

Appendix A5. Network Investments

December 2025

Appendix to the Draft 2026
Integrated System Plan for the
National Electricity Market





We acknowledge the Traditional Custodians of the land, seas and waters across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace future generations.

We acknowledge that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands. We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country; and hope that our work can benefit both people and Country.

'Journey of unity: AEMO's Reconciliation Path' by Lani Balzan

AEMO is proud to have launched its first [Reconciliation Action Plan](#) in May 2024. 'Journey of unity: AEMO's Reconciliation Path' was created by Wiradjuri artist Lani Balzan to visually narrate our ongoing journey towards reconciliation - a collaborative endeavour that honours First Nations cultures, fosters mutual understanding, and paves the way for a brighter, more inclusive future.

Important notice

Purpose

This is Appendix A5 to the Draft 2026 Integrated System Plan (ISP) which is available at <https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp>. AEMO publishes the 2026 ISP pursuant to its functions under section 49(2) of the National Electricity Law (which defines AEMO's functions as National Transmission Planner) and its supporting functions under the National Electricity Rules. This publication is generally based on information available to AEMO as at 10 December 2025 unless otherwise indicated.

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Version control

Version	Release date	Changes
1.0	10/12/2025	Initial release.

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Executive summary

AEMO's ISP is a roadmap for the NEM's transition, and outlines an 'optimal development path' (ODP) for generation, storage and network investments to meet Australia's future energy needs.

The Draft 2026 ISP reaffirms that renewable energy, connected by transmission and distribution, firmed with storage and backed up by gas, presents the least-cost way to supply secure and reliable electricity to consumers as coal plants retire, while meeting government policies through to 2050. This appendix explores transmission developments that are needed to connect the new and diverse generation and storage capacity to towns, cities and industry across the NEM. The transmission network brings electricity where it is needed, when it is needed, and improves the power system's resilience. Current network capacity is well utilised, and new projects will better share future resources between regions, allow REZs to transfer their energy to where it is needed in future, and maintain a secure and reliable power system.

In the Draft 2026 ISP approximately 6,000 km of new transmission is projected to be needed by 2050 under the *Step Change* scenario. About half this work is already well underway in committed and anticipated projects.

This Appendix A5 provides detail on the network investments in the proposed ODP¹. It sets out:

- **A5.1 Transmission development overview** – an overview of the network investments in the ODP.
- **A5.2 Committed and anticipated transmission projects** – including their timing, project status and technical details. These projects typically have regulatory approval and AEMO assesses that they are highly likely to proceed.
 - Since the 2024 ISP, three previously actionable projects have now progressed to committed or anticipated status – HumeLink, Marinus Link Stage 1 and Hunter Central Coast.
- **A5.3 Actionable transmission projects** – both actionable ISP projects and projects that are actionable under a jurisdictional scheme² – including their optimal timing based on advice from the proponents, the earliest in-service date, costs and technical detail. All actionable projects are underway or should commence relevant regulatory processes immediately after publication of the 2026 ISP in June 2026.
- **A5.5 Future ISP projects** – including their optimal timing for each scenario, costs and technical detail. These projects will deliver net market benefits to consumers but are not needed until later in the horizon. The timings for each scenario are indicative, as they will depend on which scenario unfolds in future. If a project is intended to proceed under the ISP framework, a RIT-T is not required yet. Proponents may start planning and engaging with communities now, if appropriate, to ensure the projects optimise long-term benefits for consumers, and social licence can be built.
- **A5.6 Future distribution projects** – including their optimal timing for each scenario, costs and technical detail that outlines the distribution and transmission network augmentation options to facilitate the connection of utility-scale generation and storage connecting to the distribution network.

¹ The outcomes presented in this appendix are based on the ODP, which is CDP4 described in Appendix A6.

² The ISP may identify projects as "Actionable New South Wales", "Actionable Queensland" or "Actionable Victoria" rather than "Actionable ISP" projects. This terminology means that these projects are expected to progress under the relevant jurisdictional framework – the *Electricity Infrastructure Investment Act 2020* (NSW), the *Energy (Renewable Transformation and Jobs) Act 2024* (Qld) or the *National Electricity (Victoria) Act 2005* provisions underpinning the Victorian Transmission Investment Framework – rather than the framework for actionable ISP projects in the National Electricity Rules.



Key changes from the 2024 ISP

- The transmission build has been reduced in all scenarios. The transmission build for the *Step Change* and *Slower Growth* scenarios is 6,000 km and 5,000 km respectively over the entire modelling horizon. In the next decade, 5,000 km of transmission lines is required. Beyond 2040, the forecast is more uncertain and shows a reduction in total network build over the ISP horizon compared to previous reports. The new scenario *Accelerated Transition* is less ambitious than the previous *Green Energy Exports*. Previously *Green Energy Exports* forecast 25,000 km across the modelling horizon, however *Accelerated Transition* is forecasting approximately half that amount.
- The transmission projects from the 2024 ISP are progressing. Previously committed projects are commissioned and operating in the NEM, namely the establishment of an additional connection into Woree (previously known as Far North Queensland REZ project), and Project EnergyConnect Stage 1.
- Central-West Orana REZ Network Infrastructure Project and HumeLink have progressed to committed status. Two new projects – Project Marinus Stage 1 and Hunter-Central Coast REZ Network Infrastructure Project – have progressed from actionable to anticipated.
- Higher costs for transmission and generation were observed since the 2024 ISP, due to sustained supply chain pressures on materials, equipment and workforce, as well as market competition driven by a high number of concurrent projects under development in the NEM, project complexity, social licence, scope revisions, and additional contracting costs. After accounting for inflation, transmission cost estimates have markedly increased from equivalent estimates considered as inputs to the 2024 ISP, ranging up to nearly 100% higher in some cases. Both observed and forecast transmission cost increases are included in the Draft 2026 ISP.
- AEMO has improved sub-regional power system modelling from the 2024 ISP, including a 15 sub-region structure to provide more granularity of diverse load patterns for optimisations that were previously assessed across 12 sub-regions across the NEM. Victoria has now been separated into three sub-regions, and the Central South Australia sub-region has been further divided into two sub-regions, Northern South Australia (NSA) and Central South Australia (CSA).
- From 1 November 2025, AEMO's functions in relation to the Victorian transmission network transferred to a new State Business Corporation, VicGrid Body Corporate (VicGrid), including responsibility for Transmission Company Victoria (TCV) and the Victoria – New South Wales Interconnector West (VNI West) project.
- AEMO has introduced future distribution projects as a new category. In the 2025 *Electricity Network Options Report*, AEMO included augmentation options which added utility-scale generation and storage to the distribution network. This Draft 2026 ISP has identified one future distribution project which may be proposed as Future New South Wales project. The identification of a future distribution project in this ISP does not confer any regulatory obligation on any DNSP, or substitute for detailed cost-benefit analysis required to be undertaken under a Regulatory Investment Test for Distribution (RIT-D).



