ENVIRONMENTAL PROTECTION ACT SECTION 38 REFERRAL

NEWMAN TO ROY HILL TRANSMISSION LINE

ALINTA ENERGY TRANSMISSION (ROY HILL)

February, 2013

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1 INTRODUCTION

Alinta Energy Transmission (Roy Hill) Pty Ltd (AETRH) is proposing to construct a 220 kilovolt (kV) transmission line from the existing Newman Power Station north through the Pilbara region of Western Australia (the Proposal). The northern terminus of the transmission line will be at a new 220 kV / 66 kV substation at the Roy Hill mine. Future proposals may seek to extend the transmission line to other customers in the region.

This document is intended to support the referral of the Proposal under Section 38 of the *Environmental Protection Act 1986* (WA) (EP Act) and therefore describes a "Proposal" under the EP Act. It provides additional information about the Proposal, existing environment and potential impacts. It should be read together with the referral form (provided in Appendix 1).

2 BACKGROUND

2.1 Proponent Details

AETRH, a wholly-owned subsidiary of Alinta Energy Finance Pty Ltd, was established to implement Alinta Energy's electricity transmission strategy in respect of electricity generated at the Newman Power Station.

Alinta Energy Finance Pty Ltd is the Australian parent company of a group of companies that form a specialist energy group, providing exposure to a retail energy and electricity generation asset portfolio. Alinta Energy Finance Pty Ltd is itself a subsidiary of Alinta Holdings (ARBN 148 012 471). The Alinta Energy group of companies is hereafter referred to as Alinta Energy.

Alinta Energy has a portfolio of generation assets which comprises nine operating power stations, representing approximately 2,500 MW of base load, intermediate and peaking power generation. Alinta Energy also owns 100 per cent of the Alinta retail gas business, the largest gas retailer in Western Australia and has a minority interest in the Goldfields Gas Pipeline. Through its retail businesses, Alinta Energy provides gas and electricity to over 680,000 retail, small to medium enterprises and commercial and industrial customers in Western Australia, Victoria and South Australia. Alinta Energy has recently entered the South Australian retail electricity market.

Table 1. Proponent details

Identity of the proponent:	Alinta Energy Transmission (Roy Hill) Pty Ltd ACN 159 279 857 ABN 81 159 279 857
Address of the proponent:	Level 11 20 Bridge Street SYDNEY NSW 2000
Contact details of the proponent:	Michael Riches Company Secretary Phone: (02) 9372 2615 Email: michael.riches@alintaenergy.com
Legal identity of the proponent:	Australian propriety company, limited by shares

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2.2 Proposal

The Proposal will supply the Roy Hill Mine with power to support the commencement of mining activities in 2014.

The proposed route of the Proposal is largely adjacent to the Marble Bar Road. The complete Proposal will consist of:

- Modification to the existing 220 kV switchyard's primary and secondary equipment, within the Newman switchyard.
- New 220 kV interconnecting overhead transmission line between the existing Newman switchyard and the Roy Hill substation. The line will run for approximately 123 km.
- A continuous Optical Fibre Ground Wire positioned above the phase conductors to provide a shielding angle of 25 degrees to the vertical, running the entire length of the route.
- The establishment of a new 220 kV / 66 kV substation at the Roy Hill mine.

The Proposal crosses multiple Pastoral Leases and *Mining Act 1978* (WA) (Mining Act) Leases. AETRH expects to be granted an easement under the *Land Administration Act 1997* (WA) (LAA) to allow for ongoing access and maintenance of the infrastructure.

2.2.1 Location

The Proposal will be developed primarily along the Marble Bar road between Newman and the Roy Hill Mine owned by Roy Hill Iron Ore (RHIO) mine (Proposal Area) (Figure 1). The Proposal Area comprises a 200 m wide construction corridor and access tracks. The Proposal Area crosses Great Northern Highway and Marble Bar road at four points as it leaves Newman and skirts the mining activities around Jimblebar Junction.

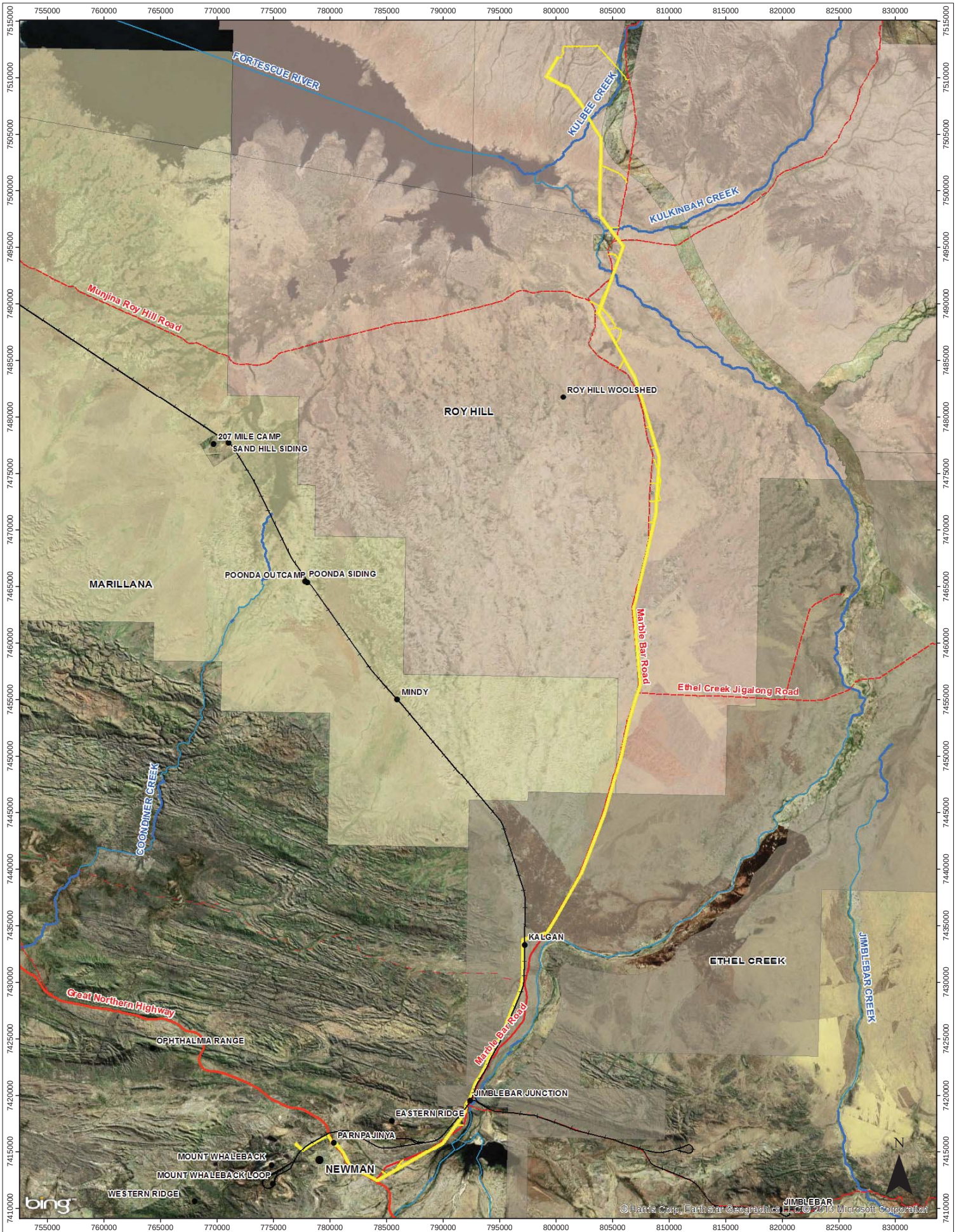
From just south of Jimblebar Junction the Proposal Area crosses to the west side of the BHP rail lease where it follows the rail lease for approximately 14 km to Kalgan siding. Once north of Kalgan siding, the Proposal Area turns east and crosses both the BHP rail and Marble Bar Road (Attachment 1).

The Proposal Area than follows the eastern edge of Marble Bar Road for approximately 75 km up to the Roy Hill Homestead at Noreena-Roy Hill Road (Attachment 2). At this point, the Proposal Area

turns toward the west as it enters the RHIO Mining Lease (M46/518), crossing Noreena-Roy Hill Road and Marble Bar Road.

Once within the RHIO Mine Lease M46/518, the corridor runs northwest for approximately 15 km before terminating at the proposed substation amidst RHIO planned infrastructure (Attachment 3).

All construction activities are proposed to occur entirely within the Proposal Area. AETRH also proposes to clear some access tracks between existing roads and the Proposal Area.



GRIFFIN SPATIAL & MAPPING

alintaenergy

Figure 1. Proposal location

0 5 10 15
Kilometers
1:300,000
Datum: GDA94 Projection: MGA Zone 50

Legend

- Proposal Area

Intersecting Pastoral Lease

- Ethel Creek
- Marillana
- Roy Hill

Matrix Approvals

Department:	--	Date:	20/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by GSM	Requested by MR	Internal Reference 0001_02	

2.2.2 Tenure & Land Access

The Proposal Area intersects multiple pastoral, mining and Native Title interests. AETRH is currently consulting with all relevant parties regarding access for construction of the Proposal.

Table 2. Land tenure intersecting the Proposal Area

PASTORAL LEASEHOLDERS		
Holder	**Pastoral Lease**	
BHP BILLITON MINERALS PTY LTD	Marillana Pastoral Lease	
	Ethel Creek Pastoral Lease	
ROY HILL PASTORAL PTY LTD	Roy Hill Pastoral Lease	
MINING ACT TENURE		
Tenement Holder	**Tenement ID**	**Status**
ATLAS OPERATIONS PTY LTD	E 4701615	LIVE
BHP BILLITON MINERALS PTY LTD	AML7000244	LIVE
	L 4700250	PENDING
	L 4700092	LIVE
	E 5202009	PENDING
	L 4700251	PENDING
BHP COAL PTY LTD	E 5202008	PENDING
BROCKMAN EXPLORATION PTY LTD	E 4600781	LIVE
BROCKMAN IRON PTY LTD	L 4700389	PENDING
	L 4600097	PENDING
BALDOCK FE PTY LTD	E 4600978	PENDING
CHICHESTER METALS PTY LTD	L 4600100	LIVE
FMG PILBARA PTY LTD	E 4600743	LIVE
	E 5202486	LIVE
	E 4600621	LIVE
HANCOCK PROSPECTING PTY LTD	E 4600687	LIVE
	E 4600685	LIVE
	L 4600042	LIVE
NORWEST MINING SERVICES PTY LTD	E 4600454	PENDING
RIO TINTO EXPLORATION PTY LTD	E 4600580	LIVE
ROY HILL IRON ORE PTY LTD	L 4700346	LIVE
	M 4600518	LIVE
	L 4700642	PENDING
	L 4700341	PENDING
	E 4600586	LIVE
	E 4701326	LIVE
OTHER TENURE		
MINISTERIAL - TEMPORARY RESERVE, NEWMAN TOWNSHIP	TR 70 7487	-

In addition to the mineral and pastoral interests identified above, the Proposal Area also intersects parcels of land owned by the State in the form of road reserves, vacant crown land and other reserves in and around Newman.

3 EXISTING ENVIRONMENT

3.1 Physical Environment

The climate of the Pilbara is arid tropical, characterised by low and variable rainfall, high daily temperatures, high diurnal temperature variability and high evaporation rates. Summer months extend from October to April, when maximum daily temperatures can exceed 35°C. The winter period extends from May to September, with temperatures ranging from approximately 7°C to 23°C (Bureau of Meteorology (BOM), 2011).

The BOM Marillana weather station (Station Number 5009), located to the west of the Proposal Area has provided rainfall records for the region since 1936 (BOM, 2011). Long-term, mean annual rainfall is approximately 310 mm but is highly variable from year to year.

3.1.1 Land Systems

Van Vreeswyk *et al* (2004) assessed the condition of perennial vegetation and extent of soil erosion on land systems within the Pilbara region. The Proposal will traverse 13 land systems, with the majority of disturbance occurring to the Divide, Fan and McKay land systems (Attachment 4). Table 3 below summarises the vegetation condition of land systems intersected by the Proposal Area.

Table 3. Summary of vegetation conditions (Van Vreeswyk *et al*, 2004)

Land System	Description	Condition of perennial vegetation (%)		
		Good to very good	Fair	Poor or very poor
Adrian	Stony plains and low silcrete hills supporting hard spinifex grasslands.	86	7	7
Boolgeeda	Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	95	4	1
Coolibah	Flood plains with weakly gilgaied clay soils supporting coolibah woodlands with tussock grass understorey.	23	17	60
Divide	Sandplains and occasional dunes supporting shrubby hard spinifex grasslands.	94	3	3
Elimunna	Stony plains on basalt supporting sparse acacia and cassia shrublands and patchy tussock grasslands.	39	35	26
Fan	Washplains and gilgai plains supporting groved mulga shrublands and minor tussock grasslands.	21	34	45
Jamindie	Stony hardpan plains and rises supporting groved mulga shrublands, occasionally with spinifex understorey.	48	25	27
McKay	Hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands.	96	3	1

Narbung	Alluvial washplains with prominent internal drainage foci supporting snakewood and mulga shrublands with halophytic low shrubs.	52	20	28
Newman	Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	98	1	1
River	Active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands.	82	13	5
Rocklea	Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands.	96	2	2
Turee	Stony alluvial plains with gilgaied and non-gilgaied surfaces supporting tussock grasslands and grassy shrublands.	16	20	64
Washplain	Hardpan plains supporting groved mulga shrublands.	40	26	34

3.1.2 Surface Water

The Proposal Area traverses a number of surface water features, the most significant of which are the Fortescue River, Kulbee Creek, Kulinbah Creek and Kalgan Creek. All surface water features in the Proposal Area drain north to the Fortescue Marsh. The Proposal Area does not intersect the Fortescue Marsh.

3.2 Proposal Area

AETRH commissioned Ecoscape to undertake a biological survey of the transmission line alignment as it was defined in early August, 2012. Following negotiations with mining companies with tenure underlying the Proposal Area, approximately half of the alignment of the transmission line has since changed slightly. The area of the alignment affected is approximately the first 65 km from the Newman Power Station up to Northing 7458000 (near Ethel Creek-Jigalong Road).

Breaking the Proposal Area in four discrete sections is useful for describing the biological survey information available for each section. From south to north the four sections are:

Section 1

This section begins at the southern terminus of the Proposal Area, the Newman Power Station, and ends at the Jimblebar Junction on Marble Bar Road. Section 1 is approximately 20 km long and closely follows the BHP rail lease, Great Northern Highway and Marble Bar Road. This section was not included in the August field survey, however a Desktop Assessment of potential Flora and Fauna species in this area has been done and is attached as Appendix 3.

Section 2

This section begins at the Jimblebar Junction and ends one km north of the Ethel Creek-Jigalong Road. Section 2 is approximately 45 km long and is adjacent to the west side of the BHP rail lease before crossing the rail and Marble Bar Road to follow the eastern edge of Marble Bar Road. A previous footprint of this section was surveyed by Ecoscape in August, 2012. While the Study Area

and the Proposal Area are not the same, there is a significant amount of overlap between the two corridors. With the exception of a short divergence near Kalgan siding, the average divergence between the Study Area and the final Proposal Area is approximately 100 metres. Along with Section 1, Section 2 was also part of the Desktop Assessment which examined the potential presence of Flora & Fauna species in the unsurveyed portion of the Proposal Area.

