

1 Statement of Commitments

The following statements form commitments of Mt Emerald Wind Farm Pty Ltd in terms of environmental management and monitoring to mitigate the potential adverse environmental impacts and to gain a net environmental benefit from the establishment of Mt Emerald Wind Farm. The draft Statement of Commitments (SoC) is a compilation of the various mitigation measures developed after the detailed impact assessment of the Proposal on identified key environmental issues. It is presented as a set of measures arranged according to environmental issues by project phases, with the desired environmental outcomes, and responsibilities for implementation clearly identified.

This SoC will inform the preparation of a Project Environmental Management Plan (PEMP); the Construction Environmental Management Plan (CEMP); and Operational Environmental Management Plan (OEMP); and associated sub-plans that provide more site and project phase-specific details regarding the environmental management and monitoring measures to be implemented.

1.1 Project Environmental Management Plan:

The PEMP is a management document prepared by the Proponent that expands on the final SoC and other project approval conditions into more detailed outcomes. The PEMP will provide the basis for:

- meeting all environmental requirements;
- assignment of environmental management responsibilities between the Proponent and contractors;
- inclusion of environmental requirements into tender documents; and
- continuing management and evaluation of the environmental performance of the project.

The PEMP will be an integral element of the detailed design phase and will form part of any contractual requirements. The PEMP will identify or describe:

- processes for the environmental evaluation of the Proposal;
- environmental risks which may be managed respectively by the Proponent and the contractor;
- the promotion of environmental awareness among employees, contractors and the community;
- the requirements for review and/or audit of environmental documents such as contractors' Environmental Management Plans.

1.2 Construction Environmental Management Plan

The CEMP will be prepared by the primary contractor, in consultation with the Proponent, based on the former's proposed work methods and the environmental outcomes required for the Proposal.

The main aim of the CEMP will be to avoid, minimise and manage any potential environmental impacts arising from construction activities for the Proposal. It will describe in a more detailed and site-specific manner the management measures to be carried out for the activities at various stages of construction. This will include the definition and allotment of responsibilities among the Proponent, the primary contractor and its sub-contractors. It will also cover the conduct of ongoing stakeholder engagement, system of notification and complaints management during construction.

The CEMP will contain a suite of sub-plans to describe detailed management procedures for key environmental issues. Among the sub-plans projected for development for the construction phase are the following:

- **Threatened Species Management Plan (TSMP)** – this plan will describe measures to minimise the impacts on threatened species of flora and fauna, including identification and marking of exclusion zones on site;
- **Weed and Pest Management Plan (WPMP)** – This plan will detail the protocols for the management of noxious and environmental weed species on the site, with the objective of minimising the potential of risk of introducing such weeds and pests into the site or spreading them across and/or beyond the development footprint;
- **Rehabilitation Plan** – this plan will provide guidelines to integrate appropriate landscape rehabilitation strategies and methods into the management of disturbed land. The Rehabilitation Plan will complement the WPMP (above), and outline recommendations for incorporating rare and threatened plants and the reinstatement of groundlayer and other fauna habitats.
- **Habitat Clearing and Management Plan** – this plan will provide management strategies involved in mitigating the impacts of habitat clearing on susceptible fauna, including the induction of all workers and for wildlife spotters and catchers in involved in habitat clearing
- **Cultural Heritage Management Plan** – this plan documents the procedures to be followed for impact avoidance or mitigation, and will be developed in consultation with an archaeologist, and the traditional owners of the land, being the Bar Barrum People and Muluridji People.
- **Traffic Management Plan (TMP)** – the TMP, to be prepared in consultation with Department of Transport and Main Roads, will outline traffic movements to and from the site as well as within the construction zones. The TMP will describe measures that promote traffic safety for local and regional traffic, construction personnel and landowners who may need to access the project site. The TMP will also establish protocols for construction deliveries, especially of large loads (e.g. cranes, turbine infrastructure);
- **Bushfire Risk Management Plan** – this plan, to be prepared in consultation with the Queensland Fire and Rescue Service and will identify and manage bushfire risks which may arise due to construction activities on site, and will describe protocols for responding to a fire during the construction phase. The plan will also identify regulatory requirements relating to fire safety in accordance with relevant Workplace Health and Safety Requirements (e.g. relevant specifications for chemical storage and refuelling) and will be based upon the draft Fire Management Plan submitted with the Development Application;
- **Ecological Fire Management Plan** – this plan will detail the management strategies to be implemented in order to maintain an appropriate fire regime (extent, intensity, frequency) for the various faunal and flora habitats represented on the site.
- **Emergency Evacuation Plan (EEP)** – this plan will outline site protocols in the event of an emergency (e.g. chemical spill), including lines of communications among construction personnel and affected residents, safe evacuation routes and muster points, and coordination procedures with State Emergency Response personnel who may respond on site.
- **Erosion and Sediment Control Plan (ESCP)** – prepared in accordance with the Institute of Engineers Australia Queensland ESC Guidelines, the ESCP will describe temporary and permanent sediment control procedures and methods to minimise erosion during the construction of the project, covering discrete construction areas

and which will account for the changing surface configuration at various stages of construction

- **Construction Waste Management Plan (CWMP)** – this plan will describe measures to minimise waste generation onsite and maximising opportunities for recycling and reuse; and
- **Construction Dust Management Plan** – this plan will describe measures for dust mitigation, control and monitoring using dust gauges.
- **Stormwater Management Plan (SWMP)** – related to Erosion and Sediment Control Plan, the SWMP will be prepared in accordance with Queensland Urban Drainage Manual, with specific reference to waterway crossings and stormwater outlets for all turbine pads and access tracks (where applicable) to ensure water quality is maintained

1.3 Operation Environmental Management Plan

An Operational Environmental Management Plan (OEMP) will be prepared by the Proponent to describe the environmental management measures to be implemented during the operational phase of the project. This plan will cover not only the operational and maintenance requirements of the wind farm but will also address ongoing monitoring and maintenance of the project site to minimise ecological impacts and to promptly respond to potential community amenity issues.