A5.1 Transmission development overview

The development path proposed by AEMO as the ODP in the ISP includes a set of network investments which are coordinated and integrated with the projected development of new generation, storage and CER, to deliver the best outcomes for consumers across a range of scenarios and sensitivities. These network investments are categorised as:

- **flow path augmentations** – upgrades to the portion of the transmission network used to transport significant amounts of electricity across the backbone of the interconnected network to load centres, or
- **REZ expansions** – expansion of the network required to connect renewable generation in areas where clusters of large-scale renewable energy can be developed using economies of scale.

Figure 1 provides a summary of these network investments. Depending on the individual circumstances of each transmission project, each project is classified as follows:

- **Committed or anticipated ISP projects** are transmission augmentation projects being developed and delivered by TNSPs or relevant NEM jurisdictional bodies are categorised as committed or anticipated after meeting a certain threshold³:
 - Committed projects meet five criteria relating to planning, construction, land, contracts and financing.
 - Anticipated projects are in the process of meeting at least three of the criteria for committed projects.
- **Actionable ISP projects** optimise benefits for consumers if progressed before the next ISP. When actioned, AEMO specifies an identified need that must be addressed to form part of the ODP⁴. For newly actionable ISP projects, the actionable window is two years, meaning it is within the window if the project is needed within two years of its earliest in-service date. The window is longer for projects that have previously been actionable, reflecting the progress that has been made and the disruption to delivery, and costs incurred for work that may not be able to be reused, if project paused and then reinstated only a few years later. Project proponents are required to begin newly actionable ISP projects with the release of a final ISP, including commencing a RIT-T.
- **Actionable jurisdictional projects:**
 - **Actionable New South Wales projects** will proceed under the framework in the *Electricity Infrastructure Investment Act 2020* (NSW)⁵.
 - **Actionable Queensland projects** will proceed under the framework of the Queensland Government policy and/or prospective or current legislation⁶.
 - **Actionable Victorian projects** will proceed under the Victorian Transmission Investment Framework⁷ supported by the *National Electricity (Victoria) Act 2005* (Vic)⁸.

³ Further details about the criteria for committed and anticipated project status are in the AER's RIT-T, and are also summarised in AEMO's Transmission Augmentation Information page.

⁴ NER Chapter 10.

⁵ See <https://legislation.nsw.gov.au/view/html/inforce/current/act-2020-044>.

⁶ At <https://www.legislation.qld.gov.au/view/html/asmade/act-2024-015>.

⁷ See <https://engage.vic.gov.au/victorian-transmission-investment-framework>.

⁸ At <https://www.legislation.vic.gov.au/in-force/acts/national-electricity-victoria-act-2005/037>.



