APPENDIX C UPDATED MITIGATION AND MANAGEMENT MEASURES

C1. UPDATED MITIGATION AND MANAGEMENT MEASURES

Environmental Aspect	Mitigation Measure	Responsibility	Stage
General	■ The Project will be designed and constructed in a manner as to minimise or mitigate harm to the environment as a result of the Project construction, operation or decommissioning through the implementation of all reasonable and feasible mitigation measures.	Proponent and Construction Contractor	Construction, Operation and Decommissioning
	<u>Environmental Management Strategy</u> An Environmental Management Strategy (EMS) will be developed to guide proposed activities associated with the construction, operation and decommissioning and rehabilitation of the Project. The EMS will: ■ provide the strategic framework for environmental management of the Project; ■ identify statutory approvals required to be obtained for the Project; ■ define the roles, responsibilities, authority and accountability of all key personnel involved in environmental management for the Project; ■ describe stakeholder and community engagement measures to be implemented, including: – measures to inform the local community and relevant stakeholder regarding the environmental performance of the Project; – procedures for the receipt handling, response and recoding of complaints; – dispute resolution procedures; – non-compliance response procedures; and – and emergency response procedures; ■ include management plans as detailed below; and ■ include a plan depicting any monitoring to be carried out.	Proponent and Construction Contractor	Construction, Operation and Decommissioning
Biodiversity	<u>Biodiversity Management Plan</u> A Biodiversity Management Plan will be prepared for the Project, in consultation with BCD and for approval by DPIE, including an unexpected finds procedure. The procedure will describe the process for identifying, dealing with, and managing any unexpected threatened flora species found during the construction process. The Biodiversity Management Plan will include: ■ A Biodiversity Offset Strategy that will be prepared and implemented in accordance with the requirements of the BC Act and the EPBC Act Offsets Policy; ■ A Bird and Bat Adaptive Management Plan that will be prepared for the Project in consultation with BCD and for approval by DPIE prior to the commissioning of any WTGs; and	Proponent and Construction Contractor	Construction, Operation and Decommissioning

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ A Weed Management Plan will be prepared and implemented as part of the EMS to implement weed control and weed disposal in accordance with Biosecurity protocols. As identified in the BDAR and RTS, other matters that will be incorporated into the Biodiversity Management Plan include: ■ weed management and frog hygiene requirements in consultation with NPWS and EES; ■ plans for the Development Footprint and adjoining area showing updated and current extent of native vegetation, flora and fauna habitat, threatened species and threatened ecological communities and measures to minimise impacts to these features; ■ plans showing areas to be cleared and areas to be protected, including exclusion zones and protected habitat features, and areas for native vegetation rehabilitation or re-establishment. This will be key to minimising impacts to Koala and Spotted-tailed Quoll; ■ mapping and identification of individual tree hollows and termite mounds and measures to minimise impacts to these features; ■ protocols for communicating biodiversity features to the design team during any turbine micrositing and design refinements to minimise and avoid impacts; ■ pre-clearing protocols, including pre-clearing inspections, establishment of exclusion zones and on-ground identification of specific habitat features to be retained and/ or relocated; ■ vegetation clearing protocols, including staged habitat removal (including of Wombats, Koalas, and other fauna) and any specified seasonal limits on clearing activities; ■ protocols for the salvage and relocation of woody debris, tree hollows and bush rock; ■ requirements for temporary fencing to minimise the risk of fauna injury / mortality due to vehicle strike or entrapment in deep excavations; ■ proposed temporary measures for maintaining habitat connectivity for Koala and other fauna during construction; ■ fauna handling and unexpected threatened species finds procedures; ■ rehabilitation, revegetation, reuse of soils and other habitat management actions; ■ weed, pest and pathogen management requirements; ■ monitoring during construction and post-construction; and ■ adaptive management measures to be applied if monitoring indicates unexpected adverse impacts.		
	<u>Biodiversity mitigation measures for the Project include:</u> ■ the Proponent will implement reasonable and feasible measures to further minimise the clearing of native vegetation within the Development Footprint;	Proponent and Construction Contractor	Pre-construction, Construction, Operation and Decommissioning

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ a pre-construction clearing survey is to be carried out to confirm the presence/absence of threatened flora within lands that have not been surveyed within and adjacent to the Development Footprint to ensure compliance with worst case assessment undertaken; ■ continuing to assess biodiversity impacts on detailed final design; and ■ rehabilitation of all areas subject to temporary clearing within the Development Footprint.		
	<u>Impacts to native vegetation, threatened ecological communities and habitat for threatened species</u> **ID:** B5 **Project Component:** Entire development footprint ■ Opportunities to further minimise impacts to native vegetation will continue to be explored during the detailed design. This will include measures to minimise the construction footprint and clearing requirements with a particular focus on the protection of hollow bearing trees and fauna movement corridors. Upon final design and an understanding of detailed impact, a Biodiversity Management Plan would be prepared and implemented. The Biodiversity Management Plan will address terrestrial and aquatic matters by including: ■ Plans for the development footprint and adjoining area showing updated and current extents of native vegetation, flora and fauna habitat, threatened species and threatened ecological communities and measures to minimise impacts to these features; ■ Plans showing areas to be cleared and areas to be protected, including exclusion zones and protected habitat features, and areas for native vegetation rehabilitation or re-establishment. This will be key to minimising impacts to Koala and Spotted-tailed Quoll; ■ Mapping and identification of individual tree hollows and termite mounds and measures to minimise impacts to these features; ■ Protocols for communicating biodiversity features to the design team during any turbine micrositing and design refinements to minimise and avoid impacts; ■ Pre-clearing protocols, including pre-clearing inspections, establishment of exclusion zones and on-ground identification of specific habitat features to be retained and/ or relocated; ■ Vegetation clearing protocols, including staged habitat removal (including of wombats, Koala, and other fauna) and any specified seasonal limits on clearing activities; ■ Maintaining areas of habitat connectivity for as long as is practicable through or around the construction area; ■ Maintaining isolated paddock trees within the development footprint where possible to provide refuge to locally occurring fauna species (incl. Koala); ■ Protocols for the salvage and relocation of woody debris, tree hollows and bush rock;	Pre-construction / construction	Contractor

