



## 9. Draft Offset Strategy

*This section summarises Volume 4 Appendix AH Environmental Offset Strategy, and in doing so outlines a strategy to offset the unavoidable impacts of the Project on environmental values carrying an offset requirement. The assessment was undertaken in accordance with the Terms of Reference (ToR) for the Project. A table cross-referencing the ToR is provided in Volume 4 Appendix C ToR Cross Reference Table. Environmental values in this strategy were identified by reference to the following sections.*

- ▶ *Volume 1 Section 10 Matters of National Environmental Significance*
- ▶ *Volume 2 Section 05 Nature Conservation*
- ▶ *Volume 3 Section 05 Nature Conservation*

### 9.1 Introduction

The purpose of the environmental offset strategy is to summarise:

- ▶ offset requirements under Australian Government and Queensland Government offset policies
- ▶ the potential impacts of the Project on environmental values carrying and offset requirement
- ▶ the availability of offset options on the Adani owned property, Moray Downs
- ▶ the availability of offset options within the Brigalow Belt and Desert Uplands bioregions
- ▶ potential offset delivery options and proposed method of delivery

Environmental values requiring offsets include matters of national environmental significance (matters of NES), threatened ecological communities (TECs), high conservation status regional ecosystems (REs), protected flora and fauna under the *Nature Conservation Act 1992* (NC Act), and important watercourse, wetland or corridor vegetation. Only protected species that were confirmed present or likely to occur were assessed to have an offset requirement - for details of the field surveys and likelihood of occurrence assessment that informed this decision, refer to Volume 4 Appendix N Terrestrial Ecology Report and Volume Appendix AA Rail Ecology Report.

### 9.2 Legislative Context

Offsets for the unavoidable impacts of the Project on certain environmental values are required under legislation administered by the Australian Government and the Queensland Government. The offset requirement of the Project was assessed with reference to the following policies.

- ▶ *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) *Environmental Offsets Policy* (EOP), administered by the Australian Government
- ▶ *Queensland Government Environmental Offsets Policy* (QGEOP), administered by the Queensland Government, and subsidiary policies:
  - *Policy for Vegetation Management Offsets* Version 3, 2011 (PVMO)
  - *Queensland Biodiversity Offset Policy* Version 1, 2011 (QBOP)



### 9.2.1 EPBC Act Environmental Offsets Policy

The purpose of the EPBC Act EOP is to outline the Australian Government's position on the use of environmental offsets to compensate for adverse impacts on matters of NES protected by the EPBC Act. Offsets seek to provide a net environmental gain through targeted actions (direct or indirect) and therefore do not necessarily ameliorate onsite impacts to matters of NES. Under the EPBC Act, environmental offsets can be used to maintain or enhance the health, diversity and productivity of the environment as it relates to matters of NES. However, environmental offsets do not apply where the impacts of a development are considered to be minor in nature or could reasonably be mitigated.

The Project was declared a 'controlled action' requiring assessment and approval under the EPBC Act on 6 January 2011 due to the likely potential impact of the Project (Mine) and Project (Rail) on matters of NES. As such the EPBC Act EOP applies to the Project.

The Project will require the clearance of high conservation status REs that are listed components of TECs and are habitat for threatened species listed under the EPBC Act (refer to Section 9.3). As such, this action carries offset obligations to deliver an overall conservation outcome that improves or maintains the health, diversity and productivity of the environment as it relates to matters of NES.

### 9.2.2 Queensland Government Environmental Offsets Policy

The QGEOP provides a framework for the use of environmental offsets in Queensland, in order to counter-balance unavoidable, negative environmental impacts that result from an activity or a development. This policy is based on the premise that offsets are used consistently and transparently across the State, and are only considered after all environmental impacts have been avoided and minimised and all other government environmental standards have been met.

The QGEOP is based on seven basic principles that guide the way in which offsets are used to contribute to ecologically sustainable development (ESD), these being:

- ▶ Offsets will not replace or undermine existing environmental standards or regulatory requirements, or be used to allow development in areas otherwise prohibited through legislation or policy
- ▶ Environmental impacts must first be avoided, then minimised, before considering the use of offsets for any remaining impact
- ▶ Offsets must achieve an equivalent or better outcome
- ▶ Offsets must provide environmental values as similar as possible to those being lost
- ▶ Offset provision should minimise the time-lag between the impact and delivery of the offset
- ▶ Offsets must provide additional protection to environmental values at risk, or additional management actions to improve environmental values
- ▶ Offsets must be legally secured for the duration of the offset requirement

Where possible, the QGEOP supports the development of offset packages that meet the combined requirement of policies administered by the Australian Government and Queensland Government. This co-ordinated approach to offsets across jurisdictions means that specific offsets sought under one policy will not also be sought under another policy, providing that the offsets package satisfies the requirements of both policies.