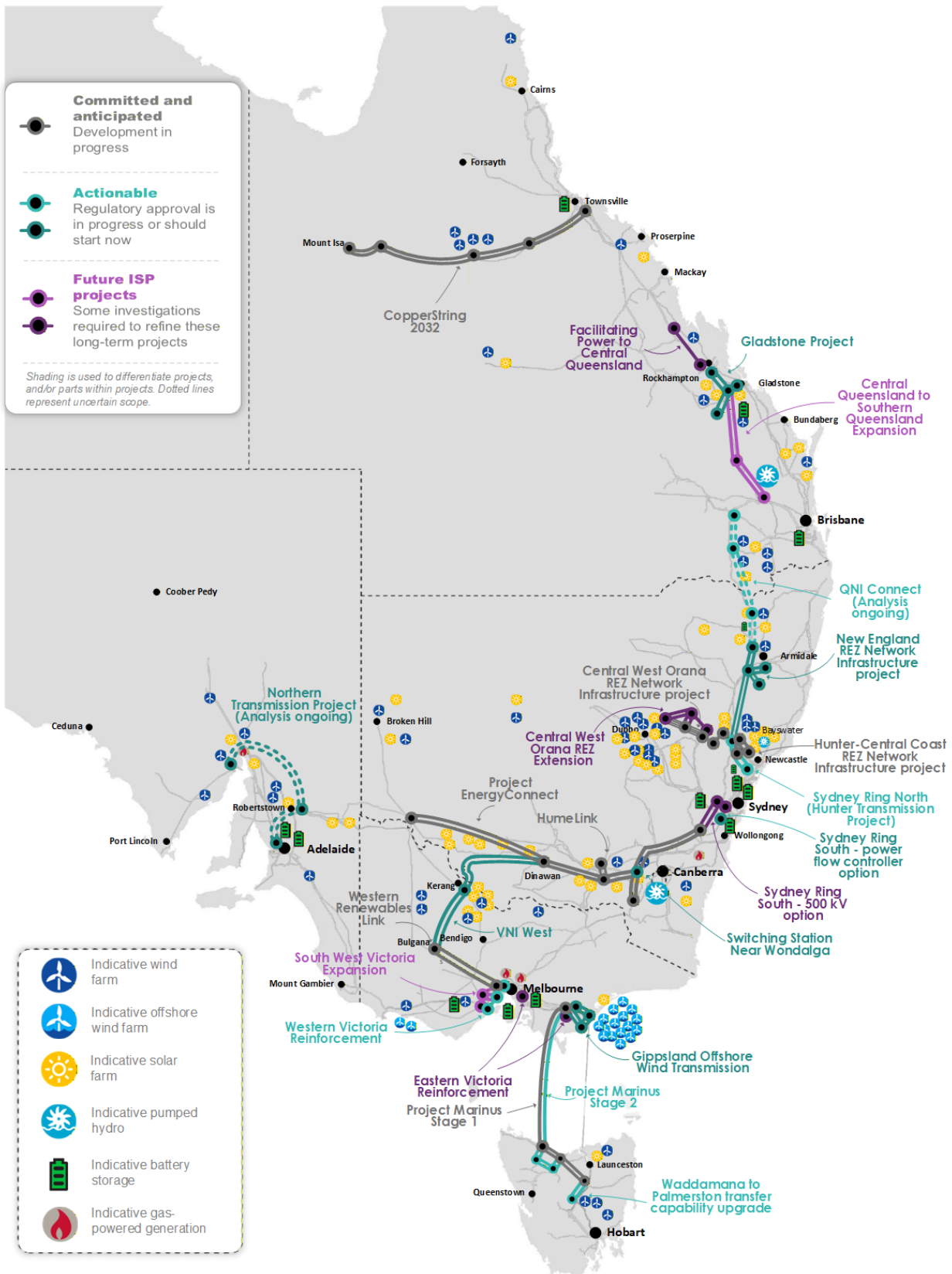
- **Future ISP projects** are transmission projects (or non-network option) that addresses an identified need in the ISP, that is part of the ODP, and is projected to be actionable in the future.

In this Draft 2026 ISP, there are 11 actionable projects, including five that are actionable under jurisdictional frameworks (see Section A5.3). There are seven future ISP projects needed in two or more scenarios (Sections A5.5.1 to A5.5.7).

In preparing the ISP, AEMO has consulted with network planners through joint planning and given due regard to the transmission annual planning reports. AEMO includes consultation on non-network options as part of the annual *Inputs, Assumptions and Scenarios Report* (IASR) consultation process, and is calling for submissions on non-network options on the three newly actionable ISP projects identified in this Draft ISP⁹.

⁹ For details on the call for submissions on non-network options, please refer to Part C of the Draft 2026 ISP.

Figure 1 Summary of the ISP optimal development path



This map shows indicative new generation and storage in 2040, and transmission projects that include new transmission lines, increase capacity by 500MW or more, and required in all scenarios by 2050.

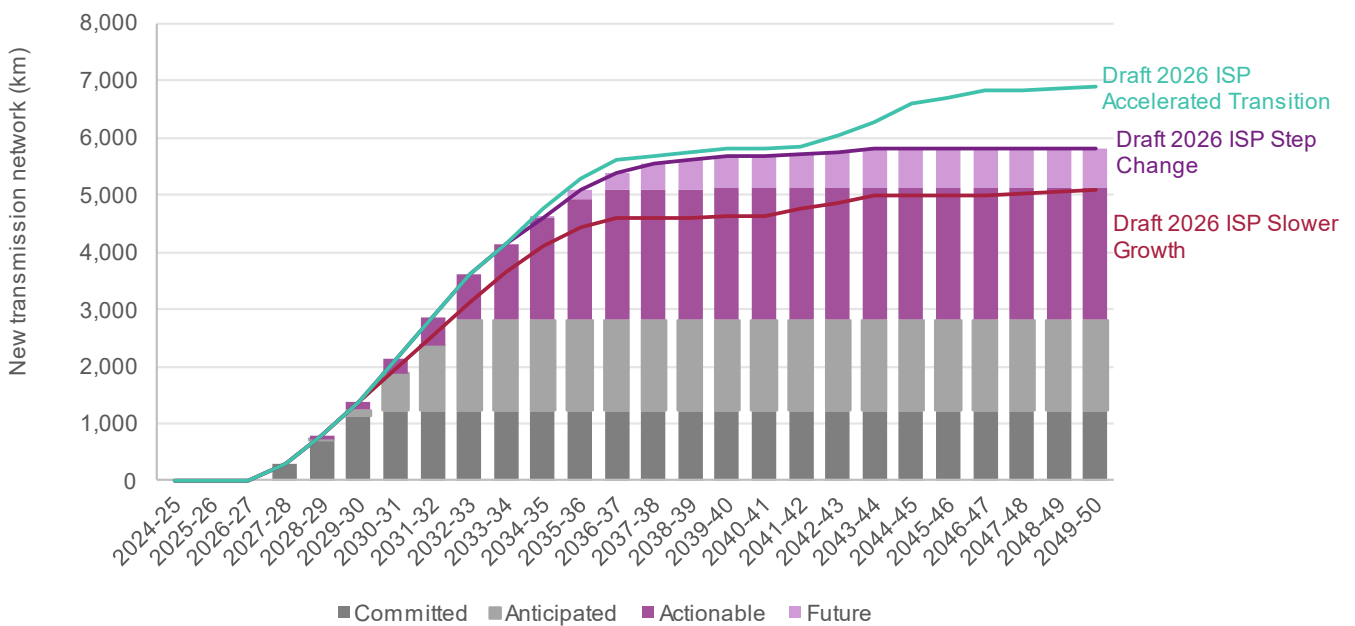


A5.1.1 Transmission development

The ISP identifies approximately between 5,000 km and 7,000 km of new transmission network investment across the three scenarios required to connect new generation and storage opportunities to demand centres through REZ and Flow Path transmission assets. **Figure 2** highlights the new network investments required per year in the *Step Change* scenario. Under this scenario, approximately 6,000 km of new transmission lines is required over the full ISP horizon.

