Threatened Species and Ecological Communities – Mt Rawdon Pumped Hydro Project

Species or threatened ecological community
An EPBC search, conducted 21 March 2022, identified four EPBC-listed threatened ecological communities (TECs) that have the potential to occur within the referral area or a 10 km radius of the project components: • Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community (Endangered). • Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland (Endangered). • Lowland Rainforest of Subtropical Australia (Critically Endangered). • Poplar Box Grassy Woodland on Alluvial Plains (Endangered).
Impact
Vegetation clearing is required within the referral area. Landforms and soils will be disturbed during vegetation clearing activities. The majority of the vegetation clearing required for the Project will take place in the upper storage site, which is approximately 64ha in area. In addition to the upper storage an access road, waste rock storage and temporary facilities will be required. The balance of the Generation Facility is either located on disturbed land or will be located underground, further minimising the amount of vegetation clearing required for the project. Vegetation clearing for the Water Pipeline has been minimised by locating the pipeline within or adjacent to the cleared corridor containing the existing water pipeline. Ecological surveys will be undertaken as part of the EIA or IAR to determine the occurrence of TECs within the project footprint. This process will identify all potential impacts and apply avoidance or mitigation measures. Key potential impacts to TECs may include: • Loss and/or degradation of TECs from excavation and vegetation clearing, including reduced extent and increased edge effects. • Fragmentation and isolation of species and communities within TECs. • Indirect impacts to species and communities within the TEC as a result of increased sedimentation from vegetation clearing. • Introduction of new and/or spread of existing invasive species as a result of movement/use of vehicles, machinery and equipment. • Alteration to physical attributes of the TEC such as landform type and soils, affecting the TECs distribution or structure. • Significant spills to the environment from hazardous materials including fuels and chemicals. The avoidance and minimisation of impacts to EPBC-listed TECs will be further considered in the evaluation of the selection of a final project design and footprint.
Species or threatened ecological community
An EPBC search, conducted 21 March 2022, identified 14 EPBC-listed threatened flora species that have the potential to occur within the referral area or a 10 km radius of the project components:

- Acacia *Acacia grandifolia*
- Hairy-joint Grass *Arthraxon hispidus*
- Three-leaved Bosistoa *Bosistoa transversa*
- Hoop Pine Orchid *Bulbophyllum globuliforme*
- Ooline *Cadellia pentastylis*
- Cossinia *Cossinia Australiana*
- Wedge-leaf Tuckeroo *Cupaniopsis shirleyana*
- Cycad *Cycas megacarpa*
- Bluegrass *Dichanthium setosum*
- Black Ironbox *Eucalyptus raveretiana*
- Macadamia Nut *Macadamia integrifolia*
- Mt Berryman *Phebalium Phebalium distans*
- Quassia *Samadera bidwillii*
- Bush Sophora *Sophora fraseri*

Impact

Potential impacts to EPBC-listed flora from the Project will primarily relate to land disturbance (i.e., native vegetation clearing, soil and landform disturbance, primarily as a result upper storage, waste rock storage and access road) and associated impacts such as the introduction of weeds and pests, during the construction phase of the Project. However, the extent of land disturbance is yet to be determined and will be defined following completion of the Project design.

Key potential impacts to threatened flora include:

- Removal of native vegetation that provides habitat and/or supports populations of threatened flora during excavation of and construction.
- Fragmentation of suitable habitat and isolation of threatened flora populations.
- Direct removal of threatened flora individuals during construction impacting populations.
- Introduction of new and/or spread of existing invasive species as a result of movement/use of vehicles, machinery and equipment.
- Damage/ loss of threatened flora individuals as a result of vehicle, plant and machinery movement and use.
- Impacts to threatened flora and/or habitat from increased sedimentation and surface runoff as a result of vegetation clearing or excavation of upper storge.
- Impacts to threatened flora and/or habitat as a result of significant spills of hazardous materials such as fuels and chemicals.

Further studies including baseline surveys of threatened flora within the project footprint will be conducted during the EIS or IAR.

Project siting and design, in particular the selection of access track, will avoid areas of high ecological significance, where reasonability practicable, such as those identified as being of greatest value for threatened flora species and known to support populations or provide suitable habitat for threatened species.

Species or threatened ecological community

An EPBC search, conducted 21 March 2022, identified 11 EPBC-listed threatened species of bird that have the potential to occur within the referral area or a 10 km radius of the project components:

- Curlew Sandpiper *Calidris ferruginea*

- Coxen's Fig-Parrot *Cyclopsitta diophthalma coxeni*
- Red Goshawk *Erythrotriorchis radiatus*
- Grey Falcon *Falco hypoleucos*
- Squatter Pigeon *Geophaps scripta scripta*
- Painted Honeyeater *Grantiella picta*
- White-throated Needletail *Hirundapus caudacutus*
- Star Finch (eastern), Star Finch (southern) *Neochmia ruficauda ruficauda*
- Eastern Curlew, Far Eastern Curlew *Numenius madagascariensis*
- Australian Painted Snipe *Rostratula australis*
- Black-breasted Button-quail *Turnix melanogaster*

Impact

Potential impacts to EPBC-listed fauna including terrestrial avifauna species from the Project will primarily relate to the clearing of vegetation for the construction of the upper storage, waste rock storage and access road, and the potential introduction of weeds and pests.

