wind farm developments in Tasmania indicate that higher levels of eagle activity occur mostly within one kilometre of nest sites and that a 1 km buffer has

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					been used as a reasonable surrogate for reducing collision risk. To minimise impact to White-bellied sea-eagle nests near Robbins Island Road, construction activities within 1 km of any active nest(s) would be undertaken outside of the most sensitive time of the breeding season (May – September). The guidance from Dennis et al (2012) would be used to determine the relative importance of disturbance from construction during different breeding phases, and the timing for suspension of construction activities (see DPEMP; Table 6-17). If nests are found to be in use, the primary management measure would be programming of bridge construction so that areas within 1 km of nests on the mainland Tasmanian side is undertaken outside of the breeding season, when sensitivity of disturbance is less. From an operations perspective, turbine collision risk is minimised through the application of coastal and nest buffer zones, and through the installation of an automated detection and curtailment system.
Orange-bellied parrot					
21,176,183,197,198,323,332,33,34,35, 36,37,38,39,40,41,42,43,44,45,46,47,4 8,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18	228	Clearance of native vegetation which forms potential habitat for Orange-bellied Parrot (OBP).	no	Covered in S6.3 of DPEMP	Refer to Section 3 of this Supplementary Volume. The Project Site has been subject to a range of avifauna investigations to understand the Project impacts, including Nature Advisory undertook four separate surveys between March and June 2003, 5 surveys in 2009, and summer survey in 2017. This species was observed in surveys in 2003 and 2004 on Robbins Island, with one observation from the west coast of Robbins Island, and three recorded at the Wallaby Islands near the south-west coast of Robbins Island. No OBPs were recorded on Robbins Island during targeted surveys in 2009 and 2017. Throughout the non-breeding range, the OBP requires a diversity of foraging opportunities, in saltmarshes, dunes and adjacent shrubby areas

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383					and weedy pastures (DELWP 2016). Despite significant work detailing the habitat preferences of the species (Holdsworth 2006; Ehmke & Tzaros 2009) it is still not known how much habitat is required to support a viable wild population. The mobility of this species, and its use of very remote locations, renders detailed habitat use studies logistically difficult. This uncertainty is acknowledged. An array of mitigation measures has been proposed to manage these impacts including exclusion zones for high quality habitat (refer Section 6.3.4 of the DPEMP and section 3.5 of this Sup. Vol.). Avoiding clearance of potential OBP habitat has informed turbine placement.
189	1	Power lines and other associated infrastructure have the potential to kill many species, including the Orange-bellied parrot.	no	Proponent to note.	UPC\AC acknowledges that associated infrastructure may pose a risk to OBPs. However, there are no overhead powerlines proposed for the Robbins Island Project.
197,198	2	Financial contribution for OBP mentioned in the DPEMP has not been discussed with the Cradle Coast Authority.	no	Offsets to be further developed in final OBP Monitoring and Management Plan prior to construction, this will be required by permit conditions if approved.	Addressed in Section 3.8 of this Supplementary Volume. UPC\AC is committed to an OBP offset that is scientifically based, adds to the overall knowledge of the species and has conservation outcomes in Tasmania. The final offset will be developed in consultation with potential recipients and will require approval from EPA and DAWE.
204	1	Orange-bellied parrot is a common user of the Robbins Island ecosystem.	no	Addressed in S6.3 of DPEMP	Addressed in 6.3 of the DPEMP and Section 3 of this Supplementary Volume. An array of mitigation measures has been proposed to manage these impacts including exclusion zones for high quality habitat (refer Section 6.3.4 of the DPEMP and section 3.5 of this Sup. Vol.).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
221	1	Robbins Island sits within the OBPs migratory corridor and has the potential to impact the entire population. The principal of avoiding sites of high importance to avoid impact has not been applied to this proposal. Surveys were inadequate and outdated. Proposal has understated the values of pasture and weed species to the OBP. The proposal lacks information of flight behaviour (flight height, direction, frequency) and hence level of collision risk cannot be determined. The loss of one OBP is considered a significant loss. High level of uncertainty about the use of the island and flight behaviour on migration, therefore the project should not proceed. Offset package is ill-conceived and inadequate. Dead bird searched methodology inadequate to ascertain impact to small birds.	yes	Further information has been requested from the proponent as part of the supplementary information.	Refer to OBP section of Robbins Island Renewable Energy Park Supplementary Volume (Section 3).
250	1	Representor concerned of the unacceptable risk to the survival of the OBP. There has not been sufficient effort to understand the use of Robbins Island by migrating OBPS and the risk to the species. There is a high level of uncertainty on the potential for OBPs to collide with WTGs and to be adversely affect their behaviour leading to decrease in survival rates.	yes	Further information has been requested from the proponent as part of the supplementary information.	Refer to OBP section of Robbins Island Renewable Energy Park Supplementary Volume (Section 3).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
259	1	Concern about potential negative impacts on OBPs	no	Addressed in S6.3 of DPEMP	Refer to OBP section of Robbins Island Renewable Energy Park Supplementary Volume (Section 3) and Section 6.3 of DPEMP.
267	1	Representor considers - No increase in mortality is acceptable for the OBP, given it is critically endangered and any mortality undermines existing conservation efforts. The entire wild population passes through the area twice per year, but the fight corridor and behaviour is unknown. Robbins Island contains key foraging habitat resources within the species known migration range. All habitat is critical for survival regardless of when the location was last occupied by the wild population. Flight behaviour has not been specifically examined or accurately measured, and hence whether OBPs will be impacted through collision or changed behaviour resulting in avoidance is unknown and cannot currently be determined. The uncertainty is high. Given the high level of uncertainty the windfarm should not proceed at this stage. The impact to the OBP will be significant.	yes	Further information has been requested from the proponent as part of the supplementary information.	Refer to OBP section of Robbins Island Renewable Energy Park Supplementary Volume, Section 3.
271	1	The DA fails to adequately articulate the risk posed by the WTGs to the OBP. The development poses an unacceptable risk to the species and should not proceed.	yes	Further information has been requested from the proponent as part of the supplementary information.	Refer to OBP section of Robbins Island Renewable Energy Park Supplementary Volume, Section 3.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
272,290	2	The area is critical to OBP migration	no	Covered in S6.3 of DPEMP	Refer to OBP section 3 of Robbins Island Renewable Energy Park Supplementary Volume and Section 6.3 of DPEMP.
346	1	DPEMP lacks assessment to demonstrate that the exclusion zones mitigate potential impacts to OBP	no	Proponent to note.	There are a number of challenges in the impact assessment for OBPs, as acknowledged in OBP Section 3 of Robbins Island Renewable Energy Park Supplementary Volume, Section 6.3 of DPEMP, and Appendix G - Bird Impact Assessment. The exclusion zones are viewed on balance as an important mitigation measure. Residual uncertainties will continue to be addressed, with proposed measures as outlined in Section 3 potentially adding to the understanding of OBP migration and use of the landscape, which would be a significant benefit to conservation efforts.
346	1	Commitment 11 requires delay in timing of installation of turbines 3,4,6 and 2 to do studies, but no commitment for removal of turbines is proposed if studies find a high risk of OBP using areas. Study proposed (funded through offset payments) described as broad study of "OBP tracking in the Tasmanian migration range", not intended to inform management of Robbins Island, or address questions about 3,4,6 and 2. No analysis to demonstrate that $50,000 for offset payment is sufficient to provide results. Offset payment would be better directed to a Robbins Island specific study to track OBPs and shorebird species, and could be used to inform redesign of windfarm.	no	Further information has been requested from the proponent as part of the supplementary information. Offsets to be finalised in the OBP MMP prior to construction, this will be required by a permit condition if approved.	Refer to OBP section 3.5 of Robbins Island Renewable Energy Park Supplementary Volume for further information on offsets. As a part of Commitment 11, it states that “The final timing for installation of these turbines will be agreed with the EPA and DAWE”. In the event the study outcome is that these turbines are viewed as high risk to OBPs, this will be again reviewed.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
279	1	Risk of collision with WTGs	no	Covered in S6.3 of DPEMP	Refer to OBP section 3.3 of Robbins Island Renewable Energy Park Supplementary Volume and Section 6.3 of DPEMP.
287	1	OBP offset is not an appropriate measure.	no	Proponent to note.	Addressed in Section 3.8 of this Supplementary Volume. UPC\AC is committed to an OBP offset that is scientifically based, adds to the overall knowledge of the species and has conservation outcomes in Tasmania.
290	1	A loss of a single bird will have a significant impact on the population. All suitable habitat in the migratory path should be protected. The wind farm may act as a barrier to migration, changing the behaviours of migrating birds as well as collisions.	no	Proponent to note.	Refer to Section 3 of Robbins Island Renewable Energy Park Supplementary Volume.
Masked Owl					
323	1	Methodology inadequate and underestimates presence of Masked Owls. Report does not consider that Masked Owls are known to nest in wet forests	no	Covered in S6.3 of DPEMP	While the Tasmanian masked owl is unlikely to occur on Robbins Island, the main potential impact during construction would be impacts to large old trees with hollows of sufficient size for the species. Suitable hollow-bearing trees for this species have been identified near the northern end of Robbins Island Road, but these trees are further than 100 m from the Project Site boundary. Given that no potential habitat would be cleared during construction of the Project, the risk of any impact on this species during construction is very low. Although around 200 ha of wet forest (WBR and WNL) is found in the Project Site, less than 1 ha is present within the Project footprint (at the southern end of Robbins Island Road on mainland Tasmania), on the mainland (Robbins Island Road) side, with no areas of wet forest on Robbins Island proposed for clearance (refer page 114; DPEMP).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					As noted on page 102 of the DPEMP, all wet forest areas have been excluded from the WTG Development Zone.
Swift parrot					
176,183,197,198,317,323,33233,34,35, 36,37,38,39,40,41,42,43,44,45,46,47,4 8,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383	227	Clearance of native vegetation which forms potential habitat for Swift Parrot.	no	Covered in S6.3 of DPEMP	The Swift parrot occurs mostly in the eastern and northern parts of Tasmania and rarely occurs as far west as Robbins Island. Most records are from south-east of Tasmania and central north (from Smithton eastwards). Across all bird utilisation surveys on the Project Site (i.e. 2002-03, 2009-10 and 2017-19), this species has not been recorded within the Project Site. The low occurrence of the species in far north-west Tasmania suggests that the species is unlikely to be impacted by the Project. Any habitat impacted is not considered key habitat. As such there are no species specific mitigation measures; however the mitigations proposed for avifauna impacts are considered sufficient.
242		Impact to swift parrot	no	Covered in S6.3 of DPEMP	As above.
279	279	Risk of collision with WTGs	no	Covered in S6.3 of DPEMP	As above.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
Grey goshawk					
197,198,201,323,25133,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,182,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,358,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383	225	Impact/removal of grey goshawk nest	no	Covered in S6.3 of DPEMP	No evidence of nests of this species were detected on Robbins Island, and this species was not recorded during bird utilisation surveys between 2002 and 2019 (Appendix C; Appendix G; of the DPEMP). Surveys identified a nest at the southern end of Robbins Island Road, located on the edge of the road (See Figure 6.7 in DPEMP). This was unoccupied at the time of the survey and there were no obvious signs of use (whitewash, etc.) (Appendix C; of the DPEMP).
317,323	2	No follow up survey of Grey goshawk nest two years after it was reported unoccupied, could be being used.	no	Updated surveys will be required prior to construction and will be required by conditions if approved.	Updated surveys will be undertaken prior to construction.
Migratory shorebirds					

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
1,2,5,12,13,16,20,21,27,30,56,111,123, 144,95,171,176,183,194,196,201, 208,232,242, 244,220, 247,263,275,279,284,287,288,289,296, 298,307,317,323,327,332,334,370,377, 38133,34,35,36,37, 38,39,40,41,42,43,44,45,46,47,48,49,5 0,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383	265	Robbins Island and adjacent areas (Boullanger Bay and Robbins Passage) are a major shorebird refuge. The area supports internationally and nationally significant numbers of resident and migratory shorebirds. These areas are significantly threatened by construction, development and operation of wind turbines and associated infrastructure. Mitigation measures proposed are not considered sufficient. Concerns raised included - Collision risk of migratory shorebirds with turbines - Impacts to the behaviour (including roosting) and movements of birds through turbines and associated habitat destruction and collision risk associated with WTG locations - Collision risk of shorebirds with turbines when crossing Robbins Island between feeding and roosting sites as well as during pre- migration flights. - Disturbance to shorebird refuge sites from increase in site access, particularly during construction. - Impact to Eastern curlew, Great knot, Curlew sandpiper, OBP, greater sand plover, white-throated needle-tail	no	Covered in S6.3 of DPEMP	Migratory species utilising Robbins Island; but primarily adjacent to the Project Site. The Robbins Passage – Boullanger Bay area is an extensive area of tidal channels and intertidal mud and sand flats. Migratory shorebirds prefer the tidal mudflats on the west coast of Robbins Island, and roost in high concentrations outside of the Project Site at Bird Point and Knot Point on the north-west coast of the island (Appendix G and Appendix J; of the DPEMP). Other roosting sites near the Project Site include islands, on the west and south-west coast of the island. Important roosting sites further from the Project Site include Shipwreck Point (on the northern tip of Perkins Island) and around Kangaroo Island, an offshore island 2.5 km west of Robbins Island. As a precautionary measure, the Project has excluded development of WTGs within 500 m of the entire coastline of Robbins Island, along with exclusion of WTGs along the northern-most 2.5 km of the northern end of White Rock Ridge. These exclusion zones minimise the risk of collision of migratory shorebird species with WTGs. Other measures to manage potential impacts to this species are outlined in the Preliminary SMMP (Appendix N; of the DPEMP), which is discussed in more detail below. This Preliminary SMMP has been developed to guide the management of the Project's potential impacts to shorebirds, including threatened and/or migratory shorebirds and listed resident shorebirds. The Preliminary SMMP provide strategies and measures to guide the development of an operational version. The operational version of the SMMP will be developed in the detailed design phase and will be submitted to the Tasmanian

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					EPA and DAWE for approval prior to construction commencing. OBP has been considered in Section 3 of this Supplementary Volume.
16,27,296	3	Noise disturbance to migratory shorebirds during quarrying and construction	no	To be addressed in the final Quarry Management Plan (QMP) and Shorebird Monitoring and Management Plan (SMMP) to be required by permit conditions if approved.	In the Preliminary Quarry Management Plan, noise disturbance is addressed (p. 29). To be addressed further in the final Quarry Management Plan (QMP) and Shorebird Monitoring and Management Plan (SMMP) both of which will require approvals prior to construction. The CEMP will also include a Construction Noise and Vibration Management Plan.
201, 317,323	3	Robbins Passage - Boulanger Bay is an important area, numbers of shorebird represent significant percentage of populations and it is critical to manage the area as an integrated system.	no	Covered in S6.3 of DPEMP	As above, and to be addressed in the final Shorebird Monitoring and Management Plan (SMMP) to be required by permit conditions if approved.
1,204	2	The location is of international significance as a wetland for migratory and resident shorebirds, which roost, feed and nest in the area. Dust emissions is a significant issue for bird health. Noise impacts from WTG operations on birds.	no	Dust emissions to be addressed in the final QMP and CEMP as required by permit conditions if approved. Noise impacts to be addressed in the OEMP.	As above, and to be addressed in the final Quarry Management Plan (QMP), CEMP and Shorebird Monitoring and Management Plan (SMMP) to be required by permit conditions if approved. Section 6.5.4 of the DPEMP outlines dust management protocols; with mitigation measures for dust emissions that have potential to cause environmental health issues including flora and fauna.
232,269, 259, 238,248	5	Collision risk of shorebirds with turbines when crossing Robbins Island between feeding and roosting sites as well as during pre- migration flights, including Latham's Snipe, Pacific Gull (not listed) with breeding colony on Howie Island and pelicans.	no	Proponent to note.	This collision risk is noted, although Appendix G – Bird Impact Assessment notes the infrequency of island crossing flights at rotor swept heights (See also Section 6.3 of DPEMP). Collisions will be monitored as outlined in the Preliminary SMMP, with response mechanisms outlined.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
232	1	Further studies are needed for each shorebird species, including tracking.	no	Proponent to note.	Updated surveys will be required prior to construction with the Preliminary SMMP outlining ongoing monitoring measures. Final SMMP will require approval.
270	1	The Robbins Island- Boullanger Bay wetlands are internationally important, with significant numbers of threatened and migratory shorebird species. Key concerns - mortality of birds colliding with WTGs, changes in behaviour from installation of WTGs, including feeding and breeding behaviour. The conclusion of the 2011 tracking study (Rogers et al - App G) that there will be limited impact is not adequately supported. It is inevitable that migratory species will fly across the land to access feeding resources. The wind farm represents a significant threat which will seriously impact populations of shorebirds.	no	Proponent to comment.	Agreed that the Robbins Island- Boullanger Bay wetlands are internationally important. As noted in Section 6.3.1 of DPEMP and Appendix G – Bird Impact Assessment, the utilisation of the Project Site itself is relatively low with feeding and roosting confined to coastal areas, which has informed the creation of the coastal buffer area. Observations during bird utilisation surveys indicate that 96% of flights were below rotor swept height. There remains a residual risk of collision, and as such monitoring and response measures are outlined in the Preliminary SMMP, which will be developed into the Final SMMP. This will require approval prior to construction.
27	1	Removal of sand for wharf will impact bird habitat	no	To be addressed in the final QMP as required by permit conditions if approved.	Measures to reduce the impact of the sand removal are documented in the Preliminary QMP and the Preliminary SMMP. The Final Plans will require approval from the EPA.
1,5,13,16,27,29,95,194,317,323,	11	DPEMP does not include key information about each shorebird species - impact on flight path of migratory shorebirds (inc Eastern curler, Curlew sandpaper, Great knot) - information about flight path of migratory shorebirds during night time or inland areas during bad weather - cumulative frequency of fatalities is not provided	no	Proponent to note.	Information on shorebird species (incl Far Eastern curlew, Curlew sandpiper, and Great knot) is included in Appendix J – Resident Shorebird and Migratory Shorebird Surveys and Appendix G – Bird Impact Assessment. As noted in the Preliminary SMMP, further surveys will be undertaken to monitor populations over the first three years of operation. The Preliminary SMMP also outlines that monitoring of any mortalities will be linked to time of day and

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					weather conditions to understand and respond to any elevated risks due to certain conditions. Fatalities of threatened/migratory shorebirds will be reported within 24 hours, and a Shorebird Impact Investigation Report will be submitted within one month. Cumulative fatalities will be reported in the Annual Environmental Report along with mortality estimates.
232	1	Inaccurate survey counts of shorebirds, therefore evaluation of shorebird information is flawed.	no	Proponent to note.	UPC\AC believes that the survey counts by Birdlife Tasmania, Eric Woehler and Nature Advisory that have been relied upon in the assessment are accurate.
176	1	Concern about impacts to ecosystem if birds are impacted by the proposal.	no	Covered in S6.3 of DPEMP.	Section 6.3 of DPEMP provides analysis of potential impacts
189	1	Robbins island is not an acceptable location for a windfarm in relation to impacts to avifauna. International studies on bird strike recognise that windfarms should not be located on the coast, wetlands or the flight path of migrant birds. Consultants have not adequately addressed impacts	no	Proponent to note.	UPC\AC notes the concern. The risks to avifauna are explored in Section 6.3 of DPEMP, and mitigation measures are proposed in the DPEMP and the Preliminary Management Plans.
189	1	Shorebird Telemetry and Behaviour Reports (Appendices G and I) were inadequate - Limited in species selection, seasonal coverage and methodology - More holistic radar monitoring should have been used, more comprehensive and would detect flocks of all species. - More intensive field work on multiple species should have been used. - Telemetry limited to Red-necked Stints and Ruddy Turnstones, and was not representative - Only 42 birds studied of the 6000+	no	Proponent to note.	Concerns are noted. From UPC\AC perspective, Appendices G and I have clearly outlined methodologies and limitations. To address residual uncertainties, the Preliminary SMMP outlines several ongoing monitoring commitments. If issues arise in this monitoring, such as degradation of habitat, reduction of populations, or recorded mortalities through turbine collision, these events will need to be responded to in reporting requirements, including adaptive management measures to address impacts. Fieldwork to date has been extensive, commencing in 2002, and including six bird utilisation surveys and five targeted shorebird

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		migratory species that use the area. - Sites of bird capture were biased (captured on western side of island) - Report did not address several endangered species - Report did not address pasture feeding of some species.			surveys. This foundational work will continue to be built on as an integral part of the adaptive management approach.
189,323	2	General Bird Behaviour descriptions (Appendices G and I) inadequate, Report fails to address significance of threatened and declining species utilising the area Keeping windfarms away from feeding and roosting hotspot areas like Robbins Passage is an important part of the Australian commitment (Bonn Convention and other agreements) towards preventing extinction of species	no	Surveys undertaken in accordance with Project Specific Guidelines (PSGs). Proponent to note.	The DPEMP and Appendices G and I are clear in their understanding of the significance of threatened and declining species. The impact assessment work informed the adoption of a coastal buffer to protect important roosting and feeding areas.
346	1	Lacks assessment to demonstrate that the exclusion zones mitigate potential impacts	no	Proponent to note	The assessment of the exclusion zone was based on the Bird Utilisation surveys and targeted shorebird surveys as outlined in Appendix G. It is acknowledged that there is residual risk of impacts, addressed through the monitoring and mitigation measures outlined in the Preliminary SMMP.
346	1	Radio tracking had critical limitations, Only two species tracked Some limited evidence presented in Appendix G of shorebirds crossing the island, which should have prompted further studies Evidence that species travelled across land to Mosquito inlet should have prompted further studies Unclear how boundary of proposed WTG exclusion zone in NW Robbins Island was determined.	no	Proponent to note.	There are a number of challenges in field surveys on Robbins Island, which are clearly articulated in Appendix G. Low numbers of birds on Robbins Island and poor weather made cannon netting birds difficult. As a result only Ruddy turnstones and Red-necked stints were captured despite having permits to capture other birds as well. UPC\AC chose to exclude the northern end of Robbins Island from the development footprint in response to the evidence that shorebirds flew across this section of land. The boundary of the exclusion zone was determined based on the survey work to date and advice from specialists.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					As outlined in Preliminary SMMP, any fatalities of a threatened and/or migratory shorebird will trigger visual and portable marine radar monitoring of flight paths in the vicinity of the area to inform the Shorebird Impact Investigation Report, which will include proposed mitigation measures.
346	1	Automated turbine shutdown system should be committed to be used for shorebirds	no	Proponent to note.	UPC\AC is still investigating if the MUSE radar/camera system (referred to in the DPEMP) would be suitable to detect small, medium and large birds on Robbins Island. There are some limitations with technologies, but UPC\AC are continuing discussion to keep abreast of technical developments and applicability to Robbins Island.
284	1	Impact to migratory species through noise, flicker, marine traffic, increased pollution, visual changes to habitat	no	To be addressed in the SMMP prior to construction, this will be required by a permit condition if approved.	These potential impacts are addressed in the Preliminary SMMP, with the final SMMP to be approved prior to construction.
287	1	Impacts from spread of rice grass, light pollution and noise (from bridge and wharf) on shorebirds	no	To be addressed in the SMMP prior to construction, this will be required by a permit conditions if approved.	These potential impacts are addressed in the DPEMP and the Preliminary SMMP, with the final SMMP to be approved prior to construction. Rice grass is addressed on pages 156, 167, 170, 261 and 271 of DPEMP, with Commitment 40 on monitoring for rice grass. Noise impacts are addressed in Section 6.8 of DPEMP and in Section 6.3. Lighting design will be in alignment with the National Light Pollution Guidelines for Wildlife (DAWE 2020).
290	1	The DPEMP is fundamentally flawed - It fails to accept the Precautionary Principle, dismissing the importance of potential deaths of critically endangered species, because "*they are not present in large numbers* "	no	Proponent to comment.	UPC\AC notes the concerns on the flaws within the assessment process. We disagree that the precautionary principle was not applied. Although this concept may have differing interpretations, we have relied on evidence-based assessment

