Appendix B. Updated mitigation measures

The mitigation measures provided in the EIS have been updated to include the additional commitments made in responding to submissions. Updated mitigation measures are indicated in ***bold italics*** in the table below.

Reference	Mitigation measures	Timing
Biodiversity		
B01	Pre-clearance surveys will be undertaken prior to tree felling works by suitably qualified and experienced persons/personnel and will include: ▪ ***Scheduling the clearing works for a time of year to avoid the breeding seasons of identified threatened species and other fauna that may breed on site where practicable. In the unlikely event that works cannot be scheduled outside of breeding times, additional controls will be implemented prior to clearing and documented in the CEMP to further manage the risk. This could include, but is not limited to, additional pre-clearance surveillance of potential den tree (stagwatching or cameras) and sectional removal of trees;*** ▪ ***Comparative habitat assessments conducted on clearing sites and proposed release sites to ensure that habitat features are available in the released sites;*** ▪ ***Release sites identified and mapped prior to clearing and all appropriate approvals granted by the landholders;*** ▪ The demarcation of areas approved for clearing to reduce risk of accidental clearing; ▪ Habitat resources and habitat trees will be identified and marked. (Note: habitat trees are those containing hollows, cracks or fissures and spouts, active nests, dreys or other signs of recent fauna usage. Other habitat features to be identified include fallen timber/hollow logs, burrows, and boulder piles); ▪ The potential presence of threatened flora and fauna species, endangered populations and ***Threatened Ecological Communities*** (TECs) will be identified; ▪ The identification of threatened species or habitat features that are suitable for translocation or salvage; and ▪ Disturbance activities will be targeted to specific times of the year to minimise impacts to threatened species' usage of habitat features for breeding and roosting, where practicable.	Prior to clearance and during clearance activities
B02	Tree felling will be completed as close to the completion of pre-clearance surveys as practicable to limit the potential for new issues to arise (such as new active nests being built). Tree felling supervision will be undertaken by an appropriately qualified and experienced person after pre-clearance surveys have identified potential habitat features. ***The tree-felling process will include the following:*** ***Prior to Felling Habitat Trees:*** ▪ ***Completion of actions recommended from the pre-clearing surveys, including (but not limited to) salvage of identified habitat features, additional surveys to determine threatened fauna usage of the area (if required), identification of active dens or burrows, any actions required to discourage fauna occupation and weed or feral fauna management requirements;*** ▪ ***Removal of non-habitat trees/vegetation as close to the habitat tree felling date as possible in order to create disturbance to discourage fauna usage of the habitat trees; and***	Prior to clearance and during clearance activities

Reference	Mitigation measures	Timing
	▪ ***Shaking of habitat trees (with heavy machinery) as appropriate to encourage fauna to abandon trees.*** ***On the Day of Felling Habitat Trees:*** ▪ ***Tree clearing should not be conducted above 35°C for the interests of animal welfare;*** ▪ ***Communication with rescue agencies and local veterinarians prior to the commencement of clearing to confirm the availability of resources for any captured/injured fauna that is unable to be released;*** ▪ ***Clearing should be conducted sequentially and directionally towards areas of refuge to prevent the creation of vegetation islands;*** ▪ ***All habitat trees will be subject to a visual inspection to survey for threatened species;*** ▪ ***Trees previously identified as containing fauna will be shaken and then felled, providing no threatened species are identified;*** ▪ ***The lowering of hollow-bearing trees will be done as gently as possible with heavy machinery;*** ▪ ***If a threatened species is identified in a habitat tree on the day of felling, the supervising person is to advise the most appropriate method to minimise potential harm. This may include leaving the tree overnight, further shaking to encourage the animal to vacate the tree, gradual removal of branches to discourage ongoing use, soft felling of the tree with the animal in the tree, or measures to capture and relocate the animal to secure habitat;*** ▪ Uninjured animals should be released on the day of capture into nearby suitable secure ***habitat and should not be held for extended periods of time;*** ▪ ***Injured animals will be taken to the nearest veterinary clinic or wildlife carer as soon as possible for assessment and treatment;*** ▪ ***Felled trees are to be rolled where appropriate so that the number of hollows blocked against the ground is minimised;*** ▪ ***All felled habitat trees should remain in place for a least one night to allow any remaining fauna to escape;*** ▪ ***Ensure that trees felled are positioned so that hollows are facing upwards and out to allow fauna to escape overnight; and*** ▪ ***Habitat features identified for translocation or salvage operations should be extracted and stored appropriately***.	
B03	Surface water design commitments will include: ▪ Design erosion and sediment controls as per sensitive environments (Managing Urban Stormwater – Soils and Construction (Landcom, 2004)); and ▪ Detailed design of drainage will balance clean water discharges to maintain minimum flows (as estimated based on current topography and hydrology) to identified green and golden bell frog habitats.	Prior to clearance and during clearance activities
B04	Surface water construction commitments will include: ▪ Hygiene protocol will be implemented in accordance with the *NSW Threatened Species Management Information Circular No.6 –* ***Hygiene protocol for the control of disease in frogs (***DECCW, 2008);	Prior to clearance and during clearance activities