Key potential impacts to threatened terrestrial avifauna include:

- Removal of native vegetation that provides habitat and/or supports populations of threatened species during construction
- Temporary or permanent loss of habitat as a result of vegetation clearing.
- Fragmentation of habitat resulting in isolation of threatened terrestrial avifauna populations.
- Temporary loss of habitat due to construction noise resulting in avoidance of Project area.
- Impact to water quality of surrounding waterways during construction.
- Direct injury/mortality as a result of vehicle strikes or machinery use during construction and vegetation clearing.
- Potential for increased predation from pest species including foxes and cats as a result of vegetation clearing and habitat fragmentation.

Further studies and project definition will be required to more accurately assess the presence/occurrence of threatened terrestrial fauna, and to assess the potential impacts at a species-specific level, and design of appropriate avoidance and mitigation measures.

Species or threatened ecological community

An EPBC search, conducted 21 March 2022, identified two EPBC-listed threatened aquatic fauna species (one fish and one reptile) that have the potential to occur within the referral area or a 10 km radius of the project components:

- Australian Lungfish, Queensland Lungfish *Neoceratodus forsteri*
- Southern Snapping Turtle, Whitethroated Snapping Turtle *Elseya albagula*

Impact

Impacts to aquatic habitat may occur directly as a result of excavation of the upper storge, waste rock storage and construction of the access road, or indirectly as a result of impacts to terrestrial environments, including:

- Temporary or permanent loss of habitat as a result of construction activities that intersect or are adjacent to aquatic habitats.
- Alteration of local waterway flow patterns during and post construction.
- Increased sedimentation of waterways and wetlands as a result of vegetation clearing or excavation, decreasing water quality and habitat suitability.
- Pollution of waterways and wetlands as a result of spills of hazardous materials such as oils and chemicals.
- Introduction of new and/or spread of existing invasive species as a result of movement/use of vehicles, machinery, equipment and infrastructure.

It is not expected that the Project will affect major stream flow regimes as the project area is located in a small catchment area. Further studies and project definition will be required to more accurately assess the presence/occurrence of threatened aquatic fauna, and to assess the potential impacts at a species-specific level, and design of appropriate avoidance and mitigation measures. An initial aquatic survey conducted in November 2021, within the project footprint, did not find any Australian Lungfish.

Species or threatened ecological community

An EPBC search, conducted 21 March 2022, identified 13 EPBC-listed threatened terrestrial fauna species (ten mammals and three reptiles) that have the potential to occur within the referral area or a 10 km radius of the project components:

- Large-eared Pied Bat, Large Pied Bat *Chalinolobus dwyeri*
- Northern Quoll *Dasyurus hallucatus*
- Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll *Dasyurus maculatus*
- Ghost Bat *Macroderma gigas*
- Corben's Long-eared Bat, South-eastern Long-eared Bat *Nyctophilus corbeni*
- Greater Glider *Petauroides volans*
- Yellow-bellied Glider *Petaurus australis australis*
- Koala *Phascolarctos cinereus*
- Long-nosed Potoroo *Potorous tridactylus tridactylus*
- Grey-headed Flying-fox *Pteropus poliocephalus*
- Adorned Delma, Collared Delma *Delma torquata*
- Yakka Skink *Egernia rugosa*
- Dunmall's Snake *Furina dunmalli*

Impact

Potential impacts to EPBC-listed fauna from the Project will primarily relate to the clearing of vegetation, including the potential loss and degradation of habitat, and the potential introduction of weeds and pests, during the construction phase of the Project.

Key potential impacts to threatened terrestrial fauna include:

- Temporary and permanent loss of habitat as a result of vegetation clearing and potential loss of tree hollows.
- Introduction of new and/or spread of existing invasive species as a result of movement/use of vehicles, machinery, equipment including introduced predators such as cats and foxes.
- Temporary loss of habitat due to construction noise resulting in avoidance of Project area.
- Fragmentation of habitat resulting in isolation of threatened terrestrial fauna populations.
- Direct injury/mortality as a result of vehicle strikes or machinery use during construction and vegetation clearing.
- Introduction of new and/or spread of existing pathogens (diseases/viruses) impacting threatened fauna populations.

Further studies and project definition are required to more accurately assess the presence/occurrence of threatened terrestrial fauna, and to assess the potential impacts and design appropriate avoidance and mitigation measures.