Section 3

This section begins near the Ethel Creek-Jigalong Road and ends at the southern boundary of the RHIO mining tenement M46/518. Section 3 is approximately 40 km long and aligns largely with the footprint of the area surveyed in August, 2012. This survey report is attached as Appendix 2. Since the field survey was conducted, the Proposal Area has been adjusted slightly to the west for approximately 8 km in order to run closer to the eastern edge of Marble Bar Road. This meets with the Office of the Environmental Protection Authority's (EPA) desire to maintain linear infrastructure in a corridor as compact as practicable.

Section 4

This section is entirely contained within the RHIO tenement M46/518 and is approximately 20 km long. For Section 4, Alinta has utilised biological survey information gathered by RHIO to support a proposal for the Roy Hill Stage 1 iron ore mine. Data relevant to this section has been provided by RHIO and can be found in Appendix 4 and Appendix 5.

3.3 Study Area

The area surveyed by Ecoscape in August (Sections 2 & 3) is referred to as the Study Area. The distance between the Study Area and the Proposal Area averages 200 – 250 m with the largest variance being approximately 1,600 m. Attachments 5 and 6 show the relative locations of the Study Area and the Proposal Area.

AETRH commissioned Ecoscape to undertake a desktop analysis in order to extrapolate known flora and vegetation data into Sections 1 & 2 of the Proposal Area. The area subject to the desktop analysis is referred to as the Desktop Study Area. The results of this desktop analysis are presented in Appendix 3 and have been provided to the Native Vegetation Conservation Branch of the Department of Environment and Conservation in preparation for a proposed Native Vegetation Clearing Permit (NVCP) Application for construction of the Proposal.

Due to the fact that the Proposal Area and the Study Area are not identical, there are small differences in descriptions of the Existing Environment found in this document and in the Ecoscape Survey Report.

3.4 Biological Environment

Australia is divided into 85 biogeographic regions known as the Interim Biogeographic Regionalisation for Australia (IBRA). These biogeographic regions are defined on the basis of their geology, landforms, vegetation, fauna and climate. The Pilbara bioregion is characterised by vast coastal plains and inland mountain ranges with cliffs and deep gorges. The Pilbara bioregion has been divided further into four subregions. The majority of the Proposal is located in the Fortescue Plains subregion, with small areas near the southern end in the Hamersley subregion (Pilbara) and Augustus subregion of the Gascoyne biogeographic region (Attachment 7).

Fortescue Plains subregion (PIL2)

PIL2 is characterised by alluvial plains and river frontage. Extensive salt marsh, mulga-bunch grass, and short grass communities exist on the alluvial plains in the east. Deeply incised gorge systems exist in the western (lower) part of the drainage. River gum woodlands fringe the drainage lines and the northern limit of Mulga (Acacia aneura). An extensive calcrete aquifer (originating within a palaeo-drainage valley) feeds numerous permanent springs in the central Fortescue subregion, supporting large permanent wetlands with extensive stands of river gum and Cadjeput Melaleuca woodlands (Kendrick et al. 2001).

Hamersley subregion (PIL3)

PIL3 is the southern section of the Pilbara Craton. It is characterised by mountainous areas of Proterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale and dolerite). Mulga low woodland over bunchy grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges.

Augustus subregion (GAS3)

GAS3 is characterised by rugged low Proterozoic sedimentary and granite ranges divided by broad flat valleys and a desert climate with bimodal rainfall. This subregion also includes the Narryera Complex and Bryah Basin of the Proterozoic Capricorn Orogen (on northern margin of the Yilgarn Craton), as well as the Archaean Marymia and Sylvania Inliers. Although the Gascoyne River System provides the main drainage of this subregion, it is also the headwaters of the Ashburton and Fortescue Rivers. There are extensive areas of alluvial valley-fill deposits. Mulga woodland with Triodia occur on shallow stony loams on rises, while the shallow earthy loams over hardpan on the plains are covered by Mulga parkland.

3.4.1 Vegetation

AETRH commissioned Ecoscape to undertake a Level 2 flora and vegetation survey of a 200 m wide corridor following the centreline of the transmission line alignment in early August, 2012. The survey was conducted in accordance with *Guidance for the Assessment of Environmental Factors No 51: Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* and *Terrestrial Biological Surveys as an Element of Biodiversity Protection Position Statement No. 3*.

The survey of the Study Area began at Jimblebar Junction, outside of Newman, and continued north to the southern boundary of the RHIO mining tenement M46/518 (Attachment 8), covering Sections 2 & 3 of the Proposal Area. A summary of vegetation types encountered during the survey is presented in Table 4 below.

According to the DEC's comprehensive, adequate and representative (CAR) data (Government of Western Australia 2010), the Pilbara bioregion occupies 17,821,310 ha with (at the time of the DEC assessment) 17,785,000 of the pre-European extent remaining. All Beard Vegetation Associations had almost all of their pre-European extent remaining.

Table 4. Pilbara Pre-European vegetation extents

Vegetation association	Association Description	Pilbara Pre-European Extent (ha)	Remaining %	Proposal Area (ha)	% in Proposal Area
Hammersley_18	Low woodland; mulga (Acacia aneura)	580,526	99.4	86	0.01
Kumarina Hills_29	Sparse low woodland; mulga, discontinuous in scattered groups	785,466	100	216	0.03
Fortescue Valley_29	Sparse low woodland; mulga, discontinuous in scattered groups	879,210	100	1,200	0.14
Hammersley_82	Hummock grasslands, low tree steppe; snappy gum over Triodia wiseana	2,169,365	99.5	182	0.01
Fortescue Valley_111	Hummock grasslands, shrub steppe; Eucalyptus gamophylla over hard spinifex	431,598	100	705	0.16
Fortescue Valley_197	Sedgeland; sedges with scattered medium trees; coolabah over various sedges & forbes	25,951	100	126	0.49
Fortescue Valley_676	Succulent steppe; samphire	202,739	99.9	6	0.00

*Shepherd et. al., 2002; extents from Government of Western Australia, 2010.

Vegetation of Conservation Significance

An ecological community is a naturally occurring group of flora and fauna that occurs in a particular type of habitat. The DEC maintains a list of Threatened and Priority Ecological Communities (TECs & PECs) throughout the state. TECs are ecological communities that are determined to be "vulnerable", "endangered" or "destroyed". An ecological community that does not meet the criteria for listing as a TEC may be classified as a PEC if it is poorly known, is near the threshold for classification as a TEC, has recently been removed from the TEC list or is dependent on a specific conservation program.

No TECs listed as matters of national ecological significance under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) or under the *Wildlife Conservation Act 1950* (WA) (WC Act) were recorded in the Study Area. The Proposal does overlap the administrative buffer of the Ethel Gorge Aquifer Stygobiont TEC.

No PECs were identified within the Study Area.

No TECs or PECs were identified as potentially present in the Desktop Study Area.

3.4.2 Flora

Threatened flora is defined as plants which have been assessed as being at risk of extinction. In Western Australia the term Declared Rare Flora (DRF) has traditionally been applied to Threatened flora due to the laws regarding threatened flora conservation. The WC Act is the primary wildlife conservation legislation in the State and the Minster for the Environment can declare taxa (species, subspecies or variety) as "Rare Flora" if they are considered to be in danger of extinction, rare or otherwise in need of special protection.

There are many Western Australian flora species that are known from only a few collections, or a few sites, but which have not been adequately surveyed to determine their abundance or scarcity. Such flora may be rare or threatened but cannot be considered for declaration as rare flora until such survey has been undertaken. These flora are included on a supplementary conservation list called the Priority Flora List. The Priority Flora List is dynamic - as new information comes to light the species' conservation status is reviewed and changes to the listing may result.

There are three categories of priority flora covering these poorly known species. The categories are arranged to give an indication of the priority for undertaking further surveys based on the number of known sites, and the degree of threat to those populations. A fourth category of priority flora is included for those species that have been adequately surveyed and are considered to be rare but not currently threatened. The Priority classifications are described below:

Priority 1 (P1) – Poorly known taxa

Taxa that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.

Priority 2 (P2) – Poorly known taxa

Taxa that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation. Taxa may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.

Priority 3 (P3) – Poorly known taxa

Taxa that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Taxa may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.

Priority 4 (P4) – Rare, Near Threatened and other taxa in need of monitoring

(a) Rare – Taxa that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
(b) Near Threatened – Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
(c) Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Priority 5 (P5) – Conservation dependent taxa

Taxa that are not threatened but are subject to a specific conservation program, the cessation of which would result in the taxa becoming threatened within five years.

Special consideration should be given to the management of priority flora as they are of conservation significance.

There were no Threatened Flora recorded within the Study Area.

There were five priority flora species recorded in the Study Area (Table 5).

Table 5. Priority flora recorded in Study Area

Flora	Priority
Eremophila pilosa	P1
Themeda sp. Hamersley Station	P3
Rhagodia sp. Hamersley	P3
Eremophila youngii ssp. lepidota	P4
Goodenia nuda	P4

RHIO conducted a series of flora and vegetation surveys in 2009 in order to support a referral to the Environmental Protection Authority (EPA) for mining activities on M46/518. During these surveys, one additional priority species was recorded in the vicinity of Section 4 of the Proposal Area: *Polymeria* sp. Hamersley (P3).

During the field survey by Ecoscape in August, 2012, one P1 flora species, *Eremophila pilosa*, was found along approximately 10 km of the Study Area (Attachment 9). This species was observed to be equally abundant in areas adjacent to the Study Area. It is estimated by Ecoscape that less than 10% of the local population of *Eremophil pilosa* is represented within the Study Area (Pers. Com., 2013).

The Desktop Assessment identified one additional species of conservation significance that is likely to occur in the Proposal Area, *Brachyscome* sp. Wanna Munna Flats (P1).

The northern end of the proposed transmission line corresponds with the administrative buffer of the '*Fortescue Marsh (Marsh Land System)'* PEC, and lies within 2 km of areas mapped as this TEC. No vegetation considered similar to the Fortescue Marsh PEC was recorded in the Study Area.

The Study Area corresponds with the administrative buffer of the '*Ethel Gorge aquifer stygobiont community*' TEC at the southern extremity of the Proposal Area. The Ethel Gorge TEC relates specifically to the ecological community present in groundwater in the Ethel Gorge aquifer, which lies approximately 50 meters below ground level (EPA, 2010).

None of the vegetation communities mapped within the Study Area is considered to represent a known TEC or PEC. All vegetation communities are well represented in the region (Ecoscape, 2012).

A final version of Ecoscape's survey report is attached as Appendix 2. Appendix 3 presents the results of Ecoscape's Desktop Assessment of flora potentially present in the Desktop Study Area.

3.4.3 Vertebrate Fauna

The conservation status of fauna species is assessed under both the EPBC Act and the WC Act. The significance levels for fauna used in the EPBC Act are those recommended by the International Union for the Conservation of Nature and Natural Resources (IUCN) and reviewed by Mace and Stuart (1994). EPBC Act categories for endangered taxa are:

- **CR:** Critically Endangered – considered to be facing an extremely high risk of extinction in the wild.
- **EN:** Endangered – considered to be facing a very high risk of extinction in the wild.
- **VU:** Vulnerable – considered to be facing a high risk of extinction in the wild.

DEC classification criteria and designations for priority fauna (P1, P2, P3, P4) are the same as for priority flora as described in Section 3.4.2. One species (Peregrine Falcon) that may occur within the Study Area has a conservation status only under Schedule 4 of the WC Act.

Conservation significant fauna recorded within or adjacent to the Study Area include:

- Mulgara *Dasycercus* sp. (Dasyuridae), presumed to be the **EPBC VU** listed species *D. cristicauda*, is recorded as probably present based on the presence of distinctive burrows at four locations within the Spinifex sandplain habitat (Divide Land System) (northings approximately 7472590, multiple burrows with fresh diggings; 7455500 single inactive burrow; 7470020 single burrow with fresh digging; 7476300 pair of burrows, fairly fresh);
- Australian Bustard *Ardeotis australis* (Otididae), **DEC P4**, recorded from abundant tracks and some sightings at the majority of investigated locations, from the Ophthalmia Range northwards (River, Divide and Fan Land Systems) (northings approximately 7431350 [sightings], 7444000, 7455500, 7459725, 7470020, 7472590, 7476000 and 7484050); and
- Bush Stone-Curlew *Burhinus grallarius* (Burhinidae), **DEC P4**, recorded from tracks on the road to Kalgan Pool in the Ophthalmia Range (Washplain/River Land Systems) and likely to be present in nearby similar habitats intersected by the corridor.

Presence of the Night Parrot *Pezoporus occidentalis* (Psittacidae), **EPBC EN**, or its habitat is predicted as 'likely' by the Protected Matters Search Tool. This species is widely distributed in the arid zone but very rarely seen and poorly known, but most frequently associated with *Triodia* hummock grass and chenopod shrubs (samphire, saltbush etc.), particularly where these occur together as a mosaic or along a boundary. *Triodia* hummock grass occurs in most habitats throughout the corridor (and throughout the Pilbara), while chenopods have a more restricted distribution, occurring together with *Triodia longiceps* on semi-saline plains (Narbung Land System, intersected by the corridor at northing approximately 7485000-7490000).

Night Parrots also use adjacent habitats where surface water occurs (natural pools, dams, wells) for drinking (e.g. 2005 sighting in Mulga woodland near Cloudbreak to the northwest, within the DEC threatened fauna database search area). This species is considered likely to occur intermittently and at low density in parts of the Study Area (especially Narbung LS).

Habitat suitable for Northern Quoll *Dasyurus hallucatus* (Dasyuridae), **EPBC EN**, occurs where rock outcrop containing crevices and small caves (potential dens) occurs adjacent to *Eucalyptus/Corymbia* woodland and rock pools, creeks or major drainage lines. Sites with these features combined occur within the Ophthalmia Range where banded ironstone formation (Newman Land System) outcrops are in close proximity to the Fortescue River channel (River LS), and also south of the Range where calcrete outcrop (representing Miocene paleochannels) is eroding on low ridges in the McKay Land System. These sites can be identified as 'critical habitat' as defined by EPBC Referral Guidelines. However, very few records of this species are known from the south-eastern Pilbara and it is unlikely that a population currently exists in the area (Ecoscape, 2012).

Habitat originally suitable for the Greater Bilby *Macrotis lagotis* (Thylacomyidae), **EPBC VU**, is widespread and includes the majority of investigated sites on the valley floor (Divide and Fan Land Systems) and potentially areas further north (Turee and Jamindie LS), but there are very few historical records in this part of the Pilbara and no evidence of burrows, tracks, digs or scats observed during the survey could be positively associated with this species. It is considered likely to be locally extinct.

The Pilbara Olive Python *Liasis olivaceus barroni* (Pythonidae), **EPBC VU**, is generally found around rocky areas, rocky outcrops and cliffs near permanent water, however they also shelter in and under logs, flood debris, caves, tree hollows and dense vegetation. It occurs close to Newman in the Ophthalmia Range (e.g. Kalgan Pool), but is at the limit of its distribution as there are no records either south of the range, or east of the upper Fortescue River. It occurs in the central Chichester Range, but not the southern part of the range or the north slope of the Fortescue Valley. Therefore, the entire Study Area may lie outside the current distribution of the species, and it is likely to be absent.