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ Requirements for temporary deterrent fencing, signage and/or requirements to modify driver behaviour and regular visual inspections to minimise the risk of fauna injury / mortality (particularly Koala and Spotted Tailed Quoll) due to vehicle strike or entrapment in deep excavations, with details to be developed during the preparation of the BMP; ■ Opportunity for egress to any species that may become trapped in any open excavation in the form of graded exits or tools to support climbing out; ■ Fauna handling and unexpected threatened species finds procedures; ■ Procedures detailing the management of pathogens such as chytrid fungus; ■ Rehabilitation, revegetation, reuse of soils and other habitat management actions; ■ Limit construction and operational traffic speed limits to minimise the potential for vehicle strike, and include sufficient signage on potential presence of threatened fauna species; ■ Ensure construction and operation personnel are educated on the presence of fauna such as Koala and Spotted-tailed Quoll in the locality, how to manage potential interactions, and to be aware of the potential for vehicle strikes when driving through the sites (particularly after dark); ■ Weed, pest and pathogen management requirements; ■ Monitoring during construction and post-construction; ■ Adaptive management measures to be applied if monitoring indicates unexpected adverse impacts; and ■ Establishment of Biodiversity Stewardship sites on neighbouring properties. Operational measures to minimise the ongoing impact of the project to threatened fauna will be implemented as part of an operational component of the Biodiversity Management Plan, and will include: ■ Revegetation with Koala feed tree species where appropriate; ■ Design of operational fencing layout to ensure fauna (incl Koala and Spotted-tailed Quoll) can continue to move through the landscape, and if they enter the wind farm are able to self-relocate back into surrounding landscape by providing egress opportunities. Ensure fauna are prevented from accessing higher traffic areas or other potentially hazardous area, and are funnelled towards areas of potential habitat rather than towards the operational wind farm, or into dead-ends and bottle-necks; ■ Installation of glider poles for glider species in areas where the width of the transmission line easement exceeds minimum requirements for species movement; and ■ Establishment of Biodiversity Stewardship sites on neighbouring properties.		

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	Impacts to National Park estate **ID:** B9 **Project component:** Wind farm corridor An appropriate buffer will be maintained to National Park estate where practicable and as assessed in the revised BDAR in Appendix D. Implementing vegetated buffers between the access tracks and wind turbine pads and the National Park estate is to be considered during detailed design. The selection of areas of buffer plantings and species to be planted will be carried out in consultation with the Area Manager, Barrington Tops National Parks and Wildlife Service. The Erosion and Sediment Control Plan will include specific actions to identify sensitive receptors associated with the National Park estate, including waterways and the adjacent Sphagnum Moss TEC.	Pre-construction	Proponent
	Impacts of wind turbine strikes on protected animals **ID:** B13 **Project Component:** Wind farm corridor Operational management measures specific to the wind turbines will be implemented. These are described in Section 8.9.1 of the updated BDAR in Appendix D of the RTS. Bird and bat activity within the site is generally concentrated around areas of vegetation. A minimum safe distance of 30 m will be maintained from the turbine blade tip to the adjacent tree canopy to minimise any risk of bird or bat strike. Additional surveys for large forest owls (equating to that required for a 90% probability of detection) will be conducted, or an expert report be obtained, to confirm the presence or absence of large forest owls.	Pre-construction, post-construction	Proponent
	Impacts to water quality and hydrology **ID:** B16 **Project Component:** Entire development footprint The Biodiversity Management Plan will include: ■ measures for the management and monitoring of surface water quality and hydrology during construction, as applicable to the protection of biodiversity values; ■ any requirements for the management of potential acid sulphate soils or contaminated lands during construction so as to minimise impacts to terrestrial and aquatic habitats; and	Construction and operation	Contractor/ Proponent

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ construction surface water quality monitoring to minimise impacts to surface water quality including to prevent indirect impacts to waterways potentially supporting Booroolong Frog surrounding the development footprint, waterways that traverse the National Park estate and the location of the Sphagnum Moss TEC in Ben Halls Gap Nature Reserve.		
	<u>Fauna injury / mortality</u> **ID:** B19 **Project Component:** Entire development footprint The Biodiversity Management Plan will include the following to minimise and manage any risk of fauna injury mortality during construction: ■ Strategies for fauna management during construction including any identification roles, responsibilities and contingency measures such as temporary stop works and engagement of fauna specialist; ■ Requirements for temporary deterrent fencing, signage and/or requirements to modify driver behaviour and regular visual inspections to minimise the risk of fauna injury / mortality (particularly Koala and Spotted Tailed Quoll) due to vehicle strike or entrapment in deep excavations, with details to be developed during the preparation of the BMP; ■ Opportunity for egress to any species that may become trapped in any open excavation in the form of graded exits or tools to support climbing out; and ■ Pre-clearing protocols, including pre-clearing inspections, establishment of exclusion zones and on-ground identification of specific habitat features to be retained and/ or relocated. For example, occupation surveys for wombat burrows, application of exclusion measures / deterrents prior to vegetation clearing / earthworks, works undertaken in presence of spotter / catcher. ■ Protocols for fauna handling and management of adverse incidents; and ■ Fauna monitoring and management protocol including identification and reporting of fauna mortalities to the relevant Biodiversity Conservation Division office.	Construction	Contractor
	<u>Impacts to habitat connectivity</u> **ID:** B20 **Project Component:** Entire development footprint The following opportunities will be fully explored as a part of the detailed design: ■ Opportunities to further minimise the disturbance footprint and clearing within important movement corridors for fauna;	Proponent	Pre-construction

