



Transmission System Plan 2025

Public

July 2026

Appendix B

Network Project Outlines



Western Power

363 Wellington Street
Perth WA 6000
GPO Box L921 Perth WA 6842

T: 13 10 87 | Fax: 08 9225 2660
TTY 1800 13 13 51 | TIS 13 14 50

Electricity Networks Corporation
ABN 18 540 492 861

An appropriate citation for this paper is:

Transmission System Plan – 2025

Enquiries about this report should be directed to:

Western Power Mailbox
Transmission Grid Strategy & Planning
Email: NOM.TSP@westernpower.com.au

Disclaimer

Western Power's Transmission System Plan (**TSP 2025**) is prepared and made available solely for information purposes. Whilst reasonable effort has been made to ensure the quality of the information in this publication, Western Power accepts no responsibility or liability for any loss or damage that may be incurred by a person acting in reliance on this information or assumptions drawn from it. This publication contains certain predictions, estimates, and statements that are made on various assumptions. The assumptions may or may not prove correct, and they may change over time. Anyone proposing to use the information in this paper should independently verify and check the accuracy, completeness, reliability, currency, and suitability of that information for their own purposes.

Western Power makes no representations or warranty as to the accuracy, reliability, completeness, currency, or suitability for purpose of the information, representations, or statements in this publication. Persons reading or utilising this document acknowledge that Western Power and their employees, agents and consultants shall have no liability (including liability to any person by reason of negligence or negligent misstatement) for any statements, opinions, information or matter (expressed or implied) arising out of, contained in or derived from, or for any omissions from, the information in this document, except insofar as liability under any Western Australian or Commonwealth statute cannot be excluded.

Western Power is required to publish a Transmission System Plan in accordance with the Electricity System and Market Rules (ESMR).

Contents

CEL North.....4

CEL East Stage 1.....5

CEL Kwinana 6

CEL Chittering.....7

CEL Moora.....8

CEL East Stage 2 & 3.....9

CEL Perth Circuit 10

CEL Collie.....11

CEL Metro 12

CEL East Enhancement.....13

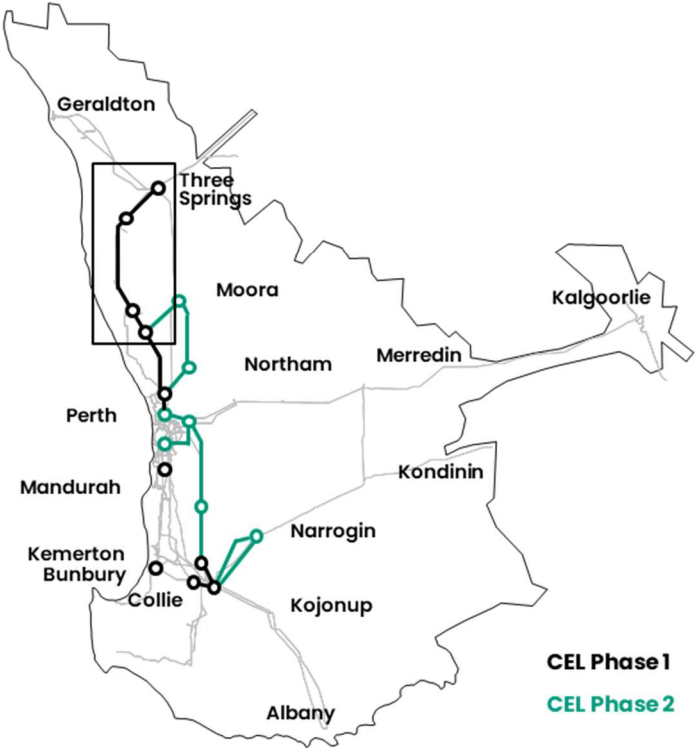
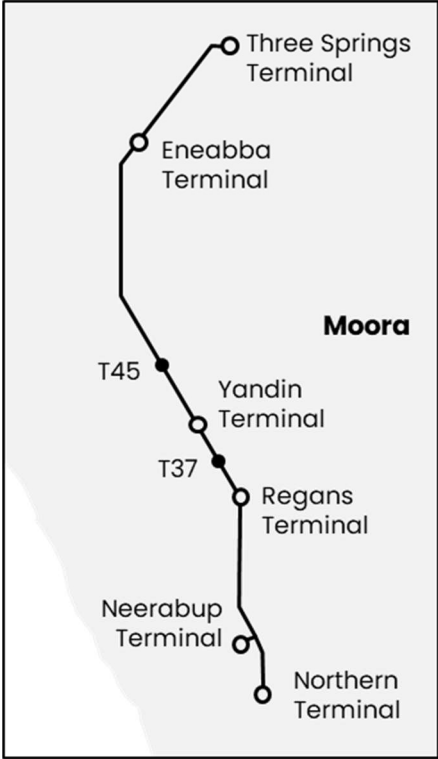
Line Reinforcement Projects (2024) 14