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		It proposes the industrialisation of farm and native vegetation amid the state's largest wild and natural wetland It overlooks the Boullanger Bay-Robbins Passage wetland habitat of the southern-most internationally significant area of migratory shorebirds in the entire East Asian-Australasian Flyaway. Bird surveys for shorebirds were inadequate - limited to brief periods, poorly timed, patchy and out of date. The main departure period of migratory shorebirds was poorly documented. Climb rates were significantly overestimated for migratory shorebirds, assuming a climb rate of u*p to 1.5 m/second* , and inappropriately applying this value for all species. Based on published climb rates and the use of tail winds to initiate their migration, shorebirds departing are at risk of collision with WTGs. Deeply flawed radio-tracking survey, with the radio antenna array not set up to detect birds actually flying over most of the island, with 80% of White Rock Ridge not covered. Inappropriate to extrapolate the limited results from two species to more than 20 different shorebird species. Flight heights at start of migration not adequately assessed. Overlooks the likelihood that predominant wind directions will carry birds departing on migratory flights into the WTG areas, sited in some cases, just 2km for key coastal roost			processes, and acknowledged residual uncertainties. An experienced team of the same ornithologists have visited the island over the last 20 years undertaking detailed investigations of shorebirds. This exceeds the survey standards required under the EPBC Act. Given the importance of the area this is warranted. These investigations have included extensive shorebird counts at both low and high tide, regular observations of daytime movement patterns of birds on and near the proposed wind farm site showing predominantly coastal and mudflat movements with flights over the island the exception. Investigations have also included radio-tracking studies of Red-necked Stints that aimed to understand nocturnal movements as these are known to be different in a range of settings. Observations during the radio-tracking studies showed that shorebirds of a range of species use the same habitats for both roosting and foraging and moved along the same routes, an observation consistent with habitats that support high numbers of shorebirds of multiple species elsewhere (e.g. Port Philip Bay, Vic. Roebuck Bay, WA). This indicated that this species was a good surrogate for understanding the behaviour of other species of shorebirds in the area. The extensive observations provided an excellent understanding of daytime movements, and the radio-tracking studies lead to the conclusion that roosting shorebirds likely use the sand spit at the mouth of the Mosquito Inlet as a night roost (it is noteworthy that it has all the characteristics of night roosts observed elsewhere, having very open, unvegetated habitat with good predator visibility). The restriction in the northward extent of the wind farm based on these findings avoids impacts on this likely zone of movement across the northern part of Robbins Island. The information collected

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		sites. The large volume of turbulent airflow over and downstream of Robbins Island produced by the WTGs will have potential adverse impacts for departing shorebirds, likely reducing their climb rates and increasing their risk of collision. Mortality monitoring is inadequate. Lighting of infrastructure (bridge and wharf) will pose risk of collision for shorebirds and seabirds and potentially cause changes in foraging behaviour. Collision with meteorological masts. Impacts from marine noise on diving seabirds.			over a number of years provides one of the most comprehensive pictures of shorebird use of a coastal habitat to inform a development impact assessment. Climb rate – Published literature cited in the technical documents that accompany the DPEMP show consistently high climb rates of departing migratory shorebirds. This has also been observed among the main species of shorebird inhabiting Robbins Island elsewhere in Australia (i.e. the same sub-species). Radio-tracking survey methodology – The radio-tracking study was undertaken by one of the world's leading shorebird specialists (Dr Danny Rogers) using the best available technology combined with visual observations. Both radio tracking and visual surveys undertaken during the study, as well as visual observations over a number of the last 20 years, consistently show low activity of shorebirds over the wind farm site. Migration flight heights – See comment above about climb rates Wind direction – Birds use winds to enhance flight speed but do not always fly downwind; they can gain significant benefit by flying up to 30 degrees away from the wind. Observations of migrating shorebirds show that they follow quite fixed bearings, including adjusting their flights to hold a heading in spite of ambient wind conditions. It is simplistic to assume they will fly down wind. Observations of departing stints and sandpipers in Victoria, for instance show a predominantly north westerly departure even during south westerly winds. This is because smaller shorebirds have shorter migratory hops and follow the Australian south coast before crossing to the north west coast of Australia. Larger, further-flying birds fly on a more northerly track as they are heading for the Yellow Sea.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					The mortality monitoring method outlined in the Preliminary SMMP applies industry standard practices. The final SMMP will need to be approved prior to construction, including the mortality monitoring. The SMMP clearly identifies that if a shorebird is found under a turbine an immediate increase in monitoring is triggered. It is noteworthy that around the world, very few shorebirds have been found under operating wind turbines even in coastal areas close to their habitats. The DPEMP acknowledges lighting of the bridge and wharf is a risk for shorebirds and seabirds. Lighting will be in line with the National Light Pollution Guidelines for Wildlife (DAWE 2020), with mitigations such as motion sensing lights, and design to limit light spill. This will significantly reduce the risk by applying best-practice standards. Collision risk with met masts is acknowledged in the DPEMP. The rate of collision with met masts is likely to be very low as, like turbines, they are located south of the main areas of likely movement of shorebirds. Impacts from marine noise is also acknowledged and will be further addressed in the CEMP.
290	1	High risk to white-throated needletail through WTG collisions with impact to the species not adequately addressed.	no	Covered in S6.2 of DPEMP	Refer to Section 6.2 (Table 7-2) of the DPEMP.
Resident shorebirds					
29,21,56,152,95,186,197,198,376,283, 232, 33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91,	232	Robbins Island and adjacent areas (Boullanger Bay and Robbins Passage) are a major shorebird refuge. The area supports internationally and nationally significant numbers of resident shorebirds. These areas are significantly threatened by	no	Covered in S6.3 of DPEMP and the preliminary Shorebird Monitoring and Management Plan (SMMP).	These issues are covered in S6.3 of DPEMP, Appendix G – Bird Impact Assessment and the preliminary Shorebird Monitoring and Management Plan (SMMP). Resident shorebirds occur on the coastlines around Robbins Island and could be impacted by the Project, with risks and mitigation measures outlined in the DPEMP. The migratory shorebird population associated

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383		construction, development and operation of wind turbines and associated infrastructure. Mitigation measures proposed are not considered sufficient. Concerns raised included - Collision risk of resident shorebirds with turbines - Impacts to the behaviour and movements of birds through distribution of turbines, and associated habitat destruction and collision risk - Collision risk of shorebirds with turbines when crossing Robbins Island between feeding and roosting sites as well as during pre- migration flights. - Disturbance to shorebird refuge sites from increase in site access, particularly during construction. - Further studies are needed for each shorebird species, including tracking.			within Robbins Passage-Boullanger Bay is not anticipated to be significantly impacted by the Project. Studies of the flight paths of shorebirds have shown that the vast majority of flights by these species occur adjacent to the coast rather than overland, with the exception of the northern tip of Robbins Island, may be occasionally overflown. In light of this, a 500 m coastal buffer has been applied to the WTG Development Zone around the whole of Robbins Island and the entire northern tip has also been excluded. Almost all shorebird habitat is outside of the Project footprint. Resident and migratory shorebirds would be monitored and managed in accordance with the Preliminary Shorebird Monitoring and Management Plan (Appendix N), which also includes a range of measures to manage impacts to habitat for these species. Site access will be restricted to limit impacts in coastal zone. Further studies of habitat and populations are part of the commitments in the Preliminary SMMP, with radio tracking surveys triggered in the event of a mortality of a migratory / threatened species.
29.	2	Wharf construction will destroy hooded plover nesting sites	no	Covered in S6.3 of DPEMP and the preliminary SMMP.	Potential area for territories of the Hooded plover (eastern) along the coast include areas in proximity within the site i.e. the wharf and the sand excavation area. Additional potential favourable areas lie outside the Project site along Little Bluff/Big Bluff and East Beach. Unpublished Birdlife Tasmania data over the last 10 years recorded a single Hooded plover (eastern) during counts in 2010 at Bird Point, and in 2014 at Knot Point and Mosquito Inlet. The risk to hooded plovers is covered in S6.3 of DPEMP and the preliminary SMMP. Mitigation measures include; prior to construction, a shorebird survey will be conducted by a suitably qualified environmental practitioner, for the area

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					within 500 m of the proposed works area for the wharf and bridge landings. This will be undertaken in summer to capture peak shorebird activity, noting the breeding season between October and March for the Hooded plover (eastern). Any areas requiring protection will be identified and flagged as no-go zones as part of this assessment and relevant management measures included in the CEMP. Protection measures are also documented in the Preliminary SMMP. Which will need to be approved as a final document that meets the EPA requirements.
197,198	2	Short-tailed shearwaters	no	Covered in S6.3 of DPEMP.	Covered in S6.3 of DPEMP and the preliminary SMMP. As documented, the potential loss of approximately 25 birds per year represents a small proportion of the annual mortality of this species, especially compared to commercial and non-commercial harvests. Compared to harvesting across Tasmania, potential WTG collision mortalities would represent 0.0001% of the annual take, and 0.6% of the harvest from the closest colonies on Robbins Island and Walker Island. The estimates in the DPEMP would not increase mortalities beyond the calculated maximum sustainable yield for this species (37% of the population), as estimated by Ramsay (2004).
General birdlife					
27	1	Impacts on black swans and pelicans	no	Proponent to note.	Refer to Appendix G - Bird Impact Assessment of the DPEMP. Black swans were not observed flying on the central and northern gradients of Robbins Island. One pelican was observed flying over Robbins Island south-west of Remarkable Banks on Robbins Island.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
152, 201	2	The area is internationally important and the infrastructure will impact the entire range of species found in the area.	no	Addressed in S6.3 of DPEMP	The DPEMP, particularly Section 6.3 outlines risks, and the mitigation measures proposed.
263	1	The Bird Impact Assessment is incomplete as it does not cover the Remarkable Banks Area and its waterbodies. The survey procedure (p12) is inadequate and not presentative of Remarkable Banks. Impact to waterbirds not adequately assessed.	no	Surveys undertaken in accordance with Project Specific Guidelines (PSGs). Proponent to note.	Refer to Appendix G - Bird Impact Assessment of the DPEMP. The Remarkable Banks was included in the survey area.
346	1	Key protection measures, including WTG exclusion zones and preliminary plans for eagles, shorebirds and orange-bellied parrots recommended by assessments in the DPEMP are not included in the list of commitments at section 10. Commitment 2 in Preliminary Eagle Monitoring and Management Plan only refers to exclusion zones being applied to any new nests identified	no	Proponent to note	Typically permit conditions associated with an approval will reference the relevant section of the DPEMP, which commits a proponent to construct/operate the project in accordance with the DPEMP. Commitments from the Preliminary Monitoring and Management Plans for eagles, shorebirds and OBPs are included in the DPEMP in Tables 6-18, 6-19 and 6-20. Note that these Plans will need to be approved as final documents prior to construction.
57,263,323	3	Impact of and mitigation of bird strike on met masts is not considered	no	Covered in S6.3 of DPEMP	Refer to Section 6.3 of the DPEMP for assessment of potential impacts and proposed mitigation measures. The rate of collision with met masts is likely to be very low as, like turbines, they are located south of the main areas of likely movement of shorebirds.
57,285	2	Impact of lighting (bridge, wharf, nightwork construction) on birds (particularly shearwaters and shorebirds) is not considered	no	Covered in S6.3 and Appendix N of DPEMP	Refer to Section 6.3 of the DPEMP and Appendix N for assessment of potential impacts and proposed mitigation measures. The DPEMP considers lighting of the bridge and wharf, including the risk for shorebirds and seabirds. Lighting will be in line with the National Light Pollution Guidelines for Wildlife (DAWE 2020), with mitigations such as motion sensing lights, and design to limit light spill. This will significantly

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					reduce the risk by applying best-practice standards.
Tasmanian devil					
95,176,190,197,198,310,317,332,334,283,1,21,27,51,94,201,370,377,5,29,95,194,307,327,376,283,16,52,296,204,238,242,248,284,285,287,288,289,271,27933,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162,163,164,166,167,168,169,170,173,174,175,177,179,180,182,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236,239,240,241,245,246,247,249,253,254,255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329, 330,331,333,335,336,337,338,339,340,341,342,344,347,348,349,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383	260	Potential impacts to Tasmanian Devils, including: Risk of spreading devil tumour facial disease to Robbins Island Increased roadkill risk from construction/ operation traffic Impact to devil dens Impact to denning and foraging habitat Noise impacts from construction and operation Impact through increase risk of devil facial tumour disease, roadkill, disturbance to dens and denning habitat Robbins Island population should be considered critical to safeguarding the species.	no	Covered in S6.2 of DPEMP. To be further detailed in the design report and CEMP following micro-siting of dens. The Design Report and CEMP will be required by permit conditions, if approved.	Refer to Section 2 of this Supplementary Volume; and covered in Section 6.2 of DPEMP. To be further detailed in the design report and CEMP following micro-siting of dens. The Wind Farm Design Report and CEMP will be required by permit. There is no devil facial tumour disease on Robbins Island therefore an offset is not required for this. The WTG Development Zone has been chosen to avoid removal of critical fauna habitat and native vegetation as far as practicable. This includes minimising the development in optimal denning habitat. This approach of avoidance as the primary option will continue through the detailed design phase of the Project, with an ecologist advising on the micro-siting of infrastructure to minimise impacts wherever possible. The final infrastructure layout will be defined in the Wind Farm Design Report.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
27	1	Impact of fencing and roads on Devil movement and potential habitat fragmentation.	no	Proponent to note.	Fencing will occur around infrastructure such as substations, the maintenance and services facility, waste storage areas, etc. for human and animal safety. Turbines and roads will not be fenced, so there will be limited habitat fragmentation. Research shows that linear roads facilitate easier and faster travel for devils and enable improved access to areas for foraging - refer to the Tasmanian devil section of the Robbins Island Renewable Energy Park Supplementary Volume.
194,283,317,197,198,000,000	7	Reference to emails between federal officials and UPC that the company had not addressed potential offsets for devil habitats, and that that as devil colony on the island is unique offsets are unlikely to exist.**link to guardian article	no	Tasmanian Devils on Robbins Island are not a unique population.	Potential impacts on habitat are addressed in Section 2 of Supplementary Volume. The difficulty with direct offset is that any conservation covenant applied to Robbins Island would make little material difference to the outcomes for devils. Instead, a more holistic approach is proposed, with active conservation management of the island population through a Conservation Management Plan across all of Robbins Island, with resourcing applied to active management measures.
197,198,283	3	Sampling for Tasmanian Devils not sufficient. Concerns included: Survey for devil dens proposed inconsistent with DPIPWE survey guidelines. Searches proposed for one month before construction, however survey guidelines recommend that activities are minimised during denning period (July -September)	no	Surveys were undertaken in accordance with survey guidelines. Further surveys will be required prior to construction, with results required for CEMP in permit conditions, if approved.	As noted by EPA; surveys were undertaken in accordance with survey guidelines. Further surveys will be required prior to construction, with results required for CEMP in permit conditions, if approved. Further, refer to Section 2 of this Supplementary Volume. The design process is one that is iterative, informed by survey work that will continue to take place prior to construction start-up. The next survey aims to build knowledge of the current distribution of devils on the island, with population structure and relative density mapped through a ten night trapping survey. A key focus will be on maternal status to understand likely locations of natal dens. This survey is planned for June 2022, with animal ethics clearance and the required permit from NRE Tas underway to enable the survey in time (given the focus on females with pouch young).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
317	1	Proponent has not proposed restrictions to the hours (daylight hours) for vehicle movements on island, associated roadkill risk.	no	Covered in S6.2 of DPEMP	As part of the Project's CEMP, a Roadkill Monitoring and Adaptive Management Plan (RMAMP) will be developed to manage the impact of increases in construction traffic along the main access roads to Robbins Island, namely, Mella Road, Montagu Road, West Montagu Road and Robbins Island Road, along with construction roads within Robbins Island. Refer to Section 2.6.4 Roadkill avoidance, mitigation and offset of this Supplementary Volume. To minimise the number of vehicles travelling on access roads to the Project Site, vehicle movements would be restricted to up to 82 Project-related vehicle movements per day during peak roadkill periods (i.e. dusk to dawn). This includes providing buses to transport up to 85% of construction staff to/from the Project Site.
332	1	40km/hr speed limit is too high, and how will it be enforced?	no	Speed limits and other mitigation measures will be implemented though the CEMP.	As part of the Project's CEMP, a Roadkill Monitoring and Adaptive Management Plan (RMAMP) will be developed to manage the impact of increases in construction traffic along the main access roads to Robbins Island, namely, Mella Road, Montagu Road, West Montagu Road and Robbins Island Road, along with construction roads within Robbins Island. Refer to Section 2.6.4 Roadkill avoidance, mitigation and offset. Vehicle speeds within the Project Site on Robbins Island and on the bridge would be limited to 40 km/h, along with instigating a culture of environmental risk management. Monitoring and enforcement will be a core part of this. High speeds will be detectable from dust emissions, and site supervisors will enforce the speed limits. UPC\AC believes that if a culture of care for wildlife can be instilled and maintained from the outset, there will be strong compliance with the speed limit.
283	1	Devil roadkill death information outdated and incorrect, current assessment required.	no	Roadkill management will be addressed in	Prior to the construction period, the roadkill survey will be repeated to update baseline data and

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		Local group collected data (not provided) which found 106 roadkill deaths between 1/12/21-15/2/22		the Roadkill Monitoring and Adaptive Management Plan (RMAMP) required as part of the CEMP.	understand changes since the initial survey over six months in 2018. Roadkill management will be addressed in the Roadkill Monitoring and Adaptive Management Plan (RMAMP) required as part of the CEMP.
283	1	Offset proposed for roadkill deaths does not cover impacts caused by devil facial tumour disease	no	Proponent to note.	As the development is not viewed as likely to cause the spread of devil facial tumour disease on Robbins Island, an offset is not required for this.
201	1	Mapping of habitat is considered insufficient.	no	Habitat mapping is sufficient and is covered in S6.2.	Habitat mapping has been an important component of the impact assessment process. Section 2.1.1 of this Supplementary Volume provides details on mapping methodology. Section 2.6.2 and 2.6.3 identify further survey work to be implemented.
201, 238, 248,287,288,289	6	Impact to optimal denning habitat for construction of the wharf	no	Addressed in S6.2 of DPEMP	Section 6.2 of the DPEMP addresses the impact in this area, as it is the only part of the development footprint that occurs within optimal habitat. Den searches will be undertaken prior to the start of works, with methods and protocols described in Section 2.6.2 and 2.6.3. The WTG Development Zone has been chosen to avoid removal of critical fauna habitat and native vegetation as far as practicable. This includes minimising the development in optimal denning habitat. This approach of avoidance as the primary option will continue through the detailed design phase of the Project, with an ecologist advising on the micro-siting of infrastructure to minimise impacts wherever possible. The final infrastructure layout will be defined in the Wind Farm Design Report.
201	1	Mitigation measures are insufficient to minimise impacts on devils. Night curfews should be proposed to protect devils and quolls from roadkill.	no	Addressed in S6.2 of DPEMP	As part of the Project's CEMP, a Roadkill Monitoring and Adaptive Management Plan (RMAMP) will be developed to manage the impact of increases in construction traffic along the main access roads to Robbins Island, namely, Mella Road, Montagu Road, West Montagu Road and

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					Robbins Island Road, along with construction roads within Robbins Island. Refer to Section 2.6.4 Roadkill avoidance, mitigation and offset of this SV. To minimise the number of vehicles travelling on access roads to the Project Site, vehicle movements would be restricted to up to 82 Project-related vehicle movements per day during peak roadkill periods (i.e., dusk to dawn). This includes providing buses to transport up to 85% of construction staff to/from the Project Site. Further, vehicle movements would occur between 6 am – 6 pm, as far as practicable. When vehicles are travelling during winter with earlier dusk and later dawn, additional care would be required, including travelling below 80 km/h on access roads, where practicable. Driving at night will only occur on an as needs basis, e.g., when weather conditions dictate night work to erect a turbine to avoid high wind speeds. However, this will not be the standard, and if night work is required, additional cautions will be outlined in the RMAMP.
243	1	The Roadkill Monitoring and Adaptive Management Plan is an important document that should have been available for public comment. The plan's proposed inclusions lack detail. Limits on traffic are not described. Effectiveness of virtual fencing is disputed amongst reviewers and users. Review of its efficacy in Tasmania is recommended, i.e. units could be closer together and lower to the ground. Limits on vehicle speed need to be aggressively applied, i.e. speed limiting vehicles on Robbins Island, fitting vehicles with GPS trackers which can record speed. Roadkill monitoring should be both on	no	Proponent to consider as part of Roadkill RMAMP required as part of the CEMP.	It is agreed that the RMAMP is an important document, and it will require approval as part of the CEMP, ensuring that it meets the standards required. These concerns raised will be considered when finalising the RMAMP. UPC\AC agree that the use of virtual fencing is not a guaranteed mitigation, and as such it is only one of the measures proposed on the mainland access roads. Assessment of virtual fencing efficacy in collaboration with other researchers, will continue to build an understanding of how this can be improved and where it can be applied. The RMAMP will be an adaptive document, with the measures improved based on evidence. UPC\AC agrees that speed limits are critical, and this will be a core part of induction, training and site supervision. Roadkill monitoring is also a critical activity to understand impacts but need to