The Pilbara Leaf-nosed Bat *Rhinonicteris aurantia* (Hipposideridae), **EPBC VU**, requires roosts with stable, warm and humid microclimates, which are mostly limited to relatively deep caves and mine adits, but temporary roosts such as crevices and tree hollows may be used in warm and humid conditions, allowing greater dispersal during the wet season. Relatively flat areas such as the Fortescue Valley are generally not occupied, and considered to act as barriers to movement and gene flow. It is questionable whether suitable roosting sites occur in the Ophthalmia or southern

Chichester Range, and there are no records of the species within 60 km of Newman or within 80 km of the northern part of the Study Area.

Additional conservation significant species that may occur as residents in parts of the Study Area, most with relatively wide but sparse and patchy distribution within the Pilbara, are:

- Long-tailed Dunnart *Sminthopsis longicadata* (Dasyuridae) **DEC P4** – rocky habitats, absent from most of Study Area;
- Ghost Bat *Macroderma gigas* (Megadermatidae) **DEC P4** – vicinity of rocky hills with cave roosts;
- Northern Short-tailed Mouse *Leggadina lakedownensis* (Muridae) **DEC P4** – grassland, shrubland, savannah woodland (habitat widespread but sparsely occupied);
- Western Pebble-mound Mouse *Pseudomys chapmani* (Muridae) **DEC P4** – pebbly slopes with Spinifex, absent from most of Study Area;
- Skink *Ctenotus nigrilineatus* (Scincidae) **DEC P1** – hummock grass habitats in north of Chichester subregion, no known overlap with Study Area;
- Skink *Ctenotus uber johnstonei* (Scincidae) **DEC P2** – chenopod, hummock grass, and snakewood habitats scattered across Pilbara including within 20 km east of Study Area in Ophthalmia Range;
- Skink *Lerista macropisthopus remota* (Scincidae) **DEC P2** – woodland habitats in vicinity of Newman and Jigalong (and to southeast);
- Blindsnake *Ramphotyphlops ganei* (Typhlopidae) **DEC P1** – moist areas including gorges, gullies and floodplains, mostly in rocky hills but also Fortescue Valley floor;
- Western Star Finch *Neochmia ruficauda subclarescens* (Estrildidae) **DEC P4** – reedbeds, grasslands and eucalypt woodland close to water;
- Grey Falcon *Falco hypoleucos* (Falconidae) **DEC P4** – use nests of crows, kites or eagles in emergent eucalypts, usually near water; and
- Peregrine Falcon *Falco peregrinus* (Falconidae) **WCA S4** – usually nest on cliff lines, may use trees as for Grey Falcon.

Conservation significant species that may occur intermittently due to seasonal migration or other kinds of high mobility:

- Fork-tailed Swift *Apus pacificus* (Apodidae) **EPBC M** – ubiquitous, no impact from terrestrial disturbance;
- Great Egret *Ardea modesta* (Ardeidae) **EPBC M** – wetland, rare in region;
- Cattle Egret *Ardea ibis* (Ardeidae) **EPBC M** – wetland and tall grass, rare in region;
- White-bellied Sea-eagle *Haliaeetus leucogaster* (Accipitridae) **EPBC M** – unlikely to occur, only near large bodies of water;

- Oriental Plover *Charadrius veredus* (Charadriidae) **EPBC M** – unlikely to occur, may visit short grasslands e.g. after fire;
- Princess Parrot *Polytelis alexandrae* (Psittacidae) **EPBC VU**, **DEC P4** – unlikely to occur; and
- Rainbow Bee-eater *Merops ornatus* (Meropidae) **EPBC M** – ubiquitous, likely resident.

3.5 Conservation Areas

3.5.1 Fortescue Marsh Wetland

The Fortescue Marsh is located outside of the Proposal Area. The Fortescue Marsh is the largest ephemeral wetland in the Pilbara bioregion. The Fortescue Marsh is a wetland of National Significance in the Directory of Important Wetlands in Australia and is listed as an "Indicative Place" on the Register of the National Estate.

3.6 Social Environment

3.6.1 Indigenous Heritage

The Proposal Area is located entirely within the area subject to the Nyiayparli Native Title Claim (Tribunal file no. WC05/6-2). The Nyiyaparli People are recognised as the Traditional Owners with cultural heritage knowledge of the land. AETRH has recently finalized a Native Title and Heritage Agreement with the Nyiyaparli People. The agreement establishes a consultation process to be followed with respect to Heritage Surveys preceding ground disturbing works and enables discussions about registered heritage sites.

The northern section of the Proposal Area is also within the area subject to the Wunna Nyiyaparli Native Title Claim (Tribunal file no. WC12/1). AETRH is currently negotiating a Native Title and Heritage Agreement with the Wunna Nyiyaparli People on the same basis as with the Nyiyaparli People.

3.6.2 Current Land Use

The land surrounding the Proposal Area is currently used for grazing under three separate Pastoral Leases: Ethel Creek Pastoral Station, Marillana Pastoral Station and Roy Hill Pastoral Station. All three stations are currently used for pastoral grazing.

The southern end of the Proposal Area passes through the town of Newman. The Marble Bar Road is roughly parallel to the Proposal Area for approximately 115 km while the northern end runs through the RHIO mine lease area, M46/518.

The Proposal Area crosses numerous exploration and mining leases (Attachment 10). Consultation with lease owners has informed the location of the Proposal Area so as to avoid prospective mineralised areas which may be subject to future mining.

4 PROPOSAL DESCRIPTION

4.1 Proposed Development

AETRH proposes to construct and operate a 123 km long transmission line between Newman Power Station and the operations at Roy Hill Mine. The major items of infrastructure are described below.

4.1.1 Towers

AETRH will erect an estimated 291 towers along which to string the conductor cables. For construction purposes, each tower will typically require a 40 x 40 m area to be cleared. The construction methods and specific design of each tower will vary depending on the geotechnical and topographic conditions at that location.

While the technical specifications of towers have not yet been finalized, it is intended that some towers will be self-supporting and others supported by guy wires. Towers will be galvanized steel and of a lattice construction and between 40 and 55 metres in height with a spacing of 450 to 550 metres between footings. Each tower foot will be secured to four or five small (~1m^2) concrete footings over an area measuring approximately 40 x 40 metres.

4.1.2 Newman Power Station and 220kV switchyard

Alinta Energy owns and operates the Newman Power Station, which comprises three dual fuel GE Frame 6B open cycle gas turbines and one Rolls Royce Trent 60 open cycle gas turbine with a nominal station capacity of 145MW. The Newman Power Station is situated on Crown Lease 3116/3685 which is held by the Newman Joint Venturers.

As part of the Proposal AETRH will expand its existing 66kV substation at Newman Power Station with new circuit breakers and a 66/220kV step up transformer(s). The Newman Power Station works will include:

- The design and construction of a new feeder supply connection from the existing Newman switchyard including a new switchyard bay requiring approximately 1ha of clearing; and
- Provision for a new 220kV circuit to enable connection between the existing switchyard bay and the new transmission line. All existing metering and protection systems, including the existing Newman control and protection equipment will be modified and upgraded to meet the new operating requirements.

4.1.3 Roy Hill substation

At the new Roy Hill substation, transformer(s) will step down the voltage for distribution within the Roy Hill mine facility.

The Roy Hill substation will contain:

- 1x 220kV line circuit (connected to Newman);

- 1x 220kV single busbar arrangement, with 220kV bus section circuit breaker;
- 2x 220/66/22kV 80MVA YNyn0d1 power transformers;
- 66kV switchboard (providing outgoing feeder circuits, with bus section circuit breakers);
- 2x 10MVAr 66kV shunt reactors (to be confirmed by power system studies);
- 1 x 66kV/415V 250kVA Dyn11 power transformer (providing station auxiliary supply); and
- metering at the 220kV breakers.

AETRH's proposed works will be linked to the remote control system at Newman to provide full remote control, operation and monitoring from the AETRH remote operations centre facility. Full automatic control and monitoring facilities will also be installed at the Newman Power Station switchyard and Roy Hill substation.

4.1.4 Access tracks

The Proposal Area is largely adjacent to Marble Bar Road. AETRH intends to clear access tracks between the Proposal Area and Marble Bar Road at intervals of two to four kilometres. Where access is practical via existing roads or tracks, no access tracks will be cleared. The largest distance between Marble Bar Road and the Proposal Area is approximately two kilometres. Most access tracks will be less than 500 metres long. AETRH also proposes to clear access tracks between most adjacent towers.

During construction these tracks will be used to transport equipment and personnel to work sites along the Proposal Area. During the operational phase of the Proposal, tracks will be used regularly but infrequently to monitor the status of infrastructure and to provide access for equipment and personnel in the event repairs are necessary.

4.1.5 Associated facilities

There are several ancillary, temporary activities that will be required to support construction of the Proposal. During construction there will be a need for laydown areas, parking areas for personnel and for trucks delivering construction materials and for temporary ablution blocks and/or site offices. All of these associated facilities will be temporary and will relocate several times during the course of construction.

4.2 Vegetation Clearing Requirements

Table 6 below summarises AETRH's estimate for the vegetation clearing required to enable construction activities which comprise the Proposal.

Table 6. Estimated clearing requirements for the Proposal

Item	Number	Width (m)	Length (m)	Area (ha)	Total Area (ha)
Tower locations	290	40	40	0.16	46
Substation/switchyard	2	100	100	1.0	2
Access Tracks	-	4	160,000	64.0	64
Associated facilities				18.0	18
				Total Clearing	**130**

4.3 Timeline

AETRH proposes to commence vegetation clearing for geotechnical investigations immediately following receipt of all necessary approvals. A NVCP application for geotechnical investigations was submitted to DEC on 21 September, 2012 and was issued to Alinta on 8 February, 2013.

The current Proposal schedule is summarised in Table 7 below.

Table 7. Major Proposal milestones and timeframes

Milestone	Timing
Begin geotechnical investigations	Q1 2013
Begin construction of Proposal	Q4 2013
First sale of electricity to customer(s)	Q4 2014

5 POTENTIAL IMPACTS

The key aspect of this proposal is the clearing of native vegetation and associated impacts. It is important to note that, while vegetation clearing is the key aspect to be managed, it is not determined to be significant on a local or regional scale. Implementation of this Proposal will result in the clearing of a maximum of 130 ha within the 2,460 ha Proposal Area, or no more than 5% of the Proposal Area. AETRH has assessed the potential environmental impacts associated with this Proposal and will apply the management actions detailed below.

5.1 Flora and Vegetation

5.1.1 Aspects and Impacts

- Clearing of approximately 130 ha of vegetation;
- Transfer of weeds during construction and travel along the alignment;
- Introduction of additional traffic and access to areas along the Proposal; and
- Increased risk of fire.

5.1.2 Management

- Implement a Ground Disturbance Procedure;
- Identify priority flora locations within the Proposal Area;
- Site locations for individual transmission towers to avoid priority flora where practicable;
- Minimise disturbance footprint during construction to the smallest practicable area which will allow safe construction and operational activities;
- Minimise disturbance to riparian vegetation during creek crossings by using existing crossings where practicable;
- Develop and implement a Weed Management Plan for the Proposal;
- Rehabilitate approximately 70 ha following construction;
- Use Marble Bar Road and other existing roads and tracks to access to the Proposal Area where practicable; and
- Enable transmission line to be controlled remotely from manned control room for emergency shut-down.

5.1.3 Expected Residual Impacts

Development of the Proposal will require the disturbance of approximately 130 ha of vegetation, of which approximately 60 ha will not be rehabilitated. The clearing in the Proposal Area will comprise a very small percentage of large and expansive land systems and vegetation types. The survey information available from the Roy Hill Mine area and the Ecoscape survey commissioned by AETRH do not indicate the presence of conservation significant vegetation communities in the Proposal Area. No DRF, TECs or PECs are required to be disturbed as a result of implementing this Proposal.

Some individuals of Priority Flora species may be impacted. Impact would be limited and may only occur where it is not possible to adjust the location of the vegetation clearing. Any potential impact is not anticipated to affect the viability of the overall populations.

Based on the above, it is expected that the implementation of the Proposal will not result in significant impacts to the abundance, diversity, geographic distribution and productivity of flora at species and ecosystem levels.

5.2 Fauna

5.2.1 Aspects and Impacts

- Clearing of approximately 130 ha of vegetation; and
- Potential entrapment in pits or trenches.

5.2.2 Management

- Implement a Ground Disturbance Procedure;
- Knowledge of resident fauna from survey results;
- Site locations for individual transmission towers to avoid significant habitat where practicable;
- Avoid disturbance to rocky outcrops;
- Minimise disturbance footprint during construction to the smallest practicable area which will allow safe construction and operational activities;
- Minimise disturbance to riparian vegetation during creek crossings by using existing crossings where practicable;
- Construction Environmental Management Plan to address fauna entrapment and injury or mortality through exposure due to excavations; and
- Rehabilitate approximately 70 ha following construction.

5.2.3 Expected Residual Impacts

Development of the Proposal will require the disturbance of approximately 130 ha of vegetation, of which approximately 60 ha will not be rehabilitated. The clearing in the Proposal Area will comprise a very small percentage of large and expansive land systems and habitat types. The survey information available from the Roy Hill Mine area and the Ecoscape survey commissioned by AETRH indicate that the impact to fauna from the Proposal will not be significant.

The Proposal will not require the disturbance of any vegetation known to be critical for the support of any conservation significant fauna. Fauna habitats that will be impacted are well represented across the region. Table 8 and Table 9 describe the anticipated impact to conservation significant fauna that were either recorded in the Study Area or have the potential to be resident in the Proposal Area.

Based on the above and the information contained in Table 8 and Table 9, it is expected that the implementation of the Proposal will not result in significant impacts to the abundance, diversity, geographic distribution and productivity of any known fauna species.