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ Opportunities for post-works restoration of habitat connectivity within important movement corridors for fauna; ■ Areas subject to temporary disturbance will be rehabilitated using a native species planting schedule as much as practical considering any operational and safety constraints; and ■ The total area exposed and cleared at any one time will be minimised and planned to allow for fauna movement during construction and periods of temporary disturbance.		
	<u>Impacts to habitat connectivity</u> **ID:** B21 **Project Component:** Transmission line The following measures be implemented post-construction to minimise impacts to flora and fauna within the transmission line easement: ■ Promotion of the growth of vegetation under the transmission line to the maximum allowable height to maintain habitat connectivity for fauna; ■ Management of understorey vegetation in easements to maintain composition and quality and to prevent weed invasion; and ■ Installation of glider poles for glider species in areas where the width of the transmission line easement exceeds minimum requirements for species movement.	Proponent	Post-construction
	<u>Operational turbine specific mitigation measures</u> ■ Mitigation measures for all turbines to ensure impacts associated with bird and bat blade strike are minimised: – development of a Bird and Bat Adaptive Management Plan (BBAMP) in conjunction with BCD to be implemented throughout life of Project; – intensive monitoring period for the first six months of operation to be outlined in the BBAMP, followed by regular bird and bat monitoring/mortality surveys for the life of the wind farm at frequencies based on the findings of each survey period and adaptive management strategy detailed in the BBAMP. The use of detection dogs during carcass surveys will be investigated and employed if found to be suitable and appropriate; – investigation into the need for, and effectiveness of, appropriate low wind speed operational curtailment strategies, that may include measures such as prevention of blade rotation prior to electricity generation cut-in speeds, and/or increased night time cut-in speeds; – research into the bat and bird deterrent systems and associated reduction of impacts, to establish whether implementation at the Project would be effective and	Proponent and Construction Contractor	Operation

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	practicable with the goal of integrating into BBAMP for re-evaluating turbine risk levels if proven effective; – regular ongoing maintenance of rotor blades to improve ultrasonic bounce-back enabling microbat avoidance; – installation of lighting schemes that minimise insect attraction to turbines within rotor swept height; – commitment to provision of data from ongoing bird and bat monitoring surveys and effectiveness of BBAMP to specialist research entities who are prepared to enter into appropriate agreements with the Project; and – frequency of bird and bat monitoring/mortality surveys will be developed in consultation with, and in accordance with, any BCD requirements, as part of the preparation and development of the BBAMP. Ongoing and potential timing amendments to monitoring will include inspections and reporting continued for the life of the wind farm, at intervals determined by the results of previous monitoring and in accordance with the BBAMP; ■ Turbines proximal to microbat roosting/breeding habitat - WP50: – disturbance to roosting microbats as a result of ground vibration during breeding season (November to February) or winter torpor season (May to September) will be avoided and minimised as far as practicable; – additional low wind speed seasonal curtailment strategy with increased night-time cut-in speeds will be implemented; and – increased frequencies of bird and bat monitoring/mortality surveys for at least months 7-30 of operation. Following which, the results will determine the frequency with which surveys will be ongoing and detailed in the BBAMP; ■ Additional mitigation measures for moderate risk turbines: – increased frequencies of bird and bat monitoring/mortality surveys for at least months 7-18 of operation. Following which the results will determine the frequency with which surveys will be ongoing, and the requirement of any adaptive management strategies; and – potential implementation of seasonal low wind speed curtailment strategies dependent on the results of ongoing monitoring.		
Noise	<u>Noise Management Plan and Mitigation Measures</u> A Noise Management Plan will be prepared and implemented incorporating the mitigation and management measures outlined below: ■ Construction works will be restricted to the hours between 7am and 6pm Monday to Friday, and between 8am and 1pm on Saturdays. No construction activities will be undertaken on Sundays or NSW public holidays;	Proponent and Construction Contractor	Construction and Operation

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ Works carried outside of these hours will only entail: – works that do not cause noise emissions above 35 dB(A) at any nearby dwellings not located on the site; or – the delivery of materials as requested by Police or other authorities for safety reasons; or – emergency work to avoid the loss of lives, property, and/or to prevent environmental harm; or – works where the Proponent demonstrates and justifies a need to operate outside the recommended standard hours, in agreement with DPIE; ■ If any other works are required outside of the specified hours, they will only be carried out with the prior consent of the relevant authority: – fixed noise sources, such as crushing and concrete batching plant, will be located at the maximum practicable distance to the nearest dwellings, and where practicable, use existing topography to block line of sight between the fixed noise source and the dwelling; – given the range of factors associated with both the generation and control of blasting, in the event that blasting is necessary, a monitoring regime will be implemented to ensure compliance with the blasting criteria detailed in the Noise and Vibration Impact Assessment; and – a curtailment regime will be implemented during Project operations in order to ensure the noise from the wind farm can practically achieve the noise criteria at all dwellings and under all wind speeds. The curtailment regime involves operating selected turbines in a noise reduced mode at the wind speeds where the predictions indicate that the criteria will be exceeded, as detailed in the NVIA; ■ An updated noise assessment will be provided for the final layout and turbine model, prior to construction. This final assessment will detail the noise levels at residences and the curtailment strategy (wind speeds directions and noise reduced mode for each turbine) to ensure the criteria are achieved. It will also incorporate a method of reporting to demonstrate that the modes have been implemented; and ■ Operational noise monitoring will be undertaken as required to confirm compliance with project noise limits at relevant receivers.		

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Landscape and Visual	■ **Screen Planting** will be implemented where non-associated residences are subject to a high level of visual impact, as an option proposed to assist in mitigating views of turbines from residential properties. Where road upgrades are expected to require the removal of vegetation close to or on private property, the relevant landowners will also be offered suitable landscape screening to offset any increased visual exposure. In order to achieve visual screening planting between the intrusive element and the homestead, tree planting could be undertaken in consultation with the relevant landowners to ensure that desirable views are not inadvertently eroded or lost in the effort to mitigate views of the turbines; ■ In addition to the screen planting requirements contained in the LVIA (2020), the following items will be considered when undertaking screen planting: – screen planting to be undertaken post construction of the Project; – use of 50 / 75 litre tree stock to ensure plants establish; – plant evergreen tree species that reach a minimum height required to sufficiently screen turbines (tree species selection is to undertaken in discussion with the landowner and local wholesale nursery and / or landscape contractor to suit local conditions); and – provide tree trunk protection to prevent damage to plant stock due to animals; ■ **Supplementary Planting** will be implemented where turbines are located close to the non-associated dwelling or where existing intervening vegetation is thin (particularly for areas surrounding the Project Area to the north along Morrisons Gap Road). Supplementary planting in keeping with the existing landscape character would further reduce potential visibility and ensure longevity of the intervening vegetation; ■ The Proponent will apply visual screening measures for any associated dwellings through agreement with the relevant owner(s) of associated residences; ■ Where possible a recessive colour palette is to be used for associated infrastructure which blends into the existing landscape, including the use of subtle colours and a low reflectivity surface treatment on power poles to ensure that glint is minimised; ■ The turbines will have a matte white finish and consist of three blades which is consistent with the current turbine models being considered; and ■ Avoid the use of any unnecessary lighting, signage on fences, logos etc.	Proponent	Operation
	<u>Night lighting</u> The following principles will be incorporated into lighting design during the detailed design phase of the switching station, substation, O&M Facility and any other structures requiring lighting. If design principles are incorporated into the night lighting for Ancillary Infrastructure, it is likely there will be no visual impacts resulting from night lighting of Ancillary Structures. ■ Control the level of lighting:		