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		island and on the approaches. Monitoring should be more than driving along roads as drive by surveys will not find all collisions. The pre-construction roadkill survey is a start, but should be repeated.			be practical to implement. Agreed that it needs to occur on the island and the approaches. The pre-construction roadkill survey will be repeated as an updated baseline for the RMAMP.
243,263,	2	Devil facial tumour disease. The DPEMP does not include provision to keep devils from using the bridge. The bridge may be a conduit to bring DFTD to Robbins Island. Impact from increased risk of DFTD due to the bridge.	no	Covered in S6.2 of DPEMP	Refer to Section 2.6.5 Tasmanian Devil Conservation Management Plan (TDCMP) of this Supplementary Volume, which includes mitigation measures; including ongoing monitoring for population health, including any signs of DFTD The bridge design will be finalised with advice from UTAS and Save the Devil Programme, utilising research from Fortescue Bay on access limitations. Monitoring bridge access through cameras will ensure we understand success or limitations of any exclusion structures or devices installed and provide ongoing adaption measures if required.
243	1	Impacts to clearing Mitigation measures through construction clearance are a minimalist approach. It is difficult to find devil dens by physical searches, with GPS/radio tracking breeding females the only reliable and efficient method. Finding and conserving dens may be important for the conservation of devils on Robbins Island. Decommissioning of dens of an endangered species results in a loss of dens and a progressive diminishing of den quality which could have implications for productivity.	yes	Further information on denning habitat has been requested from the proponent as part of the supplement.	Refer to the Section 2 of this Supplementary Volume for further information on denning habitat and additional survey work. The staged surveys are outlined, presenting an approach to locating dens (including GPS tracking) that will inform the detailed design work, and any micro-siting opportunities to avoid den sites as a key priority. It is agreed that finding and conserving dens is a key focus, and decommissioning dens is the very last resort.
243	1	Offsets Offsets should be direct, such as slowing traffic to reduce roadkill.	no	Proponent to note.	Refer to Section 6.2.4 of the DPEMP. Traffic will be slowed to reduce roadkill, noting that speed limits on Robbins Island will be set at 40 km/hr and on public roads construction traffic

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					will travel below 80 km/hr where practicable. The RMAMP is adaptive in its approach, and therefore will provide additional measures such as further speed reductions in response to incidence of roadkill and evidence on causes and most appropriate mitigations.
248	1	Ongoing operation of heavy industrial site 24 hrs a day as well as blasting, lights vibration through pile driving and excavator operations will probably force the devils to abandon the island.	no	Proponent to note.	Refer to Section 2.8.2 of the DPEMP. Night works are likely to be required for the concrete pours for turbine foundations and occasionally for erecting turbines if it is too windy during daylight hours. The turbine foundations (approximately two per week) will be constructed progressively around the site - there will not be construction activity across the whole island, particularly at night. Similarly, turbines will be erected progressively once foundations have cured. Night time activities will be restricted to localised areas. Devils are very unlikely to abandon the island in relation to disturbance.
251	1	As the Island is free of Devil Facial Tumour Disease (DFTD) the population should be protected. Decommissioning dens, the noise and disturbance from construction, ongoing 24/7 noise from operations and roadkill will impact the healthy devil population. Representor believes that devils rarely cross Robbins Passage.	no	Proponent to note.	Refer to Section 2.8.1 of the DPEMP. The wind farm will be constructed in two stages which restricts activities to set areas. Construction work, such as building roads, will be progressively undertaken across each staged area. Construction activity will not be occurring across the whole site at once. Refer to Section 2.8.2 of the DPEMP. Night works are likely to be required for the concrete pours for turbine foundations and occasionally for erecting turbines if it is too windy during daylight hours. The turbine foundations (approximately two per week) will be constructed progressively around the site - there will not be construction activity across the whole island at night. Refer to Section 6.2.4 of the DPEMP for roadkill mitigation measures. The proposed measures outlined in Section 2 of this Supplementary Volume outline an island wide conservation approach, initiating a range of measures to

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					protect the population, including initiatives to return access to pasture areas that are being progressively fenced for improved farming operations separate to the windfarm. The incidence of devils crossing the Passage is unknown, but the landowner has seen these events on a number of occasions.
279	1	Roadkill survey is out of date and requires updating. Impact on devil dens from the quarries.	no	Covered in S6.2 of DPEMP and QMP.	Roadkill survey will be updated as a baseline for the RMAMP. The Preliminary QMP also specifically addresses devil dens. Note that a larger buffer of 200m will be applied to dens located near quarrying due to the potential for noise impacts.
Spotted tailed quoll/Eastern barred bandicoot					
1,21, 29,201,323,33,34,35,36,37,38,39,40,41 ,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32	226	Potential increased roadkill risk from construction/operation traffic on spotted-tailed quoll/eastern-barred bandicoot.	no	Addressed in S6.2 of DPEMP	Refer to Section 2.6.4 *Roadkill avoidance, mitigation and offset* of this Supplementary Volume.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383					
Marrawah skipper					
176,323,327	3	Impact to habitat of Marrawah skipper	no	Covered in S6.2 of DPEMP.	Very little of the species' confirmed habitat is within the Project Site, and no evidence of the species has been identified. It is considered highly unlikely to occur or be impacted by the Project (Appendix C; DPEMP). Host plant Carex appressa was found to be largely uncommon on Robbins Island, but viable habitat for the species was found to be more widespread. Some Carex appressa habitat was identified along Robbins Island Road. Based on the small area of habitat impacted, sparse occurrences of the host plant and the lack of any evidence of Marawah skipper occupation, it is considered unlikely the Project would have a significant impact on this species
Threatened vegetation communities					
28,52,176,183, 197,198,284,287,288,289,3 23,327,334,370,"28,52,176,183, 197,198,284,287,288,289,323,327,334, 370,33,34,35,36,37,38,39,40,41,42,43, 44,45,46,47,48,49,5 0,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148,	235	Clearance of native vegetation, including critically endangered *Eucalyptus viminalis - Eucalyptus globulus* coastal forest and woodland (DVC)	no	Addressed in S6.1 of DPEMP	The WTG Exclusion Zone protects a series of environmental constraints, including threatened vegetation communities, eagle nests, Aboriginal heritage, geoconservation sites and threatened fauna habitat, as shown in Figure 2-8 of the DPEMP. WTG Exclusion Zones have been defined to avoid and minimise Project impacts, and these are described in detail throughout Section 6. The community *Eucalyptus viminalis - Eucalyptus globulus* coastal forest and woodland (DVC) occurs on 46.9 ha within the Project site. The maximum footprint area potentially impacted is 1.39 ha.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383"					The main area of DVC will be protected, with a conservation covenant, and fenced to exclude stock from this vegetation community. Active conservation management such as pest and weed management will be undertaken. Refer to table 6-2 of the DPEMP; max footprint disturbance potentially impacted by Project construction 1.39 (ha); (<0.04% proportional loss State-wide).
94,176	2	Impacts to biodiversity	no	Addressed in S6.1 of DPEMP	Impact to biodiversity is addressed throughout section 6.1 of the DPEMP. Avoidance, mitigation and management measures are provided. As a component of assessing the natural values of the Project Site, Ecological Burning Guidelines were developed for Robbins Island (Appendix C; DPEMP). The focus of the Ecological Burning Guidelines is on yielding positive outcomes for vegetation communities on the island, providing fire management tools for protection and enhancement of biodiversity.
201, 238,284	3	Concerns in relation to clearance of threatened vegetation (WBR and NME) to widen Robbins Island Road.	no	Addressed in S6.1 of DPEMP	***NME*** Close to the north end of Robbins Island Road on mainland Tasmania, a small area (up to 400 m2) of this community would be impacted. This impact cannot be avoided, as the NME community is directly adjacent to the existing Robbins Island Road alignment, and road widening needs to occur to provide sufficient width for safe movement of vehicles associated with construction of the Project. The extent of clearance of this community has been minimised to the area necessary for the proposed upgrade to

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					Robbins Island Road. As per Table 6-2 of the DPEMP, this loss amounts to 0.04 ha out of the 99.6 ha on site, or an equivalent of 0.0005% proportional loss State-wide. ***WBR*** This impact cannot be avoided, as there are areas of WBR directly adjacent to the existing road. Widening of the road needs to occur to provide for safe movement of vehicles associated with construction of the Project. The extent of clearance of this community would be restricted to the minimum area necessary for construction of the proposed upgrades to Robbins Island Road. The loss of 0.7 ha out of the 187.7 ha on the Project site, (or <0.01% proportional loss State-wide) is unavoidable. Considering the small area of potential impact, the residual effect on these threatened communities (NME and WBR) is expected to be minor. It is anticipated that refinements of the WTG and road layout during micro-siting and development of the final construction methodology would further reduce the area of native vegetation to be cleared, but the amounts provided in the DPEMP are conservative estimates. The final impact areas for native vegetation would be defined in the Wind Farm Design Report, which would be provided to the EPA for approval prior to construction.
232	1	Clearance of 1000 ha of coastal, heathland and shrubland is significant, a complete survey of Robbins Island botany is required.	no	Total footprint clearance is 366 ha, with 280 ha clearance of native vegetation. Covered in S6.1 of DPEMP.	Refer Section 6.1 of the DPEMP. Total footprint clearance is 366 ha, with 280 ha clearance of native vegetation. The proposed disturbance footprint is significantly smaller than the Project Site boundary. Refer to Table 6-2 of the DPEMP. It is anticipated that refinements of the WTG and road layout during micro-siting and development of the final construction methodology would further reduce the area of native vegetation to be

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					cleared. The final impact areas for native vegetation would be defined in the Wind Farm Design Report, which would be provided to the EPA for approval prior to construction.
Threatened flora species					
176,197,198,201, 238, 248,279,287,288,289,323,334,370	13	Threatened flora species identified on Robbins Island, including northern leek orchid, Sun orchid, *Parmotrema crinitumn* recorded on project site. Expressed view that they should have ongoing protection.	no	Covered in S6.1 of DPEMP. Further surveys will be required prior to construction, with results required in the Design Report as required by a permit condition, if approved.	Further orchid surveys will be completed prior to construction as outlined in DPEMP (pages 93-94). These will inform the Final Wind Farm Design Report which will need approval from EPA. Refer Section 6.1.4 Mitigation measures in the DPEMP which includes; areas of threatened communities and/or threatened flora locations would be designated as exclusion zones and marked to the degree necessary to avoid any inadvertent impacts. Operational impacts to vegetation communities and threatened flora are expected to be limited to the possible introduction and/or spread of weeds and pathogens around the Project Site as a result of vehicular movement, or occasional earthworks associated with Project operation (e.g. road repair and maintenance). Mitigation measures will be detailed in CEMP and OEMP.
Green and gold frog					
263,323,283, 284	4	Green and Gold Frog resides in area to be impacted by footings, roads and construction activity in the area of Remarkable Banks. Concerns included: habitat fragmentation spread of weeds pathogens, including increased threat of Chytrid fungus feral animals alterations to hydrology	no	Micrositing of infrastructure will be undertaken to minimise impact on habitat, as part of the Design Report. A weed and hygiene management plan will be required to address potential impacts from Chytrid fungus. Groundwater	Micro-siting of infrastructure will be undertaken to minimise impact on habitat, as part of the Wind Farm Design Report. A weed and hygiene management plan will be implemented through the CEMP and OEMP to address potential impacts from Chytrid fungus. Groundwater modelling will also be required as part of the CEMP.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
				modelling will required as part of the CEMP. These will be required by permit conditions.	
284	1	Threat to burrowing crayfish habitat	no	Proponent to note	The reduction in available habitat in the Remarkable Banks wet coastal heathland has the potential to impact burrowing crayfish, as noted in Section 6.4.3 of DPEMP. Given the widespread occurrence of burrowing crayfish within the Remarkable Banks area and elsewhere around the island, the loss of the 32.7 ha of habitat in the context of remaining habitat is not considered significant and would not be expected to affect the survivability of *Geocharax tasmanicus*. As per Green and Gold Frog, micro-siting of infrastructure to avoid inundated areas and likely habitat as much as practicable will be undertaken.
Striped marsh frog, Eastern dwarf galaxias, Australian grayling					
57	1	Surveys for dwarf galaxias were inadequate and do not demonstrate likely absence of the species All ephemeral freshwater habitat should be treated as if the dwarf galaxias is present Dwarf galaxias vulnerable to changes in hydrology, concern with groundwater abstraction impact	no	Proponent to note	The Remarkable Banks wet coastal heathland was considered to provide potential habitat for this species. A targeted survey (Appendix O; DPEMP) and habitat assessments (Appendix C; DPEMP) were undertaken for the species. The GHD aquatic survey of the Remarkable Banks wet coastal heathland focussed on identifying refuge habitat linkages that would support aquatic species (such as Eastern dwarf galaxias) during the extended dry period experienced at the area. The survey also investigated the possibility of the Eastern dwarf galaxias using burrowing crayfish burrows, common throughout the wet coastal heathland, for summer refuge habitat. The excavation of several burrows within the Remarkable Banks area (down to depths as far as 1.5 m) did not identify this species (Appendix O).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
Noise emissions					
Construction					
283	1	Impacts of noise from quarry on residents	no	Covered in S6.8 of DPEMP and the preliminary QMP.	Refer Section 6.8.4 of DPEMP. A list of mitigation measures has been proposed to address noise impacts to sensitive receptors (residents). A Construction Noise and Vibration Management Plan will be developed as part of the CEMP and management. Measures to reduce noise impacts on residents will be included in the Final Quarry Management Plan.
127	1	Noise impacts on wildlife and birds during construction	no	Proponent to consider in CEMP, as required by permit condition if approved.	Refer Section 6.8.4 of DPEMP; a list of mitigation measures has been proposed to address noise impacts to fauna and avifauna. A Construction Noise and Vibration Management Plan will be developed as part of the CEMP and management measures will be included in the Final Quarry Management Plan. Noise impacts to wildlife and birds will be considered in the QMP.
204	1	Noise impacts on wildlife and birds during operation of turbines and construction	no	Proponent to consider in OEMP, as required by permit condition if approved.	Refer Section 6.8.4 of DPEMP; a list of mitigation measures has been proposed to address noise impacts to fauna and avifauna during construction and operations. Noise, including measures to minimise impacts to wildlife and birds, will be considered in the development of the CEMP and the OEMP.
Operation					
61	1	Noise measuring and modelling is inadequate, it should be measured at every property within a 2 km radius.	no	No residents within 2 km of the project.	Refer to Section 6.8.3 of the DPEMP. In total, 38 sensitive receiver locations were identified for the noise assessment, with the closest resident 2.8 km to the south of the Project Site boundary. The distance from the closest sensitive receiver to the WTG Development Zone would be 3.3 km, as the Project includes a 500 m coastal exclusion zone for WTGs.
21,376	2	Missing information - studies on noise impacts to nearby residents, including	no	Addressed in S6.8 of DPEMP	Refer to Section 6.8 of the DPEMP. A noise impact assessment was undertaken for the

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		baseline information over longer time period.			Project in 2020 and is included as Appendix R. As part of this assessment, a baseline noise study was conducted around the Project Site, including both on and off Robbins Island. Noise surveys were carried out in accordance with performance requirements in Section 6.8.2 of the DPEMP.
165,183,317,248,285,294	6	The windfarm will cause noise emissions. Some residents located between Jim's Plains and Robbins Island windfarms will be subject to constant noise. Noise can be heard from 7km/ up to 10km.	no	Addressed in S6.8 of DPEMP. The windfarm will be required to meet noise emission limits as detailed in permit conditions if approved.	Addressed in Section 6.8 of the DPEMP. The Robbins Island Renewable Energy Park will be required to meet noise emission limits as detailed in permit conditions if approved.
183,376	2	Turbines will cause an impact to users of Robbins Passage and the Montagu Camp ground	no	Addressed in S6.8 of DPEMP. The windfarm will be required to meet noise emission limits as detailed in permit conditions if approved.	Addressed in Section 6.8 of the DPEMP. Montagu Campground was one of the receptor sites assessed for noise impacts. The windfarm will be required to meet noise emission limits as detailed in permit conditions if approved.
197, 198	2	Table 6-23 in EIS does not have interpretation. Representor wanted to understand if "crosses" indicate that noise levels are not acceptable at sensitive receiver.	no	Crosses indicate noise levels above criteria for all construction activities, including piling of bridge.	This table relates to the bridge construction, denoting all sources of noise including piling. Where there are crosses this denotes exceedances of the criteria, demonstrating where there needs to be mitigation measures, particularly limitations on hours.
310	1	Bird and wildlife operation are not considered as sensitive receptors.	no	Proponent to note	Noise impacts to birds and wildlife are considered in Section 6.8. of the DPEMP. UPC\AC notes the concern and will address impacts to bird and wildlife from noise further within the CEMP.
317	1	Turbine design not finalised, therefore noise impacts cannot be accurately modelled.	no	The windfarm will be required to meet noise	Noise impacts were modelled on the range of turbines under consideration. Modelling was run for the 122 WTG layout using Vestas Enventus

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
				emission limits. Prior to construction, the results of noise modelling based on the final turbine type and layout must be submitted to the Director. These will be required by permit conditions.	V162-6.0 MW, and with 74 WTG layout using GE Haliade-X 12 MW WTGs. It is noted that these turbines are not the final selected model, given the ongoing improvements in the technology it was seen as pragmatic (and potentially with better outcomes) to leave selection options open. As noted by the EPA, the final turbine selection will need to be provided to the EPA, including noise modelling based on the turbine selection and final layout. This will need EPA approval. Also, noise emissions must meet the required performance standards.
317	1	Recent court cases have found the noise from turbines can be a nuisance even within the allowable thresholds.	no	Proponent to note	The court ruling in the recent Bald Hills Wind Farm case involved a nearby residence that was approximately 1 kilometre away from the nearest turbine. The closest residence to the turbines on Robbins Island will be over 3.3 kilometres away.
376	1	Noise levels in area very low in evening, wind farm noise will be audible to residents living within 7-10km of Robbins island. Attached statements from residents or visitors residing within 8km of the Cattle Hill Wind Farm, stating that noise from the Turbines is audible, is a nuisance, and causes sleep disturbance.	no	The windfarm will be required to meet noise emission limits as detailed in permit conditions if approved.	For the Operational period, the DPEMP proposes that prior to construction and operation of any turbines, an appropriately qualified third party acoustic consultant would undertake modelling of the final WTG layout. The results would be submitted to the EPA as part of the Wind Farm Design Report. Further, to ensure that actual WTG noise is consistent with the assessments made in the Wind Farm Design Report and the DPEMP, background monitoring and tonality testing would be undertaken during Project operation by an appropriately qualified third party acoustic consultant at the closest sensitive receiver. Additionally, in Section 6.8.5 of the DPEMP, Commitment 24 states an online complaints register and contact phone number would be developed for the construction and operational phases to resolve any noise related complaints. All complaints would be logged, actioned and all outcomes documented.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
376	1	Use of time weighted noise measurements is not representative of reality of low noise levels in areas at night.	no	Noise measurements were in accordance with the Tasmanian Noise Measurement Procedures Manual (2008)	As noted by the EPA; noise measurements were in accordance with the Tasmanian Noise Measurement Procedures Manual (2008). Covered in Appendix R Noise Assessment.
Robbins Passage - bridge					
28,176, 197,198,294,301,303,304,310, 317,343,346,34633,34,35,36,37,38,39, 40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35	233	Sediment flow from construction has not been modelled in a detailed manner	no	Addressed in S6.13 of DPEMP.	Mitigation measures during the construction phase will be investigated and considered to minimise impact to sediment flow (e.g. silt curtain).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
8,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383					
27,29,176,189,194,301,303,304,308,309,310,323,343,345,28333,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162,163,164,166,167,168,169,170,173,174,175,177,179,180,182,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236,239,240,241,245,246,247,249,253,254,255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329, 330,331,333,335,336,337,338,339,340,341,342,344,347,348,349,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383	235	Impacts on current industry in channel (commercial fisheries, oyster farms and sea grasses) not modelled	yes	Proponent to comment on potential impacts to current industry in Robbins Passage.	No dredging will occur during bridge construction. Excavation of sediments for pile footings is not envisaged at this stage; however, if required, would be subject to further assessment. The construction method using driven piles for the bridge would create localised disturbance of sediments for a limited time. Given the high level of tidal activity, it is anticipated that the sedimentation would be minor and short-term. Nonetheless, mitigation measures during the construction phase will be investigated and considered to minimise impact to sediment flow (e.g., evaluating the use of a silt curtain). The closest significant seagrass beds are >6 km from the proposed bridge location, with sparse areas located ~2 km away. The closest marine farming zone (with a current lease; 8A) is >4 km from the proposed bridge location (refer to Section 6.13 of the DPEMP). Given the minimal disturbance to sediments expected during construction and the high level of tidal activity, it is anticipated that sedimentation would be minor and short-term and not significantly impact seagrass areas or industry within the channel. Stakeholder consultation - Communicating information about the Activity to other marine users ensures they are informed and aware, thereby reducing the likelihood of interference occurring.
1,5,21,189,294,317,343,34633,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95,	228	Construction of the bridge may reduce access to the passage and beach for boating and recreation	no	Addressed in S6.13 of DPEMP.	Public access will only be restricted around the bridge location during construction. Stakeholder consultation - Communicating information about the Activity to other marine users ensures they are informed and aware, thereby reducing the likelihood of interference occurring.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383					
57,311,370	3	Impact assessment is not based on actual data on flows and seabed composition. Hydrodynamic report does not include Black Reef. Report requires complete hydrology report and benthic survey. Full risk analysis with mitigating plans required.	no	Proponent to note.	The impact assessment considered the actual tidal characteristic of Robbins Island and the surrounding area from various global tide models; it also took into account the local tide constituent at Howie Island. The model was calibrated to the actual water level measurements from Howie Island and Kangaroo Island. Black Reef is > 15 km from the proposed bridge location and given the natural tidal flow (in both directions) of the area, and the limited localised effects expected from construction (see Appendix V of the DPEMP), impacts to the reef are not anticipated. The seabed composition was configured on the basis of the Lucieer et.al (2007) SeaMap habitat map and additional habitat mapping by Mount et.al (2010).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					Mitigation measures associated with the bridge and wharf are outlined in Section 6.13.4 of the DPEMP.
1,13,21,27,171,13,21,27,176,183,196,275,301,303,304,308,309,310,317,323,3436,183,196,301,	17	The bridge and wharf may adversely impact ecosystems of the entire region of Robbins Passage and Back Banks Beach, including saltmarsh/wetlands	no	Potential impacts are covered in DPEMP.	The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase.
12,232,327	3	Concern that bridge will allow feral animals onto island	no	Covered in DPEMP	As per Section 6.3.4 of DPEMP, the bridge will be designed to prevent access by feral animals. Commitments have been made for ongoing feral cat control, including monitoring and the potential use of Felixir traps.
29,94,189,343	4	Bridge/causeway will alter hydrology and impact bird feeding areas	no	Covered in DPEMP	The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase.
183,300,343	3	Concern that it will be a privately owned bridge over public land, to which public will have no access	no	Proponent to note	UPC\AC will be required to seek a lease/licence, whichever is deemed most appropriate, from Parks and Wildlife Service to build on Crown land. Refer to https://parks.tas.gov.au/about-us/conducting-business-in-parks-and-reserves/property-services/leases-and-licences-(nature-based-tourism-reserved-land-and-crown-land)
248,301,303,304,308,309,310,311,312,323,343,345,346	13	Baseline Marine Environment Assessments not adequate, more information required including: - Identification of Marine Values - Varying marine environment, including seasonal variation - Construction impacts on bordering reefs (including sediment and	no	Proponent to note.	Robbins Island is located in the Bass Strait Shelf Province (IMCRA 4.0) of the South-east Marine Region. The seabed composition was configured based on the Lucieer et.al (2007) SeaMap habitat map and additional habitat mapping by Mount et.al (2010). The Phase 3 impact assessment identified bridge and wharf configurations that would result in the