### 9.2.3 Policy for Vegetation Management Offsets

This PVMO sets the requirements for an offset as a condition of a development approval considered necessary or desirable for achieving the purpose of the *Vegetation Management Act 1999* (VM Act). The VM Act regulates clearing in Queensland but does not apply to Level 1 mining activities, as these are defined as 'not assessable development' under the *Sustainable Planning Regulation 2009*. As such, the PVMO applies to the Project (Rail) but will not apply to aspects of the Project (Mine) that are subject to a mining lease.

Under the PVMO, offsets will be required where the Project (Rail) fails to meet the performance requirements (PRs) under the Regional Vegetation Management Code for Brigalow Belt (DERM, 2009a) and New England Bioregions and the Regional Vegetation Management Code for Western Bioregions – Version 2 (DERM, 2009b), and it can be demonstrated that the impacts of development on vegetation have been avoided and mitigated in the first instance.

The purpose of the PRs outlined in the codes is to:

*“regulate the clearing of vegetation in a way that conserves remnant vegetation that are regional ecosystems, does not cause land degradation, prevents the loss of biodiversity and maintains ecological processes.”*

An assessment of the Project (Rail) against the performance requirements and acceptable solutions of the codes is provided in Table 20 of Volume 4 Appendix AH Environmental Offset Strategy.

An offset proposed under the PVMO must be ecologically equivalent to the proposed clearing, as determined through bio-condition assessment and an Ecological Equivalent Methodology (DERM 2011c). Where an offset is over a lower ecological standard than the proposed clearing, the ratio of offset to clearing area must increase.

The following PVMO offset criteria that are likely to apply to the Project (Rail).

#### Clearing of Endangered and Of Concern REs

An offset area for endangered and of concern REs must:

- a. *Be of the same broad vegetation management group; and*
- b. *Be an endangered or of concern regional ecosystem that has the same or higher, where possible, conservation status as the area proposed for clearing.*

#### Clearing of Threshold REs

An offset area for threshold REs must:

- a. *Be the same broad vegetation group;*
- b. *Be a RE within the bioregion that is at risk of the remnant extent of the RE falling below 30% of its pre-clearing extent, or, having a remnant extent of less than 10,000 ha listed in the relevant Regional Vegetation Management Code; or*
- c. *Where b. is demonstrated to not be achievable, be an RE within the bioregion that has a higher conservation status than the RE proposed for clearing.*



### Clearing of Watercourse Vegetation

An offset area for assessable vegetation at watercourses must:

- a. *Be the same broad vegetation group;*
- b. *Be a regional ecosystem that has the same or higher conservation status than the regional ecosystem proposed for clearing; and*
- c. *Be a regional ecosystem associated with a watercourse that has at least the same stream order as the watercourse proposed for clearing.*

### Clearing of Corridor Vegetation

An offset area for connectivity must:

- a. *Be the same broad vegetation group;*
- b. *Be located within one of the following ecological corridors:*
  - i. *A strategic rehabilitation area identified by the State government;*
  - ii. *An ecological corridor identified by the Federal, State or local government either on its website or in an approved and publicly available document; or*
  - iii. *Other endorsed, strategic corridor identified by a recognised organisation or group; and*
- c. *Be adjacent to vegetation shown as remnant vegetation on a regional ecosystem map and remnant map, or a restricted area (essential regrowth habitat, stream protection zones, within wetland protection areas, on slopes greater than 12%) under the regrowth vegetation code.*

#### 9.2.4 Queensland Biodiversity Offset Policy

The QBOP does not expressly apply to projects which are declared significant projects under section 26(1)(a) of the *State Development and Public Works Organisation Act 1971*. However, the Coordinator-General may use discretionary powers to require compliance with the policy as part of an approval for a significant project. As such, the policy is expected to be applied to the Project.