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	– only use lighting for areas that require lighting ie. paths, building entry points; – reduce the duration of lighting - consider the use of sensors to activate lighting and timers to switch off lighting; and – switch off lighting when not required; ■ Lighting design: – use the lowest intensity required for the job; – use energy efficient bulbs and warm colours; – direct light downwards; – ensure lights are not directed at reflective surfaces; – use non-reflective dark coloured surfaces to reduce reflection of lighting; – keep lights close to the ground and / or directed downward; and – use light shield fittings to avoid light spill; ■ The O&M Building and any other structures are to be painted in a dark, non-reflective paint to reduce reflectivity from lighting and remain sympathetic to the surrounding landscape; and ■ Aviation night lighting: – If aviation night lighting is required by the Planning Authority, – lighting of the 28 turbines with low intensity 200 candela lights in accordance with the night lighting plan accepted by CASA; – operation of night lights only when notified to be required by CASA; and – installation of night lighting shields.		
Traffic	**Traffic Management Plan and mitigation measures** A detailed Traffic Management Plan will be prepared prior to construction in consultation with Transport for NSW, Tamworth Regional Council, and other relevant roads authorities associated with the Project, to the satisfaction of the Secretary of DPIE. The Traffic Management Plan will incorporate management and mitigation measures for construction of the Project to minimise traffic safety impacts of the Project and disruptions to local road users during construction. This will include, but is not limited to: ■ temporary traffic controls, noise considerations and speed limits; ■ community notification; ■ Emergency Response Plan in consultation with the local emergency services; ■ a driver's code of conduct that addresses: – travelling speed;	Proponent and Construction Contractor	Construction, Operation and Decommissioning

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	– procedures to ensure drivers to and from the development implement safe driving practices and adhere to designated transport routes; – parking restrictions; – in-vehicle monitoring system (IVMS) to vehicles travelling to and from site; ■ operational traffic management; and ■ a detailed program to monitor and report on the effectiveness of these measures and the code of conduct.		
	<u>Implementation of carpooling for the construction workforce</u> ■ Carpooling is expected to be an effective way of reducing traffic for this Project given that most workers are forecast to be travelling from Tamworth to the Project Area where there are common origins and destinations, and the distances make it financially beneficial.		
	<u>Dedicated construction carpark:</u> ■ The Proponent will create a dedicated construction staff carpark immediately outside the Nundle town centre, in consultation with Tamworth Regional Council. This will enable the introduction of the proposed temporary parking restrictions without reducing the benefits of accessing local content for the Project. This carpark could also assist the introduction of a shuttle service for peak hour "last mile" site access to reduce traffic through Nundle, on Barry Road and Morrison's Gap Road, if practicable; and ■ The location of this carpark is proposed to be within walking distance to the village of Nundle to ensure the township benefits from increased demand for local content services.		
	<u>Voluntary temporary parking restrictions</u> ■ In the Traffic Management Plan a Code of Conduct will include temporary parking restrictions for construction workers on streets within Nundle providing key services to tourists and local residents in order to preserve the current amenity; ■ The location of these restrictions will be determined in consultation with the Nundle Business and Tourism Marketing Group and Tamworth Regional Council, but should consider the services accessed by tourists and local community on Jenkins Street; and ■ The nominal times for parking restrictions in these locations will be 8:00am to 5:00pm Monday to Friday, subject to further consultation.		
	<u>Minimising conflict with school buses routes and times</u> ■ Special consideration will be given to travelling outside school peaks where practicable. This will be for the route through Nundle and the Muswellbrook route that travels		

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	adjacent to Muswellbrook High School as well as identified school bus routes to be confirmed in the Traffic Management Plan; and ■ Nominally the hours to be avoided for heavy vehicles in these areas are 8:00am to 9:30am and 2:30pm to 4:00pm.		
	<u>Use and introduction of additional laybys to minimise disruption to local traffic</u> ■ Additional laybys, one along Lindsay Gap Road and another on Morrisons Gap Road, to make a total of five proposed laybys on the transport route for the Project, have been proposed to allow for passing of slower OSOM movements; and ■ Consultation with Nundle Business and Tourism Marketing Group raised concerns impacting tourist traffic entering Nundle. These measures should support reduced impact.		
	<u>Ensuring road and pedestrian safety</u> ■ Within Nundle, the Proponent will provide a pedestrian crossing on the corner of Oakenville Street and Jenkins Street, subject to further consultation with and approval from Tamworth Regional Council. It is noted that there are existing pedestrian refuges at this location and a pedestrian crossing at this location will not meet the normal TfNSW warrants required for pedestrian crossings; ■ Vehicle escorts will be provided for all permanent residents during significant construction activities such as concrete pours along Morrisons Gap and Barry roads; ■ Local resident call up protocols for all heavy vehicles entering Morrisons Gap Road will be prepared; and ■ A project vehicle speed limit will be implemented along Morrisons Gap Road for OSOM traffic and In-Vehicle Monitoring system (IVMS) of project vehicles traveling to and from site to monitor speed.		
	<u>Public road modifications and dilapidation</u> ■ An extensive list of public road modifications are proposed as part of the Project in the RJA Transport Route Assessment (Appendix I). These have also been summarised in Table 6.1 of the Traffic and Transport Addendum (Appendix H); ■ Road modifications will be undertaken to ensure sufficient space for oversized vehicles passage, including intersection widening, trimming and removal of vegetation, removable signs and infrastructure, and the relocation of overhead wires; ■ Any assets that the Proponent determines need upgrading as part of the Project, will be upgraded in accordance with the Austroads design requirements. Dilapidation surveys, road usage fees, and/or performance bonds for remedial works have been offered by the Proponent through Offer Letters sent to Tamworth Regional Council and Muswellbrook Shire Council;		