The *Step Change* transmission build shows a reduction in total network build over the ISP horizon compared to previous reports. However, consistent with the outcome of the 2024 ISP, the Draft 2026 ISP recommends over 5,000 km of transmission build is required in the next decade before tapering off in the latter stages of the horizon.

Figure 2 New transmission network investments required in the least-cost development path



Note: project line lengths are shown assuming a three-year construction period prior to the in-service date, with line kilometres per year distributed evenly over the construction period.

In addition to the transmission network required, between 1,000 km and 3,000 km of connection assets are required across the three scenarios to connect the generation and storage identified in this Draft 2026 ISP to the transmission network. Under the *Step Change* scenario, approximately 2,000 km of network connection assets are required across the full ISP modelling horizon.

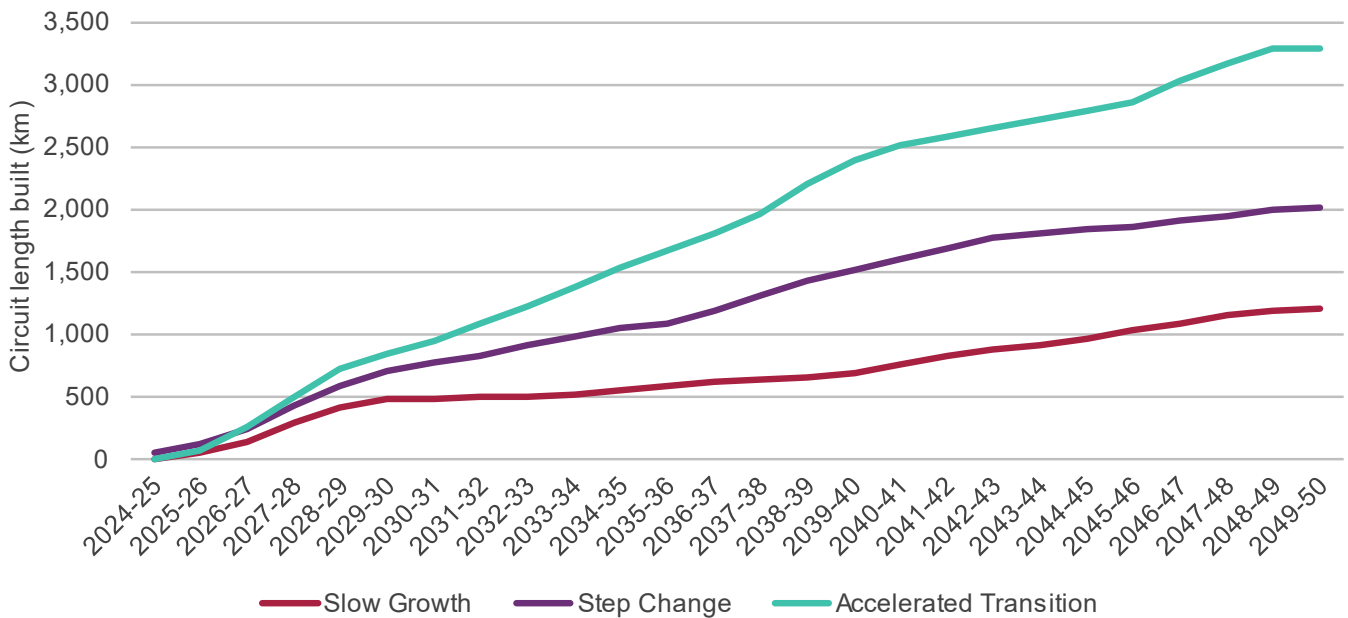
Generator connection assets account for the transmission infrastructure required to connect generation or storage to the shared transmission system. The proximity of the generation to the transmission network is assumed to vary depending on the generator technology. Due to resource location, wind and solar will often be located 5-10 km from the existing network, or assumed network developed as part of a REZ. Stand-alone storage (that is, grid-scale storage not co-located with generation) tends to be located in closer proximity to the network. More information on generator connection assets is in Section 6 of the 2025 *Electricity Network Options Report*¹⁰.

¹⁰ At https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/2025-electricity-network-options-report/final/2025-electricity-network-options-report.pdf?rev=7fd2059752bd41eba55184df4e389e1e&sc_lang=en.



Figure 3 highlights the cumulative length of connection assets required per year across all scenarios. Approximately 2,000 km of connection assets are required under the *Step Change* scenario by 2049-50, bringing the total network investment required under this scenario to approximately 8,000 km.

Figure 3 New network required to connect generation to the main transmission network



A5.1.2 Preparatory activities

Preparatory activities are activities to design and investigate the costs and benefits of actionable ISP projects, future ISP projects and REZ stages (as applicable)¹¹, including:

- (a) *detailed engineering design,*
- (b) *route selection and easement assessment work,*
- (c) *cost estimation based on engineering design and route selection,*
- (d) *preliminary assessment of environmental and planning approvals, and*
- (e) *engagement with stakeholders who are reasonably expected to be affected by the development of the actionable ISP project, future ISP project, or project within a REZ stage (including local landowners, local council, local community members, local environmental groups and traditional owners) in accordance with the community engagement expectations¹².*

The ISP may specify whether preparatory activities must be carried out for future ISP projects and the timeframes for carrying out those activities. For all actionable ISP projects, relevant TNSPs must commence preparatory activities as soon as practicable (if not yet already commenced)¹³.

