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Appendix 5.4 – OHTL Corridor Vegetation Management Framework

OHTL Corridor Vegetation Management Framework

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Approved Rev	Approver Name Approver Position	Signature	Date
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A	For Review	8-Nov-2022	Mandy Allonby	Project Coordinator	Mellissa Winfield	Development Integration Lead
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1 Introduction

1.1 Australia-Asia PowerLink Overhead Transmission Line

An essential component of AAPowerLink is the transmission of high-voltage electricity between the Powell Creek Solar Precinct and Darwin, via the OHTL, within the OHTL Corridor. The OHTL and OHTL Corridor are fully detailed in Chapter 2 of the Draft EIS (Sun Cable 2022), and further refined in Chapter 2 of the SEIS (Sun Cable 2022, in preparation).

1.2 Scope

This framework has been developed to provide high-level direction on the approach to vegetation management within the OHTL Corridor, noting that a construction and operation-detail Vegetation Management Plan (VMP) will be developed before pre-construction site preparation (e.g., clearing) activities commence.

This framework intends to address statutory requirements for instruments listed in Section 1.3, noting that there are specific requirements for vegetation management in energy corridors (refer Section 2.2). Project-wide vegetation management will be addressed in the aforementioned VMP, while project-wide weed management is addressed in the Weed Management Plan (Appendix 5.3).

1.3 Statutory Framework

Legislation concerning vegetation management subject to the OHTL Corridor primarily pertains to electrical safety within the corridor, as well as statutory instruments regulating the clearing of native vegetation. These are defined in Chapter 1 of the Draft EIS and are briefly summarised in Table 1-1.

Table 1-1: Legislation relevant to vegetation management in the OHTL Corridor

Legislation	Jurisdiction	Relevance
Environment Protection Act 2019	Northern Territory	Environmental Impact Assessment
Electricity Reform Act 2000	Northern Territory	Electrical Safety
Planning Act 1999	Northern Territory	Vegetation clearing
Pastoral Lands Act 1992	Northern Territory	Vegetation clearing
Territory Parks and Wildlife Conservation Act 1976	Northern Territory	Vegetation conservation
Water Act 1992	Northern Territory	Modification to, or clearance of, vegetation within a waterway that may affect the hydrodynamics of the waterway
Work Health and Safety (National Uniform Legislation Act) 2011	Northern Territory	Electrical Safety
Environment Protection and Biodiversity Conservation Act 1999	Commonwealth	Vegetation conservation

2 Vegetation Management in Energy Corridors

2.1 Purpose

This framework has been prepared to address risks to vegetation, wildlife habitat, human health/safety and security that are outlined in the Draft EIS and SEIS.

Vegetation within energy corridors must be regularly monitored and managed to ensure that high-voltage transmission lines function without disruption to the flow of electricity. Effective vegetation management can also result in the following:

- Reducing the potential for bushfires due to the accumulation of organic material
- Improvement to worker safety
- Maintenance or enhancement of habitat for threatened fauna species
- Provision of line-of-sight and access for electrical infrastructure inspection and maintenance
- Increased ventilation to prevent build-up of heat that could affect function of electrical equipment
- Prevention of vegetation covering fences used to reduce unauthorised entry
- Reduction of costs associated with energy disruptions and infrastructure damage or loss.

2.2 Best Practice Vegetation Management

Best practice approaches to vegetation management in energy corridors are summarised in Table 2-1.

Table 2-1: Best practice vegetation management in energy corridors (Brewer International 2021)

Method	Description	Use In Project Phase
Hazardous tree removal	Removal of dead, unhealthy or dangerous trees that have the potential to fall on power lines or electrical infrastructure.	Construction Operation
Tree pruning	Healthy trees may require targeted limb or foliage pruning to prevent interaction with electrical infrastructure. Pruning can guide branches away from infrastructure and reduces internal decay of trees. Standard AS4373 pertains to the best practice pruning of amenity trees in Australia (Standards Australia 2007).	Construction Operation
Undergrowth/brush maintenance	Low-lying vegetation can cause outages and fires and limit access to electrical infrastructure and access tracks.	Operation
Herbicide application	Herbicide can be used to kill off unwanted vegetation and prevent encroachment of undergrowth into the energy corridor. Refer to Weed Management Plan, Appendix 5.3.	Construction Operation

3 OHTL Corridor Vegetation Management

This section provides an overview of the OHTL Corridor footprint and specifications and considerations of the approach to vegetation management during each Project phase (i.e., construction, operations) and during reinstatement activities throughout both phases.

Details pertaining to specific vegetation mitigation measures, equipment and target areas will be detailed in the VMP, to be developed for both construction and operations. The VMP will also detail measures to protect and preserve threatened plants, and plants that provide habitat for threatened wildlife species (e.g., Greater Bilby), which may include practices such as translocation.

3.1 OHTL Corridor Siting

As per Chapter 2, Section 2.5.2 of the Draft EIS (Sun Cable 2022) and Chapter 2 of the SEIS, the majority of the OHTL is proposed to be constructed within the existing Rail Corridor, to minimise any vegetation clearing required for construction and maintenance of the OHTL.