Reference	Mitigation measures	Timing
	▪ Flocculants or other chemicals proposed to be used on site will be known and verified as being sage in sensitive environments, particularly in relation to amphibians; and ▪ Appropriate hygiene controls will be implemented in accordance with Saving Our Species Guidelines for threatened frog species	
B05	Erosion and sediment controls will be designed, installed and managed as follows: ▪ Progressive ***Erosion and Sediment Control Plans*** (ESCPs) will be developed by the Contractor and implemented prior to the commencement of topsoil stripping and earthworks; ▪ Erosion and sediment control structures will be regularly inspected and maintained, particularly in advance of and following significant rainfall events; ▪ Any water discharges are required to be managed to avoid pollution of waters having regard to the sensitivity of the receiving environment. In particular, any flocculants are to be demonstrated as being both effective and safe for amphibians prior to use; and ▪ All disturbed surfaces will be revegetated as soon as possible.	Construction and operation
B06	The following surface water construction monitoring will be implemented: ▪ Pre-discharge physical water quality condition (temperature; dissolved oxygen; pH; electrical conductivity) and chemical water quality condition in sediment dams will be monitored; ▪ Water quality leaving the Project area will meet the specified criteria for total suspended solids (less than 50 mg/L), pH (between 6.5 and 8.5) and no hydrocarbon or any other chemical contaminants exceeding the trigger levels set out in relevant guidelines; and ▪ Visual post rainfall checks of sediment dam water level and water quality, and to ensure erosion and sediment controls are effectively functioning.	Prior to clearance and during clearance activities
B07	Weed management controls will include: ▪ All machinery and equipment will be cleaned thoroughly prior to entering the development footprint. Cleaning will include the removal of all mud and plant matter, followed by washing with high pressure water; and ▪ Mulch containing weeds will be placed in piles separate from clean mulch, removed from site, and disposed of in accordance with weed management guidelines as soon as practicable.	Construction and operation
B08	During construction, fencing will be used to demarcate vegetation where required to avoid accidental damage to areas outside of the development footprint. Access control measures will include: ▪ Appropriate fencing and signposting of areas to prevent the uncontrolled entry of people, accidental disturbance, and to minimise vehicular and human traffic; ▪ Clear and visible signage will be appropriately located to inform the workforce and others of the restricted access or otherwise of areas outside the development footprint; and ▪ Locking of gates to prevent unwanted vehicle, person access and disturbance.	Construction and operation
B09	A Stormwater Management Plan (SMP) will be prepared to appropriately limit post development flows and manage downstream	Construction and operation