Line Reinforcement Projects (2025) 15



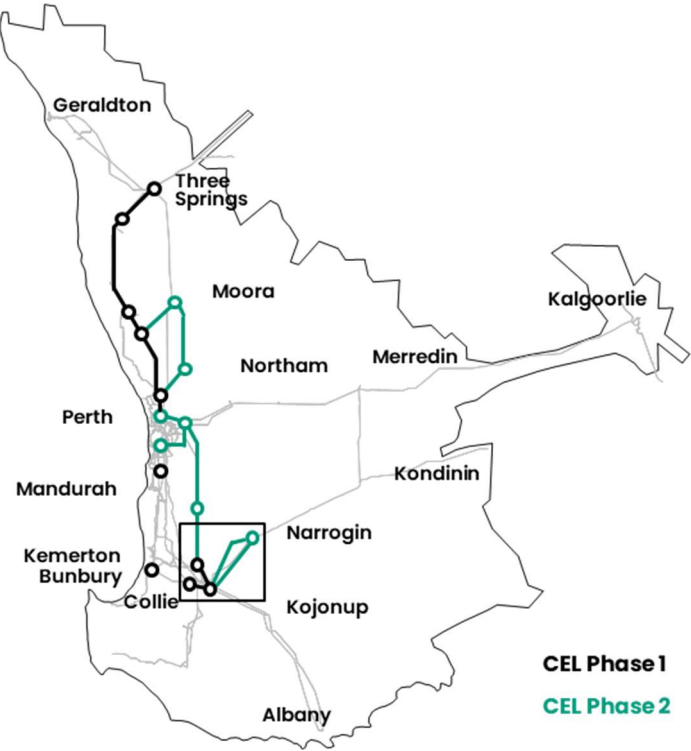
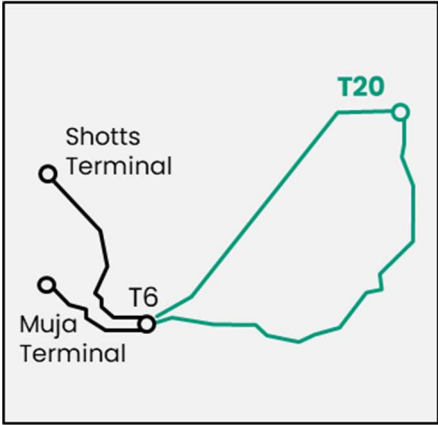
CEL North

CEL North	Transfer: 1,000 MW
FIS	2027 (North) + 2028 (Regans)
Scope	Circuit length (330 kV) 45 km (132 kV) 35 km Expand and upgrade existing terminals at Regans Ford, Malaga, Neerabup, Eneabba and Three Springs Establish new double circuit 330kV line between Northern Terminal and Neerabup Terminal Establish new single circuit 132kV cable between Padbury Substation and Wangara Substation Establish new double circuit 132kV line between Neerabup Terminal and Wangara Terminal Establish new single circuit 132kV line to branch off from existing network infrastructure between Northern Terminal and Northam to connect Henley Brook Substation Establish new double circuit 132kV line between Eneabba Substation and Eneabba Terminal Establish new double circuit 330kV line connecting Regans Terminal to the existing 330kV line Conversion of multiple existing 132kV lines to 330kV, between Northern Terminal and substations at Pinjar, Regans, Cataby, Eneabba and Three Springs. Potential for future development of T37 and T45 collector terminals.
Benefits	CEL North + CEL Regans delivers 1000 MW transfer capacity improvement.