The purpose of the QBOP is to increase the long-term protection and viability of State significant biodiversity values by offsetting residual impacts from development. Appendix 1 of the QBOP defines State significant values including REs that are endangered or of concern, essential habitat, regrowth of REs that are endangered or of concern, watercourses, protected animals and protected plants. Protected animals under the QBOP are those listed as endangered, vulnerable, near threatened and special least concern animals under the NC Act. Protected plants under the QBOP are those listed as extinct in the wild, endangered, vulnerable or near threatened under the NC Act.

A biodiversity offset will apply under the QBOP once all practical and reasonable efforts have been taken to avoid and minimise impacts on State significant biodiversity values. Offsets will only be acceptable when all reasonable attempts have been made to avoid and reduce impacts on the relevant biodiversity values and, as such, cannot be presented as a primary mitigation approach.



A offset proposed under the QBOP must be ecologically equivalent to the proposed clearing. In order for the proposed offset area to be considered acceptable, the QBOP has identified criteria for each State significant biodiversity value.

The following QBOP criteria are likely to apply to the Project.

### **Wetlands**

Where the State significant biodiversity value being impacted is a wetland or significant wetland, an offset must be:

- a) *located within the same bioregion*
- b) *have the same or higher status as the area proposed to be impacted*
- c) *an RE associated with a wetland or significant wetland. That is, the offset must assist with maintaining water quality, aquatic habitat and terrestrial habitat.*

### **Watercourses**

Where the State significant biodiversity value/s being impacted is watercourse, an offset must be:

- a) *located within the same bioregion*
- b) *the same or higher stream order as the watercourse proposed to be impacted on*
- c) *an RE associated with a watercourse. That is, the offset are must assist with maintaining bank stability, water quality, aquatic habitat and terrestrial habitat.*

### **Connectivity**

Where the State significant biodiversity value/s being impacted is connectivity, the offset must be:

- a) *located within the same bioregion*
- b) *identified on a map within one of the following:*
  - i. *a strategic area or strategic rehabilitation area identified by the State government*
  - ii. *an ecological corridor identified by the Commonwealth, State or local government either on its website or in an approved and publically available document*
  - iii. *a DERM approved, strategic corridor identified by a recognised organisation or group.*

### **Endangered Regional Ecosystems**

Where the State significant biodiversity value/s being impacted is a remnant or high value regrowth endangered RE, the offset must be:

- a) *an endangered RE in the same regional-scale broad vegetation group (1: 1,000,000)*
- b) *located within the same bioregion*

### **Of Concern Regional Ecosystems**

Where the State significant biodiversity value/s being impacted is a remnant or high value regrowth of concern RE, the offset must be:

- a) *an of concern RE or and endangered RE in the same regional-scale broad vegetation group (1: 1,000,000)*



- b) *located within the same bioregion*
- c) *the same or higher conservation status as the area proposed to be impacted on*

### Protected Animals

Where the State significant biodiversity value/s being impacted is a protected animal, the offset must be:

- a) *known habitat for the species being impacted which contains the elements necessary for the survival of the species being offset*
- b) *an area utilised by the species at any stage of its life cycle for which there is recent evidence*
- c) *demonstrate that the direct impacts on the species are mitigated by the offset area and surrounding environment*
- d) *consistent with the requirements of an approved recovery plan (where it exists) for the species or relevant community. Where a specific plan for the species does not exist, advice from a suitably qualified and experienced person should be sought and provided about the conditions and requirements for the survival of the species. In the absence of scientific information about the species being impacted, the offset area must contain the same RE containing the protected animal as being impacted.*

## 9.3 Project Impacts

The following potential impacts encompass the 90 year operational life of the Project. As such it should be noted that proposed clearing will be staged and correspond with the sequential development of the Project.

It should be noted that proposed clearing is the residual impact of a planning process that has taken place to position the Project in areas that were previously cleared or have been degraded by present or past land practices. This process has been applied to the Project as far as practicable, with consideration to other environmental, social and economic constraints. An alternatives assessment and Project is detailed in Volume 1 Section 1 Introduction.

### 9.3.1 Potential impacts – EPBC Act EOP

Potential impacts leading to an offset requirement under the EPBC Act EOP are as follows.

