Appendix B Updated Mitigation and management measures table

Updated Mitigation and Management Measures

Mitigation and management measures outlined in the EIS, Response to Submissions Report and Amendment Report are provided in the Table below.

Issue	Mitigation and management measure
Biodiversity	A **Construction Environmental Management Plan (CEMP)** will be prepared prior to construction. This plan will include measures to: – Ensure the removal of hollow bearing trees is to be undertaken in accordance with a tree hollow management protocol and involves the presence of a qualified ecologist or wildlife specialist experienced in the rescue of fauna – Ensure all workers are provided with an environmental induction prior to starting work on site. This will include information on the ecological values of the site and protection measures to be implemented to protect biodiversity – Fence off areas of native vegetation to be retained, to avoid additional impacts on vegetation. Fencing should protect the entire tree protection zone (i.e. 10 times the diameter of the trunk at breast height) – Plant locally endemic tree species in areas proposed for vegetated screens. Species should be drawn from the list of species typical of the PCTs present on -- site wherever practical – Salvage habitat features such as hollow trunks and limbs within the Project site and/or relocate within adjacent areas of woodland as far as is practicable – Install and regularly inspect and maintain erosion and sediment control measures – Restrict stockpiles of construction materials, fill or vegetation to existing cleared areas and not within areas of adjoining native vegetation – Apply a dust suppressant or cover to exposed stockpiles during windy conditions. Minimise periods that stockpiles are present on site – Restrict construction traffic to existing roads and access tracks – Microsite pole placement along ETL to avoid direct impacts to gilgai wetland habitat or other sensitive habitat features – Reinstate and stabilise groundcover as quickly as practicable after disturbance
Cultural Heritage	An **Aboriginal Cultural Heritage Management Plan (ACHMP)** will be prepared, prior to construction, in consultation with the relevant registered Aboriginal parties and agencies. The ACHMP will provide: – Provisions for the salvage of surface artefacts (as detailed in section 6.2.6) – Measures to ensure any topsoil material excavated in the Project area remains within in the local area to ensure artefacts that may have been present (within a disturbed context) will remain in the area – A procedure for management any additional Aboriginal objects identified during the construction process – A procedure to be followed in the unlikely event that human remains are located during construction – Provision for ongoing consultation with registered Aboriginal parties No impact on historic heritage is anticipated as a result of the Project. However, the following general management measures will be implemented in accordance with best practice: – An unexpected find procedure will be developed to manage the unlikely event that potential heritage items are uncovered during construction

Issue	Mitigation and management measure
	– Employees, contractors and subcontractors will be made aware of their obligations and requirements in relation to the relevant provision of the *Heritage Act 1977* through site induction
Land	An **Erosion and Sediment Control Plan** will be prepared prior to the commencement of construction, in accordance with Managing Stormwater: Soils and construction (Landcom, 2004). Management and mitigation measures will include: – Retention of four existing farm dams on the solar farm site to assist with surface water and sedimentation control – Control of stormwater flows onto, through and from the solar farm site through the installation of measures such as rock check dams, silt fencing and low earth berms – Installation of erosion and sediment control measures at all watercourse crossings along the ETL – Installation of a sediment fence at the southern corner of the switchyard site to slow down surface flows before they leave the site – Staged construction activities to minimise the extent and duration of the ground disturbance – Progressive stabilisation of disturbed areas throughout construction staging. Grass seeding and spray polymer seals to prevent wind erosion and aid with revegetation if required. – Regular inspection and maintenance of control measures A **Decommissioning and Rehabilitation Environmental Management Plan** will be prepared prior to decommissioning that outlines how the site will be restored to its previous condition. The plan is likely to require: – Progressive rehabilitation of disturbed areas – Backfilling of trenches and excavations – Revegetation with native species where required – Reseeding of pasture/crop in consultation with the landholder
Landscape and visual	– The **Landscape Mitigation Plan** (provided in Appendix I) will be implemented – At the request of any impacted landholders with views of Project infrastructure, off-site planting will be considered to screen visual impacts – Ancillary buildings will be constructed in style which reflects the character of the rural landscape – Materials and colours that are non-reflective and finished in neutral or muted colours will be used where possible – Provide screen planning along the northern boundary of 115 Forest Road to reduce the visual impact of the ETL from the house
Noise and vibration	A **Noise and Vibration Management Plan** will be prepared prior to construction. Management and mitigation measures will include: – Ensure works are undertaken during the ICNG standard daytime construction hours (i.e., 7.00 am to 6.00 pm Monday to Friday and 8.00 am to 1.00 pm on Saturdays). Exceptions may be staff arriving and leaving site and the delivery of large solar farm components. Any construction activity outside normal construction hours will only be undertaken in accordance with any required approvals from relevant authorities – Ensure ETL easement entry and exit points are located as far as possible from sensitive receivers, with consideration of safe access