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		particulate) - Potential change in natural current and resulting impacts - Potential impacts to reefs that sustain commercial and recreational fisheries - Potential impacts to marine flora, fauna and broodstocks.			minimum influence on the coastal processes of the project site from a holistic perspective. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase. Measures such as a silt curtain will be considered for the construction as one of the mitigation measures to reduce potential increased turbidity and sedimentation.
346	1	Marine Hydrodynamic Assessment has limitations Phase 2 did not have final bridge design to preform assessment Phase 3 not undertaken by a marine specialist, and does not address limitations previously addressed in Phase 2. No measurements of water currents to verify model.	no	Proponent to note	Building on the Phase 2 report, the Phase 3 report examined additional bridge and wharf configurations that informs the next phase of the project. The impact assessment considered the actual tidal characteristic of Robbins Island and the surrounding area from various global tide models; it also took into account the local tide constituent at Howie Island. The hydrodynamic model was calibrated to the water levels at Howie Island and Kangaroo Island.
283	1	Phase 4 modelling report should be provided to address deficiencies in coastal and marine impact assessment	no	Proponent to note	Phase 4 will be conducted in conjunction with the detailed design of the structures, where the purpose of the Phase 4 modelling is to inform and to optimise the structural designs for the objective of minimising the impacts of the structures. Currently, Phase 4 has not commenced.
346	1	No assessment made regarding the Living Marine Resources Management Act (listed in the DPEMP Guidelines). No analysis of Projects consistency with the Tasmanian State Coastal Policy 1996	no	Proponent to note	See Section 6.13 of DPEMP for analysis of potential impacts to marine and coastal environment, which includes an assessment of potential impacts to marine leases. Reference to minimising impacts to marine resources as per the Resource Management and Planning System is made in Section 11. Reference to Tasmanian State Coastal Policy 1996 is made in Section 6.6.2 as a performance requirement for surface water management and is

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					Section 6.11.2 as a performance requirement for the management of potential acid sulfate soils.
346	1	No reference to any marine mammal experts in any assessment of impacts in relation to marine mammal vessel strike and marine noise generation	no	Proponent to note	Refer to Section 6.13.3 noting that barges would have a maximum speed of 10 knots. Vessel speeds of 10 knots or less reduce the risk of vessel strike to low (Laist et al. 2014). Refer to Section 6.13.3 noting that a Marine Mammal Observer would be present during all piling operations, including implementation of soft start and shutdown procedures.
12733,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,182,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,358,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383	221	Concern over major environmental change and resulting habitat disturbance from the bridge across Robbins passage.	no	Covered in DPEMP	The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
204	1	Robbins Passage is a rare hydrology and ecological zone	no		This is noted, with Section 6.13 of the DPEMP and Appendices O, P, T, U and V identifying risks and mitigation actions.
204	1	There appears to be no hydrodynamic and sedimentation models for the area and the effect this will have on the shoreline of the area. There are no mitigation measures to safeguard the ecosystem that would be acceptable.	no	Proponent to note	Hydrodynamic and sediment transport modelling was documented in Phase 2 and Phase 3 reports.
232	1	Change to tidal flows will cause impacts to environmental values of Boullanger Bay, with reduction in shorebird feeding habitat. A full hydrological study is required.	no	Covered in DPEMP	The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase.
251	1	Concern that after approval there will be an amendment to build a causeway as originally proposed	no	Any approval provided would not allow amendment to a causeway.	UPC\AC has no intention to build a causeway.
263	1	Both ramps will impact on saltmarsh. Saltmarsh extends along the margins on the southern side, although not shown on TASVEG mapping. The northern side of the ramp will require clearing of saltmarsh (ARS?) mapped by Prahalad & Kirkpatrick (2019). Also loss of potential OBP habitat. The bridge will impact on seagrass, this is not adequately acknowledged in the DPEMP. Potential issues with mobilisation of ASS, sedimentation and channel migration not adequately addressed. The loss of tidal flats as an important habitat area is not adequately	yes	Proponent to address comment in relation to saltmarsh in vicinity of bridge.	On the mainland side of the bridge landing there is an area of saltmarsh (see Figure 6.4 of the DPEMP) of which lies outside the Project Site and will not be impacted. TASVEG 4.0 does not show any saltmarsh on the Robbins Island side of the proposed bridge landing. However, LISTMap does show an area of saltmarsh. This will be verified during the detailed project design and wherever practicable impact to saltmarsh will be avoided and mitigated during construction. Refer Section 6.13 - The closest significant seagrass meadow is over 6 km from the bridge site, with areas of sparse seagrass ~2 km away.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		acknowledged or addressed. The hydrodynamics assessment does not appear to take into account the ~ 170 steel piles used in bridge construction.			In one of the options, the bridge has a span of approximately 1,290 m to accommodate channel migration. The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site from a holistic perspective. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase. Impacts of the piles will be part of the design considerations post approval. ASS is only formed once the sediment is exposed to sufficient volume of oxygen. Mitigation measures such as the timing of piling such that the disturbance to the seabed would remain underwater will be considered.
294	1	Detail design of the bridge is missing. No consideration of public access around bridge location, pre and post construction	no	Proponent to note	Detailed design of the bridge, along with all other project infrastructure, will be determined post approval. Public access will only be restricted around the bridge location during construction, access will not be restricted pre-construction or post-construction.
275,301,303,304	4	Impacts to commercial fisheries	no	Proponent to note	Given the minimal disturbance to sediments expected during construction and the high level of tidal activity, it is anticipated that sedimentation would be minor and short-term and not significantly impact commercial fisheries within the channel. Stakeholder consultation - Communicating information about the Activity to other marine users ensures they are informed and aware, thereby reducing the likelihood of interference occurring.
264	1	Concern with impact to abalone habitat from the bridge and wharf, particularly the reef structures to the east of Robbins Island and the impact	no	Proponent to comment.	The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site from a holistic perspective.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		to these from sediment runoff, both from construction and operation.			UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase. Measures such as silt curtain will be considered for the construction as one of the mitigation measures.
295	1	Concern farming runoff impact on marine environment and flow of water from construction of the bridge.	no	Proponent to note	UPC\AC has no control over agricultural run-off. The bridge will be progressively constructed and won't restrict the flow.
346	1	No commitment in DPEMP for feral cat management, or how cats will be kept from island (gate on bridge)	no	Covered in DPEMP	Covered in Section 6.3.4 of the DPEMP
251	1	Boat access Concern the high arch section of the bridge currently lines up with deepest part of the channel and what will occur if the channel moves and recreational boating is blocked. If the channel silts up because of the pylons from the bridge, will the proponent dredge the channel to enable continued passage of recreational boats? If so, will this disturb ASS. Shoreline access Concern that shoreline access will be blocked after the bridge is built, excluding locals from the beach. Fish nursery areas The passage has become a known breeding ground for the King George Whiting, concern over impact to this from bridge/causeway and disturbance to ASS.	no	Proponent to note	Natural movement of the navigable channel has been taken into consideration in the bridge design, and as such the high section of the bridge will be 600 m in length to account for the possible movement. UPC\AC has no evidence to suggest the bridge piles will cause the channel to silt up; however, initial monitoring will be undertaken to confirm this. There will be a 100 m concrete ramp at the end of Robbins Island Road connecting the road to the bridge, the public will be able to walk or drive over this unimpeded. The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site from a holistic perspective. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase. Given the impact assessment identified configurations with minimal influence on coastal processes, suspended sediment (and deposition) should be minimised with no expected significant effects to fish communities.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					ASS is only formed once the sediment is exposed to sufficient volume of oxygen. Mitigation measures such as the timing of piling such that the disturbance to the seabed would remain underwater will be considered. Additionally, a silt curtain will be considered around the piling rig to limit the dispersion of plume.
Ransonnet Bay - wharf					
	1	Impact to Back Banks dune geoconservation site	no	Proponent to note	The proposed Back Banks-Second Bluff Boulder Beach & Dune Geoconservation Zone is immediately to the east of the wharf access. Section 6.12 of the DPEMP provides an analysis of geoconservation site and potential impacts.
57	1	Severe dune erosion impacts	no	Proponent to note	Refer to Robbins Island Renewable Energy Park Supplementary Volume Section 4.1 for further information on wharf access construction.
197,198	2	Length of wharf not finalised	no	Proponent to note	Section 2.6.3 of the DPEMP discusses the wharf design at a conceptual level, with lengths of 509 m and 405 m both considered and discussed. Detailed design of the wharf, along with all other project infrastructure, will be determined post approvals as a part of the iterative design process.
29	1	Concern that wharf will be convenient for fish farms to become established	no	Proponent to note	The concern is noted but there is no fish farm development proposed. It is not relevant to the assessment of the Robbins Island Renewable Energy Park
251	1	Concern over impact to shoreline from the ramp part of the wharf. Concern over impact to Mosquito Sounds from tidal flow and impact this will have on fish breeding ground, as well as impact to waterbirds. Concern over impact from wharf on tidal flows and the impact to the main squid breeding ground in Ransonnet Bay. Concern over disturbance to ASS and impacts to marine life.	no	Proponent to note	There will be no development in Mosquito Inlet and there is no evidence that the wharf (option 3) will have any impact on tidal flows, fish or waterbirds. The main squid fishing area is approximately 1 km east of the wharf and it is unlikely there will be any impact from the construction of the wharf. The location of the wharf is not mapped as having a probability of marine subtidal or intertidal acid sulfate soils. Refer to Figure 6.30 in the DPEMP. Three preliminary wharf designs have been

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		DPEMP is confusing in the length of the proposed wharf.			proposed to allow flexibility around the barging options. The final design and length of the wharf will be the determined by the turbine selected and the final barging solution. The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site from a holistic perspective. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations accordingly during the detailed design phase. ASS is only formed once the sediment is exposed to sufficient volume of oxygen. Mitigation measures such as the timing of piling such that the disturbance to the seabed would remain underwater will be considered. Additionally, silt curtain will be considered around the piling rig to limit the dispersion of plume.
Introduced marine pests					
311	1	*Unidaria pinnatifidia* sited at Montagu. Full marine benthic report is required.	no	A survey for introduced marine pests will be undertaken following construction. Management of any identified marine pests will be required in the OEMP.	The existing marine environment surrounding the proposed wharf (Appendix P of the DPEMP) and Robbins Island in general is considered to be in a generally natural condition and likely to be free from IMPs, as indicated in the marine environmental assessment undertaken for the Project. Movement of fouled structures (including vessels, anchors, moorings, ropes etc) is the main pathway for introduction and spread of *Undaria pinnatifida*, with ballast water also a potentially important vector. Prevention systems will be in place to reduce the risk of introduction and translocation of marine pests during construction (see Section 6.13.4 of the DPEMP). As noted by the EPA: *A survey for introduced marine pests will be undertaken following construction to identify any marine pests in the*

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					area. Management of any identified marine pests will be required in the OEMP.
Aboriginal heritage					
176,248,315,197,198,296,312,315,327, 334,370,28333,34,35,36,37,38,39,40,41,42,43,44,45,46,47, 48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,182,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,358,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383	232	Proponent has not conducted a detailed aboriginal heritage assessment. Aboriginal heritage requires further assessment.	no	Outside EPA Board jurisdiction. Aboriginal heritage assessment undertaken. Additional assessment to be undertaken following detailed design and micrositing.	Following the Phase 1 and Phase 2 investigations that have informed the DPEMP process, UPC\AC will undertake Phase 3 of the Aboriginal heritage assessment post approval to inform the detailed design of the project. An Unanticipated Discovery Plan will be followed to appropriately respond to any unanticipated finds of Aboriginal artefacts during construction.
194,197,198,287,288,289,327,334,283 33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73,	229	Request for Robbins Island to be declared a Significant Aboriginal Area by Federal Environment Minister	no	Outside EPA Board jurisdiction	This process is occurring independently of the Robbins Island Renewable Energy Park assessment.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383					
176,183,196,279,284	5	Impact on cultural values of Robbins Island	no	Outside EPA Board jurisdiction	Refer to Section 6.15 of the DPEMP. Appendix W – Aboriginal Heritage Assessment also provides information, noting that this document is confidential and not available to the public.
2,27,30,287,288,289,370	7	Impact to Aboriginal heritage sites	no	Outside EPA Board jurisdiction	Refer to Section 6.15 of the DPEMP. Appendix W – Aboriginal Heritage Assessment also provides information, noting that this document is confidential and not available to the public.
183,327	2	A registered Aboriginal site has already been damaged by being covered in gravel.	no	Outside EPA Board jurisdiction	This reference is to a site at the end of Robbins Island Road. UPC\AC had no involvement with the placement of gravel on the road. This issue is noted this in the Aboriginal Heritage Assessment, as caution needs to be applied with the Unanticipated Discovery Plan to provide clear protocols for any discoveries in this area during

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					works. Appendix W – Aboriginal Heritage Assessment discussed this issue, noting that this document is confidential and not available to the public.
183,315,317	3	The island is an important cultural gathering place for Aboriginal people, and access is not being allowed for education or ceremonies.	no	Outside EPA Board jurisdiction	Robbins Island is privately owned freehold land. All public access is restricted. UPC\AC are open to dialogue on this important issue.
128	1	Representor provided a background to Aboriginal connection to Robbins Island. Heritage assessments have uncovered sites which are physical items left behind by Aboriginal People that lived on Robbins Island, their spirit still remains. Robbins Island is a significant cultural and spiritual place for Aboriginal people of Tasmania. A place that holds the footsteps, stories and spirits of ancestors. The Island is highly significant to Aboriginal people.	no	Outside EPA Board jurisdiction	Robbins Island is privately owned freehold land. UPC\AC holds Aboriginal heritage as a key site value. The first phase of survey work categorised key landscape features to identify likely areas of cultural significance. AHT was consulted to discuss results and to design the proposed approach for the second survey. AHT and the Circular Head Aboriginal Council (CHAC) have been consulted at a number of stages. Ongoing dialogue with AHT would occur during the Phase 3 detailed field survey, and in the finalisation of the Unanticipated Discovery Plan, as potential impact of poorly managed responses to Aboriginal heritage discoveries is not only damage or loss of sites and artefacts but undermining of an important stakeholder relationship.
201	1	Aboriginal people of the regions are strongly opposed to the development because of the significant cultural significance of the area.	no	Outside EPA Board jurisdiction	As above.
204,232,285,287	4	Robbins Island is culturally important to the Tasmanian Aboriginal community. The area is highly significant for its values	no	Outside EPA Board jurisdiction	As above.
248	1	A full study needs to be completed. Any sites discovered should be protected.	no	Outside EPA Board jurisdiction	Refer to Section 6.15 of the DPEMP and the Appendix W - Aboriginal Heritage Assessment. Studies to date have been undertaken with advice from Aboriginal Heritage Tasmania. Any sites of

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					significance discovered to date have informed exclusion zones and are thus protected from development under this proposal. Further study is planned as a part of the iterative process. UPC\AC will undertake Phase 3 of the Aboriginal heritage assessment post-approval to inform the detailed design of the project. An Unanticipated Discovery Plan will be followed to appropriately respond to any unanticipated finds of Aboriginal artefacts during construction.
258	1	The Representor has a significant interest in Robbins Island, its tangible Aboriginal heritage, its Cultural Landscape and the stories and role in that the island plays lutruwita/Tasmania's shared history. Robbins Island and the surrounding sea scape, including Robbins Passage is an Aboriginal Cultural landscape. Representor condemns the Planning Report, reducing 40,00 year history to the discovery of several Aboriginal artefacts. The Representor supports the application for the protection of Robbins Island under the Commonwealth's *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* which is under active consideration by the Federal Government. Tasmania's Aboriginal heritage protection legislation is inadequate to protect Aboriginal cultural heritage values and given the significance of the Robbins Island and Passage to Aboriginal people, the planning permit should be rejected. The Aboriginal Heritage Assessment Report is a product of flawed legislation. The report does not	no	Outside EPA Board jurisdiction	The application to declare Robbins Island a site of Aboriginal significance under the Commonwealth Aboriginal and Torres Strait Islander Heritage Protection Act 1984 is occurring independently of the assessment of the Robbins Island Renewable Energy Park Project. The Aboriginal Heritage Assessment was undertaken in line with the Aboriginal Heritage Tasmania Standards and Procedures June 2018. UPC\AC notes that the Tasmania Aboriginal Heritage Act 1975 is currently under review and new legislation is being proposed. Potential impacts on shearwater populations are covered in Section 6.3.1.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		assess the impact of the development on Aboriginal heritage values. Further research and reporting should be conducted to establish the extent of the Cultural Landscape values and impacts of the proposal on these values. The Minister is required to consider the impact of the proposed development on the island as a whole in accordance with section 14 of the Aboriginal Heritage Act 1975. Aboriginal people have concerns on the impact of the proposed development on the mutton bird (yula) migration, breeding and viability. Also concerns over the scale and location and its impacts on natural heritage values, visual and other amenity.			
Air quality					
196,310,283	3	Concern that residents and the local environment in the area will be exposed to dust from the Quarry. Lack of information about material being mined.	no	Addressed in the preliminary QMP. Closest residence is 4.6 km, permit conditions to manage air emissions will be required.	Addressed in Preliminary Quarry Management Plan (Appendix A of the DPEMP) and Section 6.5.4 of the DPEMP. The material for quarries is clearly articulated – sand, quartzite and siltstone. All materials will be used on site, reducing the need to transport materials to the island, thus reducing impacts to residents and the local environment. Dust can be adequately managed through measures in the CEMP and QMP. The Project requires approximately 1,620,000 m3 of quarried material for a variety of uses during construction (refer Section 2 of the QMP), including: • Gravel for road construction • Sand and aggregate for concrete, which would be used in wind turbine generator

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					(WTG) foundations and other infrastructure • Sand for bedding around underground electrical cabling
327,283	2	Dust from construction will cause harm to residents of Montagu and recreational uses to the area, as well as flora and fauna.	no	Addressed in the preliminary QMP. Closest residence is 4.6 km, permit conditions to manage air emissions will be required.	Addressed in Section 3.6.1 of the Preliminary Quarry Management Plan (Appendix A of the DPEMP) and Section 6.5.4 of the DPEMP. Dust during construction will be managed through the measures in the CEMP.
283	1	Representor concern that their house is located on map in section 3.6 Air Emissions of the Preliminary Quarry Management Plan and will be impacted by dust emissions	no	Addressed in the preliminary QMP. Closest residence is 4.6 km, permit conditions to manage air emissions will be required.	Air emissions will be managed in accordance with Section 3.6.1 of the Preliminary Quarry Management Plan (Appendix A of the DPEMP) and Section 6.5.4 of the DPEMP. Dust emissions will need to be managed as a part of permit conditions.
Surface water quality					
94	1	Impact to waterways from run-off from access roads construction	no	Addressed in S6.6 of DPEMP. Measures will be detailed in CEMP. The CEMP will be required by permit condition, if approved.	Section 6.6 Surface Water addresses potential impact from run-off, and the types of mitigation measures that will be applied through the CEMP. Road construction methods will need to ensure waterways are not impacted, as will be documented in the CEMP and through the permit conditions if approved.
27	1	Missing information - wastewater and sewerage impacts on aquatic and coastal areas	no	Proponent to note.	Wastewater from wash-down facilities will be disinfected prior to being discharged into the environment. Treated wastewater will not be discharged into marine or aquatic environments. Sewerage will be tertiary treated in a package wastewater plant and will meet the effluent quality guidelines of the Australian and New Zealand Environment & Conservation Council. The water released onto nearby pasture will be free from

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					environmentally harmful substances. Treated water will not be discharged into marine or aquatic environments. Refer to Section 6.6.4 of the DPEMP for management of wastewater and sewerage.
263	1	Little consideration of the potential effects of run-off (including AS) during construction on nearby wetlands, marine environment, especially after heavy rains, e.g. Mosquito Inlet.	no	Addressed in S6.6 of DPEMP. Measures will be detailed in CEMP. The CEMP will be required by permit condition, if approved.	Section 6.6 provides analysis of potential impacts to fresh water and marine environments. The CEMP will provide detailed management measures to avoid impacts from run-off, including during periods of heavy rain.
Groundwater quality					
310,317	2	Hydrogeological Investigation based on assumptions and estimates. Proposal has potential to impact on groundwater of the island and therefore on agricultural productivity.	no	A groundwater management plan will be required prior to construction and will be required by a permit condition if approved.	UPC\AC notes the concern that only Preliminary Groundwater investigations have been undertaken. Detailed hydrogeological investigation is a critical component of detailed design and will be an important component of the iterative design process. A Groundwater Management Plan will be developed prior to construction. Agricultural productivity must be protected so that the two land uses can co-exist.
Acid sulphate soils					
294	1	Impacts from ASS from disturbed ground	no	Addressed in S6.11 of DPEMP.	Risks from ASS are detailed in Sections 6.7.3 (potential impacts to groundwater) 6.11 (potential impacts to surface water), with risks to be managed through measures that will be detailed in the CEMP and through a specific Acid Sulfate Soils Management Plan. ASS are also covered in the Environmental Hazard and Risk Assessment (Table 6-37 of DPEMP) Commitment 34 states *An Acid Sulfate Soils Management Plan would be developed for the Project and submitted to the EPA for approval 3 months prior to the commencement of the construction phase.*

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
176,190,194, 197,198,376,310,317,343,34633,34,35, 36,37,38,39,40,41,42,43,44,45,46,47,4 8,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383	230	Impacts from acid sulphate soils not addressed	no	Addressed in S6.11 of DPEMP. An Acid Sulfate Soils Management Plan will be required as part of CEMP.	Risks from ASS are detailed in Sections 6.7.3 (potential impacts to groundwater) 6.11 (potential impacts to surface water), with risks to be managed through measures that will be detailed in the CEMP and through a specific Acid Sulfate Soils Management Plan. ASS are also covered in the Environmental Hazard and Risk Assessment (Table 6-37 of DPEMP) Commitment 34 states *An Acid Sulfate Soils Management Plan would be developed for the Project and submitted to the EPA for approval 3 months prior to the commencement of the construction phase.*
251	1	The location of the bridge will disturb acid sulphate soils (ASS) which are detrimental to the marine life in the passage. There is no mention of erosion control on the causeway ramps on each end or the disturbance this will cause to the ASS. Concern on lack of details about the piles and water flow around the piles	no	Addressed in S6.11 of DPEMP. An Acid Sulfate Soils Management Plan will be required as part of CEMP.	Prior to construction, the detailed design investigations would include sub-aqueous sampling from a barge, with ASS testing to inform detailed design. The preferred option of driven piles would generally not generate the spoil at the surface (unless pre-drilling is need in some locations). This would minimise potential ASS issues. An Acid Sulfate Soil Management Plan (ASSMP) would be developed for the construction of the bridge and included in the CEMP. If bored