Final locations of OHTL structures (poles, towers) and construction pads will follow the Constraints Planning and Field Development Procedure (see Appendix 4.1). The preferred route of the OHTL Corridor was selected after consideration of route alternatives as assessed in Chapter 2 Project Refinements; the final alignment is shown in Figure 2-2, Figure 2-7 to Figure 2-9 in Chapter 2.

3.2 Vegetation Management Zones

Table 3-1 details the indicative specifications of the OHTL Corridor configuration upon which vegetation management is based. Section 3.2.1, Section 3.2.2 and Section 3.2.3 detail the proposed vegetation management zones within the OHTL Corridor for construction, vegetation reinstatement and operation, respectively.

Note: The specifications detailed in this section are indicative only and are subject to change with final siting and/or following landholder and stakeholder consultation.

Table 3-1: Estimated OHTL Corridor Specifications

OHTL Corridor Location Kilometre Point (KP)	Total Length (km)	Corridor Width (m)	Number of Structures*	Structure Maximum Height (m)	Average Structure Spacing/Span Length^
Powell Creek to Katherine KP 0 – KP 525	525	60	1 500	60	350
Katherine to Lake Bennett KP 525 – KP 711	186	50+	744	60	250
Lake Bennett to NTG Utilities Corridor KP 711 – KP 717	6	30	24	60	250
NTG Utilities Corridor KP 717 – KP 783	66	60	264	60	250

* Number of structures represents both poles and lattice towers
^ Average structure spacing is presented to account for bends in the route that require additional poles/towers, and mitigations for different span distances at sensitive areas
+ 50 m width has been adopted here due to the variability in this section of the OHTL Corridor

3.2.1 Construction Vegetation Management Zones

Table 3-2 details the OHTL Corridor construction footprint specifications. Vegetation within the conductor and pad footprints will be cleared for construction, totalling an estimate of approximately 1 439 ha across the OHTL Corridor.

Table 3-2: Estimated OHTL Corridor Footprint Construction Specifications

OHTL Corridor Location Kilometre Point (KP)	Conductor Footprint Per Structure (m)	Total Conductor Footprint (ha)	Pad Footprint Per Structure (m)	Total Structure Pad Footprint (ha)	Access Road Width (m)*
Powell Creek to Katherine KP 0 – KP 525	22 x 250	825	60 x 100	900	6
Katherine to Lake Bennett KP 525 – KP 711	22 x 150	246	50 x 100	372	6
Lake Bennett to NTG Utilities Corridor KP 711 – KP 717	22 x 150	8	30 x 100	8	6
NTG Utilities Corridor KP 717 – KP 783	22 x 150	87	60 x 100	159	6

* Area included in other footprints (i.e., not additional disturbance)

3.2.2 Vegetation Reinstatement Zones

Following the clearing of vegetation for construction, vegetation will be reinstated within the zones detailed in Table 3-3. A total estimate of 477 ha will be reinstated post-construction and will not require further management (i.e., this area will be left to re-colonise throughout the remainder of the project life and will be periodically inspected to ensure reinstatement is successful).

Reinstated vegetation may comprise species different to that which is cleared for the footprints. This is due to a number of factors including:

- Composition of original vegetation (i.e., only reinstating native species)
- Viability of species
- Availability of plants at the time of reinstatement
- Mature height of trees and shrubs (no greater than approximately 6 m, as detailed in Section 2.4.6 of the SEIS)
- Habitat of species (i.e., prolific spreading plants may be avoided close to Access Roads and infrastructure pads).

Table 3-3: Estimated OHTL Corridor Vegetation Reinstatement Specifications

OHTL Location Kilometre Point (KP)	Reinstatement Footprint Per Pad (m)	Total Reinstatement Footprint (ha)
Powell Creek to Katherine KP 0 – KP 525	22 x 100	330
Katherine to Lake Bennett KP 525 – KP 711	12 x 100	89
Lake Bennett to NTG Utilities Corridor KP 711 – KP 717	0	0
NTG Utilities Corridor KP 717 – KP 783	11 x 100	58

3.2.3 Operational Vegetation Management Zones

Table 3-4 details the OHTL Corridor infrastructure footprints and vegetation zones to be managed during the operational phase of the project. A total of approximately 2 436 ha will require active vegetation maintenance and management throughout operations. Vegetation maintenance and management will be in accordance with the best practice approaches to vegetation management in energy corridors summarised in Table 2-1.

Any overlapping of construction footprints in the operational vegetation management zone will also be reinstated and those areas will be subject to vegetation management, detailed in the Weed Management Plan (Appendix 5.3) and to be further described in the VMP.

Table 3-4: Estimated OHTL Corridor Footprint Operational (Permanent) Specifications

OHTL Corridor Location Kilometre Point (KP)	Access Track Width (m) (Retained)	Total Access Road Footprint (ha)	Structure Pad Footprint Per Structure (m)	Structure Pad Footprint (ha)	Vegetation Management Corridor Width (m)	Total Vegetation Management Footprint (ha)
Powell Creek to Katherine KP 0 – KP 525	6	315	16 x 16	38	38 m	1 642
Katherine to Lake Bennett KP 525 – KP 711	6	111.6	16 x 16	19	38 m	576
Lake Bennett to NTG Utilities Corridor KP 711 – KP 717	6	3.6	16 x 16	1	30 m	14
NTG Utilities Corridor KP 717 – KP 783	6	39.6	16 x 16	7	38 m	204

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