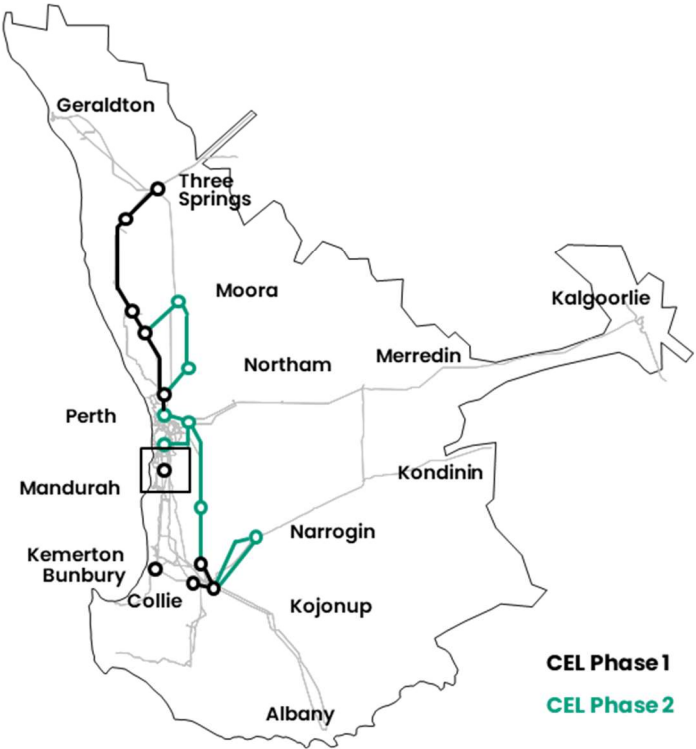
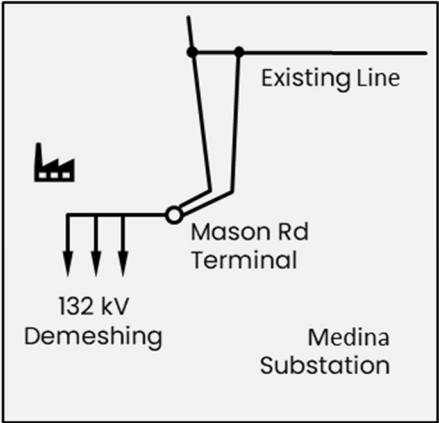
CEL East Stage 1

CEL East Stage 1		Transfer: 1,600 MW
FIS	2029	
Scope	Circuit length (330 kV) ~90 km Establish new T6 Terminal (near Muja). Expand existing Terminals at Muja and Shotts. Establish double circuit 330 kV lines. between T6 Terminal and both Muja Terminal, and Shotts Terminal. Additional network decongestion (132 kV) scope may be identified through further studies.	
Benefits	The new transmission lines and Terminals will enable a step change in new renewable energy project connections in the East Country (around Bowelling and Collie areas). The proposal will facilitate import/export of up to 1,600 MW.	



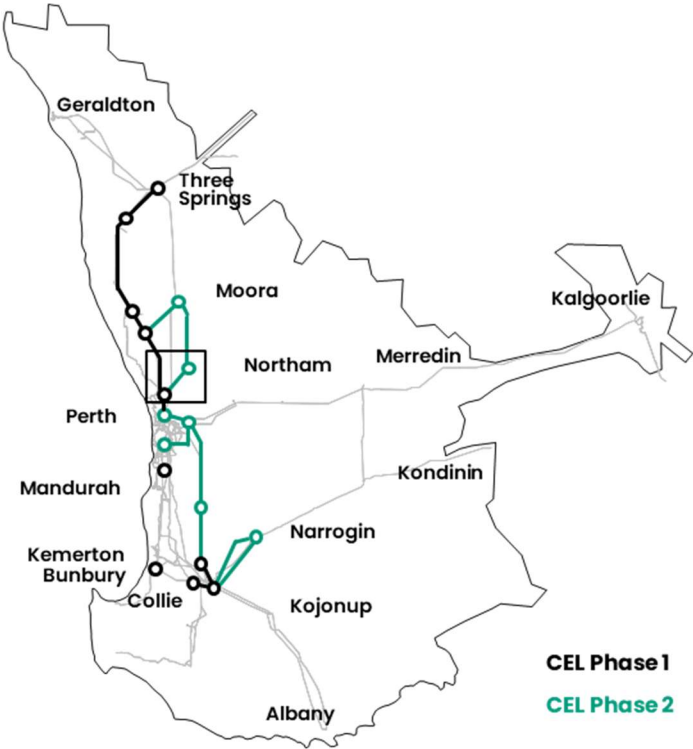
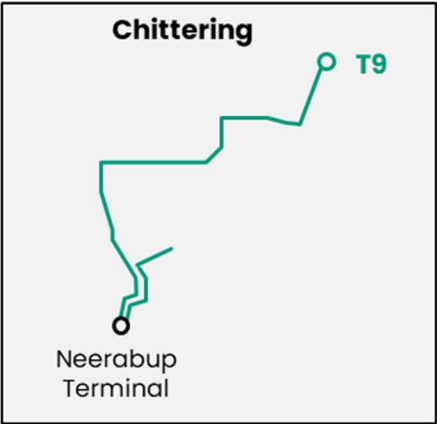
CEL Kwinana

Kwinana & Western Trade Coast		Connect: 900 MW
FIS	2029 (Stage 1) 2032 (Stage 2)	
Scope	Circuit length (330 kV) ~5 km. Circuit length (132 kV) ~25 km. Stage 1: DevelopmentWA to provide land required for Terminal within industrial precinct. Establish new 132 kV Terminal adjacent to existing Mason Road 132 kV substation. Establish double circuit 132 kV line to connect Mason Road Terminal to Medina substation. Establish double circuit 132 kV line to connect Mason Road Terminal to Rockingham substation. Establish double circuit 132 kV line and expand Medina and Rockingham substations. Stage 2: Establish new 330 kV Terminal. Establish double circuit 330 kV transmission line to connect Mason Road Terminal to existing Kwinana – Kemerton/Oakley line. Establish double circuit 330 kV line to connect Mason Road Terminal to existing Kwinana – Northern Terminal line. Additional network decongestion (132 kV) scope may be identified through further grid planning studies.	
Benefits	Establish Mason Road Terminal to connect new gas generation and expand capacity for new industrial loads in the Kwinana area up to 900 MW.	