The OEMP will include the following:

- key operational and maintenance activities;
- identification of statutory obligations and planning approval commitments;
- description of the roles and responsibility of site personnel and visiting contractors;
- monitoring of the following key environmental issues;
 - noise;
 - fauna impacts;
 - flora and vegetation impacts;
 - dust emissions (from bare ground within the development footprint);
 - stormwater quality and sedimentation
 - fire risks; and
 - operational traffic impacts.

The OEMP will be prepared and submitted for approval to the Council no later than one month prior to the commencement of operation of the wind farm.

1.4 Statement of Commitments

The Proponent has voluntarily prepared a draft Statement of Commitments (SoC) outlining the suite of mitigation measures to avoid, minimise and manage potential environmental impacts resulting from the construction (C), operation (O) and decommissioning (D) of the Proposal.

The elements of the Proponent's draft SoC which have been described throughout the Development Application, after the detailed assessment of the key issues are compiled in **Table 42**.

Table 1 Draft Statement of Commitments

Item	Impact	Objectives	Mitigation Task	Responsibility	Project Phase		
					C	O	D
1.0	Visual & Landscape						
1.01	Visual impact from contrast between turbines and rural landscape	Reduce visual contrast	An off-white or grey colour for the structures will be considered to reduce visual contrast between turbines and the viewing background (this is subject to final turbine selection).	Proponent		✓	
1.02	Visual impact	Provide screening through landscape planting	The Proponent will undertake landscape planting where screening is deemed appropriate and in accordance with the outcomes of the assessment process and in consultation with landowners, taking into consideration that the location and design of screen planting used as a mitigation measure is very site specific and requires detailed analysis of potential views,	Proponent		✓	
1.03	Visual impact from scarring of landscape	Reduce occurrences and extent of landscape scarring	<ul style="list-style-type: none"> Disturbed soil areas will be reinstated immediately after completion of construction, including re-contouring and re-seeding with appropriate plant species. Tracks have been designed to follow contour lines and existing roads will be used as much as possible, which will minimise cut-and-fill and the potential landscape scarring. Revegetation and offset planting will be undertaken on site in consultation and agreement with landholders. 	Contractor and Proponent	✓	✓	
1.04	Visual impact from construction activities	Reduce visibility of construction activities from outside the site.	<ul style="list-style-type: none"> Safeguards will be enforced to minimise dust emissions during construction. Height of stockpiles will be restricted. 	Contractor	✓		
1.05	Visual impact from night-time lighting	Minimise light spill from project site	Activities (such as aviation lighting) that may require night-time lighting will be minimised and, if necessary, low lux (intensity) lighting designed to be mounted with the light inwards to the site will be used to minimise glare.	Proponent	✓	✓	
1.06	Visual impact from contrast between site infrastructure and the rural landscape	Site infrastructure sympathetically with the nature of the locality	<ul style="list-style-type: none"> Substation and other ancillary infrastructure will be sited sympathetically with the nature of the locality and away from major roads and residences where possible to mitigate visual impact. The majority of electrical connections within the site (i.e. cables between the turbines) have been designed to be located underground (where possible), in order to further 	Proponent	✓	✓	

Item	Impact	Objectives	Mitigation Task	Responsibility	Project Phase		
					C	O	D
			reduce potential visual impacts.				
1.07	Visual impact from contrast between site infrastructure and the rural landscape	Select appropriate materials and colours	Appropriate materials and colours, together with consideration of their reflective properties, will be selected for ancillary structures and built elements associated with the Proposal.	Proponent	✓		
2.0	Noise						
2.01	Construction Noise	Minimise noise impact on receivers	Construction and decommissioning activities will be carried out within the following periods only: <ul style="list-style-type: none"> Monday – Saturday– 6am to 6pm, No work or deliveries will be carried out on Sundays and public holidays, except for the following activities, associated with the construction and decommissioning, which may need to occur outside standard working hours such as: <ul style="list-style-type: none"> delivery of oversize loads or materials as requested by Police or other authorities for safety reasons; completion of concrete pouring past the standard hours of work due to climatic considerations; Any works that do not cause a noise nuisance at nearby dwellings; Emergency work to avoid injury, property damage and/or to prevent environmental harm. 	Contractor	✓		✓
2.02	Construction Noise	Minimise noise impact on receivers	In accordance with the, <i>Environmental Protection Policy (Noise) 2008</i> and relevant Local Laws; all the feasible and reasonable standard work practices would be employed to minimise construction noise impacts	Contractor	✓		✓
2.03	Construction Noise	Minimise noise impact on receivers	Notification and ongoing consultation with potentially affected receivers will be carried out, especially where potentially noisy works are anticipated.	Proponent and Contractor	✓		✓
2.04	Noise from Construction Traffic	Minimise noise impact on receivers	The timing of deliveries will be regulated and notification to residents carried out when deliveries of large loads are scheduled.	Proponent and Contractor	✓		✓
2.05	Construction Noise	Minimise risk	Construction plant will be selected on the basis of low inherent potential to generate noise and vibration. Regular and ongoing	Contractor	✓		✓