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		is unknown, which could case erosion and ASS contamination in the passage.			piles are used, the ASSMP include appropriate treatment and disposal requirements of the spoil. Phase 4 modelling will be conducted in conjunction with the detailed design of the structures, where the purpose of the Phase 4 modelling is to inform and to optimise the structural designs for the objective of minimising the impacts of the structures. Currently, Phase 4 has not commenced.
271	1	Unacceptable risk of disturbing ASS as a result of the proposed bridge across Robbins Passage. Impact on the prolific marine biodiversity which supports commercial and recreation fishing from ASS.	no	Addressed in S6.11 of DPEMP. An Acid Sulfate Soils Management Plan will be required as part of CEMP.	Prior to construction, the detailed design investigations would include sub-aqueous sampling from a barge, with ASS testing to inform detailed design. An Acid Sulphate Soils Management Plan (ASSMP) will be developed prior to construction and included in the CEMP. Phase 4 modelling will be conducted in conjunction with the detailed design of the structures, where the purpose of the Phase 4 modelling is to inform and to optimise the structural designs for the objective of minimising the impacts of the structures. Currently, Phase 4 has not commenced.
Geoconservation					
27	1	Removal of 1.6 million m3 gravel sand and rock from the island	no	Proponent to note	The purpose of extracting concrete making and road making materials from the island is to minimise traffic movements on public roads and disturbance to nearby residents. It also reduces the carbon footprint of the development. All quarrying activities will be managed in accordance with a Quarry Management Plan, including decommissioning and rehabilitation requirements.
171	1	The bridge design for Robbins Passage should be a fully-piled bridge design for to protect geoconservation values	no	Proponent to note	Phase 4 modelling will be conducted in conjunction with the detailed design of the structures, where the purpose of the Phase 4 modelling is to inform and to optimise the structural designs for the objective of minimising the impacts of the structures.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					Currently, Phase 4 has not commenced.
263	1	Concern over considerable impact to geoconservation sites, such as the Remarkable Banks (2457), Walker Island - Back Banks (2445), Robbins Passage (2464). The infrastructure planned for Remarkable Banks has a large footprint and affects almost the entire extent, with extensive and intensive disturbance. The corridor proposed (Commitment 37) is not as wide as the one recommended in Appendix S. The infrastructure proposed at the wharf cuts in half the Back Banks Beach Dune geosite. The proposed bridge compromises the Robbins Island Tidal Channel System Geosite.	no	Proponent to note	Refer to Section 6.12.5 of the DPEMP, Commitment 37 is consistent with the advice in the Appendix S - Geoconservation Assessment
251	1	Robbins Passage listed on the Tasmanian Geoconservation Database and should not be destroyed	no	Proponent to note	Listing is noted.
Remarkable Banks					
171,197,198	3	Concern over impact to Remarkable Banks WTG exclusion zone is a minimalist approach. WTG sites and roads impinge very closely on exclusion zone Missing information - management measures to prevent disturbance during construction and operation. Disturbance will be spread across entire geoconservation site, which is inappropriate for managing conservation sites like this, as the landform complex is a whole integral landform system	no	Proponent to note	Section 6.6.4 of the DPEMP proposes mitigation measures for Surface Water (incl. Remarkable Banks); i.e. As far as practicable, works near waterways (especially on the Remarkable Banks) would be scheduled so that construction can coincide with periods of low water. The potential maximum disturbance area of the Remarkable Banks area is 42.9 ha of disturbance within the Remarkable Banks area for construction of WTGs, which has a total area of 1410 ha (~3%). Section 6.12.4 of DPEMP outline mitigation measures for this area; in accordance with the management and mitigation measures recommended in Appendix S, a geoconservation

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		Overall form and scale of Remarkable Banks are part of value, any more disturbance is unacceptable			zone would be maintained along the length of the Remarkable Banks area, in order to preserve the integrity of the site. The geoconservation zone would be 100 m wide, and located within a 200 m corridor identified in Figure 6-31, as per the siting recommendation made in Appendix S. The CEMP will also include geoconservation sediment and erosion control measures and the final location of the geoconservation zone would be defined during WTG micro-siting, prior to finalisation of the Wind Farm Design Report. Refer to Appendix S of the DPEMP for detail.
171,323	2	The scale of the proposal, and associated access and infrastructure should be reduced so that no development should occur on Remarkable Banks to protect geoconservation values.	no	Proponent to note	As above.
197,198,323	3	Hydrogeological study to be carried out after approval	no	Proponent to note	Preliminary hydrogeological work was undertaken (see Appendix Q of the DPEMP), with the need to extend this into a detailed study prior to final design. The detailed study will inform appropriate dewatering management and mitigation, with monitoring bores to be maintained throughout the construction phase. An iterative approach to investigations has been adopted with a number of Project aspects.
	1	All geoconservation sites on island should be excluded from development.	no	Proponent to note	UPC\AC notes the concern and has addressed potential impacts and management measures for geoconservation sites in Section 6.12 of the DPEMP. Commitment 35 states *Geoconservation zones for the Back Banks – Walker Island Dunes and White Rock Ridge Pliocene Boulder Beach and Embayment Sites would be defined in the Wind Farm Design Report, during the completion of detailed design of the WTG layout, wharf and roads.*
Quarry					

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
310	1	Preliminary Quarry Management Plan is insufficient and Quarry Management Plan is incomplete	no	A QMP will be required by EPA and MRT prior to construction commencing, required by permit conditions if approved.	A Preliminary QMP was developed to provide the information for assessment purposes. A Final QMP will be developed in line with MRT and EPA requirements
296	1	Impacts on noise, flora, fauna and waterways from quarrying	no	Covered in the Preliminary QMP.	Please see Appendix A for details on minimising impacts of quarrying. Management measures to be further detailed in Final QMP. In Section 3.9 of the PQMP it is noted all of the separation distances to residences would be met by the proposed quarry locations, as no sensitive receptors occur within 1000 m of any of the quarry sites, with the closest sensitive receptor further than 4 km away from any of the quarry sites. Impacts to flora, fauna and waterways are addressed, with management measures to be applied through the QMP.
Biodiversity - weed and disease					
12,242	2	Potential for disease to be brought to the island across bridge onto island	no	A weed and hygiene management plan is required as part of the CEMP, required by permit condition if approved.	Weed and Hygiene Management Plan to be developed for the Project in accordance with the *Weed Management Act 1999*, *the Weed and Disease Planning and Hygiene Guidelines 2015* (DPIPWE 2015), as identified in Section 6.1 and 6.24.2 of the DPEMP; including the implementation of wheel wash facilities at the entry points to the island (from bridge and wharf access) to be installed in the road to further reduce risk of spread. This will be addressed in detail in the CEMP, through the Weed and Hygiene Management Plan.
29	1	Potential for invasive weeds to be brought to the island	no	A weed and hygiene management plan is required as part of the CEMP,	Weed and Hygiene Management Plan to be developed for the Project in accordance with the *Weed Management Act 1999*, *the Weed and Disease Planning and Hygiene Guidelines 2015*

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
				required by permit condition if approved.	(DPIPWE 2015), as identified in Section 6.1 of the DPEMP This will be addressed in detail in the CEMP, through the Weed and Hygiene Management Plan.
244	1	Coastal heathlands are one of Tasmania's most biologically diverse vegetation communities and are of high conservation significance. The project will have a significant impact on coastal heathland vegetation.	no	Covered in S6.1 of DPEMP	Overall clearance of native vegetation would be minimised through detailed design and micro-siting (refer Section 6.1.4 for full management and mitigation measures. The potential proportional loss for coastal heathland for the State is less than 1% (0.36%).
Waste Management / Dangerous goods					
76,364	2	Disposal of damaged blades which are non-recyclable	no	Proponent to note	Blades are typically made from fibreglass or carbon fibre and epoxy resin and the composite nature of these materials makes it difficult to separate and recycle; as such most blades have been disposed in landfill. However, technological advances in recent years have demonstrated that it is possible to separate the composite materials and recycle blades into construction materials, such as a cement additive and a road making material. In addition blades are being cut down and repurposed, and have been used in power line structures and in roofing. In recognition of the waste issue and bans on disposing of blades in landfill in some parts of Europe the wind turbine industry is working towards manufacturing 100% fully recyclable turbines. The first fully recyclable blade was manufactured in Denmark by Siemens Gamesa in September 2021. In December 2021 Vestas announced it had developed technology to enable blades to be recycled and used in the construction of new blades. Similarly, in January 2022 GE announced it was working with various partners to recycle blades. UPC\AC is in discussion with all the major turbine manufacturers, including Vestas, Siemens Gamesa and GE. End of life

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					options will be one of the selection criteria in the decision-making process.
27	1	Fuel depot on island has potential to result in environmental harm	no	Covered in S6.10 of DPEMP. Permit conditions will be required for management of hazardous substances, if approved.	This risk is acknowledged (see Section 6.10 of DPEMP). Fuel depot will be built to industry standards to prevent environmental harm. Re-fuelling procedures will be detailed in CEMP and OEMP.
Decommissioning and rehabilitation					
37,76	2	Has a full closure plan be made available?	no	A Decommissioning and Rehabilitation Management Plan (DRP) will be required by permit condition, if approved.	Decommissioning and Rehabilitation are addressed in Section 9 of the DPEMP. A Final DRP will be provided 12 months prior to the planned closure period commencing (see commitment 58). This ensures that the Plan is commensurate with standards at the time and takes advantage of new approaches to aspects such as recycling. It will also need to be in line with the regulatory requirements at the time rather than being developed now. A draft DRP will be submitted to the Director of EPA for approval twelve months after the commencement of operations.
317	1	Facilities to decommission a windfarm do not exist in the state	no		Decommissioning is a responsibility of UPC\AC, and will be adequately planned for, including recycling and disposal aspects, and rehabilitation of the operational footprint. External expertise will be utilised if required, as by that time there will be significant industry experience in this aspect of wind farms.
102	1	Section 9 of the DPEMP should include a detailed assessment of the disposal of WTG components. Recyclable turbine blades should be considered, refer to Siemens Gamesa RecyclableBlade system. A $30 million bond should be posted	no	Proponent to consider a detailed assessment of decommissioning and rehabilitation in preparing the	Approximately 85% of wind turbines, such as towers, gearboxes, generators, are recyclable and are treated as such. UPC\AC is in discussion with all the major turbine manufacturers, including Vestas, Siemens Gamesa and GE that have developed or are developing recyclable blades. UPC\AC anticipates that a draft Decommissioning

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		to ensure funds are available for refurbishment and decommissioning of WTGs.		DRP. A DRP will be required by permit conditions, if approved.	and Rehabilitation Plan will be required to be submitted to the EPA 12 months after the wind farm commences operations. Information provided by the manufacturer on recycling of wind turbines, including blades, will be included in the draft plan.
310	1	Decommissioning plan not included, and commitments are not provided in the case the project becomes unviable	no	A DRP will be required by permit condition, if approved.	Decommissioning is a responsibility of UPC\AC, and will be adequately planned for, including in the event of early closure. Commitment 58 states *A Decommissioning and Rehabilitation Plan would be submitted to the EPA for approval within 12 months of the planned Project closure period commencing.* This will be reinforced as an obligation through permit conditions if approved.
Social and economic issues					
76,176	2	Financial risks to circular head residents.	no	Proponent to comment on potential financial risks to Circular Head residents.	It is unclear what the potential financial risks would be. UPC\AC does not believe there will be any financial risks to Circular Head residents. On the contrary the economic analysis shows the local economy will benefit from the project.
76,178,310	3	Questioning accuracy of employment numbers.	no	Proponent to note	Employment numbers are based on industry experience.
94,248,176,178,183,185,186,194,196,310,327,343,376	13	No local economic benefit from the project, with short-term and long-term economic costs, construction jobs would be FIFO, increasing local rent	no	Proponent to note	The economic impact assessment shows that there will be positive financial impact to the Circular Head community - refer to Appendix CC - Economic Impact Assessment of the DPEMP. The economic stimulus created through employment during the project is estimated to be over $380 million in value added to the Tasmanian economy, including over $200 million increase in local incomes. In addition, UPC\AC has committed to a substantial community benefit fund that at full development would amount to $900,000 per annum invested into the Circular Head and Waratah/Wynyard communities over the life of the

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					project. The Community Benefits Program will include assistance to local organisations and individuals to develop skills and capacity as a part of UPC\AC's commitment to improving local opportunities. Impacts to housing and local rent is acknowledged as a risk, and UPC\AC propose the development of a semi-permanent accommodation facility to be constructed in Smithton to house the majority of the workforce during the peak construction period. This will be subject to a separate development application process (see Page 307 of DPEMP).
178,310	2	Number of local jobs are overstated. Procurement is not part of legislation which facilitates project, workforce composition not enforced. As it is a private project, no contractual conditions will be imposed for local content or training requirements, and most work will be sub let to interstate companies and workers. Based on employment at other windfarms, employment numbers provided are overestimated and will not be local as the required skills are not available in the region	no	Proponent to note	This concern is noted, and it is acknowledged that some specialist skills will not be available locally. However, a key component of UPC\AC's Community Benefits Program is the Buy Locally Employ Locally strategy. UPC\AC is working with various organisations to address the skills deficiency within the region. Opportunities to upskill will be of benefit to individuals and to the local economy. Indirect services will also be an important component of the local economic stimulus through the Project.
176,196	2	Concern about how local economy (Council) will need to pay for upkeep and repair of roads impacted by increased traffic from proposal	no	Proponent to note	Using the Jim's Plain Renewable Energy Park planning permit as a recent example, the Circular Head Council is likely to impose similar permit conditions pertaining to road condition and maintenance on the Robbins Island project. The cost of road upgrades and maintenance throughout the construction period (when there will be more use of road system) will be UPC\AC's responsibility.
178	1	Concern that private renewable developers have historic safety	no	Proponent to note	UPC\AC has no history of unsafe or unjust work practices.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		issues, commonly use unlicenced work and underpay wages			
178	1	Windfarms will not lower power prices	no	Proponent to note	Economic modelling from the energy industry shows increased renewable energy in the market will lower electricity prices, noting that large scale wind and solar generation is now cheaper to build than coal fired generation.
183,196,307,310,312,332,37	7	Social and economic benefits would be better if the site were protected (Ramsar listed)	no	Proponent to note	UPC\AC has no influence over a potential Ramsar listing of Robbins Passage - Boullanger Bay.
186	1	Robbins Island cattle muster will not have same cultural significance	no	Proponent to note	UPC\AC note this concern, but this is an issue for the landowners to consider.
283	1	Statement in DPEMP "Class 1 sites are rare in the rest of the NEM". Representor questions the assessment of Class 1 sites, and how Robbins Island compares to other sites of the NEM.	no	Proponent to note	An analysis of the wind resource and site characteristics of Robbins Island show that it meets the International Electrotechnical Commission's class I criteria. Comparisons with other wind farms in the NEM show that very few meet the class I criteria.
273	1	The socio-economic benefits of the project are overestimated, with little opportunity for local businesses due to the large capital investment.	no	Proponent to note	The economic impact assessment shows that there will be positive financial impact to the Circular Head community - refer to Appendix CC - Economic Impact Assessment of the DPEMP. The economic stimulus created through employment during the project is estimated to be over $380 million in value added to the Tasmanian economy, including over $200 million increase in local incomes. In addition, UPC\AC has committed to a substantial community benefit fund that at full development would amount to $900,000 per annum invested into the Circular Head and Waratah/Wynyard communities over the life of the project. UPC\AC believes there will be many opportunities for local businesses to participate in the project, for example supplying tyres, fuel, mechanical repairs, engineering services, cleaning services, food, etc.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
Visual impacts					
94,95,310,370,376,"94,95,310,370,376,377,28333,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162,163,164,166,167,168,169,170,173,174,175,177,179,180,182,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236,239,240,241,245,246,247,249,253,254,255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329, 330,331,333,335,336,337,338,339,340,341,342,344,347,348,349,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383"377,283	227	Visual impacts - WTGs industrialise landscape, also transmission lines and easements will degrade visual amenity	no	Visual impact outside EPA Board jurisdiction. To be considered by Council.	See Section 6.17.3 of the DPEMP. It is important to note the assessment (Appendix Z) accounts for ground surface terrain only and does not take into consideration the potential obstruction of views from existing vegetation or structures. As a consequence, this assessment may determine that some areas have an unobstructed view of the Project, whereas in reality there are trees or other features that obstruct the view of the Project Site. As such, the viewshed and terrain obstruction assessment should be viewed as a worst-case scenario. Where the visual impact has been assessed as moderate the following mitigation measures have been adopted; The following measures would be incorporated to mitigate any adverse visual impacts: - WTG colours would blend with the landscape setting (e.g. cloudy skyline). (This aids in maintaining the natural setting of the horizon and limiting any potential industrial character). - WTG blades would be treated with low reflectivity treatment to avoid blade glint. - Roads, quarries and other ancillary infrastructure would avoid ridgelines and prominent locations if possible. - Areas around the WTG bases (and other construction sites) would be rehabilitated.
1,5,21,27,165,179,183,196,201,370,376,283	12	Visual Impacts on lifestyle for nearby residents	no	Outside EPA Board jurisdiction.	As above.
317,370,283	3	View shed mapping is inadequate and does not represent scale of development		Outside EPA Board jurisdiction.	View shed mapping is worst case scenario. The assessment (Appendix Z) accounts for ground surface terrain only and does not take into consideration the potential obstruction of views

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					from existing vegetation or structures. As a consequence, this assessment may determine that some areas have an unobstructed view of the Project, whereas in reality there are trees or other features that obstruct the view of the Project Site. As such, the viewshed and terrain obstruction assessment should be viewed as a worst-case scenario.
201	1	Visual amenity Turbines will be visible from most of Circular Head Municipality and will scar the landscape. Views from the Nut will be interrupted. Industrialising Robbins Island will negatively impact the area and coastline which the community values as high importance. The proposal is visually dominating when compared to the natural and agricultural landscape.	no	Outside EPA Board jurisdiction.	As above. See Section 6.17.3 of the DPEMP. It is important to note the assessment (Appendix Z) accounts for ground surface terrain only and does not take into consideration the potential obstruction of views from existing vegetation or structures. As a consequence, this assessment may determine that some areas have an unobstructed view of the Project, whereas in reality there are trees or other features that obstruct the view of the Project Site. As such, the viewshed and terrain obstruction assessment should be viewed as a worst-case scenario. Where the visual impact has been assessed as moderate the following mitigation measures have been adopted; The following measures would be incorporated to mitigate any adverse visual impacts: - WTG colours would blend with the landscape setting (e.g. cloudy skyline). (This aids in maintaining the natural setting of the horizon and limiting any potential industrial character). - WTG blades would be treated with low reflectivity treatment to avoid blade glint. - Roads, quarries and other ancillary infrastructure would avoid ridgelines and prominent locations if possible. Areas around the WTG bases (and other construction sites) would be rehabilitated.
204	1	The turbines and bridge in the landscape will become an industrial	no	Outside EPA Board jurisdiction.	As above.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		development site. The project will bring unacceptable visual impact to the region.			
238	1	Development on the island and a bridge will completely destroy the aesthetic and uniqueness of this whole area.	no	Outside EPA Board jurisdiction.	As above.
248	1	Visual amenity Turbines will be in direct view from Representors house and is concerned WTGs and transmission lines will appear as a solid block of industrial zone in their viewing angle. With shadow flicker occurring for portions of the year. The photomontages produced were misleading, with WTGs undersized and were hazy, with clearer views for the majority of the year.	no	Outside EPA Board jurisdiction.	As above. Shadow flicker assessment provided as Appendix BB.
251	1	View / amenity Concern over the visual impact from their house from the turbines. Concern the turbines will become the most noticeable landmark in Circular Head. The application does not meet the planning scheme requirements (refer below).	no	Outside EPA Board jurisdiction.	As above.
263	1	The Visual Impact Assessment does not adequately consider the loss of amenity from the construction of the bridge or meteorological masts. The bridge also alters the natural character of the passage with a loss of amenity for recreational users of the area. The WTGs will industrialise the landscape causing considerable visual impact.	no	Outside EPA Board jurisdiction.	See Section 6.17.3 of the DPEMP and Appendix Z and Appendix AA. The Visual Impact Assessment considers the construction of the bridge; see Section 6.17.3 of the DPEMP. The visual impacts from operation of the Project predominantly relate to the WTGs, due to the scale of the infrastructure and low relief terrain and vegetation on Robbins Island. For the bridge component, it is expected that the maximum height of this structure would be 8.2 m AHD, meaning that this structure is not visible from the broader landscape around the Project

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					Site (Appendix Z). Given the distance of the bridge from potential tourist viewpoints at Smithton and Stanley, along with the lack of publicly accessible vantage points along the coastline between Woolnorth and Montagu, the visual impact of the bridge structure is minor and restricted to the local area. Regarding the meteorological masts; the nature of the met mast structures means that they are not generally visible from distance on the landscape, and the existing structure on the site has limited visibility from surrounding areas. As such, met masts associated with the Project are expected to have a limited visual impact, especially compared to the visibility of the WTGs.
285	1	Concern over visual impact on the coastline and marine wildlife	no	Outside EPA Board jurisdiction.	Refer responses above in this section and Section 6.17 and Appendix AA. The visual impact is expected to be moderate for the coastline
287	1	Photomontages area false providing misleading information	no	Outside EPA Board jurisdiction.	It is important to note the assessment (Appendix Z) accounts for ground surface terrain only and does not take into consideration the potential obstruction of views from existing vegetation or structures. As a consequence, this assessment may determine that some areas have an unobstructed view of the Project, whereas in reality there are trees or other features that obstruct the view of the Project Site. As such, the viewshed and terrain obstruction assessment should be viewed as a worst-case scenario. Photomontages of the bridge were included in the Appendix Z - Viewshed Mapping and Photomontage Process Report of the DPEMP, refer to photomontage 7 and 9. Noting it was not possible to produce a realistic photomontage of the bridge from the end of Robbins Island Road. No photomontages of the wharf were provided as it will not be visible from surrounding locations, aside from passing boats out at sea.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
290	1	The WTGs will be visible from 64.9 km away.	no	Outside EPA Board jurisdiction.	Not sure how this figure was calculated so difficult to comment.
298	1	Visual impact on the area will be high	no	Outside EPA Board jurisdiction.	Refer responses above in this section and Section 6.17; and Appendix AA.
317,343	2	No photo montages provided of bridge and wharf	no	Outside EPA Board jurisdiction.	Photomontages of the bridge were included in the Appendix Z - Viewshed Mapping and Photomontage Process Report of the DPEMP, refer to photomontage 7 and 9. Noting it was not possible to produce a realistic photomontage of the bridge from the end of Robbins Island Road. No photomontages of the wharf were provided as it will not be visible from surrounding locations, aside from passing boats out at sea.
Traffic impacts					
1,5,21,27,30,52,285,377,283	9	Traffic disruption	no	Proponent to note	UPC\AC acknowledges there will be some traffic disruption; however, the delivery of turbine components and materials via the wharf will minimise the disruption.
94, 248,196,283	4	Adverse impact during construction, adversely impacting local communities and wildlife	no	Addressed in S6.18 and S6.2 of DPEMP.	A network of roads will be established across Robbins Island for construction and operational use. This will involve both the upgrade of existing roads and the construction of new roads within the site. Roads will be of a width and grade suitable for accommodating large semitrailers (B-doubles) and oversized turbine components to minimise impact to road users. The greatest proportional increase in traffic volumes will be on the Robbins Island Road section of the transport route. Currently there is minimal traffic using this road and the proposed construction traffic will produce a noticeable change in conditions and amenity. However, the road has sufficient capacity to accommodate the additional traffic and the negative impacts would be restricted to amenity impacts only Refer to Traffic Impact Assessment (Note that an updated TIA has been provided to take into account more recent traffic count data,

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					and this is provided as Appendix B to this Supplementary Volume). Several mitigation measures are included in Section 6.18.4 of the DPEMP; including generation of traffic during the construction phase of the Project would be minimised to the extent possible through the sourcing of raw construction materials, including aggregate, sand and gravel from within the Project Site and the delivery of WTG components via the wharf.
183, 196,201, 238, 248, 285,	12	Traffic impact assessment insufficient and outdated. Assessment allows for 42 month timeframe however it is anticipated construction will take 66 months. Not representative of current traffic	yes	Proponent to clarify construction timeframe and traffic impact.	An updated TIA has been provided to take into account more recent traffic count data supplied by Circular Head Council, and this is provided as Appendix B to this Supplementary Volume. TIA has also been amended to cover the entire 66 month construction period.
238, 248	2	Concern over the source of rock and having this trucked along Montagu Road and the impact this will have on the road and payment of road upgrades. Concern over payment for road maintenance	no	All gravel will be sourced from Robbins Island. No material will be transported to site along Montagu Road.	Utilising the quarries proposed for the Project that are located on Robbins Island removes the need for transport of road materials through the existing transport network on mainland Tasmania. Using the Jim's Plain Renewable Energy Park planning permit as a recent example, the Circular Head Council is likely to impose similar permit conditions pertaining to road condition and maintenance on the Robbins Island project. The cost of road upgrades and maintenance throughout the construction period will be UPC\AC's responsibility.
248,283	2	Heavy vehicle traffic will make narrow Montagu Road more dangerous. Particularly adding 1000s of 65 tonne gravel trucks. Moving large components will require the road to be closed, isolating residents. Increased noise, vibration and lights from oversize vehicles will disturb sleep and reduce quality of lifestyle for those living near the road.	no	Proponent to note	The purpose of the wharf is to allow for large turbine components to be delivered by barge to avoid using the Montagu Road. The purpose of quarrying rock and making gravel on Robbins Island is to minimise the number of truck movements on Montagu Road. Thousands of additional heavy vehicle movements will not occur along Montagu Road (see updated Traffic Impact Assessment supplied as Appendix B to this Supplementary Volume).