Reference	Mitigation measures	Timing
	water quality as part of the site establishment and clearing works. Measures to be implemented include: ▪ Minimising the area of disturbance; ▪ Diverting run-off water around disturbed areas; ▪ Installation and ongoing maintenance of erosion and sediment controls (e.g. sediment fencing) throughout the duration of the Project; and ▪ Stabilisation (e.g. sealing, landscaping) of all disturbed areas to reduce the potential for future erosion.	
B10	The following mitigation actions will be implemented for the Project to develop a greater understanding and awareness of biodiversity issues in non-ecologically trained personnel: ▪ Inductions for the workforce will be undertaken to make them aware of the key ecological issues present in the development footprint and so that they know their role and responsibilities in the protection and/or minimisation of impacts to all native biodiversity; and ▪ Inductions will identify the location of sensitive flora and fauna and the policies being implemented to protect the biodiversity values of such areas.	Prior to construction and during construction
Aboriginal heritage		
AH1	The Unanticipated Finds Protocol in the ACHAR will be followed for any unidentified Aboriginal heritage objects found during the works.	Construction
AH2	An Aboriginal cultural heritage awareness training will be developed with the local Aboriginal community and will be provided to workers involved in clearing and ground disturbance activities associated with construction of the Project.	Construction
Non-Aboriginal heritage		
NAH1	Should any unexpected historical heritage, including archaeological relics, be uncovered during the course of the proposed works, works should stop, and the area cordoned off. A qualified archaeologist and, if necessary, Heritage NSW (in accordance with s146 of the Heritage Act) should be contacted to assess significance and advise on further requirements before work can recommence.	Construction
NAH2	All contractors and subcontractors should be made aware of their obligations under the Heritage Act. The presence of a heritage item and associated elements in the vicinity of the proposed works should be communicated to all staff during toolbox talks.	Construction
Land		
L1	Detailed design of each Project component would consider and address geotechnical stability risks in accordance with applicable design standards.	Detailed design
L2	Potential contamination-related impacts associated with the Project will be managed by the implementation of a CEMP that includes (but not limited to): ▪ An ASS management plan in accordance with Acid Sulfate Soil Manual (NSW ASSMAC, 1998) will be in the event that PASS is encountered; ▪ An unexpected finds protocol, including encountering Asbestos containing material during the extent of the construction works;	Construction

Reference	Mitigation measures	Timing
	▪ Management of surface water when present to minimise the mobilisation of any potential residual soil impacts that could migrate to sensitive off-site ecological receptors; and ▪ Management of materials during construction works by implementation of the decision tree for reuse of soil in the PFAS National Environmental Management Plan (DAWE, 2020), so that excavated soils can be reused in less sensitive areas or managed within the Project area to prevent unacceptable risks to any receptor and minimise off-site disposal of excavated materials to a licensed landfill. ▪ ***Should soils containing concentrations of PFAS be considered for re-use at the site, the EPA should be contacted prior to re-use to ensure that this is acceptable.***	
L3	To manage soils hazards: ▪ High dispersion potential soils would be removed from structural foundations; ▪ Adequate topsoil and vegetation cover over the embankment face is used for permanent embankment batter slopes that are to remain through high dispersion potential soils to assist with limiting erosion. Consideration could also be given to the use of stabilisation or geosynthetic solutions on cut or embankment batter faces; ▪ The clay foundation soils be treated to reduce the potential for dispersion/erosion. This could include graded non-dispersive backfill materials around structures such as culverts to limit the loss of fines from soils surrounding such structures and the use geotextile filter materials; and ▪ Design of drainage and erosion control measures will need to take due consideration of the dispersive nature of soils at the site.	Construction
L4	***If unexpected contamination is found and remediation is required to make the land suitable for the final intended land use, a Remedial Action Plan would be prepared or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management scheme. The Remedial Action Plan must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997 and must include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use when the Remedial Action Plan is implemented.***	***Construction***
Noise		
NV1	Select low-noise plant and equipment. Ensure equipment mufflers operate in a proper and efficient manner.	Prior to and during construction
NV2	Where possible, use quieter and less vibration emitting construction methods.	During construction
NV3	Only have necessary equipment on-site and turn off when not in use.	During construction
NV4	Where possible, concentrate noisy activities at one location and move to another as quickly as possible.	During construction
NV5	Vehicle movements, including deliveries outside standard hours should be minimised and avoided where possible.	During construction