Item	Impact	Objectives	Mitigation Task	Responsibility	Project Phase		
					C	O	D
			maintenance of plant equipment and machinery will be undertaken to ensure operational noise do not exceed typical levels.				
2.06	Construction Noise	Minimise noise emission from construction plant	Construction vehicles will be fitted with mufflers and low noise emission reversing alarms.	Contractor	✓		✓
2.07	Construction and Operational Noise	Management of Noise Impacts	Establishment of Complaints Hotline to allow affected residents to register noise complaints and response within reasonable timeframe	Proponent	✓	✓	✓
2.08	Construction Noise	Monitoring of noise levels at affected receivers	When noise complaints are received, the affected resident will be contacted to identify the source of noise and any remedial measures that may be required.	Proponent and Contractor	✓		✓
2.09	Operational Noise	Manage noise impact on specific Receiver/s	Augment existing buildings to alleviate noise and ensure compliance with relevant noise policy base criterion (if required)	Proponent		✓	
2.10	Operational Noise	Reduction of turbine numbers as required to ensure compliance with noise criteria	The wind farm layout will be determined by the chosen turbine model. Turbine locations will be removed from the layout in the vicinity of any residence where necessary to achieve compliance with the relevant noise policy base criterion if required.	Proponent	✓	✓	
2.11	Operational Noise	Monitor compliance with noise criteria	Within the first twelve months of operation, monitoring of wind farm noise emissions would be undertaken at representative residences including the closest non-involved residences to assess compliance with noise criteria. The monitoring will cover all prevailing wind conditions.	Proponent		✓	
2.12	Operational Noise	Address any non-compliance with noise criteria	Where operational noise monitoring indicates the Proposal exceeds noise limits set in the development approval conditions, the following noise mitigation measures shall be implemented: <ul style="list-style-type: none"> • using active noise control functions of turbines; • rectify any manufacturing defects or control settings so that noise can be reduced to be in accordance with the 	Proponent		✓	

Item	Impact	Objectives	Mitigation Task	Responsibility	Project Phase		
					C	O	D
			<p>contracted specifications; or</p> <ul style="list-style-type: none"> if excesses still occur, acoustic treatment of non-involved receiver dwellings. 				
2.13	Operational Noise	Monitoring the effectiveness of operational noise mitigation measures	Should any of the measures in item 2.12 be adopted, their effectiveness will be verified through noise monitoring during the first 12 months of operation.			✓	
3.0	Flora and Fauna						
3.01	Reduction in local biodiversity	Protect and conserve areas of high conservation value	<p>At the design stage:</p> <ul style="list-style-type: none"> Infrastructure will be micro-sited in areas of least ecological significance with site-specific input from fauna and vegetation ecologists. Location of infrastructure in areas of important habitats and conservation significant flora will be avoided in the first instance. Clearing is limited to the development footprint Aligning access tracks and cabling along existing tracks Clearing of overstorey and mature and native riparian vegetation will be minimised. Infrastructure will be preferentially sited in previously cleared and disturbed areas. Access track widths will be kept to a minimum wherever practicable, and when in areas containing rare and threatened plants. Detailed hollow-bearing tree surveys will be undertaken in areas of woodland where hollow-bearing trees may be removed, with the results used in micro-siting infrastructure to avoid trees where possible and provide buffers around trees identified as having significance. A detailed management plan for the removal of hollow-bearing trees will be prepared by an ecologist to minimise impacts to resident fauna. Threatened Plant Management Plan to be developed including strategies for translocation or propagation and planting where removal can not be avoided 	Proponent	✓		

Item	Impact	Objectives	Mitigation Task	Responsibility	Project Phase		
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			<ul style="list-style-type: none"> • Identification of rare and threatened plants in areas to be cleared prior to vegetation removal. 				
3.02	Reduction in local biodiversity from the construction footprint	Minimise extent of construction impact and ensure vegetation integrity and connectivity	<p>Impact areas would be minimised through the following measures:</p> <ul style="list-style-type: none"> • where possible, cabling would be laid underground, within or adjacent to the road corridor to minimise additional impacts; • where required, cabling in drainage lines would be underbored. If underboring is not feasible, rehabilitation and stabilisation works would be undertaken immediately following works within drainage lines; • trenches would be filled as soon as possible; • any trench left open overnight would be adequately covered or inspected at first light for any trapped fauna which should be released in an appropriate location nearby; • disturbance would be kept to a minimum at creek crossings; • appropriate erosion and sedimentation controls would be put in place prior to works, particularly when working in or near drainage lines; • creek works would not be undertaken when rain is forecast and would be avoided where possible when there is flow; • materials laydown and stockpiling would make use of existing areas of disturbance or other areas of low biodiversity value, where possible; • all construction vehicles will be restricted within the construction zones; • care is to be taken when working within drip lines and within proximity to tree roots in order to prevent damage; • all onsite staff are to undergo a site induction which covers the sensitivity of the surrounding flora and fauna; • areas proposed for construction are to be inspected for wildlife prior to the commencement of works. Any species 	Proponent and Contractor	✓		

Item	Impact	Objectives	Mitigation Task	Responsibility	Project Phase		
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			<p>found should be relocated by a trained wildlife handler; and</p> <ul style="list-style-type: none"> • revegetation of areas not required for further construction and operation will be undertaken to maximise seasonal growth and establishment of plantings in accordance with a site-specific Rehabilitation Plan which includes monitoring to assess the success or otherwise of such works 				
3.03	Reduction in local biodiversity through loss of habitat	Retain habitat and biodiversity elements	<p>Habitat elements and biodiversity will be retained through the following measures:</p> <ul style="list-style-type: none"> • Wildlife spotter-catcher engaged to oversee construction work at each site where clearing of vegetation (such as mature tress and hollows) is required to ensure relocation of any fauna is undertaken where possible; • Consideration to staged clearing to allow fauna adequate time to relocate; • Creation of artificial habitats adjacent to sites and identification of a appropriate release areas; • impacts to hollow-bearing trees that have not been specifically identified for removal would be avoided; • fallen timber would be left in place or moved to a nearby area to retain fauna habitat (without increasing fire hazards); • where rocky outcrops could not be avoided, a preclearance survey would search and relocate captured reptiles; • rocks would be placed in nearby areas, in consultation with an ecologist; • instream habitat along creeklines such as snags, bedrock and emergent vegetation would be retained, avoided or relocated as a last option. 	Proponent and Contractor	✓	✓	✓
3.04	Reduction in local biodiversity through introduction and spread of noxious weeds	Control the introduction and/or spread of noxious weeds	<p>Introduction and/or spread of noxious weeds would be controlled through the following measures:</p> <ul style="list-style-type: none"> • noxious weeds within the development envelope would be controlled according to Weed and Pest Management Plan and other control plans and measures recommended by the Tablelands Regional Council; 	Proponent and Contractor	✓	✓	✓