Table 8. Anticipated impact to habitat for known or potential resident Priority Fauna as categorised by DEC

Species	DEC Status	Recorded in Study Area	Habitat type	Will be impacted	Comment
Australian Bustard	P4	Yes	Grasslands and open woodlands	No	Highly mobile species and large areas of similar habitat will not likely have significant impact
Bush Stone-Curlew	P4	Yes	Grasslands and open woodlands and riparian habitats	No	Highly mobile species and large areas of similar habitat will not likely have significant impact
Long-tailed Dunnart	P4	No	Rocky habitats	No	Habitat absent from most of Study Area; AETRH will not clear on rocky outcrops
Ghost Bat	P4	No	Rocky hills w/ cave roosts	No	AETRH will not clear on rocky outcrops
Northern Short-tailed Mouse	P4	No	Grassland, shrubland, savannah woodland	No	Habitat widespread and sparsely occupied
Western Pebble-mound mouse	P4	No	Pebbly slopes with Spinifex	No	Habitat absent from most of Study Area
Skink *Ctenotus nigrilineatus* (Scincidae)	P1	No	Hummock grass habitats in north of Chichester subregion	No	No known overlap with Study Area
Skink *Ctenotus uber johnstonei* (Scincidae)	P2	No	Chenopod, hummock grass, and snakewood habitats scattered across Pilbara	No	Habitat widespread and sparsely occupied
Skink *Lerista macropisthopus remota* (Scincidae)	P2	No	Woodland habitats in vicinity of Newman and Jigalong	No	Habitat widespread and sparsely occupied
Blindsnake *Ramphotyphlops ganei* (Typhlopidae)	P1	No	Moist areas including gorges, gullies and floodplains, mostly in rocky hills but also Fortescue Valley floor	No	No clearing is required on rocky outcrops; clearing near watercourses will be minimal
Western Star Finch *Neochmia ruficauda subclarescens* (Estrildidae)	P4	No	Reedbeds, grasslands and eucalypt woodland close to water	No	Very little clearing will be required in the vicinity of watercourses
Grey Falcon *Falco hypoleucos* (Falconidae)	P4	No	Use nests of crows, kites or eagles in emergent eucalypts, usually near water	No	Habitat widespread and sparsely occupied
Princess Parrot *Polytelis alexandrae* (Psittacidae)	P4 (EPBC VU)	No	Mainly in Great Sandy Desert	No	Migratory; unlikely to occur in Proposal Area

Table 9. Anticipated impact to habitat for other known or potential resident fauna of conservation significance

Species	Status	Recorded in Study Area	Habitat type	Will be impacted	Comment
Mulgara Dasycercus	EPBC VU	Yes	Hummock grasslands with sandy to sandy loam soils	No	Sparse distribution and small size of impact areas means unlikely to have significant impact
Northern Quoll	EPBC EN	No	Rock piles, creek lines and gorges, foraging areas surrounding these	No	Very few records of this species are known from the south-eastern Pilbara; unlikely that a population currently exists in the area;
Night Parrot	EPBC EN	No	Samphire flats and associated grasslands	No	Species mobility; abundant similar habitats nearby; clearing will be minimised near water bodies
Peregrine Falcon *Falco peregrinus* (Falconidae)	WCA S4	No	Usually nest on clifflines, may use trees	No	Habitat widespread and sparsely occupied
Fork-tailed Swift *Apus pacificus* (Apodidae)	EPBC M	No	Water bodies, creek lines	No	Migratory; ubiquitous presence, no impact from terrestrial disturbance
Great Egret *Ardea modesta* (Ardeidae)	EPBC M	No	Wetland	No	Migratory; rare in region; wetlands will not be impacted
Cattle Egret *Ardea ibis* (Ardeidae)	EPBC M	No	Wetland and tall grass	No	Migratory; rare in region; wetlands will not be impacted
White-bellied Sea-eagle *Haliaeetus leucogaster* (Accipitridae)	EPBC M	No	Only near large bodies of water	No	Migratory; unlikely to occur; wetlands will not be impacted
Oriental Plover *Charadrius veredus* (Charadriidae)	EPBC M	No	May visit short grasslands e.g. after fire	No	Migratory; unlikely to occur in Proposal Area
Rainbow Bee-eater *Merops ornatus* (Meropidae)	EPBC M	No	Ubiquitous	No	Migratory; little impact (but possible benefit) from ground disturbance
Pilbara Olive Python	EPBC VU	No	Gorges, rock outcrops, creek lines	No	Entire Study Area likely to be outside of population distribution; no clearing to be done on rocky outcrops or near water bodies; minimal clearing near creeklines
Pilbara Leaf-nosed Bat	EPBC VU	No	Deep caves and mine shafts	No	Fortescue Valley not occupied, species inferred to be absent from Study Area; no clearing proposed in habitat

* EPBC EN – Endangered, EPBC VU – Vulnerable, EPBC M – Migratory, WCA S4 – Schedule 4 of the Wildlife Conservation Act, 1950, (WA).

5.3 Secondary Aspects and Impacts

This section presents information on other aspects other than clearing impacts associated with the Proposal that are also not expected to be significant.

Table 10. Ancillary environmental aspects of the Proposal

Factor	Potential aspects and impacts	Proposed management	Significance of residual impact
Dust	Dust emissions may be produced from the following sources: • Helicopter stringing of conductors • Vehicle movements • Ground disturbance	• Water trucks will be used to supress dust at key points as required.	The area is remote with few residents in close proximity (Newman & Roy Hill Station). A communication plan for construction will inform other land users of panned helicopter activity.
Noise	Noise emissions may be produced from the following sources: • Helicopter stringing of conductors • Vehicle movements • General construction	• Notification to lease holders and residents prior to significant noise emitting activities.	The area is remote with few residents in close proximity (Newman & Roy Hill Station). There is some potential for noise to impact the local fauna, however this is not expected to be significant. The Proposal Area does not contain critical habitat for any conservation significant species.
Surface water	Construction activities may require the crossing of several creek lines, which may impact the quality of surface waters.	• Ground disturbance procedure; • Restrict disturbance within 200 m of creeklines to the minimum required for safe construction; • Any modification to creek lines during construction will be rehabilitated following construction; • No filling or excavation of surface water features.	The Proposal is not expected to have a significant impact on surface water.
Heritage	Aboriginal heritage sites may be identified within the boundaries of the Proposal Area.	• Heritage surveys to be conducted prior to ground disturbance; • Location of infrastructure to avoid identified sites where practicable; • Where sites cannot be avoided, seek approval to disturb the site under Section 18 of the *Aboriginal Heritage Act 1972*.	No impact to Aboriginal heritage sites unless approved under Section 18 of the *Aboriginal Heritage Act 1972*.

5.4 Environmental Protection Act Principles

In 2003 the EP Act was amended to include the Principles articulated in Table 11 below. It is these five core principles that form the basis for judgement and decisions made by the EPA. Table 11 presents aspects of the Proposal and of the Proponent as they relate to the EPA Principles.

Table 11. Proposal relationship to EP Act Principles

Principle	Comment
1. Precautionary principle Where there are threats of serious irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, decisions should be guided by: a. careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and b. an assessment of the risk-weighted consequences of various options.	Between the existing mining activities in and around Newman, the iron ore mining proposed for the Roy Hill Mine and the biological survey commissioned by AETRH, he environmental values of the Proposal Area are well understood and impacts can be identified and assessed with certainty. The Proposal has been prepared to avoid and minimise impacts on significant environmental values.
2. Intergenerational equity The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.	The Proposal can be implemented without significant impacts on the health, diversity and productivity of the environment. Implementation of the Proposal will enable the continued use of existing, significant infrastructure within the State. The Proposal will facilitate economic and social benefits brought to the State by supporting the development of the Roy Hill Mine.
3. Conservation of biological diversity and ecological integrity Conservation of biological diversity and ecological integration should be a fundamental consideration.	The existing baseline data from the Proposal Area indicate that there are not likely to be significant biodiversity or ecological integrity impacts at local or regional scales.

Principle	Comment
4. Improved valuation, pricing and incentive mechanisms a. Environmental factors should be included in the valuation of assets and services. b. The polluter pays principle – those who generate pollution and waste should bear the cost of containment, avoidance or abatement. c. The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste. d. Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which benefit and/or minimise costs to develop their own solutions and responses to environmental problems.	By connecting the existing Newman Power Station to the future demand of Roy Hill Mine, AETRH is preventing the combustion of a significant volume of diesel fuel (the alternative fuel source) and will maximise the lifetime of the gas-fired assets in Newman. Alinta Energy is aware of and participates in Federal programmes such as: • National Greenhouse and Energy Reporting Act; • Energy Efficiency Opportunities Act; • Renewable Energy Target; • Carbon Pricing Mechanism; and • National Pollutant Inventory
5. Waste minimisation All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.	Waste will be minimised by adopting the hierarchy of controls: • Avoid; • Minimise; • Re-use; • Recycle; and • Safe disposal.

6 STAKEHOLDER CONSULTATION

AETRH has been undertaking stakeholder engagement for the Proposal since early 2012. Key to the success of the Proposal is agreement from the multitude of stakeholders with land and other interests across the Proposal Area. The following stakeholders were identified by AETRH during the planning and concept phase of the Proposal.

6.1 Government Agencies

- DEC
- Department of Indigenous Affairs;
- Department of Mines and Petroleum;
- Department of Regional Development and Lands;
- Department of State Development;
- Department of Water;
- Economic Regulatory Authority; and
- Office of the EPA.

6.2 Community & Surrounding Land Users

- Nyiyaparli Working Group (Traditional Owners);
- Wunna Nyiayparli Working Group (Traditional Owners);
- Ethel Creek Pastoral Station;
- Marillana Pastoral Station;
- Roy Hill Pastoral Station; and
- Shire of East Pilbara.

6.3 Mining Companies

- Atlas Operations Pty Ltd;
- BHP Billiton Minerals Pty Ltd;
- BHP Billiton Coal Pty Ltd;
- Brockman Exploration Pty Ltd;
- Brockman Iron Pty Ltd;
- Baldock Fe Pty Ltd;
- Chichester Metals Pty Ltd;
- FMG Pilbara Pty Ltd;
- Hancock Prospecting Pty Ltd;
- Norwest Mining Services Pty Ltd;
- Rio Tinto Exploration Pty Ltd; and
- RHIO Pty Ltd.

AETRH has been undertaking a program of stakeholder engagement since early 2012 and is ongoing. Formal consultation activities to date are summarised in the table below. In addition, AETRH has also engaged in ongoing and *ad hoc* interactions with stakeholders on an individual basis.

Table 12. Summary of engagement with land interests and other interests

Date	Stakeholder	From	To	Method	Topic
21-May-12	RHPL		R. Kennedy	Meeting	Preliminary discussions on the project and Alinta's intentions.
21-May-12	RIO TINTO	M. Riches, A. Kelly	S. Majteles	Meeting - Perth	Initial discussion on transmission line project and request for consent to conduct biological surveys .
21-May-12	FMG	M. Riches, A. Kelly	Denice Johns	Meeting - Perth	Initial discussion on transmission line project and request for consent to conduct biological surveys .
21-May-12	ATLAS	M. Riches, A. Kelly		Meeting - Perth	Initial discussion on transmission line project and request for consent to conduct biological surveys
21-May-12	BROCKMAN	M. Riches, A. Kelly	G. Firth	Meeting - Perth	Initial discussion on transmission line project and request for consent to conduct biological surveys.
22-May-12	Nyiyaparli	M. Riches, A. Kelly	K. Holloman, Nyiyaparli Working Group	Meeting	Initial meeting to advise of project and intended transmission line route.
14-Jun-12	RHPL		V. Skea, M. Kennedy	Meeting	Details of project and proposed route Discussion on the key risks - aerial mustering and bushfire.
14-Jun-12	Shire of East Pilbara	M. Riches, A. Kelly	Allen Cooper	Meeting - Shire office	General discussion and information on the project
6-Jul-12	ROY HILL	M. Riches	F. Barclay	Meeting - Perth	Discuss provision of RHIO financial information, details of approvals required.
10-Jul-12	RHPL		V. Skea	Meeting	Further discussion on project and related opportunities, including Alinta acquiring and establishing a camp on RHPL.
19-Jul-12	RHPL		V. Skea, M. Kennedy, AMCO	Meeting	AMCO introduced to Alinta by RHPL. RHPL signs consent letter for biological surveys.
27-Jul-12	RHPL		V. Skea, M. Kennedy, AMCO	Meeting	discussion on safety risk to aircraft. Discussions on options for Alinta to acquire camp from AMCO.
31-Jul-12	Wunna	M. Riches, A. Kelly	S. Blackshield, Wunna Nyiyaparli	Meeting - Port Hedland	Further discussion on transmission line project and offer of compensation made.
1-Aug-12	Nyiyaparli	M. Riches, A. Kelly, R. Slaughter	K. Holloman, Nyiyaparli Working Group	Meeting - Port Hedland	Further presentation on the transmission line and offer of compensation put in detail. Discussion on timetable and particular requirements of the Nyiyaparli.
2-Aug-12	RHPL		V. Skea, M. Kennedy, R. Kennedy	Meeting	Safety risks of project. Dr. Dannatt presents potential options for mitigating safety risks to aircraft.

Date	Stakeholder	From	To	Method	Topic
17-Aug-12	ROY HILL	M. Riches, K. Wooley, O. Sela, G. Bryant	B. Fitzgerald, F. Barclay, G Korte, others	Meeting - Hancock House	Discussion on status of Alinta progress on approvals, PPA and TCA.
28-Sep-12	Nyiyaparli	M. Riches, A. Kelly	Nyiyaparli working Group	Meeting - Port Hedland	Finalisation of Native Title & Heritage agreement.
3-Oct-12	ROY HILL	G. Bryant, O. Sela	-	Meeting	
14-Jan-13	Wunna	M. Riches, A. Kelly		meeting - Perth	Finalisation of Native Title & Heritage agreement.
15-Jan-13	RHPL	M. Riches, K. Wooley, A. Kelly	V. Skea, Kennedy Brothers	Meeting - RHPL	Progress of compulsory acquisition process.
16-Jan-13	MRWA	M. Riches, M. Shepherd	John Clydesdale, Allan O'Brien, Michael Buba	Meeting - Dumas House, Perth	Discussed potential overlap of AETRH infrastructure and Easement w/ MRWA road reserves in/around Newman.
13-Feb-13	Shire of East Pilbara	G. Bryant	Allen Cooper	Meeting - Newman	Discussion about the potential overlap of AETRH easement and Shire managed reserves (Racecourse, Equestrian) and potential location of individual towers.
	ROY HILL	M. Riches, A. Kelly	R. Bird, N. Chung	Meeting - Perth	Discuss the proposed transmission route and the requirements at the Roy Hill end of the route.

Table 13. Summary of engagement with regulators

Date	Regulator	From	To	Method	Topic
22-Aug-12	DEC	R. Slaughter, P. Scott, Lyn Atkins (Ecoscape)	Jane Clarkson	Meeting - Kensington	Introduction to project and strategy for applying for NVCP - 1 for geotech and 1 for construction.
12-Sep-12	EPA	P. Scott	Hans Jacob	Telephone	Discussion about potential timing for a pre-referral meeting between Alinta & EPA.
18-Sep-12	DEC	R. Slaughter	John Riley	Telephone	Discussion on adequacy of survey data to geotech and construction NVCP applications. Geotech NVCP not a problem; discuss construction NVCP app in more detail once report is complete.
25-Sep-12	DRDL	C. Boyd	Sandra Eckert, Alison Gibson	Telephone	Discussion about the status of: draft s.91 licence application (discuss w/ G. Crow week of 1 Oct.); PERBA advice from SSO and request for more maps; advice on Native Title Act s.24MD about extinguishment; s.165 process and timing.
26-Sep-12	EPA	P. Scott, D. Ghosh, R. Slaughter	Hans Jacob	Meeting - EPA office	Introduction to project and Alinta expectations for EPA involvement.
27-Sep-12	DRDL	??	C. Boyd	Telephone	There is a briefing note to the Minister from the Pastoral Lands Board laying out the objections of RHPL to Alinta's pursuit of access to the project area on RHPL.
5-Oct-12	ERA	C. Wallwork, M. Shephard		Meeting - ERA office	Discussion about the necessary and acceptable inputs to TX Licence application.
11-Oct-12	DRDL	C. Boyd, H. McNamarra	Garry Crow	Meeting	Explanation of s165/s182 process by DRDL; requirement for deposited plan to be lodged w/ Landgate.
18-Oct-12	DEC	John Riley	R. Slaughter	Telephone	Stating that the notification letter confirming the completeness of Geotech NVCP Application was sent to Preston Consulting in Sydney. Electronic copy will be sent to R. Slaughter.
29-Oct-12	DEC	R. Slaughter	John Riley	Telephone	Discussion about progress on Geotech NVCP assessment; DEC waiting to sight final Ecoscape report and S91 or similar land access permissions.
2-Nov-12	DEC	John Riley	R. Slaughter	Telephone	Discussion regarding progress of Geotech NVCP application in light of minor changes to application area.