Issue	Mitigation and management measure
	– Ensure trucks do not arrive on site or be permitted to queue near sensitive receivers prior to the 7:00 am start time unless required to do so by road safety considerations (e.g., conditions of heavy vehicle or OD vehicle permit) – Inform all relevant staff and sub-contractors of areas and work practices where potential noise impacts have been identified and provide training to all Project personnel, including relevant sub-contractors on noise and vibration requirements through inductions, toolboxes and targeted awareness training – Ensure equipment is operated in the correct manner and well-maintained including replacement of engine covers, repair of defective silencing equipment, tightening of rattling components and repair of leakages in compressed air lines. Equipment will be shut down when not in use – Minimise the simultaneous use of plant and hand tools to reduce noise emissions from multiple sources at once – Consult with affected residents a minimum of five days prior to commencing works and provide a 24-hour contact number and complaints management procedure

Traffic and transport	A **Traffic Management Plan** will be developed in consultation with the haulage contractor, Forbes City Council and TfNSW, prior to construction. The Traffic Management Plan will provide:
	– Details of the haulage route(s) to be used during construction
	– A pre-dilapidation survey of all local roads and key intersections close to the Project site along the haulage route
	– Detailed design of the upgrade of the Back Yamma Road/Troubalgie Road intersection to accommodate OSOM vehicle movements during the construction period
	– Detailed design of the upgrade of Troubalgie Road between Back Yamma Road and the site access point(s) to accommodate two-way heavy vehicle movements, including OSOM vehicles
	– Timing for mid and post construction dilapidation survey of road conditions to identify any damage caused by construction traffic
	– A delivery schedule for key equipment and construction materials
	– All controls to be implemented (signage, speed limits etc.) to prohibit heavy vehicle use and limit light vehicle use of Forest Road
	– Restricted delivery days/times to minimise impacts to Forbes Central West Livestock Exchange and school bus route along Back Yamma Road
	– Community consultation requirements and contact details
	– The process for dealing with any community complaints during construction
	– A Driver Code of Conduct which address:
	  – Driver fatigue management
	  – Prevention of the use of Forest Road for all vehicles associated with the project
	  – Prevention of construction vehicle movements during 8 am – 9 am and 4 pm – 5.30 pm Monday to Friday
	  – Measures to prevent impacting school bus routes
	  – Procedures to monitor and ensure compliance with the Driver Code of Conduct

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Water	Surface water: – Further flood modelling will be undertaken to inform the civil and drainage during detailed design to confirm flood modelling results – A shallow swale (north to south) adjacent to the proposed substation on the solar farm site will be provided to mitigate minor predicted afflux in the neighbouring property, west of the site – A shallow swale along the western and southern boundaries of the switchyard site will be provided to mitigate minor predicted afflux to the west of the site – Finished flood levels of buildings, temporary storage areas and electrical enclosures will be installed 300 mm above 1% AEP flood levels – All electrical equipment including PV modules will be installed 300 mm above 1% AEP flood levels – The main access track and internal tracks will be designed to remain trafficable under 10% AEP storm event conditions to allow required maintenance of solar panels Groundwater: – All fuel and chemicals stored for the Project will be in approved bunded areas – Refuelling activities will be undertaken in a bunded area or on hardstands where fuel spill kits are available – Temporary Project offices and workspaces will have a portable above ground systems (i.e. above ground pump out septic systems) – Construction water supplies will be trucked to site
Hazard and Risk	Hazardous materials: – Chemicals on site will be stored in accordance with Australian standards – Safe work procedures will be implemented for the handling of all chemicals including transfer storage, spill prevention and clean up requirements – Appropriate personal protective equipment will be worn by staff – Spill kits will be installed at all chemical storage locations BESS: – The BESS will be located at least 4.5 m from the solar farm site boundary – Separation distances between battery containers will be as per AS 2067:2016 Substations and high voltage installations exceeding 1 kV a.c. – Lithium-ion batteries and associated equipment will be located within a temperature controlled and ventilated location that does not exceed the manufacturer temperature range specification – The lithium-ion batteries storage area will be protected from flooding, at least 300 mm above 1% AEP flood levels – The lithium-ion batteries will be insulated, containerised and bunded – Lithium-ion batteries will include protections and circuit controls, such as – integrated circuit control systems to avoid voltage drift – current sensing circuits to avoid short circuiting