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			<ul style="list-style-type: none"> • A regulated weed washdown bay for machinery and vehicles will be constructed and maintained at the entrance to the project area, and noxious weeds currently lining the access, controlled and eradicated prior to construction commencing; • Pre-construction and post-construction weed survey to identify location and severity of weeds within development footprint; • where a specific weed risk has been identified, all machinery, equipment and vehicles are to be inspected and washed down as required before entering and leaving the project site; • soil from soil disturbance and vegetation clearance which may contain exotic species will be placed at least 50 m away from any water source; • weed-contaminated soil will not be allowed into the project site for fill or other purposes; • topsoil that is limited in weeds and harvested to salvage the native soil seed bank will be used to reintroduce the seed bank back into disturbed areas; • onsite staff and contractors will be educated on noxious weeds occurring at the site and ways to prevent their spread; • revegetation will be carried out using locally native endemic species characteristic of the cleared vegetation type; • control of perennial weed grasses within the disturbance zone will be carried out yearly after construction or earlier if growth and population size exceeds an area rendering control difficult; 				
3.05	Reduction in local biodiversity through degradation of disturbed areas	Progressively rehabilitate disturbed areas	<ul style="list-style-type: none"> • Rehabilitation would be undertaken progressively in all areas disturbed by the works. • Local native species would be sourced for all revegetation works within native vegetation. Selected species would be common to the vegetation community in which works occur and may include rare and threatened plant species 		✓		

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			<ul style="list-style-type: none"> Re-use of topsoil and matter from the upper horizon will be used, where practical, to assist the natural regeneration process. Seed collection of plant species from localised provenance prior to vegetation clearing to accumulate suitable stock for rehabilitation work 				
3.06	Reduction in local biodiversity through impact on the aquatic environment	Manage potential impacts on creeks	<p>Upgrades to existing creek crossings would be designed in accordance with Queensland Urban Drainage Manual and Far North Queensland ROC Development Manual; and</p> <p>Disturbed bank areas will be rehabilitated using native species only as soon as practical after completion of construction.</p>		✓		
3.07	Reduction in regionally and nationally significant species	Threatened Species Management	<p>A Threatened Species Management Plan (TSMP) will be prepared to describe measures that will minimise impacts on significant species (such as Quolls) throughout the area during all project phases. The TSMP will incorporate provisions for the following:</p> <ul style="list-style-type: none"> pre-clearance surveying and monitoring; handling and relocation of wildlife (if found); regular site inspections for injured/damaged species; consultation with local government, DERM, SEWPAC and other relevant stakeholders regarding the implementation of management strategies; rehabilitation of areas of high significance; monitoring and control programme of predator species to contain predation of susceptible species; 	Proponent and Contractor	✓	✓	✓
3.08	Bird and Bat Mortality Monitoring	Monitoring of Bird and Bat Strike	<p>An adaptive management monitoring program for the mortality of birds and bats resulting from barotrauma or rotor strike would be prepared and implemented. This would include:</p> <ul style="list-style-type: none"> A more intensive period of monitoring in the first year of operation as birds and bats are in the process of habituating to the new development and sensitive species may experience higher levels of mortality during this period; Surveys will include regular carcass searches, bird and bat utilisation surveys, observation of bird avoidance/diversion 	Proponent in consultation with technical specialists		✓	

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			<p>behaviour and targeted surveys for species of concern.</p> <ul style="list-style-type: none"> • Surveys will representatively sample the habitat and topography in which turbines are located. • Surveys will sample weather conditions, particularly periods of heavy fog. The monitoring program will include identification of key 'at risk' species with an indication of what would constitute an unacceptable collision event frequency. These will include: <ul style="list-style-type: none"> • searches for breeding activity and movements to the escarpment. • monitoring during 'high risk' periods, when these species may be moving through or foraging in the area. • Reporting will be undertaken to identify any trends in the data and recommend management actions. These recommendations will include the intensity and duration of ongoing surveys as required. • The monitoring program will include a set of feasible management measures that can be implemented to reduce collision risks, if required. 				
3.09	Reduction in local biodiversity	Management of biodiversity during decommissioning	<ul style="list-style-type: none"> • A biodiversity assessment will be undertaken prior to decommissioning, to update the knowledge of site attributes and evaluate specific impact types (given the life span of the project is in the order of 30 years). • Relevant mitigation measures implemented during the construction phase to contain impacts would also be applied to decommissioning works. • New measures to avoid and mitigate impacts will be developed depending on the results of the assessment. 	Proponent in consultation with technical specialists		✓	✓
4.0	Indigenous Heritage						
4.01	Damage or disturbance to sites or items of Indigenous heritage significance	Minimisation of potential impacts on sites or items of potential indigenous heritage significance	<p>While no sites have been found to occur to date within the project area, the assessment of likely occurrence is moderate and as such, a strategy of avoidance of impacts will be adopted.</p> <p>In regard to the previously recorded Aboriginal objects</p>	Proponent and contractor in consultation with technical specialists and	✓		