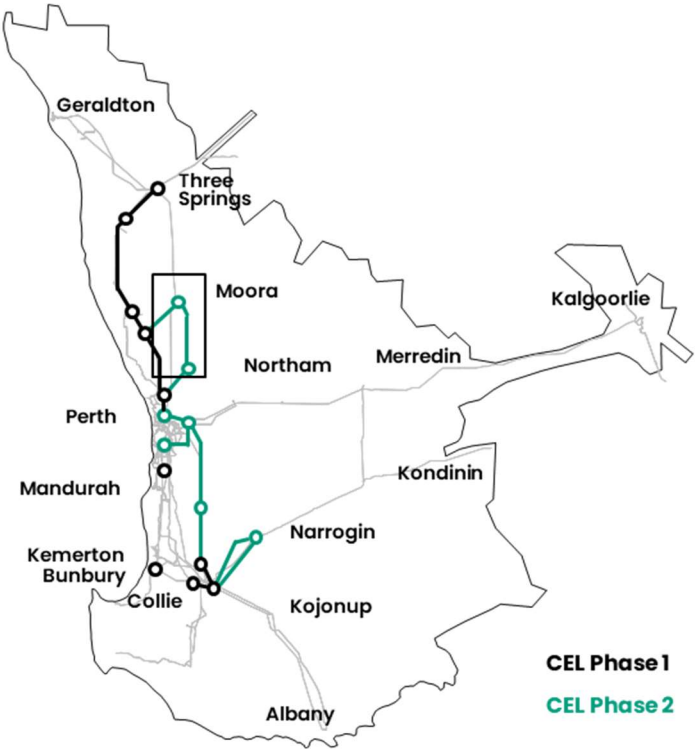
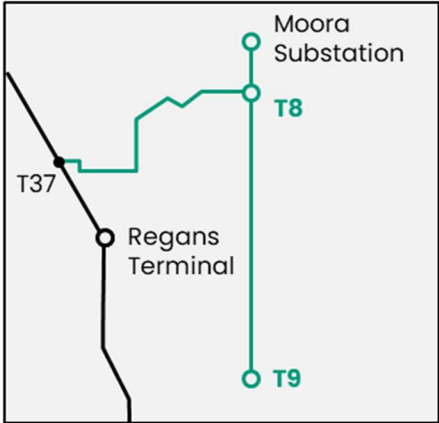
CEL Chittering

Perth Metro to Chittering		Transfer: 1,600 MW
FIS	2032 – 2035	
Scope	Circuit length (330 kV) ~45 km. Circuit length (132 kV) ~30 km. Establish new Terminal T9 (Northeast of Perth). Expand Neerabup Terminal with 3rd transformer. Establish double circuit 330 kV line between Neerabup Terminal and T9 Terminal. Establish double circuit 330 kV line for connection of the Neerabup Terminal to the existing 330 kV line. Establish double circuit 132 kV line for replacement of the Pinjar Terminal to Muchea Substation. Establish single circuit 132 kV line between Henley Brook and Landsdale 132 kV substations. Expand Landsdale 132 kV substation. Additional network decongestion (132 kV) scope may be identified through further studies.	
Benefits	The establishment of T9 Northeast Perth Terminal and the circuits to Neerabup Terminals will provide some improvement of import / export transfer capacity for new industrial loads and new renewable generation connections between north metropolitan to Neerabup by approximately 1600 MW/1600 MW, respectively.	