¹¹ These terms are defined in NER 5.10.2 and Chapter 10, at <https://www.aemo.gov.au/regulation/energy-rules/national-electricity-rules>.

¹² Preparatory activities and community engagement expectations are both defined in NER 5.10.2.

¹³ NER 5.22.6(c) and (d).



AEMO will not declare preparatory activities in the Draft 2026 ISP. AEMO may consult with responsible TNSPs with the intention of requiring in the final ISP that TNSPs carry out preparatory activities, including publishing a report on the outcome of these activities by the time(s) specified in the final ISP.

A5.1.3 Transmission costs

Since the 2024 ISP, AEMO has updated its Transmission Cost Database, to ensure that transmission project costs reflect the recent supply change issues and the impact of inflation (both economy wide and transmission asset specific). Transmission costs have risen, particularly for overhead lines and for previously actionable projects under consideration by project proponents.

The Draft 2026 ISP has re-visited all transmission network projects previously identified as needing to proceed, with the exception of projects that have advanced to anticipated or committed status, seeking to ensure that overall benefits for consumers are optimised.

After accounting for inflation, transmission cost estimates are markedly increased from equivalent estimates considered as inputs to the 2024 ISP, approximately 25% to 55% higher (in real terms) for overhead lines, and as much as nearly 100% higher in some cases. Key cost increase drivers are sustained supply chain pressures on materials, equipment and workforce, scope revision, and market competition driven by a high number of concurrent projects under development, as well as project complexity, social licence and additional contracting costs.

AEMO expects that transmission project costs will continue to increase beyond economic inflation while supply chains continue to adapt. For more information, refer to the 2025 *Electricity Network Options Report*¹⁴.

¹⁴ At https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/2025-electricity-network-options-report/final/2025-electricity-network-options-report.pdf?rev=7fd2059752bd41eba55184df4e389e1e&sc_lang=en.



A5.2 Committed and anticipated projects

AEMO includes all committed and anticipated transmission projects in all scenarios. The projects are modelled as being completed at the time advised by the proponent and this does not vary across scenarios. The *ISP Methodology*¹⁵ states that AEMO includes all committed and anticipated generation and transmission projects in all future states of the world, in accordance with the AER's *Cost Benefit Analysis Guidelines*¹⁶. This means these projects are assumed to proceed and are not considered in the ISP cost benefit analysis.

Currently, AEMO has modelled three committed transmission projects and four anticipated projects¹⁷. The details of these projects are discussed below.

¹⁵ AEMO, 2025 *ISP Methodology*, at https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2024/2026-isp-methodology/isp-methodology-june-2025.pdf?rev=e88a1f1bbeef447ba27692b785069a0a&sc_lang=en.

¹⁶ At <https://www.aer.gov.au/industry/registers/resources/guidelines/cost-benefit-analysis-guidelines/current-cba-guidelines>.

¹⁷ Status of the projects is informed by the July 2025 Transmission Augmentation Information page, at https://www.aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/transmission-augmentation-information/nem-transmission-augmentation-information-july-2025.xlsx?rev=c8c27166d992464690f5e31fd8e72fd0&sc_lang=en.



A5.2.1 CopperString

Summary						
<p>The Queensland Government has announced that it will deliver the roughly 840 km CopperString project¹⁸. CopperString will connect the North-West Minerals Province of Queensland to the NEM near Townsville. The project scope includes 330 kV transmission capacity between Townsville and Hughenden to unlock the renewable energy potential of the region. AEMO is now considering the CopperString project as an anticipated project after outcomes from joint planning with Powerlink and the Queensland Government. The project features in the Queensland Energy Roadmap¹⁹.</p>						
Existing network capability						
<p>The project to establish CopperString is considered anticipated. As such, the existing network capability is assumed to be approximately 2,200 MW, incorporating the CopperString project (1,500 MW) as well as existing network capability (700 MW)²⁰ for peak demand, summer typical and winter reference conditions. For the Draft 2026 ISP, only the section of CopperString between Townsville and Hughenden was modelled. The existing network at the North-West Mineral Province is islanded from the NEM. The NEM only extends as far west as Julia Creek and is mainly energised at 66 kV in that area. The existing network for this REZ was designed to support North-West Queensland load, rather than building for future generation projects. The REZ can potentially support much more generation with more transmission infrastructure.</p>						
Delivery scope						
Description ²¹	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<ul style="list-style-type: none"> Establish a new 500 kV substation south of Townsville (NQ 500 kV substation). Install 2 x 500/275 kV, 1,500 MVA transformers at NQ 500 kV substation. Establish a new NQ 275 kV Substation. Cut-in the Strathmore to Ross 275 kV double-circuit line to the NQ 275 kV substation. Establish a new 500 kV substation at Hughenden with associated switchgear, bays and required 500/330 kV transformers. 	Anticipated	This option increases the network limit in Q2 by at least 1,500 MW. Generation from CopperString will compete with generation in FNQ and NQ for the 275 kV	Anticipated project	June 2031		

¹⁸ See further information for CopperString at <https://statements.qld.gov.au/statements/97314>.

¹⁹ See further information for CopperString in the Queensland Energy Roadmap 2025 published in October 2025, at <https://www.treasury.qld.gov.au/files/Queensland-Energy-Roadmap-2025-25-043.pdf>.

²⁰ The existing network capacity assumes the 275 kV line from Guybal Munjan to Kidston being delivered as part of the committed Kidston pumped hydro energy storage project.