Item	Impact	Objectives	Mitigation Task	Responsibility	Project Phase		
					C	O	D
			identified in previous studies which are located within the study area, but outside areas of proposed impact, these areas will be avoided during construction, operation and decommissioning of the wind farm. Steps will be taken to ensure that inadvertent impacts to these locales do not occur.	the local Aboriginal Community			
4.02	Damage or disturbance to sites or items of Indigenous heritage significance	Minimisation of potential impacts on sites or items of potential indigenous heritage significance	Ground disturbance impacts associated with the Proposal will be kept to a minimum and that areas of work will be defined so as to ensure as little impact as possible to objects of Aboriginal cultural and heritage value which may occur on site.	Proponent and Contractor	✓		
4.03	Damage or disturbance to sites or items of Indigenous heritage significance	Assess the potential Indigenous heritage impacts in development areas which have not been previously assessed	Additional archaeological assessment will be conducted in any areas proposed to be disturbed which have not been surveyed during the assessment completed to date prior to work commencing.	Proponent in consultation with Technical Specialists	✓		
4.04	Damage or disturbance to sites or items of Indigenous heritage significance	Minimisation of potential impacts on sites or items of potential indigenous heritage significance	In consultation with an archaeologist, the relevant Aboriginal communities, an Indigenous Heritage Management Plan (IHMP) will be prepared as a component of the CHMP to document the procedures to be followed for impact avoidance or mitigation to ensure that all recorded Aboriginal objects identified in previous studies, which are located in the development envelope, but outside areas of proposed impact, are avoided during construction and operation of the wind farm.	Proponent in consultation with Technical Specialists	✓	✓	
4.05	Damage or disturb areas/items of Indigenous Heritage	Management of undiscovered items of Aboriginal and/or archaeological significance	If during the course of the construction works any items of aboriginal cultural heritage or significance (i.e. archaeological items) are uncovered, works shall cease (within vicinity to the item) and DERM notified of the findings. An appropriate assessment and salvage strategy will be determined and implemented prior to the recommencement of construction works within the area. Should human remains be found during the proposed earthworks works will cease and the police notified immediately.	Contractor in consultation with the Proponent and DECCW	✓		✓
4.06	Damage or disturb	Management of	Personnel involved in the construction management phases of	Proponent and	✓		

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	areas/items of Indigenous Heritage	Aboriginal Cultural Heritage	the project will be trained in procedures to implement recommendations relating to cultural heritage where necessary.	Contractor			
5.0	European Heritage						
4.07	Damage or disturb areas/items potentially involving unexploded Ordnance	Management of European History (specifically World War II)	<ul style="list-style-type: none"> Prior to construction, undertake an investigation of presence of unexploded ordnance within the project site in accordance with Department of Defence and DERM requirements Undertake remediation measures in accordance with findings of the investigation report Personnel involved in the construction phase of the project will be trained in appropriate procedures to report findings of UXO which include: <ul style="list-style-type: none"> Ensuring the object is left in situ; Marking the general area to ensure no further disturbance can occur; Note appearance, dimensions and location of object; Notify the police immediately 	Proponent and Contractor	✓		
	Damage or disturbance to sites and areas of European Cultural Heritage	Minimisation of potential impacts on sites or items of potential european heritage significance	Ground disturbance impacts associated with the proposal will be kept to a minimum and that areas of work will be defined so as to ensure as little impact as possible to objects of European cultural and heritage value which may occur on site.	Proponent and Contractor	✓		
	Damage or disturbance to sites or items of European heritage significance	Assess the potential Indigenous heritage impacts in development areas which have not been previously assessed	Additional archaeological assessment will be conducted in any areas proposed to be disturbed which have not been surveyed during the assessment completed to date prior to work commencing.	Proponent in consultation with Technical Specialists	✓		
	Damage or disturbance to sites or items of European heritage significance	Minimisation of potential impacts on sites or items of potential indigenous heritage significance	Prepare CHMP to document the procedures to be followed for impact avoidance or mitigation to ensure that European objects found during investigations are avoided during construction and operation of the wind farm.	Proponent in consultation with Technical Specialists	✓	✓	

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	Damage or disturb areas/items of European Heritage	Management of undiscovered European Cultural Heritage	If during the course of the construction works any items of European cultural heritage or significance (i.e. archaeological items) are uncovered, works shall cease (within vicinity to the item) and DERM notified of the findings. An appropriate assessment and salvage strategy will be determined and implemented prior to the recommencement of construction works within the area.		✓		
5.0	Traffic and Transport						
5.01	Adverse impact on local and regional traffic during the construction and decommissioning phases	Minimisation of impact to local and regional traffic	<ul style="list-style-type: none"> • Large oversize materials would be transported overnight to reduce impacts on road network (subject to DTMR approval). • No oversize or large trucks associated with the construction would operate on the Kennedy Highway or Channel/Springmount Roads during the school bus hours of 7:30am and 8:50am, and between 2:30pm and 4:30pm on school days. • Once more detail is known about the exact type of transport vehicles and routing for the delivery of turbine components to site, more detailed swept path analysis would be undertaken along the truck route to identify any road widening and road furniture relocation works that may be required. 	Contractor in consultation with Traffic Management Specialists, RTA and ULSC	✓		✓
5.02	Traffic safety risks from construction vehicles	Minimise traffic safety risks from movement of construction vehicles	<ul style="list-style-type: none"> • upgrade Kippen Drive and Springmount Road intersection, to accommodate oversize vehicles during the construction phase. • Upgrade of Kippen Drive to a standard required to accommodate expected vehicle types; • Traffic controllers on Kippen Drive and Springmount/Channel Road intersection will be provided to help assist large trucks exiting the site and manage any safety risks. Advance warning signs would be placed on each approach, 200 metres from the access road with "Prepare to stop" warnings when traffic controllers are present; • A relatively significant increase of traffic volume on Kippen 	Contractor	✓		