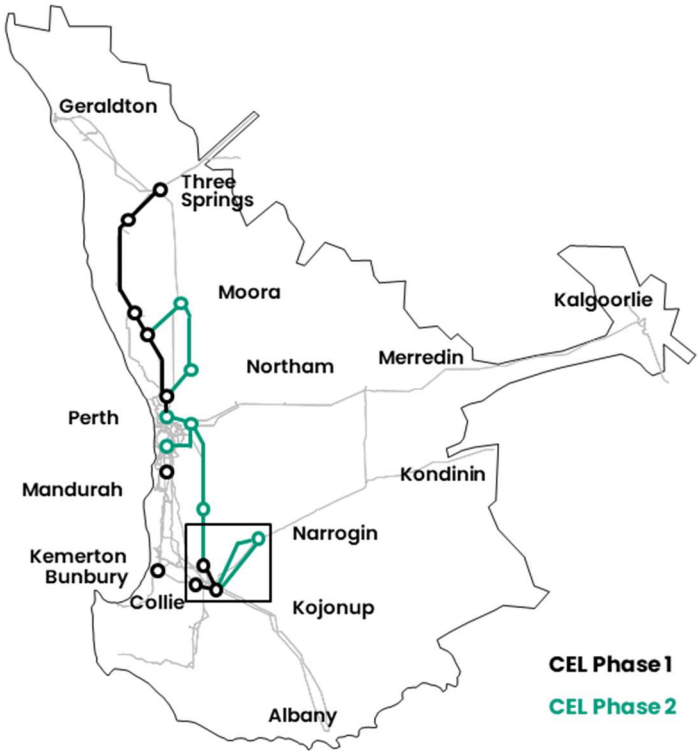
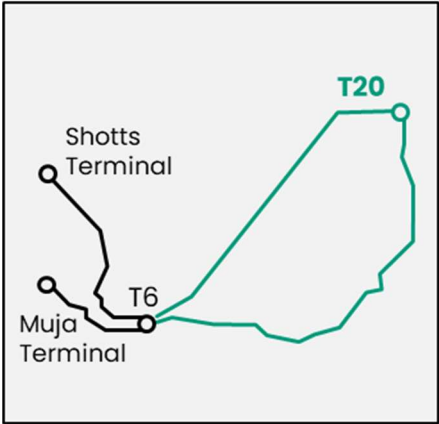
CEL Moora

Chittering to Moora		Transfer: 1,600 MW
FIS	2032 – 2035	
Scope	Circuit length (330 kV) ~150 km. Circuit length (132 kV) ~10 km. Establish new T8 Terminal substation (near Moora), including two transformers. Expand existing T9 Terminal to connect T8. Establish double circuit 330 kV line between T9 and T8. Establish double circuit 330 kV line between T37 and Regans Terminal. Establish double circuit 132 kV line between T8 and Moora. Decommission existing 132 kV Muchea-Moora 81 line.	
Benefits	The new transmission lines and Terminals will enable a step change in new industrial loads to connect and reliability for customer in Central Midlands (around Moora and Regans) to improve as there will be four instead of two transmission lines. In addition, the new transmission lines will enable new renewable generation to connect from Central Midlands to supply loads in the metropolitan and southern SWIS regions. The import/export transfer capacity between Neerabup to Central Midlands will improve by approximately 1600 MW/1600 MW, respectively.	



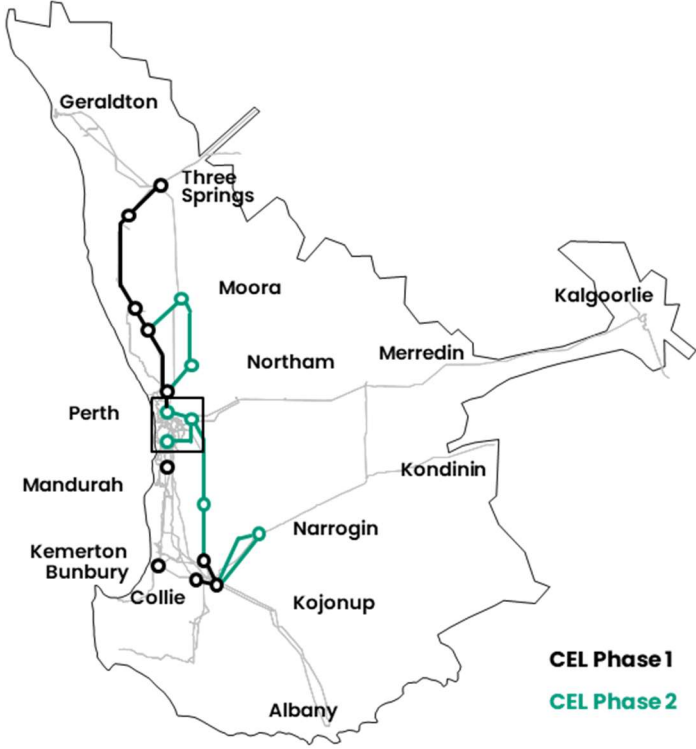
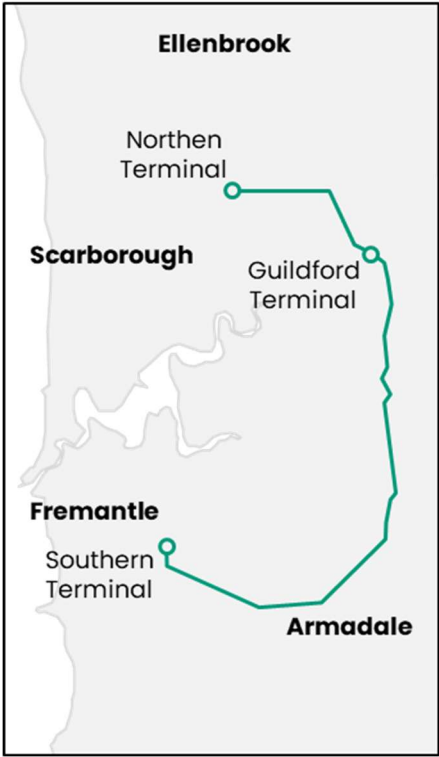
CEL East Stage 2 & 3