- ▶ Clearing of threatened ecological communities
  - Brigalow (*Acacia harpophylla* dominant and co-dominant)
- ▶ Clearing of habitat for threatened fauna – Confirmed present
  - Black throated finch (southern) (*Poephila cincta cincta*)
  - Squatter pigeon (southern) (*Geophaps scripta scripta*)
  - Koala (*Phascolarctos cinereus*)
- ▶ Clearing of habitat for threatened fauna – Likely to occur
  - Ornamental snake (*Denisonia maculata*)
  - Yakka skink (*Egernia rugosa*)
- ▶ Clearing of habitat for migratory species – Confirmed present



- Eastern great egret (*Ardea modesta*)
- Rainbow bee-eater (*Merops ornatus*)
- Satin flycatcher (*Myiagra cyanoleuca*)
- ▶ Clearing of habitat for migratory species – Likely to occur
  - Common sandpiper (*Actitis hypoleucos*)
  - Fork-tailed swift (*Apus pacificus*)
  - Curlew sandpiper (*Calidris ferruginea*)
  - Latham's snipe (*Gallinago hardwickii*)
  - White-bellied sea eagle (*Haliaeetus leucogaster*)
  - White-throated needletail (*Hirundapus caudacutus*)
  - Caspian tern (*Hydroprogne caspia*)
  - Black-tailed godwit (*Limosa limosa*)
  - Glossy ibis (*Plegadis falcinellus*)
  - Common greenshank (*Tringa nebularia*)
  - Marsh sandpiper (*Tringa stagnatilis*)
- ▶ Clearing of habitat for threatened flora – Confirmed present
  - Waxy cabbage palm (*Livistona lanuginosa*)

### 9.3.2 Potential impacts – Offset policies administered by the Queensland Government

Potential impacts leading to an offset requirement under policies administered by the Queensland Government are as follows.

- ▶ Clearing of REs that are endangered
  - RE 11.3.1
  - RE 11.4.8
  - RE 11.4.9
- ▶ Clearing of REs that are of concern
  - RE 10.7.4
  - RE 11.3.3
  - RE 11.4.5
  - RE 11.4.6
  - RE 11.4.11
- ▶ Clearing of threshold REs
  - RE 11.3.5
- ▶ Clearing of high value regrowth
  - RE 11.3.1
  - RE 11.4.8
  - RE 11.4.9



- RE 11.4.11
- RE 11.4.5
- RE 11.4.6
- RE 11.3.3
- Black throated finch (southern) (*Poephila cincta cincta*)
    - Squatter pigeon (southern) (*Geophaps scripta scripta*)
    - Black-necked stork (*Ephippiorhynchus asiaticus*)
    - Cotton pygmy-goose (*Nettapus coromandelianus*)
    - Little pied bat (*Chalinolobus picatus*)
  - Ornamental snake (*Denisonia maculata*)
    - Yakka skink (*Egernia rugosa*)
    - Square-tailed kite (*Lophoictinia isura*)
    - Black-chinned honeyeater (*Melithreptus gularis*)
- Eastern great egret (*Ardea modesta*)
    - Rainbow bee-eater (*Merops ornatus*)
    - Satin flycatcher (*Myiagra cyanoleuca*)
    - Koala (*Phascolarctos cinereus*)
    - Echidna (*Tachyglossus aculeatus*)
  - Common sandpiper (*Actitis hypoleucos*)
    - Fork-tailed swift (*Apus pacificus*)
    - Curlew sandpiper (*Calidris ferruginea*)
    - Latham's snipe (*Gallinago hardwickii*)
    - White-bellied sea eagle (*Haliaeetus leucogaster*)
    - White-throated needletail (*Hirundapus caudacutus*)
    - Caspian tern (*Hydroprogne caspia*)
    - Black-tailed godwit (*Limosa limosa*)
    - Glossy ibis (*Plegadis falcinellus*)
    - Common greenshank (*Tringa nebularia*)
    - Marsh sandpiper (*Tringa stagnatilis*)
- Waxy cabbage palm (*Livistona lanuginosa*)
    - *Solanum adenophorum* (no common name)
- Clearing of watercourse vegetation



- Stream order 1 or 2
- Stream order 3 or 4
- ▶ Clearing of wetland vegetation
  - RE 11.3.2.7
  - Wetland Protection Areas and trigger areas
- ▶ Clearing of vegetation providing connectivity

No essential habitat for species protected under the NC Act is displayed in the coterminous DEHP mapping of the Project. As such, no impacts to essential habitat under the PVMO were considered for the purpose of the environmental offset strategy. However, species protected under the NC Act were considered for their offset implications under the QBOP, with the below exception.