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	■ Further minor road upgrades are also proposed in Muswellbrook LGA based on selection of the final preferred route as outlined in the updated TTPP report (Appendix H). All works are expected to be carried out within the current width of the road reserve and will not require any additional clearing. A revised Letter of Offer relating to the use of council roads and assets for the Project is provided in Appendix F of the TIA Addendum (Appendix H), and is also detailed in Appendix G of the Submissions Report; ■ The Proponent will conduct further assessment of Muswellbrook Shire Council owned road assets as based on final equipment dimensions and transport contractor selection. Structural assessments will be undertaken as required, and further consultation with Muswellbrook Shire Council will occur in this regard; ■ Any removal of signage, repositioning of light poles and temporary changes along the OSOM route and damage caused as a direct result of the OSOM movements will be made good as agreed with the local authority. A dilapidation survey will be undertaken along the route prior to and at completion of OSOM movements; ■ Dilapidation reports covering the pavement, drainage and bridge structures will be undertaken in consultation with TfNSW and local Councils for the proposed transport routes before and after construction. Regular inspections and consultation with local Councils and the Proponent will be carried out; ■ The Proponent will seal Morrisons Gap Road following the completion of construction and deploy dust suppression measures such as polymers to prevent dust generation from traffic traveling to or from the Project Area during construction; ■ A rumble grid will be used to shake dust off vehicles. A rumble grid may also be implemented with Forestry subject to further consultation. Onsite dust suppression using water trucks will be carried out, and vehicles may also be washed down on exit of site if required; ■ The Proponent will repair or pay the costs of any damage to public infrastructure caused by the Project where required; ■ The Proponent will: – undertake a utilities search as part of detailed design for the project after the transport and logistics contractor is engaged and the turbine technology is selected; – take steps to avoid impacts to City of Newcastle's stormwater infrastructure as much as practicable; – undertake a site inspection with the City of Newcastle's engineers prior to any works being undertaken on public roads in the Newcastle LGA; – obtain Section 138 permits from the relevant Road Authority for any road modifications required on public roads, as necessary; and – provide 48 hrs notice to the relevant Road Authority prior to any works being undertaken on public roads;		

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	■ The Proponent will provide an electronic copy of a dilapidation report prepared by a suitably qualified person for both pre and post works to be submitted to City of Newcastle prior to the commencement of any works on City of Newcastle's public roads, unless otherwise agreed with City of Newcastle; ■ The Proponent will construct hardstand where boundary fencing is being relocated between TfNSW and City of Newcastle land; ■ The proposed hardstands will not involve any changes to the line marking on the road so that the existing arrangement of travel lanes remains the same. Where roads are significantly widened and do not possess edge lines, edge/centre lines will be provided; ■ No Stopping restrictions will be provided along the proposed hardstands to prevent vehicle parking on these areas for the duration of their required use; and ■ For removable / sleeved signposts security head bolts will be used to affix posts. <u>Traffic management system for managing OSOM vehicles</u> ■ The Traffic Management Plan will include a requirement to provide escorts for the majority of OSOM loads along Morrisons Gap Road, including police escorts for the higher risk OSOM loads, to ensure residents along Shearers Road and Morrisons Gap Road have safe passage. The Traffic Management Plan Driver's Code of Conduct will also include a requirement that all vehicles regularly accessing the Project Area during construction are required to have In-Vehicle Monitoring Systems installed; ■ It is proposed that before the transportation of 'live' loads that a trial run of each of the routes will be completed using simulated loads that have the same height width and length of the Project OSOM loads. Once the route is demonstrated to be safe for transportation, then the transport of the loads could commence; ■ The Proponent will provide UHF radios (given mobile phone reception can be intermittent) to residents along Morrisons Gap Road and Shearers Road to communicate any emergency or travel plans to site staff along with a protocol for reaching the site manager; ■ Prior to OSOM component deliveries commencing on the Project, community information sessions will be held to provide information about the types of components that will be delivered to the Project Area. These will create opportunities to explain the Project and update the community on Project delivery schedules; ■ Communication of the latest delivery schedules including expected component types, days and times and duration of deliveries will be provided to the local community (refer Section 6.10 of Appendix H for further detail); ■ Consultation was undertaken with businesses within Muswellbrook Shire Council based on the OSOM route proposed and input from Muswellbrook Shire Council. The Project		

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	will include these businesses (as listed in Table 6.2 of Appendix H) in communication protocols; ■ A communications protocols will be developed to allow communication between the NSW Forestry Corporation trucks and the Project trucks. The Project will maintain communication with NSW Forestry Corporation to coordinate the movement of oversized and over mass vehicles; ■ The Project will consult with TfNSW Regional Infrastructure prior to OSOM transportation commencing; ■ The Proponent will engage with local authorities and businesses in relation to traffic movements and the avoidance of peak commute times. This will be addressed in the Traffic Control Plan (TCP) to be prepared prior to OSOM transportation commencing; and ■ The Belford to Golden Highway project is likely to be the most significant impact on the Project. As part of the Traffic Management Plan, the Project will maintain communications with TfNSW project managers to identify potential impacts. This will include notification of the times when trucks will be travelling through the construction sites.		
	<u>Approvals</u> ■ Relevant permits will be obtained for over-mass and over-sized vehicles from the National Heavy Vehicle Regulator; ■ An application shall be lodged by the Proponent and consent obtained from the relevant Road Authority for all works within the road reserve pursuant to Section 138 of the Roads Act 1993 (NSW); ■ The proposed widening of George Street will require the prior consent of TfNSW before any approval granted by the City of Newcastle; ■ TfNSW approval of a Road Occupancy Licence (NSW Transport Management Centre) and Works Authorisation Deed agreement will be sought as works involve their assets (e.g. median, traffic signals) for all roads in the Newcastle LGA except for Selwyn Street and George Street; and ■ The oversized and over mass routes in the Newcastle Local Government Area are only to be used during the night time, unless otherwise agreed with City of Newcastle. Travel restrictions will be formalised within transport permits, as required for the Project.		