Muja to West Arthur		Transfer: 3,000 MW (Stage 3)
FIS	TBC	
Scope	Circuit length (330 kV) ~140 km. Stage 2: Establish new T20 Terminal (near Williams). Establish new T42 Terminal (near Darkan). Double circuit 330 kV line between T42 and T20. Stage 3: Establish double circuit 330 kV line between T6 and T20.	
Benefits	The new transmission lines and Terminals will enable a step change in new renewable energy project connections in the East Country (around Darkan and Williams areas). When combined, Clean Energy Link – East Stages 2 and 3 will facilitate the import/export of up to 3,000 MW.	



CEL Perth Circuit

Malaga to Bibra Lake (via Guildford)	
Transfer: 400 MW	
FIS	TBC
Scope	Circuit length (330 kV) ~45 km. Circuit length (132 kV) ~5 km. Establish a second circuit 330 kV circuit between Guildford Terminal and Southern Terminal by: - Installing a conductor to the second side of the existing Guildford Terminal to Southern Terminal 330 kV where there is an existing double circuit line - Establishing sections of single circuit low profile 330 kV line between Guildford Terminal to Southern Terminal where the current 330 kV line is single circuit. Expand existing Hazelmere Substation. Establish single circuit 132 kV line from Guildford Terminal to Hazelmere substation.
Benefits	The new circuits to Northern, Guildford and Southern Terminals and associated substation expansions will provide improved import/export transfer capacity between industrial loads in the north metropolitan and Kwinana of approximately 400 MW/200 MW, respectively.



CEL Phase 1
CEL Phase 2

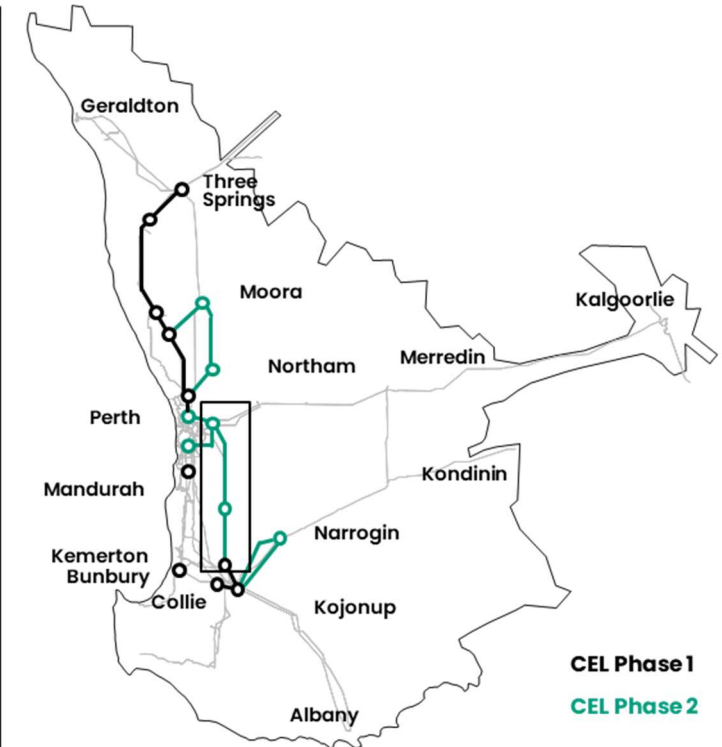
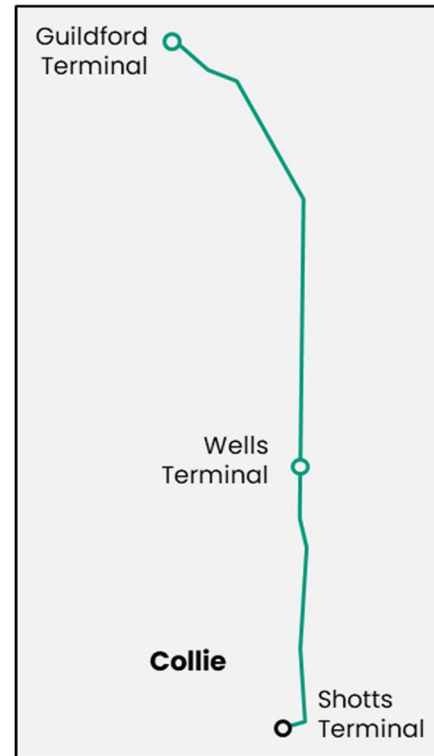
CEL Collie