Date	Regulator	From	To	Method	Topic
27-Nov-12	EPA	P. Scott	Hans Jacob	Meeting - EPA office	Initial presentation to the EPA of the idea that Alinta will be required to build an access road between GN Hwy and the Newman Power Station. EPA confirmed that there was no need to refer this activity and it could be managed w/ a NVCP.
10-Jan-13	DEC	R. Slaughter	John Riley	Telephone	Discussion about potential to split NVCP by s.91 & s.182 areas.
14-Jan-13	Minister	M. Riches, K. Wooley	Brendan Grylls	Meeting - Perth	Progress and process for S.182/165 compulsory acquisition.
16-Jan-13	DEC	R. Slaughter	John Riley	Meeting - Kennsington	Status of geotech NVCP and discussion of strategy for construction NVCP.
19-Feb-13	EPA	R. Slaughter, P. Scott	M. Pingelly	Meeting - EPA office	Pre-referral discussion and advice.

AETRH will continue to consult with all relevant stakeholders as the approval and construction stages of the Proposal progress.

6.4 EPA Pre-Referral Briefing

On the 26 of September, 2012, representatives of Alinta met with the Office of the EPA (OEPA) to introduce the Proposal and seek input from the OEPA on aspects of the Proposal that should be addressed in the Referral documents. The OEPA raised three items, which area detailed below.

6.4.1 Deviation from Marble Bar Road

The EPA prefers to maintain linear infrastructure within a corridor that is well contained and as narrow as is practical. There are several sections within the Proposal Area where the proposed transmission line deviates from the Marble Bar Road. The most common reasons for these deviations are simplification of the engineering resulting in cost savings and attempting to limit the impact on underlying tenure holders. Following the meeting with the OEPA a 15 km stretch of the Proposal Area just north of Ethel Creek-Jigalong road was re-aligned to be adjacent to Marble Bar Road.

The table below identifies sections of the Proposal Area that unavoidably deviate from the Marble Bar Road and presents AETRH's rational for the deviation.

Table 14. Transmission line alignment rationale

From pole no.	To pole no.	Max deviation distance (m)	Reason for deviation
26	37	500	Mutually agreed alignment between Alinta & BHP; facilitates straight alignment.
44	50	400	Mutually agreed alignment between Alinta & BHP; facilitates crossing of BHP rail at agreed location.

From pole no.	To pole no.	Max deviation distance (m)	Reason for deviation
64	96	1,600	Mutually agreed alignment between Alinta & BHP; facilitates crossing of BHP rail at agreed location; adjacent to BHP rail corridor.
179	201	600	Facilitates straight alignment to pole 179 -> 194 ->211, reducing number of strain structures
212	226	2,000	Closest straight line alignment along wandering section of Marble Bar Road
226	233	1,200	Closest straight line alignment along wandering section of Marble Bar Road
235	242	1,300	Closest straight line alignment along wandering section of road; avoids crossing Freehold land; connects to pole 249 along route agreed with RHIO at southern end of M46/518 and continuing to agreed substation site.

6.4.2 Areas Maintained Clear of Vegetation

There are two main activities under this Proposal that require the clearing of vegetation: the erection of towers and the establishment of access and maintenance tracks.

The area cleared for the construction of each tower and footing will be approximately 40 x 40 metres. Of this area, the footings will occupy approximately 10 x 10 metres. There will be no requirement to maintain an area clear of vegetation around the tower foundations and therefore this area will be rehabilitated. Access tracks will be cleared to four metres wide during construction and will be maintained to 3.5 metres wide during operation. Of the estimated 130 ha of clearing required for construction, approximately 70 ha will be rehabilitated.

Table 15. Estimated vegetation clearing and rehabilitation area

Item requiring clearing	Area cleared for construction (ha)	Area maintained clear for operation (ha)	Area rehabilitated
Towers	46	3	43
Newman Switchyard	1	1	0
RHIO Substation	1	1	0
Access Tracks	64	55	9
Associated Facilities	18	0	18
TOTAL	**130**	**60**	**70**

6.4.1 Applicability of Ministerial Conditions for Roy Hill 1

On 23 December 2009, Ministerial Statement 824 relating to the Roy Hill 1 Iron Ore Mine was issued. This statement applies to mining activities planned to be undertaken by Roy Hill Iron Ore on mining tenement M46/518.

The Proposal proposed by AETRH is neither facilitated nor prevented by any of the conditions contained in Ministerial Statement 824.

7 CONCLUSION

AETRH has consulted with relevant stakeholders and government agencies regarding the development of a high voltage transmission line from Newman, through the eastern Pilbara to Roy Hill Mine. The transmission line has been pursued in order to maintain the viability of the existing Newman Power Station and to provide RHIO with an economic power supply solution to support the commencement of mining activities in 2014.

Future proposals may seek to extend the transmission line to other customers in the region or to connect the transmission line to the North West Interconnected System.

The Proposal is located along the existing Marble Bar Road and partially within the area which has been approved by the Minister for the Environment for iron ore mining by RHIO. The construction and operation of a transmission line is minimally intrusive, requiring vegetation clearing only for access tracks and at 500 metre intervals for the erection of towers. The full length of the 123 km long Proposal Area is biologically well understood.

This Proposal is not expected to cause a significant environmental impact. Disturbance within the Proposal Area will be limited to small areas of clearing separated by primarily undisturbed space between. During operation there will be no barrier to the movement of fauna either along or across the Proposal Area. The key environmental issue associated with the Proposal is the clearing of native vegetation.

In consultation with DEC, AETRH has confirmed that all potential impacts resulting from vegetation clearing can be effectively managed under the Environmental Protection (Native Vegetation Clearing) Regulations.

Other insignificant impacts will be effectively managed within existing condition setting frameworks supported by other legislation. Aspects such as dust, surface water, noise and Heritage as they apply to the Proposal will be managed by the following legislation:

- General provisions of the *Environmental Protection Act 1986* (WA);
- *Environmental Protection Act 1986* (WA) Part V Regulations (Noise, Unauthorised Discharge, Native Vegetation Clearing)
- *Wildlife Conservation Act 1950* (WA);
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth);
- *Planning and Development Act 2005* (WA);
- *Rights in Waters and Irrigation Act 1914* (WA).

Based on the information set out in the EPA Referral form (Appendix 1) and presented in this supporting document, AETRH expects that the Proposal will not require formal assessment by the EPA.

8 REFERENCES

Department of Environment and Conservation, 2007, NatureMap: Mapping Western Australia's Biodiversity, available from: <http://naturemap.dec.wa.gov.au/default.aspx>.

Ecoscape, 2012, *Newman-Roy Hill Transmission Line Survey*.

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Government of Western Australia, 2012, CAR Analysis Report 2009, available from: <https://www2.landgate.wa.gov.au/slip/portal/services/files/carreserveanalysis2009.xls> [February 2011].

Kendrick, P., 2002, *A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions*, 2002, N. L. McKenzie, J. E. May, S. McKenna eds., Department of Conservation and Land Mangement.

Mace, G. & Stuart, S. 1994. Draft IUCN Red List Categories, Version 2.2. Species. *Newsletter of the Species Survival Commission.IUCN - The World Conservation Union*, vol. 21-22, pp. 13-24.

Shepherd, D. P., Beeston, G. R., Hipkins, A. J. M, 2002, Native Vegetation in Western Australia: Extent, Type and Status, *Resource Managment Technical Report 249*.

Van Vreeswyck, A. M. E., Payne, A. L., Leighton, K. A., Hennig, P., 2004, *An Inventory and Condition Survey of the Pilbara Region, Western Australia*, Department of Agriculture Technical Bulletin No. 92.

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Appendix 1 – EPA Referral Form

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GOVERNMENT OF WESTERN AUSTRALIA

Environmental Protection Authority

EPA REFERRAL FORM PROPONENT

Referral of a Proposal by the Proponent to the Environmental Protection Authority under Section 38(1) of the Environmental Protection Act.

PURPOSE OF THIS FORM

Section 38(1) of the *Environmental Protection Act 1986* (EP Act) provides that where a development proposal is likely to have a significant effect on the environment, a proponent may refer the proposal to the Environmental Protection Authority (EPA) for a decision on whether or not it requires assessment under the EP Act. This form sets out the information requirements for the referral of a proposal by a proponent.

Proponents are encouraged to familiarise themselves with the EPA's *General Guide on Referral of Proposals* [see Environmental Impact Assessment/Referral of Proposals and Schemes] before completing this form.

A referral under section 38(1) by a proponent to the EPA must be made on this form. A request to the EPA for a declaration under section 39B (derived proposal) must be made on this form. This form will be treated as a referral provided all information required by Part A has been included and all information requested by Part B has been provided to the extent that it is pertinent to the proposal being referred. Referral documents are to be submitted in two formats – hard copy and electronic copy. The electronic copy of the referral will be provided for public comment for a period of 7 days, prior to the EPA making its decision on whether or not to assess the proposal.

CHECKLIST

Before you submit this form, have you

	Yes	No
Completed all the questions in Part A (essential)	✕	
Completed all applicable questions in Part B	✕	
Included Attachment 1 – location maps	✕	
Included Attachment 2 – additional document the proponent wishes to provide (if applicable)	✕	
Included Attachment 3 – confidential information (if applicable)	**N/A**	
Enclosed the CD of all referral information, including spatial data and contextual mapping but excluding confidential information.	✕	

Following a review of the information presented in this form, please consider the following question. (A response is Optional)

DO YOU CONSIDER THE PROPOSAL REQUIRES FORMAL ENVIRONMENTAL IMPACT ASSESSMENT?

☐ YES ☒ NO ☐ NOT SURE

IF YES, WHAT LEVEL OF ASSESSMENT?

☐ ASSESSMENT ON PROPONENT INFORMATION

☐ PUBLIC ENVIRONMENTAL REVIEW

PROPONENT DECLARATION (To be completed by the proponent)

I, MICHAEL ROBERT RICHES....., *(full name)* declare that the information contained in this form is, to my knowledge, true and not misleading.

Signature: M Riches	Name (print): Michael Riches
Position: General Counsel	Company: Alinta Energy
Date: 18.12.12.	

PART A - PROPONENT AND PROPOSAL INFORMATION

(All fields of this Part must be completed for this document to be treated as a referral)

1.1 PROPONENT

Name	Alinta Energy Transmission (Roy Hill)
Joint Venture parties (if applicable)	N/A
Postal Address	
Key proponent contact for the proposal • Name • Address • Phone • Email	Michael Riches Level 11, 20 Bridge St. Sydney, NSW 02 9372 2615 michael.riches@alintaenergy.com.au
Consultant for the proposal (if applicable) • Name • Address • Phone • Email	Russell Slaughter Preston Consulting 201 Adelaide Terrace, East Perth, WA 6004 (08) 9221 0011 rslaughter@prestonconsulting.com.au

1.2 PROPOSAL

Title	220kV Transmission Line - Newman to Roy Hill
Description	Alinta Energy Transmission (Roy Hill) (AETRH, the Proponent) intends to build, own and operate a new 220kV power supply interconnection from its existing Newman Power Station north through the Pilbara region of Western Australia. The northern terminus of the transmission line will be at a new 220kV / 66kV substation the Roy Hill Mine. Future proposals may seed to extend the transmission line to other customers in the region. Works will comprise of: 1. Modification of existing 220kV switchyard primary and secondary equipment, within the existing Newman switchyard. 2. New 220kV interconnecting overhead transmission line between the existing Newman switchyard and the Roy Hill substation. The line will span approximately 123km. 3. A Continuous Optical Fibre Ground Wire (OPGW), positioned above the phase conductors, running the entire length of the route. 4. Establishment of a new 220kV/66kV substation at the Roy Hill Mine. 5. This Proposal does not include geotechnical

	investigations, which have been addressed separately through consultation with the Department of Environment and Conservation (DEC) and an application for a Native Vegetation Clearing Permit (NVCP). The transmission line will follow the Marble Bar Road for the majority of its length. Refer to Figure 1 for the proposed route.
Extent (area) of proposed ground disturbance	Up to 130 hectares will be cleared for construction of the transmission towers, access tracks, substation, switchyard and associated facilities.
Timeframe in which the activity or development is proposed to occur. (Include start and finish dates where applicable)	Start Date: 1 September 2013 End Date: 31 December, 2015
Details of any staging of the proposal	N/A
Is the proposal a strategic proposal?	N/A
Is the proponent requesting a declaration that the proposal is a derived proposal? If so, provide the following information on the strategic assessment within which the referred proposal was identified - • Title of the strategic assessment • Ministerial Statement number	N/A
Indicate whether, and in what way, the proposal is related to other proposals in the region.	The Proposal will initially provide power only to the Roy Hill project (OEPA Assessment No. 1345 for Stage 2 of the Roy Hill mining). The Proponent may submit a future proposal seeking to extend the transmission line to supply other customers in the region.
Does the proponent own the land on which the proposal is to be established? If not, what other arrangements have been established to access the land?	The Proponent is currently engaging with landholders along the length of the proposed transmission line. AETRH understands that landholder consent must be in place before DEC will issue a NVCP for the Proposal.
What is the current land use on the property, and the extent (area in hectares) of the property?	Current land use is pastoral activities and mining.

1.3 LOCATION

Name of the Shire in which the proposal is located	Shire of East Pilbara
For urban areas – • street address • lot number • suburb • nearest road intersection	N/A
For remote localities – • nearest town • distance and direction from that town to the proposal site	Newman The transmission line will run north from Newman approximately 123km to Roy Hill Mine (refer Figure 1)
Electronic spatial data - GIS or CAD on CD, geo-referenced and conforming to the following parameters: • GIS: polygons representing all activities and named ~~• CAD: simple closed polygons representing all activities and named~~ • datum: GDA94 • projection: ~~Geographic (latitude/longitude) or~~ Map Grid of Australia (MGA) • format: Arcview shapefile, ~~Arcinfo coverages, Microstation or AutoCAD~~	Enclosed: Yes / ~~No~~

1.4 CONFIDENTIAL INFORMATION

Does the proponent wish to request the EPA to allow any part of the referral information to be treated as confidential?	~~Yes~~ / No
If yes, is confidential information attached as a separate document in hard copy.	~~Yes / No~~

1.5 GOVERNMENT APPROVALS

Is rezoning of any land required before the proposal can be implemented? If Yes, provide details.		~~Yes~~ / No	
Is approval required from any Commonwealth or State Government agency or Local Authority for any part of the proposal? If yes, complete the table below -		Yes / ~~No~~	
Agency/Authority	Approval Required	Application lodged Yes / No	Agency contact/s for proposal
DEC	NVCP	No	To be determined
Department of Water (DoW)	Bed and Banks Permit	No	To be determined

Shire of East Pilbara	Planning Approval	No	To be determined
Department of Indigenous Affairs (DIA)	Approval under Section 18 of the Aboriginal Heritage Act (if required)	No	To be determined

PART B - ENVIRONMENTAL IMPACTS AND PROPOSED MANAGEMENT

2. ENVIRONMENTAL IMPACTS

Describe the impacts of the proposal on the following elements of the environment, through the questions below:

(i) flora and vegetation #;

(ii) fauna #;

(iii) rivers, creeks, wetlands and estuaries;

(iv) significant areas and/ or land features;

(v) coastal zone areas;

(vi) marine areas and biota #;

(vii) water supply and drainage catchments;

(viii) pollution;

(ix) greenhouse gas emissions;

(x) contamination; and

(xi) social surroundings.