Reference	Mitigation measures	Timing
NV6	Ensure all plant and equipment is well maintained and where possible, fitted with silencing devices.	Prior to and during construction
NV7	Use only the necessary size and powered equipment for tasks.	During construction
NV8	Implement training to induct staff on noise sensitivities	Prior to and during construction
NV9	Where possible, consider the application of less intrusive alternatives to reverse beepers such as 'squawker' or 'broadband' alarms.	During construction
NV10	Consider the installation of temporary construction noise barriers or earth mounds for concentrated, noise-intensive activities.	During construction
NV11	Where practicable, install enclosures around noisy mobile and stationary equipment as necessary.	During construction
NV12	Where possible, avoid simultaneous operation of two or more noisy plant close to receivers. The offset distance between noisy plant and sensitive receivers should be maximised.	During construction
NV13	Plan traffic flow, parking and loading/unloading areas to minimise reversing movements.	Prior to and during construction
NV14	Complete routine monitoring to evaluate construction noise levels and evaluate whether the mitigation measures in place are adequate or require revision.	During construction
NV15	▪ Choosing alternative, lower-impact equipment or methods wherever possible; ▪ Scheduling the use of vibration-causing equipment at the least sensitive times of the day (wherever possible); ▪ Locating high vibration sources as far away from sensitive receiver areas as possible; ▪ Sequencing operations so that vibration-causing activities do not occur simultaneously; ▪ Keeping equipment well maintained; and ▪ Do not conduct vibration intensive works within the recommended safe setback distances.	During construction
NV16	Informing nearby receivers about the nature of construction phases and the vibration-generating activities.	During construction
NV17	The detailed design of the Project would include further consideration and modelling of the selected BESS component supplier's equipment sound power levels and layout to confirm the predictions of the noise impact assessment remain valid prior to construction commencing. Selected technology would avoid or otherwise manage annoying noise characteristics to acceptable levels.	Detailed design for each Project Stage
NV18	Operational noise monitoring would be undertaken immediately following commissioning of each Project stage to confirm predictions and to identify any need to retro-fit mitigation measures to achieve compliance with applicable criteria. Results would be used to determine need for additional mitigation for subsequent Stages.	Immediately following commissioning of each Stage.
NV19	All reasonable and feasible mitigation measures would be explored and implemented to achieve compliance with all criteria at all times.	Operations

Reference	Mitigation measures	Timing
Traffic		
T1	A Construction Traffic Management Plan ***(CTMP)*** will be prepared and implemented by the construction contractor. The CTMP will include: ▪ Confirmation of haulage routes; ▪ Access to construction site including entry and exit locations; ▪ Times of transporting to minimise impacts on the road network; ▪ Measures to minimise the number of workers using private vehicles; ▪ Management of oversized vehicles; ▪ Site specific traffic control measures (including signage) to manage and regulate traffic movement; ▪ Relevant traffic safety measures including driver induction, training, safety measures and protocols; ▪ Identify requirements for, and placement of, traffic barriers; ▪ Requirements and methods to consult and inform the local community of impacts on the local road network due to the development-related activities; ▪ Consultation with Transport for NSW and Council; ▪ Consultation with the emergency services to ensure that procedures are in place to maintain safe, priority access for emergency vehicles; ▪ A response plan for any construction related traffic incident; ▪ Monitoring, review and amendment mechanism; and ▪ Individual traffic management requirements at each phase of construction.	Prior to commencement of construction.
T2	An oversized vehicle permit will be sought for all OSOM vehicle movements where required. The OSOM movements would be in accordance with the permit requirements and be outside of peak traffic periods where possible. In addition, a separate OSOM Transport Management Plan will be prepared and will include: ▪ Identification of route; ▪ Measures to provide an escort for the loads; ▪ Times of transporting to minimise impacts on the road network; ▪ Communication strategy and liaising with emergency services and police; and ▪ Any minor temporary civil infrastructure works may be required to accommodate OSOM movements.	Prior to delivery of over size overmass loads.
T3	The CEMP and general site induction would inform construction and operational personnel of the risk of collisions, and the risks of speeding and fatigue on safety. In addition, a Driver Code of Conduct will be prepared and used to outline the rules and behaviours which drivers associated with the Project would be required to adhere to. The Driver Code of Conduct will outline arrangements for light and heavy vehicle drivers including: ▪ General requirements including site induction requirements ▪ Travelling speeds and safe driving practices, particularly through residential areas and school zones ▪ Fatigue management ▪ Adherence to designated transport routes and heavy vehicle noise ▪ Public complaint resolution and penalties and disciplinary action.	Construction