Guildford to Shotts (via Boddington) Transfer: 1,800 MW

FIS

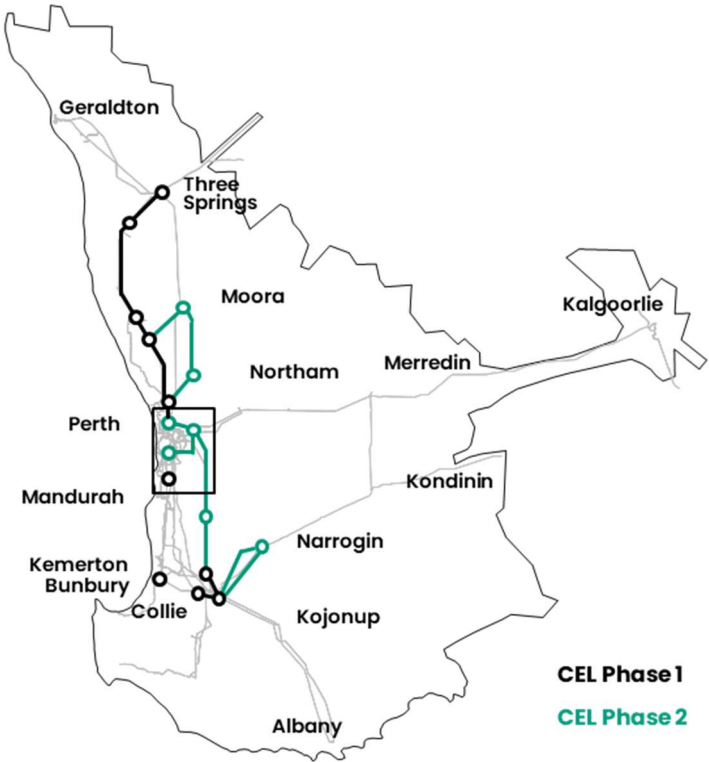
- Scope**
- Circuit length (330 kV) ~200 km
 - Circuit length (132 kV) ~10 km
 - Expand existing Guildford and Shotts Terminals.
 - Establish new Wells Terminal (near existing site).
 - Establish double circuit 330 kV line between Guildford Terminal and Wells Terminal (northern section).
 - Establish single circuit lines between new terminal and existing terminal.
 - Install conductor to the second side of the existing Shotts Terminal to Wells Terminal 330 kV double circuit line.
 - Decommission existing Guildford Terminal – Wells Terminal 132 kV line.
 - Additional network decongestion (132 kV) scope may be identified through further studies.

- Benefits** The new circuits to Wells, Guildford and Shotts Terminals and associated substation expansions will provide an improvement of import/export transfer capacity between industrial loads in the north metropolitan region and Kwinana and renewable generation connections in the southwest of approximately 1800 MW/1800MW, respectively. Clean Energy Link – Collie will enable additional capacity to be released from Clean Energy Link East Stage Three.