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
377	1	Speed limit identified in DPEMP at Montagu listed as 60km/h, when actually 70km/hr. Speed limit identified in DPEMP at Montagu Road towards Scopus is 80km/hr, when actually 100km/hr. The road is narrow and dangerous and should be widened. School bus signs are needed.	no	Proponent to note	UPC\AC acknowledges the speed limit errors in the DPEMP. However this is unlikely to make a material difference to potential impacts. The state of the road and signage is the responsibility of the Council.
287	1	Vehicle movement numbers are obsolete, with February 2021 counts at 9352, 6000 more than in the TIA. The TIA did not include the Bass Highway or Mella Road.	yes	Proponent to update vehicle movements with up-to-date numbers.	An updated TIA has been provided to take into account more recent traffic count data supplied by Circular Head Council, and this is provided as Appendix B to this Supplementary Volume. In re-assessing the vehicle counts, we could not identify traffic counts of 9352. This seems more commensurate with counts in the Wynyard area rather than the Smithton data. The TIA does include both the relevant area of Bass Hwy and Mella Road in the assessment.
Electromagnetic interference					
310	1	Electromagnetic interference not dealt with sufficiently in DPEMP	no	Covered in S6.23.4 and Appendix EE of the DPEMP	Please see Section 6.23.4 in DPEMP and Appendix EE. The assessment is adequate to identify risk and proposed response to any impacts. To monitor impacts to local digital televisions signals, a baseline pre-construction survey would be initially undertaken, followed by a post-commissioning survey. Mitigation measures would be developed and implemented where signals are affected by Project operation, such as high performance antennas and signal amplifiers for affected households.
Planning Matters					
52,61,165,167,169,176,183,194,196,197,198,251,283,307,310,317,323,327,332,334,346,346,370, 28333,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50,51, 53, 54, 55, 56,	244	Height - visual amenity Height of WTGs at 270 m, higher than permitted height A.3.2. The visual impact will be obvious to all people in the Circular Head	no	Outside EPA Board jurisdiction. To be considered by Council.	If the Acceptable Solution height of WTG cannot be met the proposal can be assessed against the performance criteria at the discretion of the Council.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383		community. The photomontages downplay the views of the proposal. Property owners who adjoin Robbins Passage will be negatively impacted. 26.4.2 - Impact on visual amenity.			See Section 6.17.3 of the DPEMP regarding visual amenity. It is important to note the assessment (Appendix Z) accounts for ground surface terrain only and does not take into consideration the potential obstruction of views from existing vegetation or structures. As a consequence, this assessment may determine that some areas have an unobstructed view of the Project, whereas in reality there are trees or other features that obstruct the view of the Project Site. As such, the viewshed and terrain obstruction assessment should be viewed as a worst-case scenario. Where the visual impact has been assessed as moderate the following mitigation measures have been adopted; The following measures would be incorporated to mitigate any adverse visual impacts: - WTG colours would blend with the landscape setting (e.g. cloudy skyline). (This aids in maintaining the natural setting of the horizon and limiting any potential industrial character). - WTG blades would be treated with low reflectivity treatment to avoid blade glint. - Roads, quarries and other ancillary infrastructure would avoid ridgelines and prominent locations if possible. Areas around the WTG bases (and other construction sites) would be rehabilitated.
52,61,165,167,169,176,183,194,196,19 7,198,251,283,307,310,317,323,327,33 2,334,346,346,370, 28333,34,35,36,37,38,39,40,41,42,43,4 4,45,46,47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114,	235	Environmental Management Zone (EMZ), concerns include: Bridge and wharf do not meet EM zone standards of the planning scheme. No detailed design of wharf. No landowner consent documents in DA. The bridge is sited in an area of significant ecological, scientific, geomorphological, cultural and aesthetic value. Impact on Robbins	no	EMZ - Outside EPA Board jurisdiction. To be considered by Council.	The proposal can be assessed against the performance criteria at the discretion of the Council. UPC\AC obtained landowner consent from the Circular Head Council and Parks and Wildlife Service prior to lodging the Development Application. It was an oversight that these landowner consents were not included in Appendix B - Planning Report.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383		Passage. The bridge will have drastic long term effects on the fragile ecosystem, with changing in water flows impacting fish species and birds relying on tidal flats as well as sea grass.			Potential impacts from the bridge and mitigation strategies are documented in the DPEMP and in Appendices P, T, U, V.
52,183,238,248,284,20133,34,35,36,37 ,38,39,40,41,42,43,44,45,46,47,48,49,5 0,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236,	226	Performance criteria for Development in a shoreline (E10.6.2) have not been addressed. Concerns include: Bridge and wharf have not adequately addressed No photomontages of the bridge Sediment from construction and sediment flow post construction has not been modelled in a detailed manner. No modelling or mitigation strategies for acid sulphate soils (ASS) and their impact on the channel, including industry in the channel. Impact of wharf on seagrass beds to the west. Impact from bridge on access for boating and recreation. The project does no minimise visual impact and therefore contravenes clause (P1)(c). The visual amenity will	no	Outside EPA Board jurisdiction. To be considered by Council.	In Section 5.14 of Appendix B Planning Report, the E10 Water and Waterways Code is addressed, with measures to meet the performance standards outlined. The section specifically addressing E10.6.2 can be found on pages 87-91. Photomontages of the bridge were included in the Appendix Z - Viewshed Mapping and Photomontage Process Report of the DPEMP, refer to photomontage 7 and 9. Noting it was not possible to produce a realistic photomontage of the bridge from the end of Robbins Island Road. Sediment from construction and post-construction will be addressed in the CEMP/OEMP and monitored under permit conditions. ASS is assessed in the DPEMP, but there will be further modelling undertaken as part of the iterative design process. Prior to construction, the detailed design investigations would include sub-

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
239,240,241,245,246,247,249,253,254,255,256,257,262,265,266,268,278,280,282,272,290,291,297,300,306,313,316,318,319,321,322,324,325,326,328,329,330,331,333,335,336,337,338,339,340,341,342,344,347,348,349,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,369,371,372,373,374,375,383		be changed forever. Impacts on marine life from release of acid sulphate soils during construction of the bridge. Seagrasses will be killed from exposure to concrete dust from construction along with the dumping of large quantities of rock. Community will lose access to the end of Robbins Road during construction. Montagu campgrounds will have view of an industrial site or turbine flicker.			aqueous sampling from a barge, with ASS testing to inform detailed design. This testing and development of mitigation strategies will consider industry in the channel, impacts on marine life and any impacts to seagrass beds. The preferred option of driven piles would generally not generate the spoil at the surface (unless pre-drilling is need in some locations). This would minimise potential ASS issues. An Acid Sulfate Soil Management Plan (ASSMP) would be developed for the construction of the bridge and included in the CEMP. If bored piles are used, the ASSMP include appropriate treatment and disposal requirements of the spoil. Phase 4 modelling will be conducted in conjunction with the detailed design of the structures, where the purpose of the Phase 4 modelling is to inform and to optimise the structural designs for the objective of minimising the impacts of the structures. Currently, Phase 4 has not commenced. The final bridge design will consider boating access and recreational use. Visual amenity change is acknowledged. Visual and shadow flicker impact to Montagu Campground is assessed in Appendices Z, AA and BB. Whilst there will be a clear view of the development from the Montagu boat ramp, the view of the development will be obscured by vegetation when looking from the camp ground. Impacts to seagrass from dust will be mitigated through the measures in the CEMP. Any impacts to seagrass are predicted to be limited and temporary. Loss of access to the end of Robbins Island Road will be limited and temporary.
183	1	Concern about previous construction of gates to block access to passage	no	Proponent to note	UPC\AC was not involved with blocking access

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
36	1	Rezoning from Rural would require loss of farming land	no	Outside EPA Board jurisdiction. To be considered by Council.	UPC\AC is not seeking to rezone Robbins Island
Other matters					
Marinus Link					
28,323,354,356,381,	5	Tasmania does not need Marinus link	no	Marinus is a separate project.	Not part of this development proposal.
146,190,208,238,251,263,266,294,323, 283	10	Proposal should not be assessed separately from Marinus Link, as it requires Marinus Link to be viable and there is concern about that viability, for example: - Concern over Marinus not proceeding and the wind farm becoming a stranded asset - Could be costly, like Basslink - Concern over unknown funding of Marinus - Final decision on Marinus Link not due until 2024 - Marinus will not happen until 2029 - Analysis of Marinus provided in paper "*Marinus Link and Battery of the Nation – Wrong Way, Go Back. An analysis of the economics and greenhouse gas impact of Marinus Link and Battery of the Nation. Bruce Mountain and Steven Percy*"	no	Marinus is a separate project.	UPC\AC not the proponent for Marinus Link
323,283	2	Separating Assessment of proposal from Marinus Link and Transmission line undermines the EPBC and EMPC Acts.	no	Marinus is a separate project.	Marinus Link and the Transmission Line are separate proposals.
Transmission Line					

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
197,198	2	Visual impact of transmission line	no	Transmission line is a separate project requiring a separate environmental assessment.	As noted by the EPA.
197,198,312,317,283	5	Impacts of transmission line are not considered, including - Land clearing, - Landscape fragmentation, - Impacts to fauna and other cumulative impacts of supporting infrastructure - Treating as a separate proposal does not allow public to comment on the entire project	no	Transmission line is a separate project requiring a separate environmental assessment.	As noted by the EPA.
171,196,323,332,283	5	Concern that transmission line is to be assessed separately, and if wind farm has already been approved then there will be pressure on planning authority to approve transmission line Undermines purposes of EPBC Act Contrary to principles about piecemeal applications set out by the majority of the High Court in Pioneer Concrete (QLD) Pty Ltd v Brisbane City Council (1980)	no	Transmission line is a separate project requiring a separate environmental assessment.	As noted by the EPA.
293	1	Transmission line is vital information that should be included in the assessment of this project.	no	Transmission line is a separate project requiring a separate environmental assessment.	As noted by the EPA.
Other matters					
95,197,198,251,284,296,312,317,323,334,34533,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49	231	Missing information - proponent has not identified the number of WTGs, how tall WTGs will be, how long the	no	To be included in Design Report following	These details will be included in Wind Farm Design Report, which will need to meet permit conditions and be approved by the EPA. Detailed

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383		wharf will be, foundation design of the WTGs		micrositing. The Design Report will be required by permit condition, if approved.	design is a complex process and is iterative with environmental constraints and changing technology options. Leaving some design decisions open allows selection of the best available technology, and the use of micro-siting to improve environmental outcomes. The DPEMP was based on the worse case scenario in terms of numbers of WTGs, and the potential land clearance.
95,197,198,310,317,323,33433,34,35,3 6,37,38,39,40,41,42,43,44,45,46,47,48, 49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162,	227	Missing information - micrositing of WTGs and roads to protect threatened flora and devil dens and reduce risk of bird strike	no	To be included in Design Report following micrositing. The Design Report will be required by permit condition, if approved.	As noted above, micro-siting is a component of detailed design that will be informed by further assessment of devil den locations and threatened flora. Reducing risk of bird strike is also a component of the detailed design. The Wind Farm Design Report will need to meet permit conditions if approved, and will need to be approved by the EPA.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383					
197,198,296,310,317,323,334,34533,3 4,35,36,37,38,39,40,41,42,43,44,45,46, 47,48,49,50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329,	228	Missing information - sediment movement and sand accretion studies	no	Addressed in S6.13 DPEMP	Refer to Section 6.13 of the DPEMP. The Phase 3 impact assessment identified bridge and wharf configurations that would result in the minimum influence on the coastal processes of the project site from a holistic perspective. UPC\AC will consider the outcomes of the impact assessment and identify the preferred configurations that do not result in unacceptable levels of sediment erosion and deposition.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383					
197,198,323,327,334,37033,34,35,36,3 7,38,39,40,41,42,43,44,45,46,47,48,49, 50,51, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 91, 92, 93, 95, 96, 98, 100,101, 103, 104, 105, 106, 107, 109, 110, 112, 114, 116, 121, 122, 126, 127, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149,150,153,154,155,156,160,161,162, 163,164,166,167,168,169,170,173,174, 175,177,179,180,18 2,202, 203, 205, 206, 209, 210, 211,213, 214, 215, 216, 217, 218, 219, 222, 223, 224, 225, 226, 227,228,229,230,231,233,234,235,236, 239,240,241,245,246,247,249,253,254, 255,256,257,262,26 5,266,268,278,280,282,272,290,291,29 7,300,306,313,316,318,319,321,322,32 4,325,326,328,329, 330,331,333,335,336,337,338,339,340, 341,342,344,347,348,349,351,352,353, 354,355,356,357,35 8,359,360,361,362,363,364,365,366,36 7,369,371,372,373,374,375,383	226	Missing information - traffic movements	yes	Proponent to clarify construction timeframe and traffic impact.	Traffic Impact Assessment report has been updated with more recent data, clarifying the construction timeframe and traffic impact (See Appendix B of this Supplementary Volume).
296,317	2	Impact to Robbins Island Road from traffic	no	Outside EPA Board jurisdiction. Matter for Council.	A network of roads will be established across Robbins Island for construction and operational use. This will involve both the upgrade of existing roads and the construction of new roads within the site. Roads will be of a width and grade

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					suitable for accommodating large semitrailers (B-doubles) and oversized turbine components. This will aid in reducing impact to road users. The greatest proportional increase in traffic volumes will be on the Robbins Island Road section of the transport route. Currently there is minimal traffic using this road and the proposed construction traffic will have a noticeable change in conditions and amenity. However, the road has sufficient capacity to accommodate the additional traffic and the negative impacts would be restricted to amenity impacts only Refer to Traffic Impact Assessment (Appendix DD). Several mitigation measures are included in Section 6.18.4 of the DPEMP; including generation of traffic during the construction phase of the Project would be minimised to the extent possible through the sourcing of raw construction materials, including aggregate, sand and gravel from within the Project Site and the delivery of WTG components via the wharf.
57,323	2	Assessment of significance of impacts is subjective, speculative and not precautionary	no	Proponent to note	This view is noted. The DPEMP was prepared in accordance with legislative requirements including EPBC Act.
283	1	Site should be Ramsar listed	no	Proponent to note	UPC\AC has no influence over a potential Ramsar listing of Robbins Passage - Boullanger Bay.
2,12,60,61,220,277, 278	7	Alternatives should be considered, which will have less impact on ecosystems. For example, offshore windfarms or wave/tide generation windfarms.	no	Proponent to note	There are potential impacts to birds and the marine environment from offshore wind farms. There is no evidence that offshore wind farms have less impacts than onshore wind farms. Wave and tidal energy generation is not yet commercially viable.
284,320	2	Alternative sites not considered for project, as required by PSGs	no	Proponent to note	This is noted. The siting of Robbins Island was selected on the basis of work that had been undertaken for pervious proposals and assessment of the feasibility of the site given the wind resource and current WTG technology. Alternative sites must have viable wind resource,

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					landowner consent, and be cost effective with today's technologies. With the critical need for developing renewable energy, any site must present a viable business case.
19,83	2	Representors do not like WTGs	no	Proponent to note	Noted.
86,87,300,343	4	Generally against the project	no	Proponent to note	Noted.
90	1	Enormity of the proposed disturbance to the sensitive Robbins Island landscape. Proposed management and monitoring recommendations do not mitigate for impact to these values.	no	Proponent to note	Noted and it is acknowledged that this is a large-scale wind farm development. Impacts to the sensitive landscape are addressed in DPEMP and supporting studies. Significant efforts and resources are applied to reducing and mitigating potential impacts.
1,21,100,101,275	5	Impact to property values	no	Proponent to note	Addressed in DPEMP and Planning Assessment and Supporting Studies.
2,4,196,283	4	Concern about fairness of public consultation process Large proportion of local residents will find it challenging to understand and respond to large amounts of complex information Not a representative method to gauge community support Some community members feel dismissed.	no	Proponent to note	Refer to Section 5 of the DPEMP for the details on the various methods used to engage with the community. Various forums have provided information and opportunity for informal discussion. It is acknowledged that the DPEMP and associated studies are complex, however this level of detail is a requirement of the assessment process and integral to sound planning and design. UPC\AC have counter-balanced this formal process with opportunities for discussion and information sharing. Our policy has been that inclusive process and discussion is important.
2,4,165,167,176,186,194,275,310,377,283	11	Concern about negative impacts to tourism	no	Proponent to note	Concern is noted. Tourism is discussed in the DPEMP as one of the important industries in the Circular Head region. The range of experiences for visitors in the region provides a strong basis for ongoing industry development.
2,23,24,29,165,167,169,179,183,238,251	11	Statements about location being wrong, for example: There are more suitable sites with lower environmental values The west coast has more suitable sites Concern about climate change, but	no	Proponent to note	All wind farm sites have potential impacts, noting that the wind farm site on the west coast of Tasmania that is currently being investigated is in the Tarkine. Off-shore sites will have impacts on marine eco-systems and avifauna. Reducing emissions is an urgent imperative, and renewable

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		believes the location of the wind farm is the wrong location with too many biodiversity impacts.			technologies need to be located where the business case works. Reducing biodiversity impacts is addressed in the DPEMP.
31,204,263	3	Project is considered unsustainable according to sustainable development context in Tasmania. It does not comply with the *State Policies and Projects Act 1993* , and the *Land Use Planning and Approvals Act 1993* Sustainable Development objectives One representor included a detailed argument in attached paper "Making sustainability laws work, and application of Scarcity Multiplier Theory" that the proposal is unsustainable under the RMPS definition of 'sustainable development', and that no industrial developments can be considered sustainable under the current definition.	no	Proponent to note	The DPEMP was prepared in accordance with legislative requirements. The development proposal is for a wind farm; and is viewed as part of the picture in developing a sustainable future. The view of UPC\AC is that there is a requirement for industrial developments that reduce our carbon footprint if we are to have a tangible impact on limiting climate change. It is noted that the development will not inhibit the current use of the site of agricultural production on private property.
176,275,300,377	4	Concern about cultural impacts in community	no	Proponent to note	Refer to the Social and Cultural Heritage sections of the DPEMP; Section 6.19 and 6.15 respectively.
186	1	Proposal should not be considered in isolation Windfarm development in Tasmania should be considered wholistically Cumulative impacts of all windfarms on species such as eagles, raptors and bats should be considered	no	Proponent to note	Refer to Section 6.25 of the DPEMP for Cumulative and Interactive Impacts. UPC\AC has undertaken an assessment in line with the Project Specific Guidelines.
273	1	The project does not present a cumulative impact assessment and does not consider the combined environmental impact of Robbins Island, Jims Plains and the proposed transmission line, in particular the	no	Proponent to note	Refer to Section 6.25 of the DPEMP for Cumulative and Interactive Impacts. UPC\AC has undertaken an assessment in line with the Project Specific Guidelines.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		unacceptable risk to the WTE population and disturbance of ASS.			
194,320,381	3	The state requires a coordinated approach to wind farm development. Accessibility to existing high voltage power corridors Avoid environmental damage to vulnerable areas, Reduce visual impact on coastlines.	no	Proponent to note	This is the remit of Renewables, Climate and Future Industries Tasmania. Refer to https://recfit.tas.gov.au/home
317	1	A proportion of proposed funding should be allocated to be spent within the Circular Head Community	no	Proponent to note	UPC\AC has committed to doing this - refer to Section 6.19.3 of the DPEMP.
310	1	Community Benefit Fund is not enforceable	no	Proponent to note	As indicated by the Australian Energy Infrastructure Commissioner it is best practice to commit to and implement a community benefit fund. Refer to https://www.aeic.gov.au/publications/best-practice. UPC\AC have made the commitment to support the local area and view the Community Benefit Fund as an opportunity to give back and support a range of initiatives to strengthen the region. We do not require enforcement to meet our commitments
323	1	2010 Guidelines for Robbins Island considered environmental impact of a smaller proposal for the island, and should be publicly available. Proposal relies on outdated studies.	no	Proponent to note	Updated Project Specific Guidelines were issued in 2018 to reflect the altered development footprint. Refer to https://epa.tas.gov.au/Documents/Final%20DPEMP%20PSGs_Robbins%20Island.pdf The proposal relies on a long list of new studies provided as Appendices to the DPEMP, which at times references earlier studies in order to build a longer term picture of important baseline information.
323	1	Hardstand area in North Barker report represented as 2,000m^3, when instead 10,000m^3. Report based on incorrect impact area.	no	Proponent to comment.	The North Barker report was revised to account for the increased hardstand area (2000 m^3 to 10,000 m^3), note the reference to 1 ha and 366.2 ha in the report. There is a minor discrepancy in