These features should be shown on the site plan, where appropriate.

For all information, please indicate:

(a) the source of the information; and

(b) the currency of the information.

2.1 Flora and Vegetation

* Do you propose to clear any native flora and vegetation as a part of this proposal?

  (A proposal to clear native vegetation may require a clearing permit under Part V of the EP Act *(Environmental Protection (Clearing of Native Vegetation) Regulations 2004)*. Please contact the Department of Environment and Conservation (DEC) for more information.

  (please tick) ☒ Yes ***If yes, complete the rest of this section***

  ☐ No ***If no, go to the next section***

- How much vegetation are you proposing to clear (in hectares)?

Proponent Response

The proposal will require a disturbance footprint of approximately 130 ha. This disturbance footprint is based on:

- 2 ha for one substation and one switchyard (each 100 x 100 m footprint);
- 46 ha for 291 towers (typically 40 x 40 m construction footprint);

- 64 ha for access tracks (typically 4 m wide). Tracks are expected to stretch between most adjacent tower footprints and between towers and existing access roads/tracks as necessary.

- 18 ha for associated facilities and activities, including: laydown areas, portable ablutions and offices, parking and other ancillary activities.

* Have you submitted an application to clear native vegetation to the DEC (unless you are exempt from such a requirement)?

☐ Yes ☒ No **If yes**, on what date and to which office was the application submitted of the DEC?

Proponent Response

A NVCP application covering the Project Area is currently being prepared and is expected to be submitted to DEC in February, 2012.

❑ Are you aware of any recent flora surveys carried out over the area to be disturbed by this proposal?

☒ Yes ☐ No **If yes**, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey/s. (If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.)

Proponent Response

AETRH commissioned Ecoscape to undertake a Level 2 Flora and Vegetation survey. The field component of this work was completed on 9 August, 2012. The survey was designed to meet the guidance set out in EPA Guidance Statement No. 51 *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia*. The final report from this survey is expected to be complete in October, 2012.

No DRF, or vegetation indicative of known TECs or PECs was found. A final copy of the survey report can be forwarded to the EPA if required, once received by AETRH.

Roy Hill Iron Ore (RHIO) have completed extensive vegetation and flora surveys over the full extent of the Mine Lease area M46/518 and has made this data available to AETRH (Attached).

* Has a search of DEC records for known occurrences of rare or priority flora or threatened ecological communities been conducted for the site? #

☒ Yes ☐ No If you are proposing to clear native vegetation for any part of your proposal, a search of DEC records of known occurrences of rare or priority flora and threatened ecological communities will be required. Please contact DEC for more information.

Proponent Response

A DEC database search of threatened flora (rare and endangered) and Threatened Ecological Communities that are likely to occur within the project footprint was undertaken on the 24th March 2012.

The search of the DECs Naturemap, which includes any results from the Western Australian Herbarium Specimen database, indicated that there are a total of 320 species from 535 records that may occur within the Proposal footprint, of which six species of conservation significance may occur, comprising:

- One Priority One (P1) species, being *Eromophila pilosa*;
- Three Priority Three (P3) species; *Gymnanthera cunninghamii, Rhagodia sp. Hamersley* (M. Trudgen 17794) and *Tecticornia medusa*;
- Two Priority Four (P4) species, being *Eromophila youngii subsp. lepidota* and *Goodenia nuda*.

In a desktop assessment of the portion of the Project Area that was not covered by the field survey, Ecoscape identified one conservation significant species that is likely to be present: *Brachyscome* sp. Wanna Munna Flats (P1). Alinta Energy commits to undertaking a targeted survey for priority flora species prior to the commencement of construction activities.

The Proposal lies outside the eastern boundary of one Priority Ecological Community, being the Fortescue Marsh Priority 1 PEC. The Proposal lies within the boundaries of one Threatened Ecological Community, being the Ethel Gorge aquifer stygobiont community (endangered, B (ii)).

No impact to either identified PEC or TEC is expected, as:

- The Fortescue Marsh PEC, defined as an extensive, episodically inundated samphire marsh at the upper terminus of the Fortescue River and the western end of Goodiadarrie Hills, lies to the south and west of the Proposal and no impact is expected from this Proposal.
- The Ethel Gorge TEC is related to the stygofauna communities located within the vicinity of Newman. Regional groundwater levels are approximately 50 m below ground level. The sub-surface disturbance from the construction of the Proposal will be minor and localised, arising from geotechnical investigations (no deeper than 25 m) and construction of tower footings. Neither of these aspects will have an impact on potential stygofauna communities related to the TEC.

The flora survey conducted by Ecoscape shall be used to support a NVCP application for the Proposal.

Due to the linear nature of the infrastructure, and the low level of disturbance, the location of discrete disturbance points necessary for access tracks and pole foundations is relatively flexible and can be readily altered if necessary.

* Are there any known occurrences of rare or priority flora or threatened ecological communities on the site? #

☒ Yes ☐ No **If yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

Proponent Response

During the biological survey in August, no vegetation indicative of the Fortescue March PEC or any other PEC or TEC was recorded.

Five priority flora were recorded in the Study Area during the biological survey:

Flora	Priority
Eremophila pilosa	P1
Themeda sp. Hamersley Station	P3
Rhagodia sp. Hamersley	P3
Eremophila youngii ssp. lepidota	P4
Goodenia nuda	P4

The Priority one species, *Eremophila pilosa*, is known from 3 other records in the Pilbara. The density of the population was noted to be similar both east and west of the Study Area.

Expert advice from Ecoscape suggests that the 200m wide investigation corridor intersects at most 10% of the population of *Eremophila pilosa*. During construction less than 5% of the vegetation within the Study Area will be cleared. Further advice indicates that this species is a disturbance opportunist.

* If located within the Perth Metropolitan Region, is the proposed development within or adjacent to a listed Bush Forever Site? (You will need to contact the Bush Forever Office, at the Department for Planning and Infrastructure)

☐ Yes ☒ No **If yes**, please indicate which Bush Forever site is affected (site number and name of site where appropriate).

- What is the condition of the vegetation at the site?

Proponent Response

Van Vreeswyk *et al* (2004) assessed the condition of perennial vegetation and extent of soil erosion on land systems within the Pilbara region. The proposal will predominantly traverse eight types of land systems, with the major disturbance occurring to the Divide, Fan and McKay land systems. Table 1 below provides a summary of the level of vegetation condition against the land systems intersected by the Proposal.

Table 1 Summary of vegetation condition for the proposal (Van Vreeswyk *et al*, 2004)

Land System	Description	Condition of perennial vegetation (%)		
		Good to very good	Fair	Poor or very poor
Adrian	Stony plains and low silcrete hills supporting hard spinifex grasslands.	86	7	7
Boolgeeda	Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands or mulga shrublands.	95	4	1
Coolibah	Flood plains with weakly gilgaied clay soils supporting coolibah woodlands with tussock grass understorey.	23	17	60
Divide	Sandplains and occasional dunes supporting shrubby hard spinifex grasslands.	94	3	3
Elimunna	Stony plains on basalt supporting sparse acacia and cassia shrublands and patchy tussock grasslands.	39	35	26
Fan	Washplains and gilgai plains supporting groved mulga shrublands and minor tussock grasslands.	21	34	45
Jamindie	Stony hardpan plains and rises supporting groved mulga shrublands, occasionally with spinifex understorey.	48	25	27
McKay	Hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard spinifex grasslands.	96	3	1
Narbung	Alluvial washplains with prominent internal drainage foci supporting snakewood and mulga shrublands with halophytic low shrubs.	52	20	28
Newman	Rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands.	98	1	1
River	Active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands.	82	13	5
Rocklea	Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands.	96	2	2
Turee	Stony alluvial plains with gilgaied and non-gilgaied surfaces supporting tussock grasslands and grassy shrublands.	16	20	64
Washplain	Hardpan plains supporting groved mulga shrublands.	40	26	34

2.2 Fauna

* Do you expect that any fauna or fauna habitat will be impacted by the proposal?

(please tick) ✕ Yes ***If yes, complete the rest of this section***

☐ No ***If no, go to the next section***

❑ Describe the nature and extent of the expected impact.

Proponent Response

The 130 ha of linear clearing for the Proposal has the potential to impact on fauna habitat.

However, impact to fauna is expected to be insignificant due to the narrow corridor containing the infrastructure, the low level of disturbance and the flexibility in the location of discrete disturbance points necessary for access tracks and pole foundations, which can be readily altered as necessary.

* Are you aware of any recent fauna surveys carried out over the area to be disturbed by this proposal?

☒ Yes ☐ No **If yes**, please attach a copy of any related survey reports and provide the date and name of persons / companies involved in the survey/s. (If no, please do not arrange to have any biological surveys conducted prior to consulting with the DEC.)

Proponent Response

AETRH commissioned Ecoscape to undertake a Fauna survey of the Proposal area. The field component of this work was completed on 6 August, 2012. The survey was designed to meet the guidance set out in EPA Guidance Statement No. 51 *Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia*. A draft report has been reviewed by AETRH and the final report is expected to be complete in November, 2012. A copy of the report can be forwarded to the EPA if required

A copy of the fauna survey commissioned by RHIO and undertaken by ecologia in 2009 is attached. This survey is relevant to the section of the Proposal that overlaps with the RHIO mining tenement M46/518.

* Has a search of DEC records for known occurrences of Specially Protected (Threatened) fauna been conducted for the site?

☒ Yes ☐ No (please tick)

Proponent Response

A DEC database search of threatened Fauna (rare and endangered) that are likely to occur within the Proposal area was undertaken on the 24th March 2012.

Only four species of conservation significance were found to potentially occur within the Proposal area. Based on 6,113 records DEC's Naturemap identified that there are 266 fauna species that could potentially occur within the Proposal area. The four species of conservation significance that may occur in the Proposal area were:

- One Priority One (P1) species, being *Ramphotyphlops ganei*;
- Three Priority Four (P4) species – *Ardeotis australis* (Australian Bustard), *Burhinus grallarius* (Bush Stone-curlew) and *Pseudomys chapmani* (Western Pebble-mound mouse); and
- One other specially protected fauna, being the *Falco peregrinus* (Peregrine Falcon).

A search of the EPBC Act protected Matters was completed as part of this referral. The following species of significance were identified as potentially occurring within the Proposal area:

- Two species were listed as Endangered under the EPBC Act:
  - *Pezoporus occidentalis* (Night Parrot); and
  - *Dasyurus hallucatus* (Northern Quoll);
- An additional three species were classified as Vulnerable under the EPBC Act
  - *Polytelis alexandrae* (Princess Parrot, Alexandra's Parrot)
  - *Macrotis lagota* (Greater Bilby); and
  - *Rhinonecteris aurantia* (Pilbara Leaf-nosed Bat).
- An additional six migratory species were assessed to potentially occur in the area, including:
  - *Ardea ibis* (Cattle Egret);
  - Ardea alba (Great Egret);
  - *Merops ornatus* (Rainbow bee-eater);
  - *Haliaeetus leucogaster* (White-bellied Sea-Eagle);
  - *Apus pacificus* (Fort-tailed Swift); and
  - *Charadius veredus* (Oriental Plover).

Predominantly, these species are related to the Fortescue Marshes and interlinking tributaries which the Proposal crosses within minimal disturbance.

* Are there any known occurrences of Specially Protected (Threatened) fauna on the site? #

☒ Yes ☐ No **If yes**, please indicate which species or communities are involved and provide copies of any correspondence with DEC regarding these matters.

Proponent Response

During the biological survey in August, three specially protected fauna were recorded: *Mulgara Dasycercus*, Australian Bustard and the Bush Stone-Curlew. During the 2009 fauna survey for RHIO the Rainbow bee-eater was recorded near the Proposal Area while the P1 *Ramphotyphlops ganei* was recorded several kilometres from the Proposal Area.

2.3 Rivers, Creeks, Wetlands and Estuaries

* Will the development occur within 200m of a river, creek, wetland or estuary?

(please tick) ☒ Yes ***If yes, complete the rest of this section***

☐ No ***If no, go to the next section***

* Will the development result in the clearing of vegetation within the 200 m zone?

☒ Yes ☐ No **If yes**, please describe the extent of the expected impact.

Proponent Response

Clearing will be dependent on the location of the towers and access arrangements for crossing of creek lines. Minimal disturbance is anticipated for creeks.

Four named watercourses intersect with the Proposal: Fortescue River, Kulbee Creek, Kulinbah Creek, and Kalgan Creek. During construction AETRH may create a temporary access across the creek-lines in order to deliver equipment and machinery to individual pole locations. There will be no filling, redirecting or excavation of creeks while undertaking this Proposal.

AETRH will consult with the Department of Water regarding potential impacts to watercourses.

* Will the development result in the filling or excavation of a river, creek, wetland or estuary?

☐ Yes ☒ No **If yes**, please describe the extent of the expected impact.

* Will the development result in the impoundment of a river, creek, wetland or estuary?

☐ Yes ☒ No **If yes**, please describe the extent of the expected impact.

* Will the development result in draining to a river, creek, wetland or estuary?

☐ Yes ☒ No **If yes**, please describe the extent of the expected impact.

* Are you aware if the proposal will impact on a river, creek, wetland or estuary (or its buffer) within one of the following categories? (please tick)

Conservation Category Wetland	☐ Yes	☒ No	☐ Unsure
Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998	☐ Yes	☒ No	☐ Unsure

Perth's Bush Forever site	☐ Yes	✕ No	☐ Unsure
Environmental Protection (Swan & Canning Rivers) Policy 1998	☐ Yes	✕ No	☐ Unsure
The management area as defined in s4(1) of the Swan River Trust Act 1988/	☐ Yes	✕ No	☐ Unsure
Which is subject to an international agreement, because of the importance of the wetland for waterbirds and waterbird habitats (e.g. Ramsar, JAMBA, CAMBA) #	☐ Yes	✕ No	☐ Unsure

2.4 Significant Areas and/ or Land Features

* Is the proposed development located within or adjacent to an existing or proposed National Park or Nature Reserve?

☐ Yes ✕ No **If yes**, please provide details.

* Are you aware of any Environmentally Sensitive Areas (as declared by the Minister under section 51B of the EP Act) that will be impacted by the proposed development?

☐ Yes ✕ No **If yes**, please provide details.

* Are you aware of any significant natural land features (e.g. caves, ranges etc) that will be impacted by the proposed development?

☐ Yes ✕ No **If yes**, please provide details.

2.5 Coastal Zone Areas (Coastal Dunes and Beaches)

* Will the development occur within 300m of a coastal area?

(please tick) ☐ Yes ***If yes, complete the rest of this section***

✕ No ***If no, go to the next section***

* What is the expected setback of the development from the high tide level and from the primary dune?

* Will the development impact on coastal areas with significant landforms including beach ridge plain, cuspate headland, coastal dunes or karst?

☐ Yes ✕ No **If yes**, please describe the extent of the expected impact.

* Is the development likely to impact on mangroves?

☐ Yes ☒ No **If yes**, please describe the extent of the expected impact.