Three EPBC Act listed migratory birds were confirmed present during field surveys of the Project (Mine) and an additional 11 were assessed as likely to occur. However, these species are common and widespread, and therefore the Project was not considered to comprise 'important habitat' for these species, as defined in the Significant Impact Guidelines (DEWHA 2009). As such, impacts to EPBC Act listed migratory birds were not considered for the purpose of the environmental offset strategy. These species are classified as special lease concern under the NC Act and may have offset implications under the QBOP. Offset options for these species must be negotiated with DSEWPaC and relevant agencies of the Queensland Government to agree on a suitable outcome.

Two TECs, Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin and Semi-Evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions, have been identified from the proposed quarry and borrow areas. However as proposed quarry and borrow areas are indicative, TECs were not considered for the purpose of the environmental offset strategy.

Category A areas mapped within the Project (Mine) footprint, and subject to a compliance notice for their restoration, were considered based on their preclearance extent and RE classification.

### **9.3.3 Calculation of Clearing Extents and Potential Impacts**

Quantification of clearing is detailed in Section 5.3 of Volume 4 Appendix AH Environmental Offset Strategy. This quantification is approximate and has been based on the Mine Plan (Runge, 2011).

Potential impacts requiring offsets for remnant vegetation associated with a watercourse were located using 1:100,000 DEHP topographic maps. The Project (Rail) footprint intersects with 26 DEHP mapped major watercourses (of which 15 have mapped assessable vegetation) and the Project (Mine) intersects with 22 DEHP mapped major watercourses (of which 20 have mapped assessable vegetation). Total clearing extents were estimated with reference to Table 2 of the relevant Regional Codes or Table 1 of the QBOP. Biodiversity Planning Assessment (BPA) mapping was examined to calculate the extent of mapped bioregional corridors and habitat remnants within the Project footprint at various scales of biodiversity significance.

The modelling and mapping process used to determine the potential impact to matters of NES does not currently take into account localised features, previous disturbance (other than remnant vegetation current extent), relationships with introduced species, local habitat condition or current land use. It takes key habitat features at a regional scale that can be spatially represented to



describe potential habitat. For this reason, the mapping outputs of potential habitat do not reflect current distribution or predict occurrence of a species. Therefore the outputs of the model are an overestimate of where species actually occur, and therefore an overestimate of residual impact to matters of NES.

It is important to note that clearing extents presented in Section 5.3 of Volume 4 Appendix AH Environmental Offset Strategy are not discrete. Due to the shared habitat of some species, there is substantial overlap in proposed impact extents. The combined total disturbance area is likely to be substantially reduced through the preparation of the offsets package.

#### **9.4 Potential Offsets**

An area totalling 79,935 ha on Moray Downs was assessed to determine its offset potential. It was determined that Moray Downs may meet a significant portion of offset requirements for Brigalow TEC, squatter pigeon (southern), black throated finch (southern), ornamental snake and yakka skink, RE 11.3.3, RE 11.4.5, RE 11.4.11, threshold RE 11.3.5, HVR, watercourse and wetland RE areas, and potential habitat for black-necked stork, cotton pygmy-goose and grey falcon (refer to Table 24 in Volume 4 Appendix AH Environmental Offset Strategy). Further ground truthing and species habitat factors and ecological equivalence will be necessary to confirm offset values.

A desktop assessment was conducted to determine the offset potential within the Brigalow Belt and Desert Uplands Bioregions. Due to the position of the Project (Mine) on the border of the Brigalow Belt and Desert Uplands, both regions were considered suitable targets for offset acquisition. Only the Brigalow Belt was considered for the Project (Rail). Potential offset areas (ha) were quantified (refer to Table 25 and Table 26 in Volume 4 Appendix AH Environmental Offset Strategy).

For RE 10.7.4, listed as of concern under the VM Act, there are only 41 ha of potential offset areas available within the Desert Uplands Bioregion. Given the impact of the Project (Mine) on this RE is estimated to be 88 ha, additional offset availability in the landscape will be undertaken by field survey. For eight values impacted by the Project (Mine) it is likely that the delivery of direct offsets will require the securing of offsets across multiple lots to fulfil Queensland Government offset requirements. It was determined that sufficient potential existed in the Brigalow Belt bioregion to offset Project (Rail) impacts.

#### **9.5 Implementing Offset Requirements**

Offset requirements are stipulated by the relevant offset policies and include acceptable offset types and means of delivery. Offset requirements of the EPBC Act EOP, the QGEOP, the PVMO and the QBOP are explained in Section 9.2. Means of delivery are discussed in Section 7 of Volume 4 Appendix AH Environmental Offset Strategy.