Reference	Mitigation measures	Timing
T4	Road maintenance is not proposed as part of the Project on the basis that total heavy vehicle movements associated with full Project construction would be equivalent of 6 days of heavy vehicle movements on Wangi Rd while movements on Rocky Point Rd would be equivalent to 20 days of existing operations of the EPS.	Construction
T5	Affected parties including emergency services will be notified in advance of any disruptions to traffic and restriction of access impacted by Project activities.	Construction
Water (Surface water, groundwater and flooding)		
SW1	A Construction Surface Water Management Plan (CSWMP) will be prepared as a sub-plan of the CEMP for each stage of the Project. The plan will outline measures to manage soil and water impacts associated with the construction works. The CSWMP will include but not be limited to: ▪ Measures to minimise/manage erosion and sediment transport both within the construction footprint and off-site including requirements for the preparation of ESCP for construction; ▪ Processes for dewatering of construction sediment basins, including relevant discharge criteria; ▪ Measures to manage accidental spills including the requirement to maintain materials such as spill kits; ▪ Measures to manage any potential ASS found in excavated fill material, in accordance with the Acid Sulfate Soil Guidelines; ▪ Measures to manage potential tannin leachate; and ▪ Details of surface water quality monitoring to be undertaken prior to, throughout, and following construction (refer to SW2 for further information).	Pre-construction, Construction
SW2	A surface water monitoring program will be implemented prior to, during and following construction and decommissioning. The monitoring program will include (but not be limited too): ▪ Visual assessment and routine monitoring (at least fortnightly) of physio-chemical parameters and contaminants of concern at downstream SREs to ensure compliance with applicable ANZG (2018) DGVs and HEPA (2018) guidelines during construction and decommissioning stages and until permanent drainage are demonstrated to be functioning and non-polluting. ▪ Visual assessment of surface water runoff structures at least once every week and also following any heavy rain during construction and decommissioning, until such time as permanent drainage is established and functioning to prevent sediment laden run-off, to ensure all water structures are operating effectively for their designed purpose, and to promptly address any deficiency in their operation. ▪ Should any deficiency in water structure operation or downstream water quality be identified, prompt remedial actions will be employed to address issues, including clearing sediment traps of sediment, storing and disposing of sediment (if required) in accordance with the Managing Urban Stormwater: Soils & Construction (Landcom, 2004), and repairing any damaged structure immediately after the damage is identified.	Pre-construction, Construction, Operation
SW3	Site specific controls and procedures would be developed and implemented as part of the CSWMP to reduce the risk of litter and spills	Pre-construction, Construction

Reference	Mitigation measures	Timing
	and leaks entering downstream waterways. The CSWMP would include (but not be limited to) the following measures: ▪ All fuels, chemicals and liquids would be stored on level ground away from waterways (including existing stormwater drainage systems) and would be stored in a sealed bunded area within the construction site; ▪ Refuelling and minor maintenance activities would be limited to designated areas with established spill capture and management controls; ▪ An emergency spill response procedure would be prepared as part of the CSWMP; ▪ Regular visual water quality checks (for hydrocarbon spills/slicks, turbid plumes and other water quality issues) will be carried out at waterways in proximity to works; and ▪ Installing and maintaining control measures such as silt fencing and gross pollutant traps, etc.	
SW4	To avoid ingress of concrete waste material into downstream waterways, the CEMP would outline procedures to capture, contain and appropriately dispose of any concrete waste from concrete works including designated lined, bunded and controlled concrete wash-out areas.	Pre-construction, Construction
SW5	Dewatering any construction sediment basins will be in accordance with the *Managing Urban Stormwater: Soils & Construction* (Landcom, 2004), any EPL licence conditions which may be held for construction, and as per the EPBC Referral decision (August 2021) water quality runoff performance criteria outlined in Particular Manner 3. Dewatering procedures would be outlined in the ESCP and will include (but not be limited to): ▪ Routine and pre-discharge sampling and analysis to confirm absence of contaminants exceeding applicable criteria; ▪ Pre-discharge confirmation of compliance with water quality performance criteria able to be analysed in real time; ▪ The methodology for dewatering including use of amphibian friendly flocculants and pH balancing agents; ▪ Supervision requirements; ▪ Staff responsibilities and training; and ▪ Approvals required before any dewatering activity commences.	Construction
SW6	The design of permanent drainage and water management would demonstrate ability to meet Project performance outcomes of no pollution of waters. Any necessary maintenance or emergency isolation requirements would be documented in the Project operations manual. As a minimum, the operations manual would include: ▪ Details for bi-annual surveillance inspections of drainage and water management infrastructure and rectification requirements; ▪ Bi-annual discharge water sampling and analysis to confirm pollution of waters is not resulting from the operations of the Project; ▪ Operational procedures for emergency isolation in response to spills, leaks or fire events as necessary in response to recommendations of PHA; ▪ Stormwater / flooding detention facilities to mitigate against increases in peak runoff rates from the Project; and	Operation