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			Drive, Channel and Springmount Roads could increase the risk of accidents with vehicles. Therefore, lower speed limits would be enforced on Springmount and Channel Roads and internal access roads at all times during construction.				
5.03	Damage to existing road infrastructure	Protect existing road infrastructure	<ul style="list-style-type: none"> Road and intersection conditions would be established by the use of field surveys and regular site inspections. When required, rehabilitation of the pavement and/or edges of seal, shoulders and verges would be carried out. At the completion of the works the access roads would be in the same or superior condition than at the commencement of the works; Regular road dilapidation surveys will be carried out during construction and decommissioning; Internal roads and turns in the project site are required to be widened up to 10m in order to transport the construction materials and the large turbines to the desired location, and will require surfacing upgrade through grading; and A procedure will be established to ensure the ongoing maintenance of access roads during the operation phase. 	Proponent / Contractor	✓	✓	✓
5.04	Amenity impacts from construction and operation traffic	Minimise potential amenity impacts from traffic from the Proposal	<ul style="list-style-type: none"> Procedures will be established to monitor traffic impacts on public and internal access tracks during construction, including noise, dust and travel times, and to implement modified work methods to reduce such impacts where possible. 	Proponent, Contractor and Technical Specialists	✓	✓	✓
5.05	Loss of internal access roads	Retain and handover internal access roads	Internal access roads will be retained and handed over to the landowners after decommissioning.				✓
6.0	Aeronautical						
6.01	Disruption of flight paths and local aeronautical	Minimise risk	<p>Prior to the commencement of construction and operation the following information shall be provided to the CASA and DoD:</p> <ul style="list-style-type: none"> as constructed coordinates in latitude and longitude of each 	Proponent in consultation with technical	✓		

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	activities		WTG (WGS84 or MGA94); <ul style="list-style-type: none"> final height of each WTG in mAHD; and elevation at the base of each WTG in mAHD. 	specialists			
7.0	Telecommunications						
7.01	Potential interference	Minimise potential of Proposal infrastructure to interfere with existing telecommunications facilities	Once the final models and locations of wind turbines are known, the locations of communications towers and requirements of licence holders will be confirmed and input into the micro-siting of individual turbines to minimise potential for telecommunications interference.	Proponent and Contractor	✓		
7.02	Prolonged Interference or disturbance of communication links	Manage and minimise impacts	At the commencement of operation, the Proponent shall offer to undertake a monitoring program of houses within 5km of the wind farm to determine any loss in television signal strength. If loss of signal occurs and the source of interference can be reasonably attributed to the Proposal, the Proponent shall put in place mitigation measures at each of the affected receivers in consultation and agreement with the landowners.	Proponent		✓	
8.0	Fire and Bushfire						
8.01	Bushfire risk during construction	Manage bushfire risk	A Bushfire Risk Management Plan will be prepared in consultation with the Rural Fire Service and QLD Fire and Rescue Service. The mitigation measures will include: <ul style="list-style-type: none"> Construction personnel will be inducted on bushfire risk management and other fire risks that could be present at the project site. On total fire ban days, restrictions will be placed on certain activities with the potential to cause fires. Basic fire fighting equipment at each active site will be provided, including fire extinguishers, knapsacks and other equipment suitable for initial response actions with a minimum of one trained person on-site. 	Contractor	✓	✓	✓
8.02	Bushfire risk during construction	Maintain coordination with RFS	The QFRS will be provided with the final wind turbine locations, ancillary infrastructure, construction work schedule and locations of additional water supplies for construction, potential landing pads for fire fighting aircrafts and helicopters and access gates for fire fighting services.	Proponent and Contractor	✓		

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8.03	Ignition of fire due to mechanical malfunction	Minimise risk	<ul style="list-style-type: none"> Dedicated monitoring systems (e.g. SCADA) enable wind turbines to be automatically shut down if ambient temperatures exceed the safe operating range, or if components overheat. Other remote alarming and maintenance procedures are required for electrical faults, which can still occur within the tower or nacelle and create a fire. Wind turbines will be shut down if directed by the QFRS in the event of nearby wildfire. 	Turbine Manufacturer		✓	
8.04	Spreading of fire away from wind farm infrastructure	Minimise risk	<ul style="list-style-type: none"> The substation would be surrounded by a gravel and concrete area free of vegetation to prevent the spread of fire from the substation and to reduce the impact of any bushfire on the structure. An Asset Protection Zone (APZ) would be maintained around the control room and substation buildings, compliant with the RFS guidelines. Areas around each WTG will be managed for fire risk (e.g. regular vegetation clearing and reduction of any fuel loads). 	Proponent and Contractor		✓	
8.05	Ignition of fire due to lightning strike on turbines	Minimise risk	Lightening arresters will be built into each of the turbines to minimise the potential impacts of fire caused by lightening.	Turbine Manufacture		✓	
8.06	Restricted movement of fire response vehicles and personnel	Manage fire vehicle movement	Access roads will be constructed and maintained with suitable width and specifications for the movement of fire management vehicles.	Proponent and Contractor	✓	✓	✓
9.0	Health and Safety						
9.01	Wind farm noise	Manage community concerns with respect to wind farm noise	The Proponent will establish a complaints management system to be implemented prior to the construction phase and maintained throughout the operation phase of the development to register noise and other health complaints and concerns about the Proposal from the community.	Proponent		✓	
10.0	Electromagnetic Fields						
10.01	Exposure to EMF	Minimise unnecessary exposure to EMF	To ensure there would be no unnecessary exposure to EMF from the Proposal, the following mitigation and management measures will be implemented:	Proponent and Contractor		✓	