2.6 Marine Areas and Biota

* Is the development likely to impact on an area of sensitive benthic communities, such as seagrasses, coral reefs or mangroves?

☐ Yes ☒ No **If yes**, please describe the extent of the expected impact.

* Is the development likely to impact on marine conservation reserves or areas recommended for reservation (as described in *A Representative Marine Reserve System for Western Australia*, CALM, 1994)?

☐ Yes ☒ No **If yes**, please describe the extent of the expected impact.

* Is the development likely to impact on marine areas used extensively for recreation or for commercial fishing activities?

☐ Yes ☒ No **If yes**, please describe the extent of the expected impact, and provide any written advice from relevant agencies (e.g. Fisheries WA).

2.7 Water Supply and Drainage Catchments

* Are you in a proclaimed or proposed groundwater or surface water protection area?

(You may need to contact the Department of Water (DoW) for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

☒ Yes ☐ No **If yes**, please describe what category of area.

Proponent Response

The project is located within the Pilbara Proclaimed Surface Water Area and the Pilbara Proclaimed Groundwater Area.

* Are you in an existing or proposed Underground Water Supply and Pollution Control area?

(You may need to contact the DoW for more information on the requirements for your location, including the requirement for licences for water abstraction. Also, refer to the DoW website)

☒ Yes ☐ No **If yes**, please describe what category of area.

Proponent Response

The Proposal will traverse P1 and P3 Pollution control areas under the Newman PDWSA. The proposal is compatible as per *Water Quality Protection Note 24 Land use compatibility in Public Drinking Water Source Areas* (DoE, 2004). Consultation with the Department of Water will be undertaken as the engineering details of the Proposal are finalised.

* Are you in a Public Drinking Water Supply Area (PDWSA)?

  (You may need to contact the DoW for more information or refer to the DoW website. A proposal to clear vegetation within a PDWSA requires approval from DoW.)

  ☒ Yes ☐ No **If yes**, please describe what category of area.

Proponent Response

The Proposal will traverse the Newman PDWSA, however it is compatible as per the *Water Quality Protection Note 24 Land Use Compatibility in Public Drinking Water Source Areas (*DoE, 2004). The Proposal will not impact the Newman PDWSA.

* Is there sufficient water available for the proposal?

  (Please consult with the DoW as to whether approvals are required to source water as you propose. Where necessary, please provide a letter of intent from the DoW)

  ☒ Yes ☐ No (please tick)

* Will the proposal require drainage of the land?

  ☐ Yes ☒ No **If yes**, how is the site to be drained and will the drainage be connected to an existing Local Authority or Water Corporation drainage system? Please provide details.

* Is there a water requirement for the construction and/ or operation of this proposal?

  (please tick) ☒ Yes ***If yes, complete the rest of this section***

  ☐ No ***If no, go to the next section***

❑ What is the water requirement for the construction and operation of this proposal, in kl/year?

Proponent Response

An estimated allowance of 250 kL/day may be required during the peak of the construction phase of the project, predominantly for dust suppression after clearing of construction footprint areas. Once the towers are erected, only minimal additional sources of water shall be required.

This number has been estimated based on other projects of similar size and significance.

* What is the proposed source of water for the proposal? (e.g. dam, bore, surface water etc.)

Proponent Response

Water will be sourced either from local landholders, minesites or the Newman town water supply. Further consultation with potential suppliers of water will occur once the water

requirements are further defined during contractor tendering and detailed design phase of the Proposal. It is not proposed that AETRH will install bores to provide its own water source.

2.8 Pollution

* Is there likely to be any discharge of pollutants from this development, such as noise, vibration, gaseous emissions, dust, liquid effluent, solid waste or other pollutants?

(please tick) ☒ Yes ***If yes, complete the rest of this section***

☐ No ***If no, go to the next section***

Proponent Response

Minor noise, vibration and dust from traffic movements and construction (drilling and blasting) will occur. This will be managed through an Environmental Management Plan developed specifically for the Proposal.

* Is the proposal a prescribed premise, under the Environmental Protection Regulations?
(Refer to the EPA *General Guide for Referral of Proposals to the EPA under section 38(1) of the EP Act 1986* for more information)

☐ Yes ☒ No **If yes**, please describe what category of prescribed premise.

* Will the proposal result in gaseous emissions to air?

☐ Yes ☒ No **If yes**, please briefly describe.

* Have you done any modelling or analysis to demonstrate that air quality standards will be met, including consideration of cumulative impacts from other emission sources?

☐ Yes ☒ No **If yes**, please briefly describe.

* Will the proposal result in liquid effluent discharge?

☐ Yes ☒ No **If yes**, please briefly describe the nature, concentrations and receiving environment.

* If there is likely to be discharges to a watercourse or marine environment, has any analysis been done to demonstrate that the State Water Quality Management Strategy or other appropriate standards will be able to be met?

☐ Yes ☐ No **If yes**, please describe.

N/A

* Will the proposal produce or result in solid wastes?

☒ Yes ☐ No **If yes**, please briefly describe the nature, concentrations and disposal location/ method.

Proponent Response

Minor volumes of construction waste will be generated. This waste is expected to be disposed of at a licenced landfill facility in the area.

* Will the proposal result in significant off-site noise emissions?

☐ Yes ☒ No **If yes**, please briefly describe.

* Will the development be subject to the Environmental Protection (Noise) Regulations?

☒ Yes ☐ No **If yes**, has any analysis been carried out to demonstrate that the proposal will comply with the Regulations?

Please attach the analysis.

Proponent Response

The Proposal will comply with the Environmental Protection (Noise) Regulations at all times.

Minor noise is expected from traffic and construction activities and from the use of a helicopter to string the conductor cables. Given the remote location of the Proposal these noise emissions are not expected to be significant.

* Does the proposal have the potential to generate off-site, air quality impacts, dust, odour or another pollutant that may affect the amenity of residents and other "sensitive premises" such as schools and hospitals (proposals in this category may include intensive agriculture, aquaculture, marinas, mines and quarries etc.)?

☐ Yes ☒ No **If yes**, please describe and provide the distance to residences and other "sensitive premises".

* If the proposal has a residential component or involves "sensitive premises", is it located near a land use that may discharge a pollutant?

☐ Yes ☒ No ☐ Not Applicable **If yes**, please describe and provide the distance to the potential pollution source

2.9 Greenhouse Gas Emissions

* Is this proposal likely to result in substantial greenhouse gas emissions (greater than 100 000 tonnes per annum of carbon dioxide equivalent emissions)?

☐ Yes ☒ No **If yes**, please provide an estimate of the annual gross emissions in absolute and in carbon dioxide equivalent figures.

* Further, if yes, please describe proposed measures to minimise emissions, and any sink enhancement actions proposed to offset emissions.

2.10 Contamination

* Has the property on which the proposal is to be located been used in the past for activities which may have caused soil or groundwater contamination?

☐ Yes ☒ No ☐ Unsure **If yes**, please describe.

* Has any assessment been done for soil or groundwater contamination on the site?

☐ Yes ☒ No **If yes**, please describe.

* Has the site been registered as a contaminated site under the Contaminated Sites Act 2003? (on finalisation of the CS Regulations and proclamation of the CS Act)

☐ Yes ☒ No **If yes**, please describe.

2.11 Social Surroundings

* Is the proposal on a property which contains or is near a site of Aboriginal ethnographic or archaeological significance that may be disturbed?

☐ Yes ☐ No ☒ Unsure **If yes**, please describe.

Proponent Response

A search of the Department of Indigenous Affair's Aboriginal Heritage Inquiry System was undertaken to determine registered heritage sites along the alignment.

AETRH is well advanced in discussions with the Nyiyaparli people regarding heritage issues. AETRH shall undertake an archaeological and ethnographic survey of the proposed transmission line and, if required, submit a Section 18 application to disturb any sites of significance.

* Is the proposal on a property which contains or is near a site of high public interest (for example, a major recreation area or natural scenic feature)?

☐ Yes ☒ No **If yes**, please describe.

* Will the proposal result in or require substantial transport of goods, which may affect the amenity of the local area?

☐ Yes ☒ No **If yes**, please describe.

3. PROPOSED MANAGEMENT

3.1 Principles of Environmental Protection

- Have you considered how your project gives attention to the following Principles, as set out in section 4A of the EP Act? (For information on the Principles of Environmental Protection, please see EPA Position Statement No. 7, available on the EPA web.)

1.	The precautionary principle.	☒ Yes	☐ No
2.	The principle of intergenerational equity.	☒ Yes	☐ No
3.	The principle of the conservation of biological diversity and ecological integrity.	☒ Yes	☐ No
4.	Principles relating to improved valuation, pricing and incentive mechanisms.	☒ Yes	☐ No
5.	The principle of waste minimisation.	☒ Yes	☐ No

Refer to section 5.4 in the supporting document.

- Is the proposal consistent with the EPA's Environmental Protection Bulletins/Position Statements and Environmental Assessment Guidelines/Guidance Statements (available on the EPA web)?

  ☒ Yes ☐ No

Proponent Response

The Environmental Impacts of the proposal will be managed through a Construction Environmental Management Plan to be developed prior to construction.

3.2 Consultation

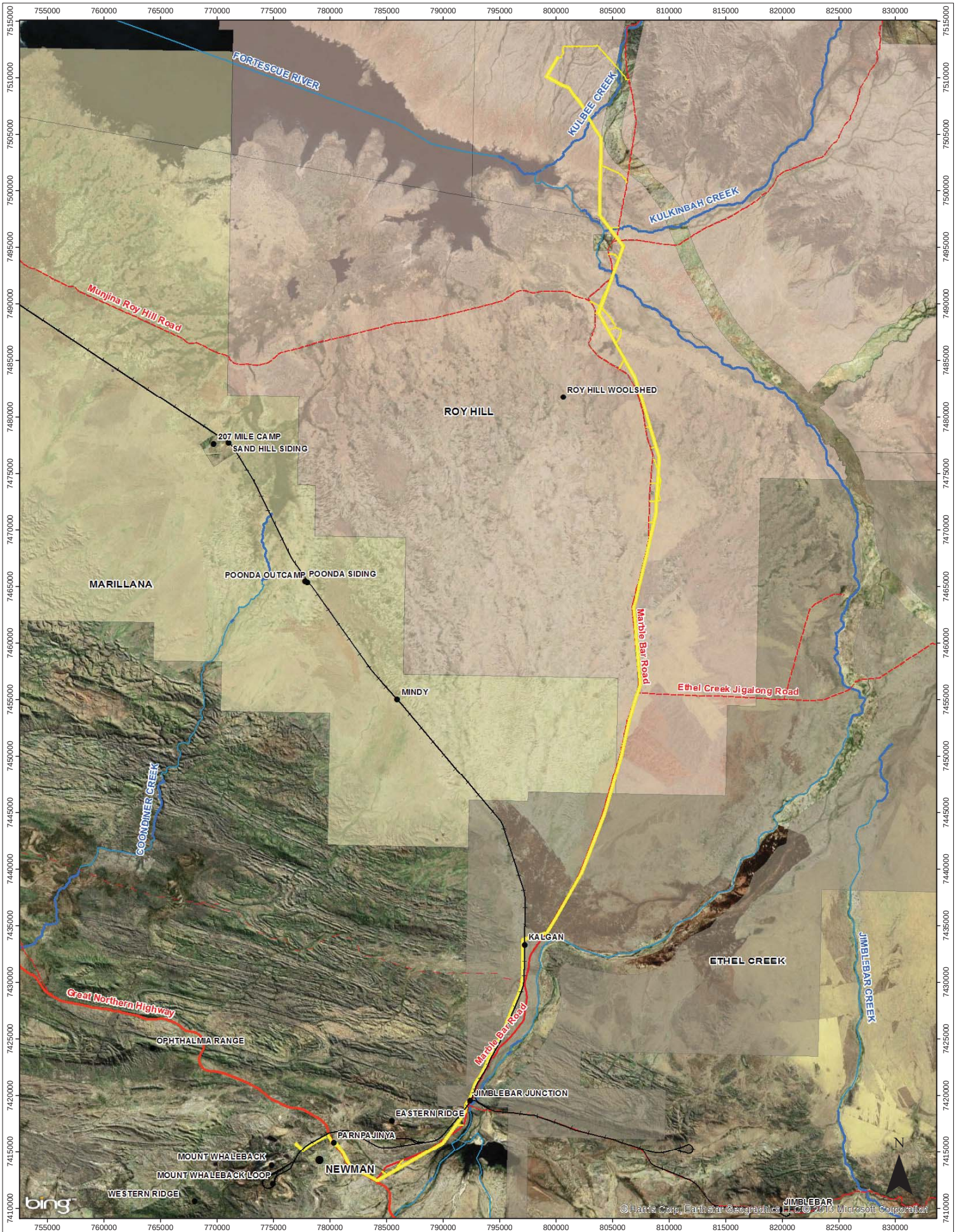
- Has public consultation taken place (such as with other government agencies, community groups or neighbours), or is it intended that consultation shall take place?

  ☒ Yes ☐ No **If yes**, please list those consulted and attach comments or summarise response on a separate sheet.

Proponent Response

AETRH has been undertaking a program of stakeholder engagement since early 2012 and is ongoing. Formal consultation activities to date are summarised in the table below. In addition, AETRH has also engaged in ongoing and *ad hoc* interactions with stakeholders on an individual basis. Refer to section 6 of the supporting document.

Figure 1 – Proposed Transmission Line Project Area



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PROPOSED ALIGNMENT

0 5 10 15
Kilometers
1:300,000
Datum: GDA94 Projection: MGA Zone 50

Legend

- Proposal Area

Intersecting Pastoral Lease

- Ethel Creek
- Marillana
- Roy Hill

Matrix Approvals

Department:	--	Date:	20/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by GSM	Requested by MR	Internal Reference 0001_02	

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The following appendices are provided in electronic format on the enclosed CD.