Reference	Mitigation measures	Timing
	▪ Monitoring of receiving drainage channels and waterways downstream of the discharge location(s) to identify any evidence of channel erosion and scour.	
SW7	▪ All equipment or storage containing dangerous goods or hazardous substances would be bunded or otherwise contained in accordance with AS 2067 and AS1940. ▪ A PHA for the Project would be progressed to a final hazard study as part of detailed design when specific technology is confirmed. The design of operational water management system would accommodate the emergency response philosophy for the selected technology and include emergency isolation and water management measures as warranted.	Operation
F1	▪ Provision of stormwater detention facilities to mitigate against increases in peak runoff rates from the Project with sizing to be confirmed during detailed design.	Operation
F2	▪ Permanent stormwater detention facilities should be installed prior to construction of hardstand/paved areas to mitigate against potential flood impacts during construction phase.	Construction
F3	▪ The BESS site should be filled to a minimum of the 1% AEP flood level + 0.5 m freeboard or the PMF level, whichever is higher. The recommended minimum finished level is 10.4 m AHD.	Construction, Operation
Hazards (Including PHA, Bushfire and EMF)		
H1	The PHA would be progressed to a final hazard study to further develop document and implement the recommendations of the PHA to: ▪ Specify requirements for suppliers and designers to demonstrate robust designs to prevent, monitor and (where unable to eliminate the possibility) control thermal runaway and undertake specialist safety in design assessments such as fire risk assessment to inform the design and selection of the battery; ▪ Implement a design principle that assumes a thermal runaway event within an enclosure will occur in the lifetime of the asset and therefore limits deflagration energy release, and prevents the spread of fire to adjacent enclosure by adopting appropriate design controls such as suitably designed enclosures and separation distances; ▪ Undertake detailed HAZOP studies and design review of the selected designs with specific attention on the inherent design features that detect, control and prevent thermal runaway; ▪ Review findings from thermal runaway event incident investigations, to identify applicable lessons and improvements, and establish the Project design basis accordingly; ▪ Determine credible scenario's from a thermal runaway event once the technology and its size is determined to quantify the amount of potential hazardous by products that must be managed and establish the Project design basis accordingly (e.g. amount of combustion and pollution, fire water use for containment (if applicable), volumes of retention dams etc); ▪ Bushfire risk assessment is covered in detail other Chapters of the EIS, the PHA recommends that heat maps from the detailed bushfire study be used to inform the design and determine adequate asset protection zones required to prevent conditions that could trigger thermal runaway in the specific technology selected;	Detail design