Although potential synergies exist between EPBC Act EOP and offset policies administered by the Queensland Government, it is not assumed that an offset which satisfies the EPBC Act EOP will also satisfy related requirements under a policy administered by the Queensland Government. As such, offset options must be negotiated with DSEWPaC and relevant agencies of the Queensland Government to agree on a suitable outcome. Offset options that are complementary will need to be negotiated so that these options satisfy policy requirements at both levels of government. However the EPBC Act EOP and QGEOP generally support the development of such complementary offset packages and in development of the offsets package, offset values that occur within the same area



will be collocated where possible. Potential collocation opportunities are identified in Table 21 and Table 22 of Volume 4 Appendix AH Environmental Offset Strategy.

The development of an environmental offset package will include:

- ▶ an update of the offset requirements of the project based on refined impact data and the criteria of current Queensland and Australian Government offset policies
- ▶ the anticipated offset requirements of the project corresponding to each of the three stages of offset delivery
- ▶ where required, the results of ecological equivalence assessments of impact sites
- ▶ solutions for acquitting the offset requirements including details of proposed direct offsets, indirect offsets (or compensatory measures), offset payments and offset transfers (as applicable)
- ▶ for direct offsets, data on the values and extent of each offset value on each property, including maps and results of field assessments and ecological equivalence assessments (where relevant and possible)
- ▶ the compliance of the proposed offset solutions with the criteria of the relevant offset policies
- ▶ details of the proposed offset delivery approach for each stage of offset delivery including:
  - ▶ how offsets will be delivered for each stage
  - ▶ proposed legally binding mechanisms for direct offsets
  - ▶ a schedule of future tasks and timeframes to secure offsets
- ▶ the framework for the development specific offset area management plans, including monitoring and reporting requirements

The offset package is likely to include a combination of direct and indirect offsets, and offset transfers or payments. Direct offsets under the EPBC Act EOP, QBOP or PVMO include the acquisition of compliant land to be protected in the relevant conservation estate, or rehabilitation of existing vegetation. Indirect offsets may be land based offsets that do not fully comply with direct offset requirements. Typically land based indirect offsets are proposed in combination with indirect offsets such as improved management and research funding aimed at promoting benefits for those values being impacted. Potential indirect offsets of this sort under the EPBC Act EOP, QBOP and PVMO are detailed in Sections 7.1.2 and 7.1.3 of Volume 4 Appendix AH Environmental Offset Strategy.

An Ecological Equivalence Methodology Guideline (DERM, 2011c) has been developed by DEHP to assist in determining ecological equivalence between the areas proposed for clearing and potential offset areas, under the PVMO and the QBOP. To determine ecological equivalence in the field, a botanical methodology, known as Bio-condition assessment is used (Eyre et al, 2011). Site condition is assessed using a Bio-condition score which is based on a comparison between measurements of specific site-based attributes and a benchmark value for each of these attributes, specific to a particular RE. Detailed field assessments may also be employed to refine modelling of potential impacts on matters of NES.

Another key task in the development of the Environmental Offset Package will be to coordinate the environmental management and offset objectives of the Project. This can be achieved partly through the development of offset area management plans in accordance with management plans developed to mitigate the impacts of the Project during operation.



Offset implementation will be staged and correspond with the sequential development of the Project. The tasks and associated timeframes for offset delivery as well as detailed breakdowns of activities requiring offsets at each stage of the Project are described in Table 27, Table 28, Table 29 and Table 30 of Volume 4 Appendix AH Environmental Offset Strategy.

## 9.6 Summary

A number of potential direct and indirect impacts have been identified within the Project footprint. Impacts are primarily the direct loss of protected vegetation communities and habitat for threatened species. Offsets for these impacts must meet the offset requirements outlined in the relevant offset policies, including the EPBC Act EOP, PVMO and QBOP.

The potential for land based offsets on the Adani owned property, Moray Downs, and the Brigalow Belt and Desert Uplands bioregions was assessed and substantial offset potential was identified. The final suitability of offsets depends on an assessment of their ecological equivalence and the application of offset ratios by the Australian Government.

On approval of this strategy, an Environmental Offset Package will be developed to present the proposed solutions to fulfil the offset requirements of the project based on Queensland and Australian Government legislation and offset policies in place at the time that the package is prepared. The package is likely to include a combination of direct and indirect offsets, offset payments and offset transfers.