²¹ The existing scope will be consulted with Powerlink between Draft 2026 ISP and final 2026 ISP to reflect the update from the new Queensland Energy Roadmap. The description of the scope is as per the 2025 *Electricity Network Options Report*, at https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/2025-electricity-network-options-report/final/2025-electricity-network-options-report.pdf?rev=7fd2059752bd41eba55184df4e389e1e&sc_lang=en.

Actionable projects



<ul style="list-style-type: none"> • Establish a new 500 kV substation (mid-point between NQ 500 kV and Hughenden substations) with associated switchgear and bays. • A new 500 kV transmission line from south of Townsville to Hughenden. • A new 330 kV transmission line from Hughenden to Cloncurry. • A new 220 kV transmission line from Cloncurry to Mount Isa. • Up to six new substation sites. • Associated static and dynamic reactive plant. <p>(Only the 500 kV transmission line from south of Townsville to Hughenden has been modelled)²².</p>		<p>capacity south of Mulgrave Substation.</p>		
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²²The Queensland Government recently announced (in the Queensland Energy Roadmap 2025) this section would now be built at 330 kV. This will be consulted with relevant stakeholders between Draft 2026 ISP and Final 2026 ISP.



A5.2.2 Central West Orana REZ Network Infrastructure Project

Summary						
<p>Central-West Orana REZ has been identified by the New South Wales Government as the state’s first REZ.</p> <p>The Central-West Orana REZ was declared on 5 November 2021 under the <i>NSW Electricity Infrastructure Investment Act 2020</i> (NSW)²³. The declaration was amended in December 2023 to increase the intended network capacity. The Central-West Orana REZ has an intended 6,000 MW²⁴ of additional network capacity, with an initial stage of 4,500 MW to be delivered from 2027-28, to be constructed in the Central West New South Wales region of the state. The declaration identifies that the NSW Energy Corporation (EnergyCo) will be the infrastructure planner responsible for coordinating the development of the REZ.</p> <p>The project to establish the Central-West Orana REZ is considered committed, with construction of Australia’s first REZ having begun in June 2025²⁵ towards energisation in 2028. EnergyCo have awarded 7.15 GW of generation and storage projects under its access rights scheme with 7.7 GW as the current aggregate maximum capacity²⁶.</p>						
Existing network capability						
<p>The project to establish the Central-West Orana REZ is considered committed. The existing network capability is approximately 900 MW, which will increase by 4,500 MW once Central-West Orana REZ is established.</p> <p>Hunter Transmission Project 1.0 (CNSW-SNW Option 1) is required to address network constraints between CNSW and SNW to enable the increase in network capacity from 3,000 MW to 4,500 MW for the Central-West Orana REZ Transmission Project.</p>						
Delivery scope						
Description ²⁷	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<ul style="list-style-type: none"> New Merotherie 500/330 kV substation with 4 x 500/330/33 kV 1,500 MVA transformers. New 330 kV Elong Elong switching stations. 	Committed	4,500	Committed project	December 2028		

²³ See <https://www.energyco.nsw.gov.au/cwo-rez> and <https://gazette.nsw.gov.au/gazette/2021/11/2021-569.pdf>.

²⁴ See Government Gazette No 580 of Friday 15 December 2023, at <https://gazette.nsw.gov.au/gazette/2023/12/2023-580.pdf>

²⁵ See <https://www.energyco.nsw.gov.au/our-projects/central-west-orana-renewable-energy-zone/transmission-project>.

²⁶ See <https://www.energyco.nsw.gov.au/central-west-orana-access-scheme>.

²⁷ The existing scope will be consulted with AEMO and EnergyCo between Draft 2026 ISP and final 2026 ISP to reflect any recent updates. The description of the scope is as per 2025 *Electricity Network Options Report*, at https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/2025-electricity-network-options-report/final/2025-electricity-network-options-report.pdf?rev=7fd2059752bd41eba55184df4e389e1e&sc_lang=en.

Actionable projects



<ul style="list-style-type: none"> • New 500 kV Barigan Creek switching station. • 2 x 500 kV double-circuit lines from Barigan Creek to Merotherie with Quad Orange conductor. • 2 x 500 kV double-circuit lines and initially operated at 330 kV from Merotherie to Elong Elong with Quad Orange conductor. • 3 x 250 MVAR synchronous condensers at Elong Elong switching station. • 4 x 250 MVAR synchronous condensers at Merotherie substation. • Provision of switch bays for future generator connections (cost estimation is not required) • An additional 330 kV single-circuit line from Bayswater to Liddell. • An additional 330 kV single-circuit line from Mt Piper to Wallerawang. <p>Note: possible expansion to Uungula/Burrendong is subject to a separate and future project authorisation process</p> <p>Pre-requisite: CNSW-SNW Option 1 when Central-West Orana REZ exceeds 3 GW.</p>				
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A5.2.3 Hunter-Central Coast REZ Network Infrastructure project

Summary						
<p>The Hunter-Central Coast (HCC) REZ²⁸ has been identified to assist industries to decarbonise and access renewable energy with a mix of solar, onshore and offshore wind energy projects.</p> <p>The REZ was declared on 9 December 2022 with 1,000 MW of intended network capacity²⁹ and the New South Wales Energy Corporation (EnergyCo) has been appointed the Infrastructure Planner enabled by the <i>Electricity Infrastructure Investment Act 2020</i>.</p> <p>The capacity of the Hunter-Central Coast REZ is likely to increase over time with the retirement of coal-fired power stations, re-purposing of mining land and the growth of offshore wind.</p> <p>This project was identified as an actionable New South Wales project in the 2024 ISP, and is now proceeding as an anticipated project.</p> <p>EnergyCo has appointed Ausgrid as the network operator (Commitment Deed executed December 2024) to deliver the HCC REZ 1 GW network transfer capacity. The scope comprises of electricity distribution network upgrades between Kurri substation and Muswellbrook bulk supply point in three portions.</p>						
Existing network capability						
<p>EnergyCo has announced this REZ will supply both Central New South Wales (CNSW) and Sydney, Newcastle and Wollongong (SNW) via Ausgrid's sub-transmission network (132 kV network), with the network normally open, and has said this project will support up to 1,800 MW of generation and storage projects³⁰.</p> <p>The upstream REZ transmission limit from Muswellbrook 330 kV substation is 400 MW, which assumes high southbound flows from NNSW to CNSW at peak demand.</p>						
Delivery scope						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>Portion 1: Upper Hunter Secondary Systems Modernisation (350 MW):</p> <ul style="list-style-type: none"> Upgrade secondary systems in the Upper Hunter to enable bidirectional power flow. This includes remote end secondary systems works that will upgrade protection to duplicate differential line schemes on existing 132 kV lines between Muswellbrook bulk supply point, Muswellbrook substation and Mitchell line substation. 	Anticipated	1,000	Anticipated project	July 2028		