Issue	Mitigation and management measure
	– built-in positive temperature coefficient to protect against current surges – circuit interrupt device that opens at excess pressure – safety vent to release gases on excessive pressure build-up – separator that inhibits ion-flow when exceeding a certain temperature threshold – an active fire suppression system – a Battery Management System to properly manage the batteries state of change, including battery balancing devices, to avoid deterioration and individual cell over/ under voltage – An inspection and maintenance regime will be implemented to identify signs of damage, such as bulging/cracking, hissing, leaking, rising temperature, and smoking EMF – Only electrical equipment that complies with the ICNIRP exposure levels will be selected
Bushfire	– Prior to construction a comprehensive **Fire Safety Study** should be developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper (HIPAP) No 2 and is to meet the requirements of Fire and Rescue NSW – Prior to the commencement of construction an **Emergency Services Information Package (ESIP)** be prepared in accordance with Fire and Rescue NSW fire safety guideline – Emergency services information package and tactical fire plans. – A **Bush Fire Emergency Management and Operations Plan** should be prepared identifying relevant risks and mitigation measures associated with the construction and operation of the solar farm. This should include: – Detailed measures to prevent or mitigate fires igniting – Work that should not be carried out during total fire bans – Availability of fire-suppression equipment, access and water – Storage and maintenance of fuels and other flammable materials – Notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite – Surrounding vegetation, proposed to be carried out during a bush-fire fire danger period to ensure weather conditions are appropriate – Appropriate bush fire emergency management planning – From the commencement of building works, and in perpetuity, the property around the proposed structures and associated buildings must be managed as an inner protection area for a distance of 10 metres in accordance with the following requirements of Appendix 4 of Planning for Bush Fire Protection 2019: – Tree canopy cover should be less than 15% at maturity – Trees at maturity should not touch or overhang the building – Lower limbs should be removed up to a height of 2m above the ground – Tree canopies should be separated by 2 to 5m

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	– Preference should be given to smooth-barked and evergreen trees – Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards – Buildings should be provided – Shrubs should not be located under trees – Shrubs should not form more than 10% ground cover – Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice – The height of the vegetation – Grass should be kept mown (as a guide, grass should be kept to no more than 100mm in height) – Leaves and vegetation debris should be removed – Essential equipment should be designed and housed in such a way as to minimise the impact of bush fires on the capabilities of the infrastructure during bush fire emergencies. It should also be designed and maintained so that it will not serve as a bush fire risk to surrounding bush
Socio-economic	Implementation of the **Community Engagement Plan** which will include: – Regular engagement with Forbes Shire Council and the community throughout the construction period to: – understand concerns and expectations of the local community – provide timely and transparent information to communities that may be temporarily impacted by construction activities – provide contact details for community enquiries and complaints – Development of a local procurement policy to encourage the employment of locals and local sourcing of goods and services – Coordination with local industry representatives to maximise the use of local contractors, manufacturing facilities and goods and materials suppliers, and to minimise adverse impacts to local supplies, services and tourism – Establishment of a community benefit sharing program that shares Project benefits with the local community
Waste	A **Waste Management Plan** will be developed, in consultation with Forbes Shire Council, prior to the construction of the Project which will detail: – The quantities and classification of all waste streams – Types and location of on-site recycling facilities – Location of nearby waste facilities permitted to accept waste – Requirements for transportation and tracking of waste – Responsibility for recycling, re-use and disposal – Incident reporting procedures