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			<ul style="list-style-type: none"> electrical cables will be placed below ground where possible to shield electrical fields; wires will be bundled where possible to reduce the magnetic field emissions; appropriate security will be placed around emitting structures (e.g. substation) to restrict public access and limit potential exposure; and non-staff that need to go near the emitting structures will be accompanied by a trained and qualified staff member. 				
11.0	Water Quality						
11.01	Pollution or contamination of aquifers	Minimisation of pollution or contamination risk to surface and ground water quality	<p>An Erosion and Sediment Control Plan and Stormwater Management Plan will be prepared in line with the FNQROC Development Manual, Institute of Engineers Australia Queensland ESC Guidelines and Queensland Urban Drainage Manual, as part of the CEMP. Both the ESCP and SWMP will address the requirements for:</p> <ul style="list-style-type: none"> water retardation and diversion devices around construction areas, including devices to manage surface runoff from hardstand areas and surfaced access tracks; design of appropriately sized sedimentation basins to capture and treat runoff from construction areas; and monitoring and maintenance procedures for erosion and sediment control structures. 	Proponent and Contractor	✓		
11.02	Pollution or contamination of local water ways and aquifers	Minimising risk to groundwater quality and wind farm infrastructure	<ul style="list-style-type: none"> Where rock anchor foundations are the first choice solution but the resulting risks posed to groundwater could be too high as may be shown in detailed geotechnical studies, alternative footings such as gravity foundations will be designed and implemented. Suitable perimeter protection and bunding will be provided to the substation transformers to minimise the risk of transformer oil leaks or spills during operation and maintenance. 	Proponent in consultation with technical specialists, Contractors and Turbine Manufacturer	✓	✓	
11.03	Pollution of local water ways and aquifers	Minimising risk to groundwater quality	<ul style="list-style-type: none"> In the instance that belowground infrastructure intercepts the groundwater table, a suitable protective casing (for example a plastic pipe sleeve) would be used to pass 	Contractor and Proponent	✓	✓	✓

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			<p>through the ground water zone. This sleeve would allow the foundation/pile material to pass through and form a solid foundation without affecting the groundwater zone.</p> <ul style="list-style-type: none"> • Spill kits will be provided at or near the location of oil and fuel storage to contain potential spills and leaks. • Concrete and cement carrying vehicles will only be washed out in appropriate wash down facilities. • Hazardous material, waste and sewage will be managed in accordance with regulatory requirements. • Wastewater produced from temporary on site toilets during construction will be disposed off site. 				
11.04	Alteration to local hydrology	Minimising adverse impacts on local hydrology	<p>The construction of hardstands and sealed roads may cause minor alterations to drainage patterns due to localised reduction in infiltration resulting in increased runoff. The appropriate drainage structures and erosion controls will be incorporated in hardstands, access roads and tracks to manage run-off and reduce the risk erosion and scour from concentrated flows.</p> <p>Outlet structures will be designed in accordance with the DERM guidelines to minimise construction and operation impacts on watercourse and riparian corridors. Considerations include, but are not limited to:</p> <ul style="list-style-type: none"> ○ any stormwater outlets should aim to be 'natural', yet provide a stable transition from a constructed drainage system to a natural flow regime; ○ All ancillary drainage infrastructure, e.g. sediment and litter traps, should be located outside the riparian corridor. Runoff should be of an appropriate water quality and quantity before discharge into a riparian corridor or watercourse is allowed; ○ Discharge from an outlet should not cause bed or bank instability. 	Proponent, designers and Contractor	✓	✓	✓
11.05	Pollution or contamination of local water ways	Minimising pollution or contamination risk to surface water quality	<ul style="list-style-type: none"> • Except for drainage line crossings of access tracks and cable trenches, ground disturbance activities, including road construction and track upgrades and the excavation of footings for turbines, crane pads, control buildings and 	Contractor	✓	✓	✓

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			<p>substation, would be located away from natural drainage features where possible.</p> <ul style="list-style-type: none"> The storage of oils, fuels and other hazardous chemicals will be appropriately banded and located away from watercourses. All trenching works will be rehabilitated immediately following completion and works within drainage lines will be confined to a minimal timeframe to reduce the risk of release of discharge of and accidental spills of oil or fuel from construction plant. Any spoil stockpiles from foundation excavation and access road construction will be located away from drainage lines, natural watercourses, road surfaces and trees, Stockpiles will be protected against erosion and sedimentation until the material is carted away for reuse or offsite disposal. Stockpiles to be retained longer than four weeks on site will be stabilised. The extra width of construction roads not required for operational phase access will be stabilised and rehabilitated to reduce the extent of bare ground. Sediment and erosion controls during various phases of construction will be developed in accordance with the requirements of the Institute of Engineers Australia Queensland ESC Guidelines . Water quality and erosion and sedimentation control devices will be regularly inspected and maintained to ensure functionality. If erosion is detected as a result of inadequate maintenance of drainage control devices, remedial action will be carried out immediately to avoid reoccurrence of the event. 				
11.06	Pollution of local water ways	Manage the disturbance of riparian vegetation throughout the site	Any access tracks (with the exception of creek crossings) and all other works and disturbances will avoid any core riparian zone to avoid impacting on the integrity of the riparian corridors.	Proponent and Contractor	✓		✓
12.0	Soils and Landform						
12.01	Ground disturbance	Minimise alteration	<ul style="list-style-type: none"> Detailed geotechnical investigations would be undertaken 	Proponent and	✓		✓