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
					the report in that the hardstand areas in Figures 2 to 7 were not revised; however, it was acknowledged in the report that the hardstands in the figures were not to scale. It also needs to be noted that the 10,000 m^3 footprint for each WTG allows for adequate area to laydown construction components, particularly WTG blades. The laydown areas will be rehabilitated post-construction, thus reducing the impact area. However, the impact assessment has been based on the 10,000 m^3 figure to provide a worse case basis for the assessment.
323	1	Adaptive management for mitigation not possible given infrastructure is fixed	no	Proponent to note	Adaptive management is an iterative process in which hypotheses are tested and decisions and actions are adjusted accordingly based on experience. It is common practice to use adaptive management to refine mitigation measures associated with developments. It is true that infrastructure is fixed. However, there are a range of adaptive responses that can be applied such as WTG curtailment in areas/times of high risk, or further reducing speed limits if roadkill impacts are higher than anticipated. Adaptive management is based on ongoing monitoring and using evidence as a basis for response.
323	1	Disturbance footprint of the proposal is larger than the boundary of the site	no	Proponent to note	This statement is incorrect.
323	1	Areas of Robbins Island have already been cleared or burnt without approval under EPBC and EMPC Acts or FPA, with no prosecution of land owners which are partners in development. Environmental assessments consider altered ecological conditions after these activities as baseline. The restored landscape should be considered as a baseline.	no	Proponent to note	UPC\AC has had no control over land management practices undertaken for the purposes of farming. Environmental assessments ae based on the ecological mapping at the time of assessments (using available desktop data such as TasVeg and the List, and on-ground survey work). It is noted that further survey work is planned prior to construction to allow for micro-siting of infrastructure.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
323	1	Wind speed rather than rotor speed not provided in assessment, misleading to the reader. Underestimates the risks to avian fauna.	no	Proponent to note	The wind speed was provided to demonstrate the quantum of the wind resource, it was not used to assess potential impacts to birds.
332	1	Concern that permit conditions will not be enforced, resulting in impacts to threatened species	no	Proponent to note	UPC\AC will comply with any permit conditions and will prepare an Annual Environment Report to demonstrate compliance.
332	1	Carbon footprint of project is high	no	Proponent to note	Refer to Section 6.14.2 of the DPEMP - the typical energy/carbon payback period for a wind farm is between 6 months and 17 months.
346	1	Final plans will not be shown to public until after approvals are granted. No guarantee that the recommendations in preliminary plans will be included in final plans.	no	Preliminary plans are a minimum that the final plans must address. Final Plans will be required by permit conditions if approved.	Preliminary plans are provided for assessment purposes, with all final plans to be approved as a part of permit conditions. There is no possibility of reducing the commitments or measures between the two phases of developing the various plans.
332,381	2	The community does not support the proposal	no	Proponent to note	Noted
201	1	Proposal has been divisive for the Circular Head community	no	Proponent to note	Noted
208	1	Missing information and key studies.	no	Proponent to note	UPC\AC has endeavoured to provide detailed information for assessment purposes, with an extensive list of studies commissioned to date, and further studies required to inform the detailed design.
144	1	Inappropriate site location for wind farm, environmentally risky and contentious. Remote and unspoiled natural environment. Deficient on impact on infrastructure (wharf, bridge) on projected sea level rise as well as sea level rise on shorebird roosting sites. Impact on the one black blade on night	no	Proponent to note	Environmental risks are noted, and measures to reduce risk are detailed in DPEMP and associated annexes. Sea level rise will be considered in detailed design to ensure infrastructure is protected from this risk. Sea level rise impacts on roosting sites beyond the scope of Project, although the move

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		navigation amidst turbine blades. Lack of government leadership to ensure renewable energy infrastructure is suitably located. Concern on competence of Council to consider DA. New dams will attract more avian species. Impact on swamp harrier. Increased food availability as a result of turbine collisions and the increase in roadkill and eagle scavenging.			to renewable energy is viewed as part of the solution to this global crisis. Black blades are part of design consideration, with more detailed analysis of benefits and risks to be undertaken. Government leadership or Council competence are not matters for UPC\AC to comment on. There will be minimal dam requirements – three will be created for construction water supply. After construction dams will either be decommissioned or retained for farming purposes, depending on their local and potential use for fire suppression and/or farming. Any potential impacts through attracting more avian species will be considered in this decision making. Impacts on swamp harrier are assessed in Appendix G – Bird Impact Assessment Eagle scavenging of carrion from turbine collision and roadkill addressed in DPEMP and Appendix M Preliminary Eagle Monitoring and Management Plan.
204	1	The area should have had an assessment as an integrated environmental zone. Impact to surrounding land use.	no	Proponent to note	Unclear about an integrated environmental zone as an assessment process, as this is not the development proposed. Planning assessment does address impact to surrounding land use.
253	1	DA is not compliant with planning scheme, environmental legislation and is missing key studies. As a Montagu resident, deeply concerned about the irreversible environmental damage to the significant and sensitive part of Circular Head.	no	Proponent to note	Concern is noted. UPC\AC believes the DA is compliant with planning scheme and environmental legislation, with adequate studies undertaken.
287	1	Housing shortage in the area cannot accommodate another 350 people	no	Proponent to note	Refer to Section 6.23.3 of the DPEMP - UPC\AC plans to build temporary accommodation for construction workers.

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
294	1	Justification for the project is lacking. The project is reliant on marinus or hydrogen production to be viable.	no	Proponent to note	Refer to Section 3.1 of the DPEMP for the project rationale, noting that only Stage 2 of the project is reliant on Marinus Link or hydrogen production.
Supportive Representations					
89,314	2	Visual amenity - being visual should not influence the viability of the development Noise - prevailing wind direction would carry noise away from residential areas Bridge access will be a positive for servicing farmland and reduce heavy machinery across the sand flats Tourism - boost to the area, for tourism, accommodation providers Community - community fund will improve infrastructure and facilities Road transport - extra truck movements that occurred during construction of Woolnorth did not raise public concerns Avian wildlife - independent experts completed surveys Renewable energy - a positive Fossil fuels - moves away from fossil fuel use Stewardship of Robbins Island by landowners is positive Development process is rigorous.	no		Noted
97,187	2	Will provide for sustainability in agriculture, enhance renewable energy reputation. Invigorate rural towns.	no		Noted
99,151,157,159,172,184,187	10	Economic benefits to the region are immense. Benefits from construction jobs and ongoing employment, and the flow on effect to the local community and entire region Significant project as part of the overall energy strategy for Tasmania.	no		Noted

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
4,10,11,22,26,32,151,157,15	17	Supportive of proposal for trades/employment opportunities and economic development in region			Noted
11,17,18,32,151,157,159,172	13	Supportive of renewable energy project wind power is cost effective			Noted
195	1	A proportion of proposed funding should be allocated to be spent within the Circular Head Community			Noted
195	1	Future DAs for windfarms should include application to incorporate secondary form of supplementary back up supply of electricity generation			Noted
113	1	Project key benefits: Employment and opportunity Confidence for construction companies and local businesses to Invest in their people and capacity to meet demand Opportunities for training Green energy will assist in ensuring net zero emissions are achieved by 2050 The energy generated from the project has the potential to develop new industries in the state.	no		Noted
117	1	Great location for a wind farm and a win win for Circular Head, employment and local business.	no		Noted
118	1	A local family business owner commented Project will provide long term contracting work for local contractors and associated support businesses Extra need for accommodation which in turn will boost housing construction.	no		Noted

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		Economic benefits to Circular Head and Tasmanian economy.			
119	1	North west business supports the project as work for local Tasmanians and Tasmanian owned and operated businesses, with wages and profits spent locally.	no		Noted
120	1	Representor supports the project as it Positions Smithton as a regional centre which can expand, including housing, investment, new businesses and jobs. Renewable energy provides energy security for Tasmania, and is the way forward in the immediate future as Australia moves away from fossil fuel energy use. Sympathetic to concerns of those who oppose the project and wants protections to flora, fauna and Aboriginal heritage. Understands the concerns in relation to visual impacts but acknowledges that farms, houses, towns and road also change the landscape. Satisfied bird strike mitigation measures will operate.	no		Noted
124	1	Representor supports the project - With increasing energy demand, a goal of net zero emissions by 2050 and current national production of renewable energy at 25%, the project is needed. Land beneath the towers can be grazed and will enable supply of food. Environmental impacts must be managed and assessment must be undertaken and historic and indigenous heritage can be managed.	no		Noted

All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
125	1	Representor supportive of project - provides long term opportunities for companies in the civil construction industry. Will provide employment opportunities and training for the next generation in civil construction. Will assist in meeting net zero emissions targets Enable the development of new industries.			Noted
207	1	Development is crucially important for Circular Head, both for the area's advancement and the renewable energy contribution within Tasmania and on the mainland. The development would provide business and employment growth.	no		Noted
237	1	Representor is strongly supportive of continued sustainable development of Tasmania's renewable energy resources, providing energy security, competition and ultimately lower power prices for Tasmania/ The project will generate massive direct and indirect jobs and economic activity.	no		Noted
260	1	Supportive of project and a step forward for Tasmania in the renewable energy sector. Rather than a mine there are steel wind turbines which is less disturbing.	no		Noted
261	1	Support of the project. A good fit with Tasmania's long term clean green image.	no		Noted
281	1	Supportive of project based on benefits to the whole community despite the negativity.	no		Noted
286	1	Supportive of project. Appreciate others have concerns with visual	no		Noted

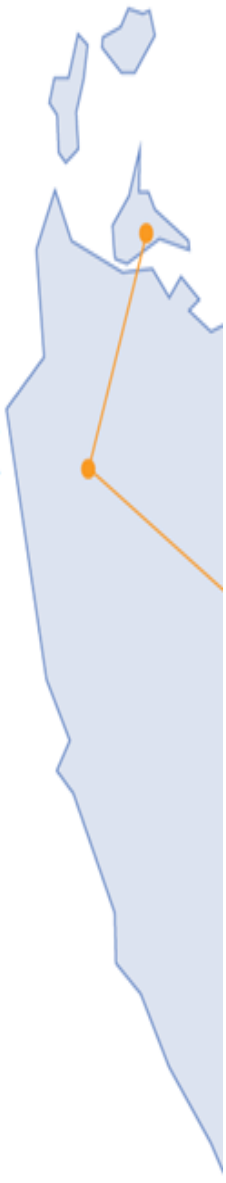
All representations	Total No Reps	Comments and Issues	Further info request [yes/no]	EPA Comments	UPC\AC Response
		impact along the coastline, however Representor does not mind them. The project will make a significant contribution to the local economy.			
292	1	Supportive of development, however, no medical facilities available for existing local population, this will need to be addressed, and will there be public access to the project when completed.	no		Noted
299	1	Supportive of the project and the benefits it will bring to the community and future investment. Also have faith in the landowners who love the area as much as the community, to have the best interest of the Circular Head area.	no		Noted

Appendix B

Updated Traffic Impact Assessment

UPC AC Renewables
AUSTRALIA

Jim's Plain & Robbins Island
Renewable Energy Parks



Robbins Island Renewable Energy Park

Appendix DD

Traffic Impact Report updated May 2022

UPC Robbins Island Pty Ltd

UPC Robbins Island Pty Ltd

Robbins Island Renewable Energy Park Approvals
Traffic Impact Report

May 2022

Table of contents

Table index

Figure index

Appendices

1. Introduction

1.1 The Project

The Robbins Island Renewable Energy Park (the Project) is a wind farm proposal involving the installation of up to 163 wind turbine generators (WTGs) on Robbins Island in north-west Tasmania. The site location is shown in Figure 1. In addition to the WTGs themselves, the Project involves an array of support and ancillary infrastructure, major electrical transfer infrastructure, hardstand areas, site camp and offices, and a network of roads for construction and operational use. This will involve both the upgrade of existing tracks on the island and the construction of new roads. Roads will be of a width and grade suitable for accommodating large semi-trailers and oversized construction machinery.

To enable vehicle access between Robbins Island and mainland Tasmania a single lane bridge over Robbins Passage is included as part of the Project, approximately 5 metres wide. The proposed bridge is a 1290 metre precast concrete and steel piled structure connecting to ramps at either approach.

Owing to the large size of the wind turbine components and tower sections, a marine roll on/roll off (RoRo) landing and wharf facility is included in the Project on the eastern coast of Robbins Island to facilitate component delivery.

Delivery of major infrastructure for the Project, including all oversized WTG components, will occur via the port facility, with smaller infrastructure to be delivered via the bridge across Robbins Passage. The bridge will be used by local and maintenance vehicles for the operational life of the project.

Construction raw materials, including aggregate, sand and gravel will be sourced on Robbins Island, where available, from a series of quarries/borrow pits around the island. Materials that cannot be sourced locally from the island will be delivered via Bass Highway, Smithton (via Mella Road) and the Robbins Passage bridge.

A detailed site plan identifying the infrastructure components of the Project and a conceptual layout of the WTGs is provided in Figure 4.

The construction phase of the Project will occur over an approximate 66 month period, utilising a workforce of up to 350 people. It is expected that the operational life of the project will be 25 years.

Once the Project is operational, very little traffic is expected to be generated by the site. The most significant traffic impact will be during the construction phase and this traffic impact assessment (TIA) report is focussed on this period.

Figure 1 Locality map

Source: The List Map website

1.2 Purpose of this report

The aim of this report is to provide an assessment of the traffic impact of the Project and recommend mitigation measures for any negative impacts.

1.3 Supporting information

Average Annual Daily Traffic and percentage of heavy vehicles for the Bass Highway, 437 m east of Nelson Street (Station A0249890), provided by the Department of State Growth for 2021.

Average Annual Daily Traffic and percentage of heavy vehicles for the Bass Highway, 416 m west of Nelson Street (Station A0249900), provided by the Department of State Growth for 2021.

Two-way traffic counts for Nelson Street provided by Circular Head Council for April 2017.

Two-way traffic counts for Mella Road, north, provided by Circular Head Council for February 2020.

Two-way traffic counts for Mella Road, south, provided by Circular Head Council for February 2020.

Two-way traffic counts for Montagu Road, 150 m west of Bens Hill Road, provided by Circular Head Council for January-February 2021.

Two-way traffic counts for Montagu Road, Montagu, for March 2016, reviewed for relevance and to determine growth rates on Montague Road, Montagu.

Two-way traffic counts for Montagu Road, at Smithton High School, provided by Circular Head Council for January-February 2021.

Two-way traffic counts for Montagu Road, at Smithton High School, for March 2016, reviewed for relevance and to determine growth rates on Montagu Road, at Smithton High School.

Two-way traffic counts for West Montagu Road provided by Circular Head Council for March 2016.

Robbins Island Renewable Energy Park - Planning Report (July 2021)

The construction materials' volumes and weights are as provided by the client (detailed in Appendix A). The materials have been assigned to a period in which they would be delivered. Multiple deliveries during the same period will indicate the most critical period and this period will be analysed.

1.4 Scope and limitations

This report: has been prepared by GHD for UPC Robbins Island Pty Ltd and *may only be used and relied on by UPC Robbins Island Pty Ltd for the purpose agreed between GHD and the UPC Robbins Island Pty Ltd as set out in section 1.2 of this report.*

GHD otherwise disclaims responsibility to any person other than UPC Robbins Island Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report, section 1.5. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided UPC Robbins Island Pty Ltd and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

1.5 Assumptions

The following assumptions have been used to formulate this report:

- Delivery truck schedule is averaged over the construction period for each task (less 5 day construction time at the end of the task).
- All deliveries will occur during a normal 12 hour work day, but outside school bus times.
- The scoped impact area is from Bass Highway, east of Smithton, to the site. This would include routing via Mella Road for normal delivery trucks.
- All physical logistical issues associated with oversize loads are addressed in a separate report
- Two persons per personal light vehicle (LV) and a maximum of 46 persons per bus will be transported to site.
- Personnel transport to site will be comprised of 15% travel by light vehicles and 85% by project supplied buses.

- Construction of the bridge over Robbins Passage will occur during the site camp establishment period. The majority of the bridge construction materials will be delivered by sea barge.
- All internal site roads (i.e. all road on Robbins Island) have not been assessed and it has been assumed that they are designed to be fit for purpose.
- Traffic data provided by the Department of State Growth and Circular Head Council accurately represents the traffic conditions of the local road network.

2. Existing conditions

2.1 The site and access

The Project location is on Robbins Island which is relatively remote, with Smithton being the closest town, some 35 km away and accessed by an informal ford across Robbins Passage. The site is open bushland and agricultural farmland with no other development present.

The Project site is accessed via an informal ford water crossing from Robbins Island Road (when tide allows) which connects onto the West Montagu Road. The West Montagu Road connects between Smithton and Woolnorth.

2.2 Road network

The transport route from Smithton is shown in red on Figure 2, with each of the key roads discussed further below

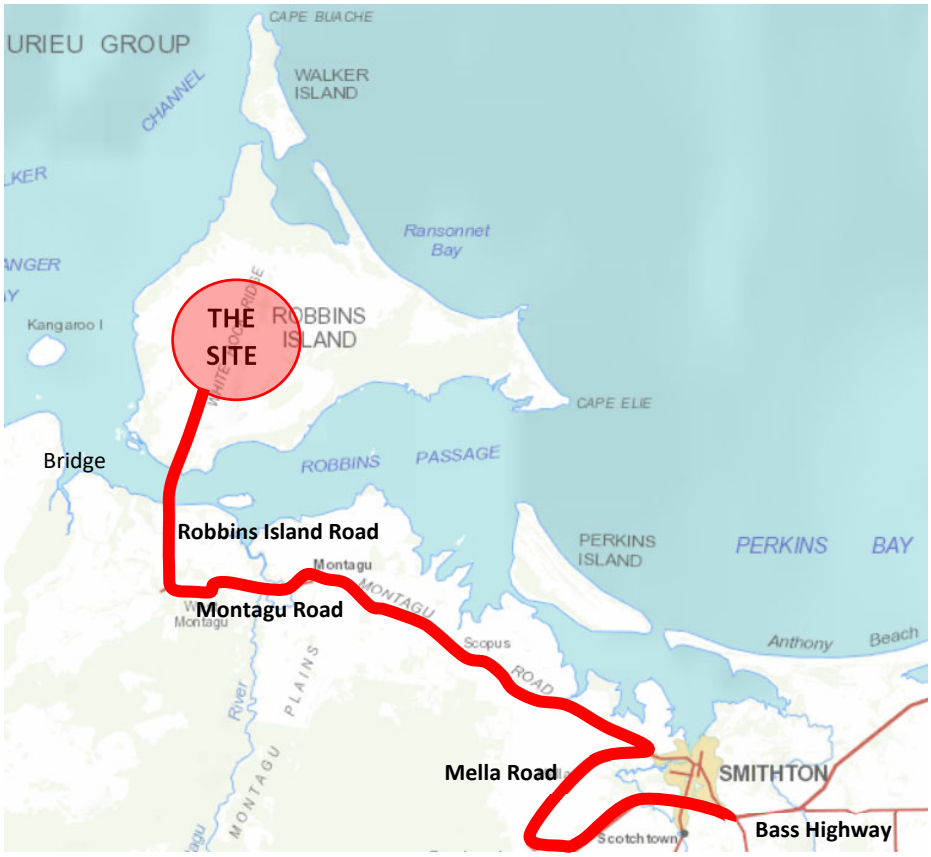


Figure 2 Transport route

Source: The List Map website

Robbins Island Road

The general cross section of this road is approximately 6.0 m wide, gravel surfaced with natural drainage runoff on both sides. The condition of the road is good and it has a posted speed limit of 80 km/h. Sight distances are generally good in all directions along the road. There is no street lighting or footpaths and the road is classed as a local road. Some curves appear to be substandard for the proposed delivery vehicle and further investigation is required.

Robbins Island Road connects to Robbins Island via an informal ford, at the end of the formalised road section. A warning sign informs drivers to stop as shown in Figure 3.

Figure 3 Robbins Island Road informal ford

West Montagu Road

The general cross section of this road is approximately 7.0 m wide, sealed surfaced with natural drainage runoff on both sides. The condition of the road is good and generally has a posted speed limit of 100 km/h except through the villages and settlements where a 60 km/h or 80 km/h speed limit applies. Sight distances are good in all directions along the road. There is no street lighting or footpaths and the road is classed as a rural arterial road. The road has a power line running parallel to it, which crosses the road intermittently along the route.

Montagu Road / Davis Street

The Montagu Road general cross section is approximately 7.0 m wide, sealed surfaced with natural drainage runoff on both sides. There are no footpaths or street lighting outside of Smithton. The condition of the road is good and generally has a posted speed limit of 80 km/h except within Smithton where a 50 km/h speed limit applies. Sight distance are good in all directions along the road.

Within Smithton, Montagu Road becomes Davis Street, which has a general cross section of approximately 7.0 m wide with kerbed edges and stormwater inlets for drainage. There are footpaths on both sides and street lighting and power lines on the east edge. Montagu Road is classed as a rural arterial road.

Nelson Street

The general cross section of Nelson Street is approximately 12.0 m with parallel parking on each side of the road, and 3.5 m lane widths. Nelson Street has kerbed edges with stormwater

inlets for drainage. There are footpaths on both sides and street lighting and power lines on the eastern edge. The condition of the road is good and it has a posted speed limit of 60 km/h. The road is relatively straight and sight distances are good in all directions along the road. The road is classed as an urban arterial road.

Mella Road

The cross section of this road is approximately 7.0 m wide, asphalt surfaced with no kerbs or footpath. There is natural drainage runoff on both sides. The condition of the road is good and has a posted speed limit of 80 km/h. Sight distances are good in all directions along the road. The road is a rural local class 4 road. Mella Road is also designated as a bypass route for heavy vehicles to avoid travelling through Smithton.