Appendix 2 – Newman - Roy Hill Transmission Line Survey Report, Ecoscape

Appendix 3 – Newman - Roy Hill Transmission Line Desktop Assessment, Ecoscape

Appendix 4 – Roy Hill 1 Vegetation and Flora Assessment, Ecologia

Appendix 5 – Roy Hill 1Infrastructure Flora Assessment, Ecologia

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Attachment 1 – Alignment Detail Map 1

780000 785000 790000 795000 800000

7440000 7435000 7430000 7425000 7420000 7415000 7410000

KALGAN

Marble Bar Road

JIMBLEBAR JUNCTION

EASTERN RIDGE

PARNPAJINYA

NEWMAN

Great Northern Highway

N

bing

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PILBARA TX LINE
ALIGNMENT DETAIL - MAP 1

0 2 4 6
Kilometers

1:100,000
Datum: GDA94 Projection: MGA Zone 50

Legend

Alinta Project Area

Matrix Approvals

Department:	--	Date:	15/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by GSM	Requested by RS	Internal Reference 0030_01_Map1	

Attachment 2 – Alignment Detail Map 2

795000 800000 805000 810000 815000

7475000 7470000 7465000 7460000 7455000 7450000 7445000

Marble Bar Road

Ethel Creek Jigalong Road

N

bing™

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PILBARA TX LINE
ALIGNMENT DETAIL - MAP 2

0 2 4 6
Kilometers

1:100,000
Datum: GDA94 Projection: MGA Zone 50

Legend

Alinta Project Area

Matrix Approvals

Department:	--	Date:	15/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by: GSM	Requested by: RS	Internal Reference: 0030_01_map2	

Attachment 3 – Alignment Detail Map 3

790000 795000 800000 805000 810000

7510000 7505000 7500000 7495000 7490000 7485000 7480000

Marble Bar Road

Noreena Roy Hill Road

Munjina Roy Hill Road

ROY HILL WOOLSHED

N

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PILBARA TX LINE
ALIGNMENT DETAIL - MAP 3

0 2 4 6
Kilometers

1:100,000
Datum: GDA94 Projection: MGA Zone 50

Legend

Alinta Project Area

Matrix Approvals

Department:	--	Date:	15/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by: GSM	Requested by: RS	Internal Reference: 0030_01_Map3	

Attachment 4 – Land Systems

775000 800000 825000

7500000 7475000 7450000 7425000

RGECWA RGEWAI RGEMSH RGETUR RGELAT RGEMCK RGEBLG RGESPH RGENEW RGELAT RGEELI RGESPH RGELAT RGECAL RGERIV RGEELI RGEWAI RGEMCK RGEWAI RGEJAM RGEBGD RGEELI RGEWAI RGEROC RGECAL RGECAL RGEMCK RGEWAI RGETUR RGEJAM RGEWAI RGELAB RGEJAM RGEFAN RGETUR RGEMRA MUNJINA ROY HILL ROAD RGEWSP RGEBRO RGEADR RGETUR RGENAB RGEWSP RGEURY RGEADR RGEDIV RGEADR RGECOB RGEBGD MARBLE BAR ROAD RGEJIG RGEFAN RGERIV RGEBGD RGEROB RGEBGD RGEDIV RGEWSP RGEDIV RGEFTC RGEROC RGEEGE RGEWNM RGETAB RGEPLA RGEWNM RGEPLA RGENEW RGESPH RGEADR RGEDIV RGEDIV RGEWSP RGEROC RGERIV RGEROC RGEROC RGEBGD RGEBGD RGEBGD RGENEW RGERIV RGEELI RGEMCK RGEWNM RGEBGD RGEMCK RGEWSP RGEX_MINE RGEMCK RGEWSP RGEJAM RGEELI RGEX_MINE RGENEW RGEELI RGEWSP RGEROC RGEBGD RGEX_MINE RGESYL RGEZEB RGESPH RGESYL RGEJAM RGEMCK RGEBGD RGESYL RGESYL RGESYL

Legend

Alinta Project Area

Intersecting Land Systems

Mapping Unit

- RGEADR
- RGEBGD
- RGECOB
- RGEDIV
- RGEELI
- RGEFAN
- RGEJAM
- RGEMCK
- RGENAB
- RGENEW
- RGERIV
- RGEROC
- RGETUR
- RGEWAI
- RGEWSP

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PILBARA TX LINE
VAN VREESWYK LAND SYSTEMS

N

0 5 10 15
Kilometers

1:300,000
Datum: GDA94 Projection: MGA Zone 50

Matrix Approvals

Department:	--	Date:	15/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by: GSM	Requested by: RS	Internal Reference: 0031_01	

Attachment 5 – Study Area vs. Proposal Area Map 1

780000 785000 790000 795000 800000

7440000 7435000 7430000 7425000 7420000 7415000 7410000

KALGAN

Marble Bar Road

FORTESCUE RIVER

JIMBLEBAR JUNCTION

EASTERN RIDGE

PARNPAJINYA

NEWMAN

Great Northern Highway

WARRAWANDA CREEK

N

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PILBARA TX LINE
PROJECT AREA vs. STUDY AREA - MAP 1

0 2 4 6
Kilometers

1:100,000
Datum: GDA94 Projection: MGA Zone 50

Legend

- Environmental Study Area
- Project Area

Matrix Approvals

Department:	--	Date:	15/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by: GSM	Requested by: RS	Internal Reference: 0032_01_Map1	

Attachment 6 – Study Area vs. Proposal Area Map 2

795000 800000 805000 810000 815000

7475000 7470000 7465000 7460000 7455000 7450000 7445000

Marble Bar Road

Ethel Creek Jigalong Road

N

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PILBARA TX LINE
PROJECT AREA vs. STUDY AREA - MAP 2

0 2 4 6
Kilometers

1:100,000
Datum: GDA94 Projection: MGA Zone 50

Legend

- Environmental Study Area
- Project Area

Matrix Approvals

Department:	--	Date:	15/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by: GSM	Requested by: RS	Internal Reference: 0032_01_Map2	

Attachment 7 – IBRA Subregions

775000
800000
825000
7500000
7475000
7450000
7425000

Chichester
Chichester
MARBLE BAR ROAD
MUNJINA ROY HILL ROAD
Fortescue
Hamersley
GREAT NORTHERN HIGHWAY
Augustus

Legend

- Alinta Project Area

IBRA Regions

- Augustus
- Chichester
- Fortescue
- Hamersley

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PILBARA TX LINE
IBRA REGIONS

N

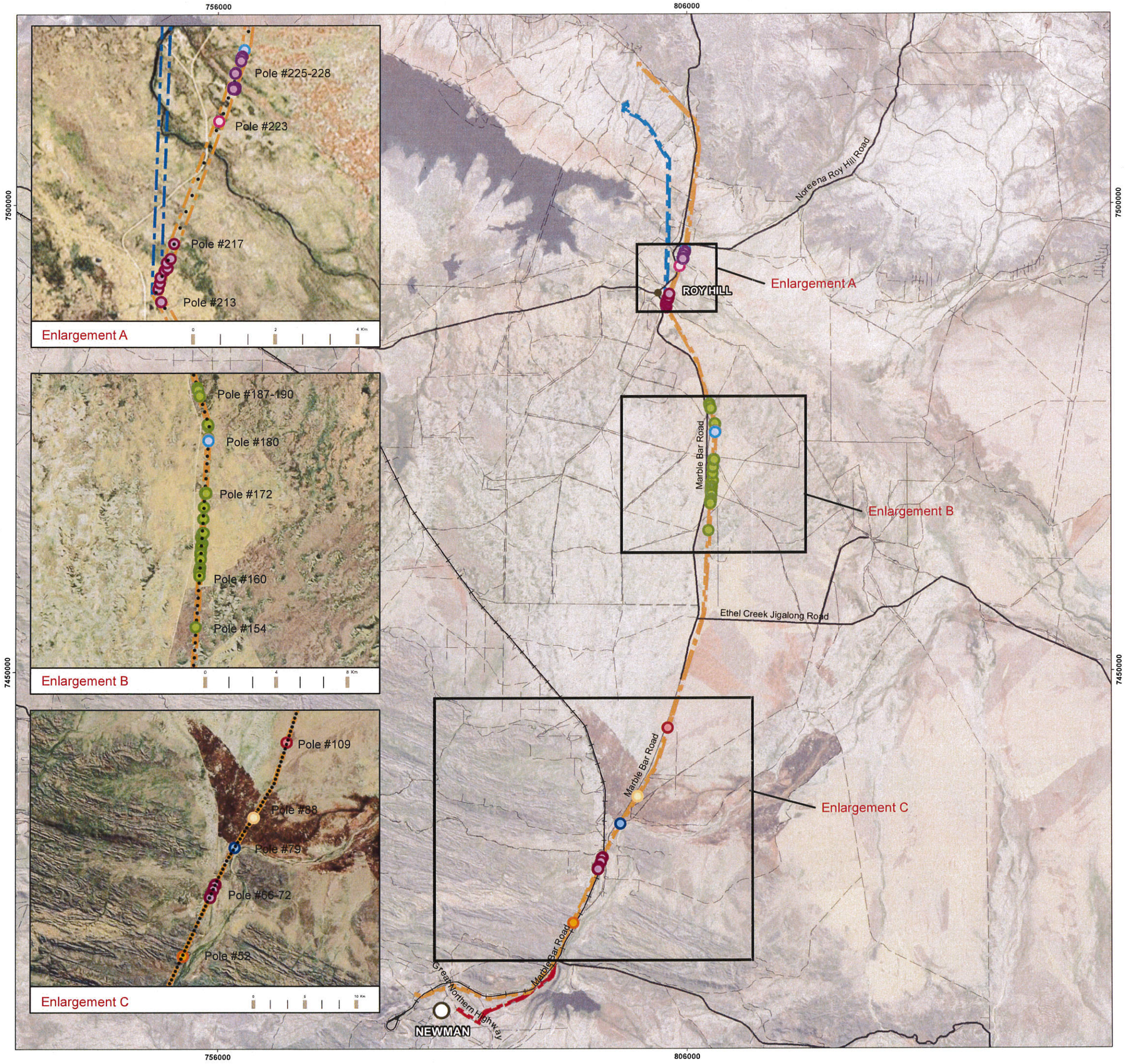
0 5 10 15
Kilometers

1:300,000
Datum: GDA94 Projection: MGA Zone 50

Matrix Approvals

Department:	--	Date:	15/02/2013
Sheet Size:	A3	Status:	Draft
Drawn by GSM	Requested by RS	Internal Reference 0092_00	

Attachment 8 – Ecoscape Study Area

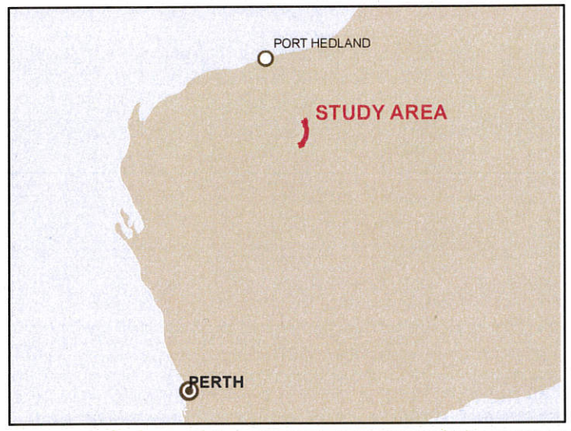


Legend

- Original Study Area Todd Provided
- Digitised Northern Area
- Digitised Southern Area
- Land System Code
- Road
- Railway
- Tracks
- Pole Locations

Conservation Significant Flora

- P4 *Goodenia ? nuda*
- P3 *Indigofera ? sp. Bungaroo Creek*
- P3 *Acacia ? subtiliformis*
- P1 *Eremophila pilosa*
- P4 *Eremophila youngii* subsp. *lepidota*
- P3 *Acacia ?daweana*
- P3 *Rhagodia sp. ?Hamersley*
- P1 *Sida sp. ?Hamersley Range*
- P3 *Themeda sp. Hamersley Station*



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ecoscape

AUTHOR: RD
DATE: 07-12 PROJECT NO: 2817-12

Newman-Roy Hill Survey

CLIENT: ALINTA ENERGY

CONSERVATION SIGNIFICANT FLORA LOCATIONS

MAP 1

SCALE 1:395,000 @ A3

0 10 20 Km

Attachment 9 – *Eremophila pilosa* recorded locations

802500 805000 807500 810000 812500 815000

7477500 7475000 7472500 7470000 7467500 7465000

Pole # 188
Pole # 187
Pole # 181
Pole # 179
Marble Bar Road
Pole # 172
Pole # 170
Pole # 168
Pole # 167
Pole # 161
Pole # 155

Legend

Original Study Area Todd Provided

Conservation Significant Species

P1 *Eramophila pilosa* contiguous presence

Sparse less than 0.5% cover

Moderate 0.5% - 1% cover

Species, Individuals within 50m radius of point

P1 *Eremophila pilosa*, less than 10 plants

P1 *Eremophila pilosa*, 10-50 plants

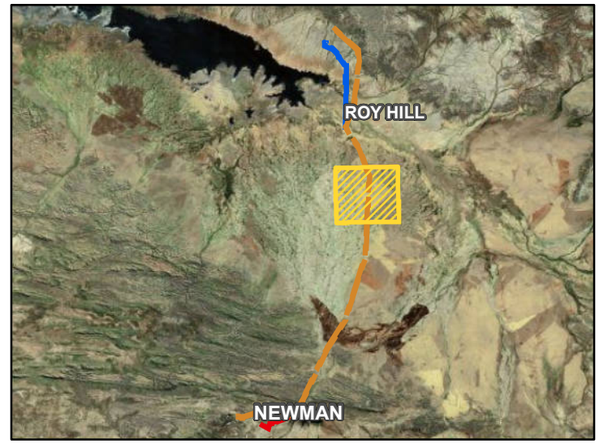
P1 *Eremophila pilosa*, 50+ plants

Pole Locations

Road

Railway

Tracks



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AUTHOR: RD
DATE: 08-12 PROJECT NO: 2817-12

Newman-Roy Hill Survey

CLIENT: ALINTA ENERGY

CONSERVATION SIGNIFICANT FLORA LOCATIONS

MAP 1b

SCALE 1:50,000 @ A3

0 1 2 Km

Attachment 10 – Mining Act tenure across Proposal Area

775000
800000
825000
7500000
7475000
7450000
7425000

L 46/100
CHICHESTER METALS PTY LTD
LIVE

M 46/518-I
ROY HILL IRON ORE PTY LTD
LIVE

Noreena Roy Hill Road

Munjina Roy Hill Road

E 47/1326-I
ROY HILL IRON ORE PTY LTD
LIVE

L 47/341
ROY HILL IRON ORE PTY LTD
PENDING

E 46/586-I
ROY HILL IRON ORE PTY LTD
LIVE

ROY HILL WOOLSHED

E 46/685-I
HANCOCK PROSPECTING PTY LTD
LIVE

Marble Bar Road

L 47/642
ROY HILL IRON ORE PTY LTD
PENDING

L 47/346
ROY HILL IRON ORE PTY LTD
LIVE

E 46/687-I
HANCOCK PROSPECTING PTY LTD
LIVE

L 47/251
BHP BILLITON MINERALS PTY LTD
PENDING

L 47/250
BHP BILLITON MINERALS PTY LTD
PENDING

E 46/454
NORWEST MINING SERVICES PTY LTD
PENDING

L 46/42
HANCOCK PROSPECTING PTY LTD
LIVE

MINDY

Ethel Creek Jigalong Road

E 47/1615-I
ATLAS OPERATIONS PTY LTD
LIVE

E 46/918
CAZALY IRON PTY LTD
PENDING

E 46/743-I
FMG PILBARA PTY LTD
LIVE

E 46/580-I
RIO TINTO EXPLORATION PTY LTD
LIVE

L 47/92
BHP BILLITON MINERALS PTY LTD
LIVE

E 46/621-I
FMG PILBARA PTY LTD
LIVE

Great Northern Highway

E 46/781-I
BROCKMAN EXPLORATION PTY LTD
LIVE

ML 244SA
BHP BILLITON MINERALS PTY LTD
LIVE

E 52/2009
BHP BILLITON MINERALS PTY LTD
PENDING

E 52/2486-I
FMG PILBARA PTY LTD
LIVE

TR 70/7484
MINISTERIAL
LIVE

L 47/389
BROCKMAN IRON PTY LTD
PENDING

E 52/2008
BHP COAL PTY LTD
PENDING

JIMBLEBAR

N

GRIFFIN
SPATIAL & MAPPING

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alintaenergy

PILBARA TX LINE
MINERAL INTEREST OVERVIEW

0 5 10 15
Kilometers

1:300,000
Datum: GDA94 Projection: MGA Zone 50

Legend

Alinta Project Area

Tenement Status

LIVE

PENDING

Matrix Approvals

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