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		to soils and landform especially where beneficial land use post-decommissioning may be restricted	<p>to assess ground conditions and determine the most suitable foundation design for the turbine sites;</p> <ul style="list-style-type: none"> The foundation design will consider the volume of excavation spoil that would be generated and any opportunities for reuse of the spoil in the construction of other site infrastructure and any constraints in stockpiling the material. Soil compaction resulting from vehicle access and laying of materials will be remediated after construction activities have been completed in the affected area. Where possible, access routes and tracks would be confined to already disturbed areas. 	Contractor			
12.02	Creation of unstable landforms and loss of topsoil from construction activities and infrastructure layout	Stabilise steep slopes	<ul style="list-style-type: none"> Subsoil would be separated from topsoil for reinstatement purposes. On steep slopes, topsoil would be stabilised; Any spoil stockpiles from foundation excavation and access road construction will be protected against erosion and sedimentation until the material is carted away for reuse or offsite disposal. Stockpiles to be retained longer than four weeks on site will be stabilised. 	Contractor	✓		
12.03	Soil Contamination	Manage any contaminated material from past land uses	<ul style="list-style-type: none"> The involved property owners will be consulted to identify any potential areas of contamination resulting from past land use. An unexpected finds protocol will be prepared to outline the procedures to manage any contamination identified or disturbed during excavation works. 	Contractor and Proponent	✓		
13.0	Waste						
13.01	Inefficient resource use and waste generation	Promote waste hierarchy	<p>Waste will be managed according to a Waste Management Plan based on the hierarchy principles of resource management as follows:</p> <ul style="list-style-type: none"> as a priority, unnecessary resource consumption will be avoided; avoidance will be followed by resource recovery (including reuse of materials, reprocessing, recycling, and energy recovery); and disposal will be undertaken as a last resort. 	Contractor and Proponent	✓	✓	

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13.02	Inefficient resource use	Promote efficient use of water and energy	Energy and water conservation will be promoted through training and use of appropriate signage.	Contractor and Proponent	✓	✓	
13.03	Missed opportunities for recycling and reuse	Maximise opportunities for recycling and reuse	<ul style="list-style-type: none"> Purchasing decisions will be made in consideration of recycled content and increased opportunities for reuse (for example, refillable printer cartridges). Cleared vegetation will be chipped and used as mulch for revegetation works where practical. Bins will be provided in construction and office areas for the collection and segregation at source of wastes and recyclables. 	Contractor and Proponent	✓	✓	
13.04	Potential contamination and OHS risk from improper waste disposal	Control waste disposal procedures	<ul style="list-style-type: none"> Liquid and solid waste generated from the wind farm will be classified and disposed of in accordance with a construction waste management plan. Any hazardous waste, including unwashed empty, containers will be stored in appropriate containers on site prior to collection by licensed contractors for disposal to a licensed facility. All noxious weeds and exotic plant species removed would be disposed of at a licensed facility. 	Contractor and Proponent	✓	✓	
13.05	Loss of amenity and potential contamination from waste generation	Minimise risks from waste generation and waste handling	<ul style="list-style-type: none"> All working areas will be kept free of rubbish and cleaned up at the end of each work day. Any contaminated waste will be contained then disposed of according to regulatory requirements. Waste generated outside of the project site will not be stored, treated, processed or disposed in the project site. 	Proponent and Contractor	✓	✓	
14.0	Community						
14.01	Regional community impacts as a result of the wind farm development,	Community enhancement and benefit	The Proponent is proposing to establish a Community Investment Fund and contribute to the fund each year. The fund would be maintained throughout the operational life of the project for investment in community infrastructure and	Proponent		✓	

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	operation and decommissioning.		services, sustainability initiatives, local economic and tourist developments, community groups and events etc.				
14.02	Community information and project knowledge	Dissemination of project information	With the exception of confidential documents, the Proponent will make all documents under this EA available for public inspection on request.	Proponent	✓	✓	✓
14.03	Community information and project knowledge	Dissemination of project information	Regular newsletters and newspaper articles will be disseminated to all relevant parties (including those who have registered as part of our community information sessions), together with website information regarding the progress of the application through to construction	Proponent	✓	✓	✓
14.04	Community information and project knowledge	Dissemination of project information	The Proponent will issue newsletters on a quarterly basis throughout the planning approvals and design phase providing information regarding the progression of the project. Detailed newsletters will also be prepared throughout the duration of the construction period up to the operational phase.	Proponent	✓	✓	
15.0	Land Use						
15.03	Risk of degradation of previously inaccessible environmentally sensitive areas	Minimise degradation of environmentally sensitive areas	Access to previously inaccessible environmentally sensitive locations will be restricted to landowners and authorised personnel only through measures such as the installation of lockable gates on access tracks;	Proponent in coordination with landowners	✓	✓	
15.04	Impact on amenity of residents and visitors to the area	Minimise visual, noise and traffic impacts	The design, construction, operation and decommissioning of the Proposal will incorporate the mitigation measures recommended in the visual, noise and other technical assessments so as to minimise any potential impacts on local amenity.	Proponent and Contractor	✓	✓	✓
16.0	Air Quality						
	Generation of fugitive dust	Monitor and minimise the generation of dust from ground disturbance, spoil stockpiles and construction traffic	<ul style="list-style-type: none"> • A Construction Dust Management Plan (CDMP) will be prepared as part of the CEMP. • Dust deposition gauges will be installed to monitor dust emissions and ensure emissions do not exceed 4 grams per metre squared per month, in accordance with DERM and WPH&S guidelines. • Dust levels will be visually monitored dust suppression (e.g., water sprays) would be implemented if required. • During dry and windy conditions a water cart or alternative 	Proponent and Contractor	✓		✓

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			chemical dust suppression will be made available and applied to access tracks and ground disturbance areas. <ul style="list-style-type: none"> Set appropriate speed limits for construction traffic on internal roads. 				