Environmental Aspect		Mitigation Measure	Responsibility	Stage
Hazards and Risks	Aviation	■ The Proponent will enter into a commercial agreement with Airservices Australia to amend flight procedures for Scone Airport as detailed in Section 13.1.4 of the Project EIS; ■ 'As constructed' details of wind turbine and wind monitoring tower coordinates and elevations will be provided to Airservices Australia, using the following email address: vod@airservicesaustralia.com; ■ The rotor blades, nacelles and towers of the wind turbines will be painted in matt white; ■ Marking the temporary and permanent wind monitoring towers will be undertaken according to the requirements set out in Manual of Standards (MOS) 139 Chapter 8 Division 10 (as modified by the guidance in NASF Guideline D); ■ Prior to the construction of any wind turbines or meteorological monitoring masts, the Proponent will provide relevant details to CASA, Airservices Australia, Defence, NSW Regional Airspace and Procedures Advisory Committee, and any relevant landowners or local aerial agricultural or firefighting operators. Information will include; co-ordinates, final heights, confirmation of compliance with any OLS and aviation hazard light; ■ Wind Monitoring Towers of approximately 155m AGL will be marked to some extent, depending on the proximity to the surrounding turbines. If the Wind Monitoring Towers are to be installed before the turbines, then they will incorporate a medium intensity red obstacle light at night. The obstacle lights may be removed when wind turbines are erected in the vicinity of the Wind Monitoring Towers; ■ Obstacle lighting, if required, will be implemented in accordance with the requirements of CASA, including compatibility with night vision devices. Following ongoing consultation with the project, CASA have approved the use of steady low intensity lighting (200 candela) rather than medium intensity. Obstacle lights will be set to 'steady' to reduce the visual impact on neighbouring properties. Night lighting will be installed in accordance with the Obstacle Lighting Plan and will be operated when requested by CASA; ■ On commencement of the installation of the first turbine or 155m high Wind Monitoring Tower if preceding the turbines, Airservices Australia will be requested to publish a NOTAM advising pilots that construction of tall structures is imminent. Details will be reported to the Airservices Australia Vertical Obstacle Database (VOD); ■ The location and height of wind turbines and wind monitoring towers will be provided to landowners so that, the landowner may provide the aerial application pilot with all relevant information. This information, and a description of the infrastructure, will be provided in suitable GIS format to all fire authorities and emergency services in suitable GIS format on an ongoing basis through the construction phase; ■ Operational guidelines regarding water-bombing setbacks from WTGs will be developed and distributed to fire authorities; and	Proponent	Prior to Construction

Environmental Aspect		Mitigation Measure	Responsibility	Stage
		■ Consultation will be undertaken with relevant aviation operators and Scone Airport to ensure that all stakeholders fully understand the extent of the impact of proposed changes.		
	Telecommunications	■ A pre-construction assessment of TV and radio reception will be undertaken to establish a base line of reception strength for comparison with any complaints relating to reception post-construction and to assist with determining whether any reception interference issues were pre-existing. The assessment will be carried out at a representative sample of dwellings in the vicinity of the Project Area; and ■ In the event that reception impacts are experienced, the Proponent will implement reasonable measures to reduce impacts as soon as practicable.	Proponent	Prior to Construction
	Human Health / EMF	■ Detailed design will consider the prudent avoidance and incorporation of significant setbacks between residential dwellings and project components as discussed in Section 13.3.5 of the EIS.	Proponent	Prior to Construction
	Bushfire	<u>Bushfire Emergency Management and Operations Plan</u> ■ A Bushfire Emergency Management and Operations Plan will be prepared that will detail procedures, processes and mitigations to manage potential fires on site during construction, operation and decommissioning, in consultation with the RFS and as outlined in Sections 6.3 – 6.7 of the Bushfire Management Plan; ■ The bush fire risk management strategies – table 13.11, as reported in section 13.4 of the EIS shall be implemented. The Bushfire Emergency Management and Operations Plan will include a detailed site plan identifying, using GPS coordinates, each turbine tower location. A copy of the plan shall be stored at the NSW RFS Liverpool Range District office; ■ Further bushfire mitigation measures to be implemented include: – a minimum 10 m APZ will be established around each wind monitoring masts. The APZ for WTGs will comprise of the concrete foundation (approx. 25 m in diameter); and – an increased APZ of 20 m will be established for the around the O&M buildings, BESS, substation and switching station. This will be increased as required to ensure that these assets are located outside of the flame zone. To ensure that significant assets are not at risk of direct flame contact: ▪ the substation will have minimum 23 m wide APZ to the east and 20 m in all other directions; ▪ the switching station will have a minimum 33 m APZ to east and 20 m in all other directions; ▪ the BESS will have a 23 m APZ to the west and 20 m in all other directions;	Proponent and Contractors	Construction and Operation