²⁸ See <https://www.energyco.nsw.gov.au/our-projects/hunter-central-coast-rez>.

²⁹ See <https://gazette.nsw.gov.au/gazette/2022/12/2022-569.pdf>

³⁰ See <https://www.energyco.nsw.gov.au/sites/default/files/2025-04/HCC%20REZ%20IPRR%20-%20Public%20Report%20-%20For%20CEO%20Approval%20-%2030%20April%202025.pdf>.



<p>Portion 2: Muswellbrook Network Rearrangement and Singleton to Kurri 132 kV link (630 MW, cumulative):</p> <ul style="list-style-type: none"> • Construction of a new sub-transmission switching substation at Muswellbrook (Sandy Creek Subtransmission Switching Station) to enable new 132 kV generator connections. • Rearrange the sub-transmission network at Muswellbrook sub-transmission substation and construct a 132 kV link from Singleton to Kurri. • Install a fibre communications link across the Hawkesbury River from Berowra to Somersby. <p>Portion 3: New 132 kV switching station and Eastern Hub to Singleton 132 kV link (1 GW, cumulative):</p> <ul style="list-style-type: none"> • Construction of a new 132 kV sub-transmission switching substation at the north-eastern bank of Lake Liddell (Antiene Subtransmission Switching Station) to provide a point of connection for large scale generation/storage options in the Upper Hunter Region. • Re-terminate the portion 2 built Singleton to Kurri line as Antiene Subtransmission Switching Station to Kurri. • Construct a new 132kV sub-transmission line between Antiene Subtransmission Switching Station to Kurri. • Augmentations to the Rothbury zone substation. <p>Pre-requisite: None</p>				
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A5.2.4 HumeLink

Summary						
<p>The transmission network between Southern New South Wales (SNSW) and Central New South Wales (CNSW) provides access for the hydroelectric generation in the Snowy mountains, renewable generation in SNSW, and import from Victoria and South Australia to New South Wales major load centres.</p> <p>HumeLink³¹ is a committed project that reinforces the southern New South Wales network, connecting the Snowy Mountains Hydroelectric Scheme and Project EnergyConnect to Bannaby, and is expected to be completed by December 2027.</p>						
Existing network capability						
<p>The maximum transfer capability from SNSW to CNSW is 2,700 MW at peak demand and summer typical and 2,950 MW winter reference periods. The maximum transfer capability is limited by thermal capacity of Collector – Marulan 330 kV lines following a credible contingency.</p> <p>The maximum transfer capability from CNSW to SNSW is 2,320 MW at peak demand and summer typical and 2,590 MW at winter reference periods. The maximum transfer capability is limited by thermal capacity of Yass – Canberra or Marulan – Yass or Gullen Range – Bannaby 330 kV lines following a credible contingency.</p> <p>The Waratah Super Battery (WSB) with System Integrity Protection Scheme (SIPS) increases the transfer capacity between SNSW to CNSW when paired with selected generators. When enabled during the five-year contract period, the SNSW to CNSW transfer capability is expected to increase by 250 MW in one direction only.</p> <p>After Humelink is in service, the transfer capability between SNSW and CNSW will increase by 2,200 MW in both directions.</p>						
Delivery scope						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<ul style="list-style-type: none"> New Gugaa 500/330 kV substation. A new 500 kV double-circuit line between Gugaa and Wagga Wagga initially operated at 330 kV. Three new 500 kV transmission circuits between: <ul style="list-style-type: none"> Maragle and Bannaby 500 kV substations. Maragle and Gugaa 500 kV substations. 	Committed	Forward: 2,200 Reverse: 2,200 REZ: N5: 400 ³² N6 + N7: 2,200	Committed project		December 2027	

³¹ See Transgrid's website for project updates <https://www.transgrid.com.au/projects-innovation/humelink/>.

³² Transgrid has advised the additional capacity to accommodate South West New South Wales REZ generation is limited by the rating of conductors between Wagga Wagga – Gugaa built for HumeLink. This reduces the previous value from 800 MW to 400 MW.