Reference	Mitigation measures	Timing
	▪ Implement a robust quality plan and inspections throughout the supply chain and during construction focused on aspects that provide layers of protection to prevent battery modules being installed that have manufacturing defects or mechanical damage; ▪ Develop and implement suitable asset management plans to ensure proper maintenance of the facility in line with manufacturers recommendations and good industry practice throughout the operations phase; and ▪ Engage reputable and experienced design consultants knowledgeable in good industry standards to design the proposed grid connection infrastructure and undertake an EMF study and assessment to confirm that EMF levels beneath the proposed transmission line are within public exposure guidelines.	
H2	During detail design: ▪ An EMF study and assessment will be carried out to confirm that EMF levels beneath the proposed transmission line are within public exposure guidelines detailed in the Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (ICNIRP, 2020); ▪ It will be confirmed that step and touch potential of infrastructure from induced voltages will be limited within appropriate standard thresholds as part of the design process; and ▪ EMF impacts to workers at the site will be considered and appropriate health and safety management practices will be implemented.	Detailed design
H3	Storage and management of dangerous goods and hazardous materials (if required) will occur in a safe, secure location consistent with the requirements of applicable Australian Standards.	Construction/ operation
H4	Refuelling will take place in a designated area within the works area, away from ignition sources and trees or vegetation and with appropriate controls to prevent any spills coming into contact with the ground.	Construction/ operation
H5	Appropriately stocked emergency spill kits will be available at all work areas at all times. All staff will be made aware of the location of the spill kit and trained in its use.	Construction/ operation
H6	Temporary construction compounds will be maintained in a tidy and orderly manner to minimise potential fuel loads in the event that any construction compounds are affected by fire.	Construction
H7	An emergency response plan for the Battery would be prepared for the Project and provided to the relevant stakeholders.	Construction/ operation
H8	***The Bushfire Impact Assessment would be revised in accordance with Section A2.4 of Planning for Bushfire Protection 2019 and consider the final layout and inputs of the Fire Safety Study undertaken in accordance with DPIE Hazardous Industry Planning and Assessment Papers and in consultation with RFS. The Updated Bushfire Impact Assessment would include:*** ▪ ***Revising the bushfire risk assessment using a recognised assessor and adopting field validated slopes and fuel loads as a key input to detailed design process;*** ▪ ***Consideration of proposed layouts and fire vulnerability of selected BESS equipment;*** ▪ ***Provision of inputs to the Fire Safety Study and adoption of risks identified in the Fire Safety Study to identify necessary***	**Detailed design**

Reference	Mitigation measures	Timing
	performance-based solutions to achieve objectives of Planning for Bushfire Protection 2019 for adoption in the final detailed design.	
H9	***Prior to commencement of construction a bushfire management plan (new or revised) would be prepared in consultation with RFS and in accordance with Section A2.6 of Planning for Bushfire 2019 and for the approval of DPE. Once approved, the bushfire management plan would be implemented and updated as necessary in consultation with RFS for all stages of the development.*** The following bushfire risk mitigation measures would be applied during construction: ▪ *SFAZ and APZ:* management of bushfire fuel hazard in the surrounding landscape should continue in accordance with the EPS Bushfire Management Plan (AECOM, 2020; Figure 15); ▪ *Site clearance:* Vegetation within the development footprint for each stage will be cleared as a first step in construction; ▪ *Access:* site access from Rocky Point Road would be maintained throughout construction. In the event of a fire, emergency services would access the site via Rocky Point Road and have access to construction access tracks and existing perimeter roads for firefighting purposes; ▪ *Fire water supply:* access to water for fire suppression and/or protection of structures or equipment located on site will be provided so that water supply arrangements for firefighting meet the NSW RFS requirement (NSW RFS, 2019a). Fire water for firefighting proposes would be identified in the detailed design stage in consultation with RFS and Fire and Rescue NSW. The intent is to provide adequate services of water for the protection of infrastructure during and after the passage of a bushfire; ▪ *Hazardous materials:* Storage of diesel fuel and other potentially flammable materials on site would follow environmental protection guidance and be located at parts of the site with low radiant heat exposure in the event of a bushfire (i.e. outside the BAL-12.5 zone). ▪ *Hot works controls:* works that have potential to generate sparks and ignite fires will be subject to the contractor's hot works safety management procedures. Hot works will not be undertaken on TOBAN days without a permit from the RFS; and ▪ *Emergency management:* on site bushfire emergency management arrangements will be addressed through the construction contractor's site emergency management plan. Given the level of fire risk and proximity of the site to fire services, bushfire-specific fire-fighting equipment (e.g. 4WD with slip on tank and pump) will not be held on site during construction. If a fire is ignited and cannot be safely contained using fire extinguishers or other materials at hand, construction crews will dial 000 and seek emergency service assistance.	Construction
H10	The following bushfire risk mitigation measures would be applied during operation: ▪ The EPS Bushfire Management Plan would continue to be implemented to maintain target fuel loads in land to the west and north of the BESS compound; ▪ A ***minimum*** 10 m Project APZ would be established inside the Project area between bushfire prone land and the BESS compound	Operation