Environmental Aspect		Mitigation Measure	Responsibility	Stage
		▪ O&M Option 1 will require a minimum 20 m wide APZ in all directions; and ▪ Compound/O&M Option 2 will have minimum 21 m wide APZ to the south and 20 m in all other directions; ■ All WTGs will be made of non-combustible construction materials; ■ All poles will be either concrete or galvanised steel poles and the maintenance of the transmission line easement including, reduced fuel loads beneath transmission lines, will be the responsibility of the asset owner. For the safe operation of the transmission line, certain activities will be restricted within the easement such as planting and growing trees, construction of buildings, or erection of antennae or masts; ■ Operational guidelines regarding water-bombing setbacks from WTGs will be developed and distributed to fire authorities; ■ The Proponent will work with NPWS to ensure that alternative water supplies are made available during construction for fire-fighting activities. This will also be built into the Construction Management Plan; and ■ Final turbine layout maps will be issued to NSW RFS ahead of construction for their internal response planning.		
	Blade Throw	■ WTG components will be manufactured and certified in accordance with the current best practice IEC Standards; ■ WTGs will be equipped with sensors that identify structural fatigue and enable early maintenance and management measures which will also assist in mitigating structural failures such as blade throw risks; and ■ Measures to mitigate ice formation on the wind turbines (e.g. anti-icing or de-icing technologies) and/or control access (e.g. ice risk management plan) will be implemented to reduce the risk of ice impact where necessary and to the extent reasonably practicable.	Proponent and Contractors	Pre-construction and Operation
	SEPP 33 / Preliminary Hazard Analysis	■ The BESS and other key infrastructure will be installed in as per AS/NZS 5139:2019 or other relevant standards; ■ Relocation of the O&M building as identified in the Preliminary Hazard Analysis will be considered to reduce the potential risk of impact from blade throw, tower collapse or nacelle collapse; ■ Measures to mitigate ice formation on the wind turbines (e.g. anti-icing or de-icing technologies) and/or control access (e.g. ice risk management plan) will be implemented to reduce the risk of ice impact to the extent reasonably practicable; ■ Restricted public access to the construction and operational areas and security will be maintained via surveillance equipment to restrict access throughout the construction and life of the Project;	Proponent and Contractors	Construction, Construction, Operation

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ Appropriate safe work procedures will be implemented for the handling of all chemicals, including transfer, storage, spill prevention and clean up requirements; ■ Transportation of dangerous goods will comply with the requirements of the Australian Code for the Transport of Dangerous Goods by Road and Rail (the ADG Code); ■ An Emergency Response Plan for the Project will be prepared and implemented and will address the specific hazards identified in the PHA and ensure emergency response personnel take appropriate precautions to protect themselves and the general public from immediate hazards and escalating events; ■ A separation distance between BESS containers of 3.05m (10 ft) is recommended, based on the requirements of NFPA 855, as additional separation distances are not warranted by the explosion analysis; ■ Forced ventilation will be installed in the BESS containers (minimum 32 air changes per hour is recommended to prevent flammable mixture formation in the container); ■ An alarm will be installed to indicate loss of ventilation flow through the containers; and ■ A CO detector on the ventilation exhaust duct (CO is present whether the gas is ignited or not) will be installed, with shutdown of the BESS charging/ discharging if CO is detected. The HVAC will be kept on, and alarm if HVAC flow stops.		
Aboriginal Heritage	<u>Aboriginal Heritage Management Plan</u> An Aboriginal Heritage Management Plan will be prepared in consultation with Heritage NSW and Aboriginal stakeholders. Heritage mitigation measures will include: ■ if impacts to identified Aboriginal archaeological sites are unable to be avoided, surface collection or archaeological salvage efforts will be undertaken in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010); ■ all employees, contractors, subcontractors and agents carrying out any development on site will undertake a Project induction (including the distribution of a construction heritage site map) to ensure that they have an understanding of and are aware of the Aboriginal and historic heritage issues affecting the activity; and ■ in the event that works on site reveal either possible human skeletal remains or possible Aboriginal or historical heritage objects, all work will cease and the measures detailed in the Unexpected Finds Protocol will be implemented.	Proponent and Construction Contractor	Construction
Historic Heritage	■ All works will be undertaken in accordance with a Non-Aboriginal Heritage Unexpected Finds Procedure; ■ Further geophysics, engineering assessment and heritage protocols / approvals will be undertaken and obtained during detailed design of the final Devil's Elbow bypass road alignment;	Proponent and Construction Contractor	Construction

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ Heritage controls, such as possible archaeological monitoring during earthworks in potential anomaly areas, will be contingent on the results of the further geotechnical analysis. Heritage controls and/or mitigation measures will be detailed in the Project's EMS and Heritage Management Plan; ■ Heritage interpretation relating to the transport alignment upgrade will be investigated as a possible community value-add, in terms of development into a unique future heritage interpretation site. This could include interpretative signage, possibly as part of a heritage trail, or potentially expose a section of historical diggings if possible from an engineering solution. This recommendation is subject to local Council and community interest and advice of feasibility; and ■ If backfilling is required, the methodology for this will be developed in consultation with the Proponent, construction contractors, and heritage specialists. Decisions around appropriate methodology will be made based on the type and condition of any findings.		
Soils and Water	<u>Design Mitigation Measures</u> ■ During detailed design, turbine and infrastructure locations will be further refined to avoid the adjacent steeper slopes and areas of significant rocky outcrops. In addition, appropriate permanent cut batter slopes will be assessed on an individual basis with reference to cutting ground conditions. Benches will be implemented into areas of higher cut slopes or wherever deemed necessary for stability purposes; ■ During detailed design of earthwork batters there will be a need to incorporate the following design requirements of selected batters following detailed review of onsite conditions: – for slopes 2H:1V or shallower, individual vertical batter heights may be up to 10 m; ▪ Minimum bench width of 4.5 m; ▪ The unreinforced slopes will be designed with the following long-term factor of safety $\geqslant$ 1.5; ▪ No temporary or permanent surcharges loads may be placed on batter crests; and ▪ Surface rainwater flows will also be diverted away from batter crests and faces; and – if steeper, or relatively high batter slopes are required, then engineering design and support / stabilisation will be required. Permanent soil nailing and shotcrete support will be considered for such cases during detailed design; ■ Given the relatively steep and exposed nature of much of the Development Footprint, and assessed high dispersity/erodibility of site soils, detailed design will assess the need for the use of appropriate cut/fill batter protection and effective site surface water management and drainage techniques to prevent the mobilisation of sediments to	Proponent and Construction Contractor	Pre-Construction, Construction