Bass Highway

The Bass Highway generally has a posted speed limit of 100 km/h which is reduced to 60 km/h locally at the Nelson Road roundabout. Before Nelson Road the Bass Highway has a general cross section which includes 3.5 m traffic lanes and 1.0 m sealed shoulders. West of Nelson Road there are 3.5 m traffic lanes but with no shoulders. There is natural stormwater runoff into an open channel. The Bass Highway is a State Class II Regional Freight Road.

The Bass Highway / Nelson Street roundabout has a 9.0 m wide single circulating lane with a 40.0 m inside diameter. The intersection has kerbed edges with stormwater inlets for drainage. There is street lighting present at the intersection. Sight distances are excellent in all directions.

2.3 Existing traffic data

Traffic data was obtained from the Department of State Growth (the Department) and Circular Head Council (Council) for the key roads.

Average Annual Daily Traffic (AADT) was obtained from the Department for 2021 for the Bass Highway, 437 m east of Nelson Street and 416 m west of Nelson Street, and these AADT values are provided in Table 1.

Traffic volumes have been provided by Council for approximately two weeks in January - February 2021 for Montagu Road, 150 m west of Bens Hill Road, and at Smithton High School. The volumes in Table 1 represent the Average Weekday Daily Traffic (AWDT). Based on comparison of this 2021 AWDT data with AWDT data obtained from traffic counts conducted on Montagu Road over a week in March 2016, it was determined that the average annual linear growth rates over this period were -5.4% for light vehicles and -8.4% for heavy vehicles.

Traffic volumes were provided by Council for approximately one week in March - April 2017 for Nelson Street. No more recent data is available for Nelson Street. As the growth rate on nearby Montagu Road was determined to be negative between 2016 and 2021 and the growth rate on Nelson Street is unknown, for the purposes of this assessment 2017 AWDT volumes have been conservatively adopted, and are provided in Table 1.

Traffic volumes were provided by Council for approximately three weeks in February - March 2020 for Mella Road north and south. As the volumes on Mella Road north were greater than Mella Road south, for the purposes of this assessment 2020 AWDT Mella Road north volumes have been conservatively adopted, and are provided in Table 1.

Traffic volumes were provided by Council for approximately one week in March 2016 for West Montagu Road. No more recent data is available for West Montagu Road. As the growth rate on nearby Montagu Road (of which West Montagu Road is a continuation) was determined to be negative between 2016 and 2021 and the growth rate on West Montagu Road is unknown,

for the purposes of this assessment 2016 AWDT volumes have been conservatively adopted, and are provided in Table 1.

Table 1 Traffic volumes

Count location	Light vehicles (veh/day)	Heavy vehicles (veh/day)
Bass Highway (east of Nelson Street)	2,139	686
Bass Highway (west of Nelson Street)	1,230	291
Nelson Street	4,706	759
Mella Road	531	132
Montagu Road (at Smithton High School)	1,050	108
Montagu Road (at Montagu)	362	145
West Montagu Road	346	136

2.4 Road safety

To review the safety performance of the road network, historic crash statistics for each key road within the study area have been sourced from the Department of State Growth, with key findings summarised below for the five year period between October 2013 to October 2018:

West Montagu Road

A total of three crashes were recorded in the five year period, resulting in one property damage and two minor injury crashes.

Montagu Road

Eight crashes were recorded in the five year period. There were two serious injury crashes recorded (occurring in 2016 and 2018), one property damage, three minor injury and two crashes requiring first aid.

Four out of eight crashes occurred in the dark without street lighting on a sealed roadway. There was a trend observed for crashes occurring as a result of vehicles travelling on curves.

The two serious crashes occurred during the daytime where one of the vehicles travelled on the wrong side of roadway whilst not overtaking and the other one involved striking an object on the roadway.

Mella Road

21 crashes were recorded since 2001. There were three serious crashes (with the most recent crash occurring in 2017), 25 property damage only crashes, two minor crashes and one crash required first aid. A significant proportion of the crashes occurred at night time.

Davis Street

One crash was recorded in the five year period, resulting in property damage only.

Nelson Street

A total of 10 crashes were recorded in the five year period. The level of severity for the recorded crashes included one serious injury which occurred in 2018, seven property damage, one minor and one requiring first aid. The serious crash involved the vehicle leaving the carriageway.

60% of the total crashes recorded on Nelson Street occurred at intersections, with three recorded at the intersection of Davis Street and Smith Street.

3. The Project

3.1 Detailed information

The construction phase of the Project involves the upgrading of roads, the construction of new roads, construction of the bridge, construction of the RORO, the construction of WTG footings and hardstands, the erection of the WTG towers, and the installation of electrical infrastructure to connect the WTG to the power grid. The site area is shown in Figure 4 in Section 3.2.

For this Traffic Impact Assessment (TIA), the focus will be on the period of construction that would generate the highest amount of traffic. When assessing the construction program, we determined the highest volume of traffic that would occur was when tasks were overlapping. This period was estimated to occur in the first quarter of the second year of the project and the tasks occurring were road construction, WTG footing and hardstand construction. Some of these tasks involve delivery from east of Smithton, which includes materials (steel and concrete) and site personnel. The delivery of these materials will be assessed in the following traffic generation assessment. All other construction materials will be sourced on site and WTG components will be delivered by ship directly to Robbins Island and are not required to be assessed in this report.

Parking will be provided on site. Sufficient levelled gravel surface will be provided in the contractor's site office yard to accommodate 30 light vehicles and 7 buses. Parking spaces shall comply with Circular Head Council planning scheme Clause E9.5.1.

During the operational phase of the project, very little traffic is expected.

3.2 Traffic generation

3.2.1 Construction Phase

The trips generated by the Project will be in two separate (day) time periods. The first period will be when staff travel to and from site, which is typically early morning and late afternoon (outside of the typical work day). The second period will be the trucks delivering materials and this would occur throughout the work day.

For this assessment a one-way trip is considered as a single direction of travel (for example, a private vehicle travelling to site is one trip). A return trip is considered a two-way movement (for example, a private vehicle travelling to site and then back to Smithton).

All truck deliveries are assumed to come from the Bass Highway east of Smithton. It was assumed that 29 tonne payload trucks will be used to inform this assessment. Estimates of the total number of trucks required to deliver the materials and the average truck movements per day, were calculated from the task timeframes. These estimates are detailed in Appendix A.

A small number of staff will be housed on Robbins Island but the bulk of staff will be housed in Smithton. The 350 site personnel that will be based in Smithton will travel to site every day in a private vehicle (utility or similar light vehicle) or buses provided by the Project. We have assumed the light vehicles will have an average occupancy of two personnel per vehicle and a maximum of 46 persons per bus and that 85% of the workforce will travel by bus.

In Appendix A, the total number of return trips per day is calculated as 14 bus trips (seven in the morning and seven in the evening), seven delivery trucks and 26 light vehicles. As this indicates each vehicles traverses the road sections twice (to the site and from the site)

therefore a total number of 42 heavy vehicle and 52 light vehicle one-way trips are anticipated per day.

The light vehicles will go to site in the morning and return in the afternoon, outside of typical working hours. It is assumed that there will be seven return bus trips in the morning and seven return bus trips in the afternoon. The buses will travel to site, pick up/drop off personnel and then return to Smithton.

The trucks will travel to site during working hours, offload and then return to the Bass Highway to pick up a new load. The delivery trucks will complete 14 one-way trips which are assumed to be spread out over a 12 hour work day. The total of 14 delivery truck trips per day would equate to an average of less than 1.5 trips per hour. The total trips generated by the site are presented by hour in Table 2.

Table 2 Vehicle movement through the day

Hour start	Heavy vehicle	Light vehicle	TOTAL
4:00			
5:00	14	26	**40**
6:00			
7:00	1		**1**
8:00	2		**2**
9:00	2		**2**
10:00	2		**2**
11:00	2		**2**
12:00	1		**1**
13:00	1		**1**
14:00	1		**1**
15:00	1		**1**
16:00	1		**1**
17:00			
18:00	14	26	**40**
19:00			
Total	**42**	**52**	**94**

Accounting for the return nature of trips the peak traffic generation, peak hour, period will be the transportation of personnel to site which is estimated to be 40 vehicle trips, inclusive of 26 light vehicle trips and 14 bus trips (seven bus trips to site and seven bus trips from site). The opposite is estimated for the evening peak generation.

The total estimated daily traffic generation is 52 light vehicle trips and 42 heavy vehicle trips.

3.2.2 Operational Phase

The operational phase will consist of 50 staff on site with 30 light vehicles completing return trips per day, with a heavy vehicle travelling to site occasionally for maintenance purposes.

1:70,000 @ A3

0 0.5 1 1.5 2

Kilometres

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

N

- The Project Site
- WTG layout
- Met mast
- Robbins Island Road upgrade
- Arterial road
- Spur road
- 1 x 220kV underground cable (indicative)
- 2 x 220kV underground cable (indicative)
- 4 x 220kV underground cable (indicative)
- Bridge alignment
- Wharf
- Wharf access
- WTG exclusion zone
- Area available for irrigation
- Maintenance and service facility (MAS)
- Maintenance and service facility storage area (MASfs)
- Substation (Sbs)
- Wash down bay (Wdb)
- Wash down pad (Wdp)
- Wastewater treatment facility (Wwf)

UPC Robbins Island Pty Ltd
Robbins Island Renewable Energy Park

TIA - Conceptual Site Layout (Robbins Island)

Job Number	32-1855801
Revision	I
Date	12 Oct 2021

Figure 4

G:\32\1855801\GIS\Maps\Deliverables\DPEMP\32_1855801_02-03_OperationalSitePlan_RevH.mxd

Data source: ESRI - Imagery. UPC Renewables - Boundary, turbine layout, roads, underground cables, infrastructure. The List - Land boundary, access road. GHD - Environmental constraints, infrastructure locations, roads, bridge, quarry locations, wharf. Created by:tdcoates

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com

3.3 Transport route

The primary route to site for heavy vehicles from the Bass Highway will typically be via Mella Road bypassing the Smithton town centre. At the end of Mella Road turning left in a westward direction onto Montagu Road. Following Montagu Road onto West Montagu Road until reaching Robbins Island Road, where vehicles will turn right in a northerly direction, following Robbins Island Road until reaching the new bridge and continuing on to the site.

When heavy vehicles return, the same route will be taken, but in the reverse direction.

While heavy vehicles will be restricted to using the above route, no such restrictions will be placed on light vehicles, which may use other roads (including Nelson Street and Davis Street within Smithton) to travel to and from the site.

3.4 Access to site

Robbins Island Road will be upgraded to accommodate the B-double truck traffic for the Project, and improve general road safety. Improvements, where required, will include upgraded pavement structure, flattening of curves in the alignment, widening of the cross section and vegetation removal in verges to improve radius sight distances.

An internal road network will be constructed within the site with arterial roads having a trafficable width of 6.0 m and 0.5 m shoulders. Spur roads, which comprise the majority of roads within the site, will have a trafficable width of 4.5 – 5.5 m (dependent on grade and curve radius) and 0.5 m shoulders.

For the project, a bridge will be constructed between Robbins Island Road and Robbins Island, including a concrete ramp from the end of Robbins Island Road. The bridge will be approximately 5.0 m wide with a 20 m construction zone either side of the bridge structure for construction.

Further details of the road upgrades and internal road network are contained in the *Robbins Island Renewable Energy Park - Planning Report (July 2021)*.

3.5 Traffic analysis

The proposed construction vehicle transport route and key roads are described in Section 3.3. Private vehicles and buses for personnel will originate from within Smithton. Delivery trucks will originate from the Bass Highway, travelling around Smithton, via Mella Road to the site.

The volume of proposed traffic generated by the Project is small in comparison to existing volumes, however, an additional 52 light vehicle trips and 42 heavy vehicle trips per day will be a noticeable increase in traffic, and the change in conditions may result in an impact on the general amenity of the roads. Table 3 details the current traffic volumes and proposed daily two-way traffic volumes generated as a result of the Project.

Table 3 Increase in traffic volume

Road	Current LV volume	Current HV volume	Development Generated LV (% increase)	Development Generated HV (% increase)
Bass Highway (east of Nelson Street)	2,139	686	-	14 (2%)
Mella Road	531	132	-	14 (11%)
Montagu Road (at Montagu)	362	145	52 (14%)	42 (29%)
West Montagu Road	346	136	52 (15%)	42 (31%)

3.5.1 Bass Highway and Nelson Street roundabout

The roundabout has a large 40.0 m inside diameter with a wide 8.0 m circulating lane. Entry angles and sight distances are good. The ADT volumes shown in Table 3 above are relatively low and would indicate that this roundabout has significant spare capacity to accommodate the minor increase in traffic from the development, with no or negligible negative level of service impacts expected.

Using methodologies in *The Guide to Traffic Management Part 3: Traffic Studies and Analysis (Austroads, 2017)*, the traffic using the Nelson Street roundabout records less than one fifth of the potential capacity therefore indicating the roundabout has significant spare capacity, even after considering the development traffic.

3.5.2 Nelson Street and Davis Street intersection

The intersection of Nelson Street and Davis Street is signalised, with a left turn slip lane from Nelson Street to Davis Street for vehicles travelling from the south to the west. The Davis Street approach, from the west, has two lanes providing one lane for through and left turns and another for through and right turns from Davis Street into Nelson Street. The traffic volumes are relatively low and would indicate that the signalised intersection has significant spare capacity to accommodate the additional traffic from the development, with no or negligible negative level of service impacts expected.

A signalised intersection which has an even traffic flow on each leg has a generalised capacity of approximately 500 – 600 veh/h per approach lane (through and left) and 300 veh/h for a right turn lane*. This intersection has no more than 200 vehicles per hour with some legs having two lanes on approach. With the intersection having significantly more than half of its capacity spare there is sufficient capacity remaining to accommodate the additional development traffic.

**Traffic Engineering and Management - Monash University (Ogden & Taylor), 1999, Chapter 8.1 Item 110*

3.5.3 Montagu Road / West Montagu Road route section

For this section of road the ADT volumes shown in Table 3 are very low and based on the theoretical capacity of the road being a rural arterial, this section could adequately accommodate the estimated increase in traffic.

3.5.4 West Montagu Road and Robbins Island Road intersection

The intersection of West Montagu Road and Robbins Island Road is a standard stop controlled intersection with West Montagu Road being the primary through road. Traffic volumes shown in Table 3 are very low on this section of West Montagu Road and no or negligible negative level of service impacts are expected.

4. Impacts and recommendations

4.1 Road network

The road network is owned and managed by the Department of State Growth and the Circular Head Council. The roads connect Smithton to agricultural areas of Woolnorth and therefore already accommodate heavy vehicles associated with the farm operations.

The main surfaced roads are established travel routes with existing heavy vehicle traffic. The proposed traffic generated by the Project will cause minimal noticeable change in capacity or amenity conditions for the open road sections of the route. A slight change in the same conditions will be noticeable within Smithton where speeds are lower and the population and traffic density is higher. The presence of the additional staff traffic may be noticeable however given that the road network has sufficient capacity to accommodate the increase in traffic volume, the impact on level of service would be minimal.

The greatest proportional increase in traffic volumes will be on the Robbins Island Road section of the transport route. Currently there is minimal traffic using this road and the proposed construction traffic will have a noticeable change in conditions and amenity. However, the road has sufficient capacity to accommodate the additional traffic and the negative impacts would be restricted to amenity impacts only.

For the Robbins Island Road and West Montagu Road intersection, the Robbins Island Road leg of the intersection is recommended to be sealed to a length of 30.0 m to aid take off traction as well as the right turn movement from West Montagu Road. Sealing this 30.0 m section will also help to keep loose gravel and dirt off West Montagu Road.

For Montagu Road, West Montagu Road and Mella Road a significant increase in heavy vehicle use is anticipated. The additional heavy vehicle traffic may have an impact on the road network's pavement integrity, structural assets and drainage infrastructure and a route condition assessment prior to start of construction will be required as a benchmark. The structural condition should be assessed every six months and then be assessed again at the end of the construction phase to note any degradation in integrity resulting from the construction traffic. Should any degradation be noted, liaison with the relevant road authority is recommended to repair the affected road infrastructure.

The location of accommodation for staff within Smithton is unknown at this stage and therefore the traffic impacts could not be determined. If accommodation is spread throughout the town it is suggested to have a park and ride facility centrally located, although the location and suitability of any parking area has also been excluded from this assessment.

4.2 Road safety

From a holistic view of the access route, the roads are typically in good condition and signage appears adequate.

Robbins Island Road currently has a geometry and a cross section that is not suitable for the anticipated heavy vehicle traffic generation. Improvements to Robbins Island Road have been planned and are due to be implemented during the initial construction phase. The cross section of Robbins Island Road should be widened to at least 6.0 m with a 0.5 m shoulder each side. Some curve radii are not sufficient for heavy vehicles and require additional widening.

Footpaths are provided within Smithton where there is pedestrian activity but not on the rural roads where pedestrian activity is low and there is little demand for pedestrian infrastructure.

Care should be taken to ensure heavy vehicles do not travel in close convoy. A close convoy of heavy vehicles can create difficulty for other vehicles to pass and can create an environment where other road users may take risks in attempting to overtake. In the event that a convoy is formed, a minimum of 50.0 m spacing between heavy vehicles should be maintained to allow other road users passing opportunities.

Vehicles driving on gravel roads are exposed to additional slipping / sliding risk and special care should be taken by drivers travelling to and from site.

Wet roads expose vehicles to additional slipping / sliding risk and special care should be taken by drivers travelling to and from site when roads are wet.

Temporary construction signage should be installed on Robbins Island Road and the junction with West Montagu Road during the construction period to warn road users of increased heavy vehicle volumes and possibility of large turning vehicles.

Drivers should undergo a site specific road safety induction with emphasis on driving in convoy and driving on gravel roads.

An assessment of the crash history was conducted and is detailed in Section 2.3. Montagu Road data indicated that five of the 10 crashes reported within the five year analysis period occurred in dark conditions with a lack of street lighting and delineation noted.

A detailed road safety audit of the route should be conducted prior to the construction phase beginning. It is expected that improvements to the delineation and night visibility along Montagu Road in higher risk areas such as bends would be considered. Monthly informal road safety reviews should also be undertaken to check for any changes in the expected road safety conditions.

5. Summary

5.1 The Project

The Robbins Island Renewable Energy Park (the Project) involves the construction and operation of a wind farm in north western Tasmania.

The construction phase of the Project will occur over an approximate 66 month period. The construction will utilise a workforce of up to 350 people and generate up to approximately 42 heavy vehicle and 52 personal vehicle trips per day. The morning and evening peak hour period will have the greatest traffic impact with 26 personal vehicle trips and 14 bus trips in each period.

A network of roads will be established across Robbins Island for construction and operational use. This will involve both the upgrade of existing roads and the construction of new roads within the site. Roads will be of a width and grade suitable for accommodating large semi-trailers (B-doubles) and oversized turbine components.

Parking will be provided on site. Sufficient levelled gravel surface will be provided in the contractor's site office yard to accommodate 30 light vehicles and 7 buses. Parking spaces shall comply with Circular Head Council planning scheme Clause E9.5.1.

5.2 Road network

The greatest proportional increase in traffic volumes, generated by the development will be on Robbins Island Road during the construction phase. Improvements to Robbins Island Road are planned including upgraded pavement structure, flattening of curves in the alignment, widening of the cross section and vegetation removal in verges to improve radius sight distances.

For the Robbins Island Road and West Montagu Road intersection, the Robbins Island Road approach to the intersection should be sealed to a length of 30.0 m.

The additional heavy vehicle volume may have an adverse impact on the proposed transport routes pavement structural integrity and a condition assessment should be undertaken at the start of construction, every six months after the start and at end of the construction phase. Should any degradation be noted, liaison with the relevant road authority is recommended to repair the affected road network.

5.3 Road safety

A detailed road safety audit of the route should be conducted prior to the construction phase beginning. It is expected that improvements to the delineation and night visibility along Montagu Road in higher risk areas such as bends would be considered. Monthly informal road safety reviews should also be undertaken to check for any changes in the expected road safety conditions.

Temporary construction signage should be installed on Robbins Island Road and the junction with West Montagu Road during the construction period to warn road users of increased heavy vehicle traffic.

When trucks find themselves in convoy they should keep a minimum of 50.0 m spacing between trucks to allow other road users passing opportunities.

Drivers should undergo a site specific road safety induction with emphasis on oversized loads, driving in convoy, and travelling on gravel roads

Appendices

Appendix A - Robbins Island Wind Farm - Traffic generation

Material	Quantity	Measure	Source location	Mode of transport	No. of vehicles	Period	Days	Time of Day	Return trips per day
General purpose cement	19,148	Tonnes (bulk)	East of Smithton	29 t payload truck	951	16/6/21 – 02/3/23	447 – 10 = 437	6am – 6pm	7 HV
Fly ash	44,705	Tonnes (bulk)	East of Smithton	29 t payload truck	1,619			6am – 6pm	
Steel reinforcing (in WTG bases)	14,670	Tonnes (bulk)	East of Smithton	29 t payload truck	506			6am – 6pm	
				Total	3,075			6am – 6pm	
Construction site personnel	52	persons	Smithton	Personal vehicle	26 LV	Every day	Every day	5 – 6am	26 LV
								6 – 7pm	
Construction site personnel	298	persons	Smithton	Bus	7 buses	Every day	Every day	5 – 6am	7 bus trips
								6 – 7pm	7 bus trips
Site camp establishment Incl. bridge construction	50	Truck	Burnie	Truck	30	09/9/20 - 20/10/20 Outside of period	30	Outside of peak delivery period	
								Total per day	14 bus, 7 HV, 26 LV
Operational phase Site personnel	50	persons	Smithton	Light vehicle	30	Every day	5 day week during operations	7 – 8 am	30
								4 – 5 pm	

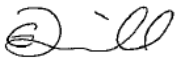
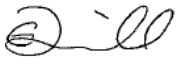
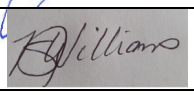
Concrete pours which results in extended work hours for 31 days. One bus traveling to site at 4am and return trip at 7pm for Q1/21 – Q2/21.
Tower erection results in night work on 31 days. One bus travelling to site at 6pm and return trip at 12am for Q2/21. Unlikely that concrete pour and tower erection occur on same day.
Delivery is averaged over construction period (less some construction time at the end of the task).
Assume 2 persons per light vehicle and 46 persons per bus.
Assume scope area is from Bass Highway, east of Smithton to site.

GHD

2 Salamanca Square
T: 61 3 6210 0600 F: 61 3 6210 0601 E: hbamail@ghd.com

321855801-77541/https://projects.ghd.com/oc/tasmania3/robbinsislandrenewab/Delivery/Documents/321855801-REP_Robbins_Island_TIA_Report.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	D Bekker	E.Jackson		E.Mohan		18/12/19
1	D Bekker	E.Jackson		E.Mohan	On file	20/02/20
2	D Bekker	A.Moore		A.Moore		7/12/20
3	M Petrusma	K Williams				
4	R Green	S Chapman	On file	D Rockiff	On file	16/05/22

ghd.com

→ The Power of Commitment