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ARTC railway crossing	In regard to the ETL that will cross the Stockinbingal to Parkes Railway line, prior to the commencement of construction, Pacific Hydro must: – Obtain written approval from the appropriate Environmental Planning Approval Authority that they will enter into a Licence for Infrastructure of the 132 kV transmission line (crossing at 603.730km). This agreement will govern the works in the rail corridor and the ongoing occupation of the infrastructure upon completion. ARTC will not agree to an easement over the rail corridor. – Pay ARTC Fees (noting these are subject to change): a) Application b) Ongoing Licence rental fees c) Project specific Third Party Review costs – Ensure the design, construction and corridor entry is in accordance with: a) ARTC Network Rules and Procedures including but not limited to RLS-PR-003. b) ARTC Standards, Policies and Procedures c) Any relevant Australian Standards d) All relevant safety documentation including but not Safe Work Method Statement relating to working in the rail corridor – Ensure that: a) Any works are not to have a negative impact on ARTC Operations b) The works are not to have a negative hydraulic impact on ARTC property c) Services Searches, surveys or other preliminary corridor entry are conducted under separate ARTC approval
High pressure pipeline	Prior to the commencement of construction, details of all proposed crossing and works within the pipeline easement must be submitted to APA for consideration. The proposal must comply with the following conditions: – No improvements within Easement - Buildings, structures, roadway, pavement, pipeline, cable, fence, change in ground level, or any other improvement on or under the land, must not be constructed within the gas transmission pipeline easement, without the prior authorisation of APA. This includes both temporary and permanent improvements of the type detailed above. All construction workers on site must be made aware of this requirement. – Risk Assessment Required - Prior to the development commencing, and to inform detailed design, the applicant must conduct electrical hazard studies in accordance with (the requirements of) Australian Standard 4853-2012 (for Low Frequency Induction and Earth Potential Rise). The applicant must address any relevant requirements and any recommendations and/or actions must be implemented to the satisfaction of APA. All costs associated with the study and implementing its recommendations and/or actions are to be borne by the applicant. The applicant must complete validation testing upon completion of construction. – Electrical Interference Studies - The applicant must conduct electrical interference studies in accordance with the requirements of AS2832 once detailed design is complete. – Design to Comply with Australian Standards - The applicant must prepare a pipeline crossing design as required in order to obtain results for the electrical interference studies and electrical hazard studies which comply with the applicable Australian Standard and promptly provide a copy of the studies and reports to APA.

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	– High Voltage Powerlines - The applicant must make good (at the applicant's cost) any hazards or risks to the Marsden to Dubbo Pipeline (including cathodic protection systems), caused by any powerlines, or associated infrastructure – Construction Management Plan - Prior to the commencement of any works on land within 50 metres of the pipeline easement, a construction management plan must be submitted to and approved by APA. The plan must: – Prohibit the use of rippers or horizontal directional drills unless otherwise agreed by the operator of the gas transmission pipeline – Avoid significant vibration, heavy loadings stored over the pipeline and heavy vehicle /plant crossings of the pipeline within the easement. – Be endorsed by the operator of the gas transmission pipeline where the works are within or crossing the relevant gas transmission easement – Easement Delineation On Site - During construction, the boundary of the easement must be clearly delineated on site by temporary fencing (or other means as agreed by APA), and clearly marked as a hazardous work zone/ restricted area. Crossing of the easement during construction must only be at points agreed to by APA and designed and built to APA's standards – Easement Delineation On Plans - All plans which include the area of the gas pipeline easement must have the easement clearly identified with hatching on the full width of the easement. The easement must also be clearly labelled as 'high pressure gas pipeline easement – no works to occur without the prior authorisation of the pipeline operator' Pipeline Operator Access - The ability of the pipeline operator to access the easement must be maintained at all times to facilitate prompt maintenance and repairs. This may be through interlocking padlocks so APA has keyed access as any time. APA field officers will undertake any necessary site induction to facilitate unaccompanied access.
Crown land	Pacific Hydro must obtain appropriate tenure / easement for the Crown land within the proposed corridor for the electricity transmission line (ETL)