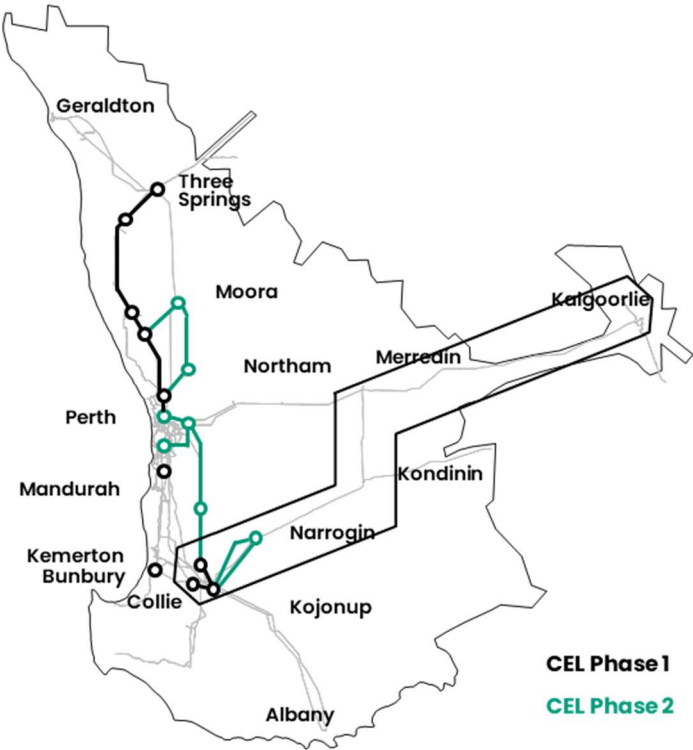
CEL Metro

Perth Metropolitan Region		Transfer: 400 MW
FIS	TBC	
Scope	Circuit length (132 kV) ~115 km. Metropolitan 132 kV reconfigure including: • Additional transformers at Guildford and Northern Terminals. • Expansion of zone substations and additional 132 kV lines in a number of Metropolitan locations. • Upgrading of existing 66 kV substations and lines to be incorporated into 132 kV network.	
Benefits	The Metropolitan 132 kV reconfigure allows increased power to flow on the 330 kV network to service metro loads from the other generation capturing Clean Energy Link projects. It will provide an improvement of import/export transfer capacity between north metropolitan area and Kwinana of approximately 400 MW/400 MW, respectively. It also improves the reliability of the metro 132 kV networks north and south of the river and replaces the aged 66 kV network in the western suburbs and Fremantle.	



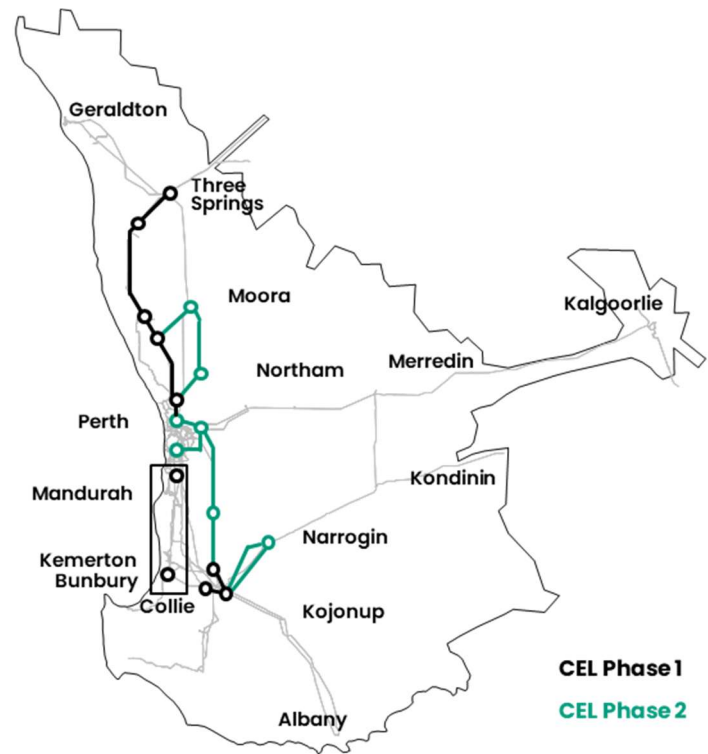
CEL East Enhancement

Muja to West Kalgoorlie		Transfer: 560 MW
FIS	2025 (Stage 1) 2027 (Stage 2)	
Scope	Stage 1: - Replacement and/or upgrade of non-conductor limiting components along the 220 kV network. This project has been completed in 2025. Stage 2: - Deploy remedial action schemes to de-mesh the East Country 132kV network, optimise the 220kV transmission corridor, and apply dynamic line ratings to enhance the thermal capacity of the 220kV network. - Upgrade primary equipment that falls below the standard maximum rating of 220kV (1250A)	
Benefits	Increase transfer capacity by 360MW along the 220 kV network to relieve network constraints for new and existing renewable energy projects.	



Line Reinforcement Projects (2024)

South 132 kV	
FIS	1/10/2026
Scope	Implement uprating strategies to improve the network capacity following 132 kV network circuits: • Mandurah to Pinjarra 132 kV • Picton to Marriot Road 132 kV • Pinjarra to the T point of three-ended line Cannington-Meadow Springs-Pinjarra 132 kV • Kemerton to the T point of the four-ended line Kemerton-Pinjarra-Picton-Busselton 132 kV • Pinjarra to the T point of four-ended line Kemerton-Pinjarra-Picton-Busselton 132 kV
Benefits	Uprating the above 132 kV circuits relieves network congestion and allows increased power flows in the South. By reducing network congestion at time of peak demand, nearby generators avoid reductions in network access quantities and firm capacity in the SWIS is increased.



Line Reinforcement Projects (2025)

South 132 kV	
FIS	1/10/2027
Scope	Implement asset replacement strategies to improve the network capacity for the following 132 kV network circuits: • Southern Terminal to Canning Terminal 132 kV • Mandurah to Pinjarra 132 kV • Kemerton to the T point of the four-ended line Kemerton-Pinjarra-Picton-Busselton 132 kV • Rockingham to the T point of Rockingham-Western Mining-Australian Fused Materials 132 kV
Benefits	Asset replacements along the above 132 kV circuits relieves network congestion and allows increased power flows in the South. By reducing network congestion at time of peak demand, nearby generators avoid reductions in network access quantities and firm capacity in the SWIS is increased.