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	natural water courses. This may include vegetation or shotcreting batter faces. Drainage design will aim to direct runoff from all hardstands, access tracks and Project infrastructure to appropriate sediment control facilities such as sediment basins, grassed filter strips or swales to trap sediments and filtered off before being discharged (to appropriate vegetated areas or drainage lines); ■ To minimise the ongoing maintenance any cut and fill slopes, batters will be vegetated with grass as soon as possible following construction, and be protected from overland surface water flows by the construction of appropriate permanent surface drainage measures; ■ Appropriate erosion and sediment controls will be implemented for any exposed soil in stockpiles, temporary works or permanent works such as covering, vegetation or a permanent capping; ■ Runoff from fill batters facing towards the National Park will be retained as sheet flows utilising vegetated filter strips or concentrated in collection drains diverted either via culverts beneath the access tracks to join the northern drainage network or to enhanced sediment controls prior to release. To ensure that flows from the up-gradient catchment reach the Peel River culverts will be installed at key watercourse crossing points confirmed at the detailed design phase; and ■ All waterway crossings will be constructed in accordance with the: – *Water Guidelines for Controlled Activities on Waterfront Land* (DPI, 2012); and – *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (DPI, 2003). <u>Construction Mitigation Measures</u> ■ During construction, the following measures will be implemented to address potential soil and water impacts: – undertake a further geotechnical study prior to construction commencement including soil characteristics to inform the development of appropriate erosion and sediment controls; – prepare a detailed Soil and Water Management Plan (SWMP) prior to construction commencing, outlining measures for the management and monitoring of surface water quality and hydrology during construction. The plan would also address any requirements for the management of pollutants or contaminated lands during construction so as to minimise impacts to terrestrial and aquatic habitats. The SWMP should be prepared by a suitably qualified person, such as a soil conservationist; – progressive Erosion and Sediment Control Plans (PESCPs) within the SWMP as the Project progresses to address management requirements at individual work sites to be developed by an experienced CPESC;		

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	– SWMP & PESCP will be prepared based on 'The Blue Book' (Landcom, 2004) utilising a range of BMPs for the various construction activities and landforms including the adoption of enhanced controls/higher level of protection for activities in sensitive catchments and challenging landforms such as increased capacity of controls, shortening lengths between controls and use of soil binders and other proprietary products; – design and construct the Project to minimise land disturbance and therefore reduce the erosion hazard; – stage construction activities to minimise the duration and extent of land disturbance; – manage topsoil resources to minimise the risk of erosion and sedimentation, and maximise reuse of topsoil during rehabilitation; – divert upslope (clean) stormwater around the disturbed sites and capture sediment-laden run-off from within the disturbed site for diversion to sediment control devices; – installation of geotextile silt fences (with sedimentation basins where appropriate) on all drainage lines from the site which are likely to receive runoff from disturbed areas; – installation of appropriate sediment traps or sediment ponds near waterways to contain surface water contaminated with sediment runoff entering the waterway; – procedures to ensure that steep batters are treated appropriately for sediment control; – a process for overland flow management to prevent the concentration and diversion of water onto steep or erosion prone areas; – rehabilitate the site promptly and progressively as works progress; – inspect and maintain erosion and sediment control devices for the duration of the Project construction stage including thorough visual inspections following significant rain events with a requirement for immediate remediation of localised erosion caused by runoff (within specified response times); – avoid land disturbance beyond that identified in the assessment within 20 m of minor streams (first and second order watercourses) and 40 m of third order or higher watercourses; – ensure appropriate procedures are in place for the transport, storage and handling of fuels, oils and other hazardous substances, including availability of spill clean-up kits; – construct required access tracks at any early stage to minimises disturbance during construction; – obtain all necessary water access licences; and		

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	– ensure appropriate stormwater, collection, treatment and recycling at the concrete batch plant, in accordance with good practice and any requirements of the NSW Environmental Protection Authority. <u>Sensitive Areas Mitigation Measures</u> ■ Additional measures have been identified to mitigate impacts associated with the identified sensitive location in the adjacent National Park. Measures are to be included in the progressive ESCP to either; – direct disturbed runoff away from the catchment area identified to contain the sensitive location, or – process runoff through additional sediment controls (e.g. sumps and/or sediment basins) and discharge at a low, non-erosive velocity. <u>Water Quality Monitoring</u> ■ A monthly water quality monitoring program will be developed in consultation with NPWS for the two sensitive receiving waters. The monitoring program will include trigger parameters that can be measured insitu such as pH and turbidity along with visual observations for hydrocarbons. Monitoring would be undertaken during dry periods and post rainfall; and ■ These measures are to be included in any environmental management plans to be implemented across the site, to protect the identified sensitive locations.		
Air Quality	The following mitigation measures will be implemented where practicable to minimise air quality impacts: ■ watering roadways or preparing roadways with coarse gravel or other road coverings where required; ■ the sealing of Morrisons Gap Road following consultation with the local community and subject to Tamworth Regional Council acceptance; ■ covering and/or stabilising material loads which may generate dust, such as aggregates, during transport into and within the construction site where practicable; ■ managing soil stockpiles through stabilisation, light watering or the use of covers; ■ minimising vegetation clearance, including clearing vegetation in stages, and the stabilisation of cleared areas where practicable; ■ controlling the speed of dumping from tip trucks; ■ minimising vehicle movements where practicable; ■ cleaning and wash of vehicles, plant and equipment; ■ progressive revegetation and stabilisation of disturbance areas no longer required for construction;	Proponent and Construction Contractor	Construction

Environmental Aspect	Mitigation Measure	Responsibility	Stage
	■ regular inspection and maintenance of all vehicles, plant and equipment to ensure operational efficiency; and ■ regular monitoring of environmental conditions during construction, such as wind, that may result in dust generation and implementation of control measures as specified above, as relevant.		
Waste	<u>Waste Management Plan</u> ■ A Waste Management Plan (WMP) will be prepared and will describe the measures to be implemented to classify, manage, reuse, recycle and safely dispose of waste.	Proponent and Contractors	Construction, Operation and Decommissioning
Socio Economic	■ The Proponent will implement the following key community enhancement and benefits programs: – a Voluntary Planning Agreement in the form of a Community Enhancement Fund with Tamworth Regional Council on the terms proposed and Upper Hunter Shire Council on the terms agreed; – a Neighbours Benefits Sharing Program; and – Vegetation Screening Program; and ■ The Proponent will to work closely with local authorities to promote and develop relevant skills/programs in an effort to engage the community in local employment opportunities.	Proponent	Construction, Operation and Decommissioning