Proposal Content Document

Table 1: General proposal content description

Proposal title	**Northern Terminal to Neerabup Terminal 330kV Transmission Line.**
Proponent name	Electricity Networks Corporation trading as Western Power (Western Power)
Short description	The Northern Terminal to Neerabup Terminal 330kV Transmission Line proposal (the Proposal) is located approximately 13 km north of Perth in the City of Swan and City of Wanneroo. The Proposal is for the construction of a new 330kV dual circuit transmission line between Northern Terminal in Malaga and Neerabup Terminal in Pinjar, a length of approximately 29 km. The purpose of the proposal is to reinforce the North Region transmission network to remove constraints on existing connected generation and provide additional capacity to connect large-scale renewable energy generation and meet future demand. The proposed transmission line will be located in parallel to the existing 330kV transmission line between Northern and Neerabup terminals. The Proposal involves the following components: • Construction of steel lattice towers, steel poles or hybrid of both options. For the purposes of this referral, it is assumed steel lattice towers will be used. • Installation of 330kV overhead conductors, grounding wires and communications wires • Construction of a 4-m wide permanent maintenance access track centred on the line route. • Establishment of a 60 m-wide vegetation clearance zone (ie, 30 m either side of the line route). Maximum vegetation height in this zone will be 3 m. • Connection to existing transmission lines and to Northern and Neerabup terminals In addition, the Proposal includes the following temporary construction activities: • Construction access track • Break and winch sites every 6 km of line for stringing conductors • Clearing within a 20m wide corridor where necessary for turnaround areas, laydown/storage areas, laying of conductors and other construction activities. Western Power has developed an indicative project layout to determine the anticipated impact area for the Proposal. The total impact area is 160.98 ha within a development envelope of 163 ha. The Proposal requires clearing up to 92.12 ha of native vegetation, which comprises 70.70 ha of permanent clearing and 21.42 ha of temporary clearing. The Proposal also

	requires clearing up to 68.86 ha of non-native vegetation, which comprises 52.63 ha of permanent clearing and 16.23 ha of temporary clearing.

Table 2: Proposal content elements

Proposal element	Location / description	Maximum extent, capacity or range
Physical elements		
The transmission line comprises the following physical components: - Transmission infrastructure. For the purposes of this referral, 74 steel lattice towers are assumed. - 330kV conductors (dual circuit) - Optical Ground Wire (OPGW) and underground fibre - Permanent maintenance access track - Vegetation clearance zone	Within Development Envelope. Refer to Attachment 1 indicative project layout.	Proposal activities comprise 160.98 ha of disturbance within a 163 ha Development Envelope. The following elements will require clearing and ground disturbance: - Construction of transmission towers within a 54m x 54m clear pad. - Permanent maintenance access track will be 4m wide. - Vegetation clearance zone will be 60m wide. Any vegetation growing over 3m in height at maturity within this zone will be removed.
Construction elements		
Clearing for temporary construction access track	Within Development Envelope. Refer to Attachment 1 indicative project layout.	Temporary construction access track will be 6m wide. A 4m wide permanent maintenance access track will be retained post-construction.
Clearing within construction corridor for turnaround areas, laydown/storage areas, laying conductors and other construction activities.	Within Development Envelope. Refer to Attachment 1 indicative project layout.	Temporary construction corridor will be 20m wide.

Break and winch sites – areas for winching equipment to pull conductors between transmission towers.	Within Development Envelope. Refer to Attachment 1 indicative project layout.	Break and winch sites will be located every 6km of line. Winching equipment will be located within a 60m x 30m temporary cleared area.
Dewatering to construct tower footings.	Within Development Envelope. Refer to Attachment 1 indicative project layout.	Dewatering requirements will be determined following geotechnical investigations.
Operational elements		
Operation and maintenance of transmission infrastructure	Within Development Envelope. Refer to Attachment 1 indicative project layout.	Ongoing clearing of vegetation regrowth within permanently cleared areas (maintenance access track, around transmission towers and vegetation clearance zone).
Proposal elements with greenhouse gas emissions		
Construction elements:		
Scope1	9,500 t CO2-e Scope 1 emissions have been calculated using emission factors as per the National Greenhouse and Energy Reporting (Measurement) Determination based on available project projections and/or existing operational data for fuel use (transport and stationery) and land clearing. Supporting documentation can be provided on request due to commercially sensitive information used in emissions modelling.	
Scope 2	Nil	
Scope 3	N/A Scope 3 emissions are excluded in this estimate due to the lack of consistent available methods to provide a reliable estimate across range of associated Scope 3 categories associated with the project.	
Operation elements:		
Scope 1	125 t CO2-e /yr Scope 1 emissions have been calculated using emission factors as per the National Greenhouse and Energy Reporting (Measurement) Determination based on available existing operational data for fuel use associated with operational and maintenance activities (transport), and use of SF6 within circuit breakers.	
Scope 2	10,000 t CO2-e /yr Based on electricity losses during transmission (line losses). Scope 2 emissions calculated as per the National Greenhouse and Energy	

	Reporting (Measurement) Determination 2008, Method A1 for estimating emissions from electricity consumption. 10,000 CO2-e/yr represents year one losses. Scope 2 emissions are projected to decrease year on year as this project, together with other network augmentation projects facilitates further connection of renewable energy generation to the SWIS.	
N/A	Scope 3 Scope 3 emissions are excluded in this estimate due to the lack of consistent available methods to provide a reliable estimate across range of associated Scope 3 categories associated with the project.	
Rehabilitation		
Areas cleared for temporary construction activities will be rehabilitated following completion of construction. In total, 21.42 ha of cleared land will be rehabilitated.		
Commissioning		
Commissioning will include testing and assurance at the end of construction. These activities are included in the extent of construction elements.		
Decommissioning		
Decommissioning is not anticipated within life of asset (>50 years). Prior to the end of design life, the transmission line and associated infrastructure will be reviewed to determine the ongoing needs of the network and whether assets will be removed, upgraded or replaced.		
Other elements which affect extent of effects on the environment		
Proposal time*	Maximum project life	Permanent infrastructure (>53 years)
	Construction phase	3 years
	Operations phase	>50-year design life
	Decommissioning phase	N/A

** Proponents should only provide realistic timeframes to avoid unnecessary change to proposal applications at referral (section 38C), assessment (section 43A) or post assessment (section 45C).*