Reference	Mitigation measures	Timing
	and may be implemented on a staged basis with final details to be confirmed as part of detailed design; ▪ The Project APZ would be maintained clear of native vegetation; ▪ Where existing access tracks are not available, new access tracks would be constructed within part of the APZ to provide access for fire-fighting vehicles to bushfire-prone parts of the Project area. Measures would be in place to ensure fire response vehicles and personnel are separated from electrical infrastructure within the BESS footprint where necessary; ▪ The BESS compound and substation would be kept free of vegetation; ▪ Existing and new access tracks required for inspection and firefighting purposes would be available for emergency services and tracks would be a minimum of 4 m wide and have a minimum vertical clearance of 4 m; ▪ Where fire access tracks are to be constructed within the proposed APZ, these would be constructed to a standard that allows use by fire response vehicles (as specified in NSW RFS fire trail standards (RFS, 2019b) for *Category 1 fire appliances*); and ▪ Fire water for bushfire responses would be identified in the detailed design stage in consultation with RFS and Fire and Rescue NSW. Suitable water supply arrangements shall be provided for firefighting that meet RFS requirements (NSW RFS, 2019a). Water would be available from the potable water system or other EPS water bodies as per the current EPS Bushfire Management Plan (AECOM, 2020). Where necessary, additional on-site water storage would be provided and equipped with standard fittings to enable use by RFS to refill fire response vehicles in the event of failure of the potable supply.	
Socio-economic		
SE1	Origin will keep the community and stakeholders updated on the Project via notifications letters and posts on the Origin website.	Pre-construction
SE2	Identify opportunities to maximise the use of local suppliers, labour and businesses in the provision of goods and services for construction.	Construction
Waste		
WR1	A Waste Management Plan will be developed for the Project with the following criteria: ▪ A hierarchical waste management approach will be used, from the most preferable (reduce, reuse or recycle wastes) to the least preferable (disposal) to prioritise waste management strategies to avoid waste generation; ▪ The plans will promote the use of materials with minimal packaging requirements, removal of packaging offsite by suppliers and fabrication of parts offsite; ▪ Where waste cannot be avoided, waste materials will be segregated by type for collection and removal (for processing or disposal) by licensed contractors; ▪ All waste types will be separated at source for recycling; ▪ A licensed service provider will be appointed to collect waste during construction and operation; ▪ Each waste type will be classified for transport to ensure correct handling; and	Detailed design

Reference	Mitigation measures	Timing
	▪ Any waste that cannot be recovered or recycled will be disposed of to a suitably authorised or licensed treatment or disposal facility where it will be treated and disposed of according to its classification.	
WR2	End of life batteries will be recycled to the extent reasonable and feasible either through return to suppler for repurposing or other mechanisms.	Operation and decommissioning
WR3	Cleared vegetation will be either mulched for onsite reuse or used to created habitat piles, noting that any weeds and pathogens will be managed according to requirements under the NSW *Biosecurity Act 2015*.	Construction
Air		
AQ1	The following will be undertaken to manage exhaust emissions from plant and equipment: ▪ Inspecting all plant and equipment before it is used on-site ▪ Ensuring that all vehicles, plant, and equipment are operated in a proper and efficient manner ▪ Switching off all vehicles, plant and equipment when not in use for extended periods	Construction
AQ2	The following will be undertaken to manage wind erosion from stockpiles and exposed surfaces: ▪ Watering stockpiles and exposed surfaces; ▪ Progressive rehabilitation of exposed surfaces (as feasible) that are no longer required for construction; and ▪ Reviewing and where necessary modifying or suspending activities during dry and windy weather and elevated background air quality conditions.	Construction
AQ3	Potential for air quality impacts resulting from a thermal runaway event would be identified as part of a HAZOP / final hazard analysis and air quality risk and management response would be included in operational safety and environmental management procedures and the site pollution incident response management plan as required under EPL1429.	Operation
Cumulative		
CL1	The CEMP will include a process to review and update management measures if any other development with potential to contribute to cumulative impacts commence in proximity to the Project.	Ongoing