Actionable projects



<ul style="list-style-type: none">– Gugaa and Bannaby 500 kV substations.• Three 500/330 kV 1,500 MVA transformers at Maragle substation.• Two 500/330 kV 1,500 MVA transformers at new Gugaa substation.• 500 kV Line shunt reactors at the ends of Maragle – Bannaby, Maragle – Gugaa and Gugaa – Bannaby 500 kV lines.• Augmenting the substations at Maragle, Wagga Wagga and Bannaby to accommodate the additional transmission lines and transformers. <p>Pre-requisite: None</p>				
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A5.2.5 Project EnergyConnect Stage 2

Summary						
<p>Project EnergyConnect is a new 330 kV interconnector between New South Wales and South Australia. Project EnergyConnect is under construction and when completed the interconnector runs from Robertstown in South Australia to near Wagga Wagga in New South Wales, via the northernmost section of the transmission network in Victoria. It traverses between east and west, linking the REZs of Riverland and South West New South Wales, providing additional hosting capacity in these REZs.</p> <p>Project EnergyConnect has been split into two stages. Stage 1 connecting Robertstown (via Bunday) to Buronga was completed in late 2024 providing an initial transfer capability of 150 MW between New South Wales and South Australia. Stage 2 described below is currently underway³³.</p>						
Existing network capability						
<p>Project EnergyConnect Stage 1 is completed. The maximum transfer capability from SNSW to CSA is 150 MW in both directions.</p> <p>After the completion of Project Energy Connect Stage 2, the Southern New South Wales – Central South Australia interconnector is expected to increase to 800 MW in both directions.</p>						
Delivery scope						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>Stage 2:</p> <ul style="list-style-type: none"> Second 330 kV circuit closed on the Bunday–Buronga 330 kV double-circuit line (including 1 x 60 MVAR line reactor at Bunday and 1 x 50 MVAR line reactor at Buronga of each circuit). A new 330 kV double-circuit line from Dinawan to Buronga (including 60 MVAR line reactors at both ends of each circuit). A new 500 kV double-circuit line from Dinawan to Wagga Wagga operating at 330 kV (including 50 MVAR line reactors at the Dinawan end on each circuit). A new 330 kV switching station at Dinawan. Additional 4 x 200 MVA 330 kV phase shifting transformers at Buronga. Additional 2 x 200 MVA 330/220 kV transformers at Buronga. 	Committed	<p>Stage 2:</p> <p>650 MW In both directions of NSW-SA</p> <p>100 MW In both directions of VIC-SA</p> <p>REZ network limit increase:</p> <p>S2: 800 MW N5: 800 MW V1: 400</p>	Committed project		Stage 2: November 2027	

³³ See Transgrid's website for project updates <https://www.transgrid.com.au/projects-innovation/energyconnect/>.

Actionable projects



<ul style="list-style-type: none">• An additional 1 x 100 MVA 330 kV connected synchronous condenser at Buronga.• New 2 x 100 MVA 330 kV connected synchronous condenser at Dinawan.• New 2 x 52 MVar 330 kV capacitor banks at Dinawan.• A special protection scheme to detect and manage the loss of either of the AC interconnectors connecting to South Australia.		SWNSW1: 400		
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A5.2.6 Western Renewables Link (updated)

Summary						
<p>The Western Renewables Link (WRL) is a planned 500 kV double circuit overhead electricity transmission line from Bulgana in western Victoria to Sydenham in Melbourne’s north-west. The augmentation will alleviate constraints identified on the 220 kV network in Western Victoria. Addressing these network constraints from existing and committed large-scale renewable generation within the area, additional REZ capacity and future VRE development will be unlocked.</p> <p>A RIT-T was completed in July 2019³⁴. Minor transmission line augmentations, including wind monitoring and upgrading station limiting transmission plant, on the Red Cliffs to Wemen to Kerang to Bendigo, and Moorabool to Terang to Ballarat, 220 kV transmission lines, were completed in 2021 through AusNet Services’ Network Capability Incentive Project Action Plan (NCIPAP).</p> <p>In May 2023, WRL’s scope and timing was augmented as part of the Victoria – New South Wales Interconnector West (VNI West) Project Assessment Conclusions Report (PACR)³⁵ and subsequent National Electricity (Victoria) Act 2005 (NEVA) order³⁶. Updated scope includes relocation of the North Ballarat terminal station to Bulgana and upgrade of the transmission line from north of Ballarat to Bulgana from 220 kV to 500 kV.</p> <p>WRL will unlock renewable energy resources, reduce network congestion, and improve utilisation of existing assets in western parts of Victoria. The updated scope results in a higher capacity and harnesses 1,460 MW of renewable capacity rather than the original design of 600 MW. This project is classified as an anticipated project and is expected to be completed in November 2029</p>						
Existing network capability						
<p>The existing network capability does not allow full dispatch of existing and committed renewable generation in Central Highlands and Western Victoria REZs at times of high generation output.</p>						
Delivery scope						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slow Change	Step Change	Accelerated Transition
<ul style="list-style-type: none"> A new 500 kV double-circuit transmission line from Sydenham Terminal Station to Bulgana Terminal Station with switched shunt line reactors at the end of each circuit (approximately 70 MVAR). Extension of the 500 kV Sydenham Terminal Station by two breaker and a half switched bays Additional 100 MVAR at 500 kV switched bus reactor at Sydenham Terminal Station. 	Anticipated	695 MW In both directions of MEL-WNV REZ: V3+V4: 1,150 MW V2:310 MW	Anticipated project			November 2029

³⁴ See AEMO. Western Victoria Renewable Integration, at https://www.aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/victorian_transmission/2019/pacr/western-victoria-rit-t-pacr.pdf.

³⁵ See AEMO. VNI West PACR Volume 1. At https://aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/victorian_transmission/vni-west-rit-t/reports-and-updates/vni-west-pacr-volume-1.pdf?la=en.

³⁶ See <https://www.gazette.vic.gov.au/gazette/Gazettes2023/GG2023S267.pdf>

Actionable projects



<ul style="list-style-type: none"> • Rerouting of the existing No. 1 Sydenham to South Morang and Sydenham to Keilor 500 kV transmission lines to terminate into new bays at Sydenham Terminal Station. • Construction of new 220 kV circuit breakers and a second 220 kV bus at Bulgana Terminal Station. • A new 500 kV switchyard at Bulgana Terminal Station with two new 500/220 kV 1,000 MVA transformers, transmission line realignment, site provisioning and line cut in works for the existing Bulgana to Horsham 220 kV transmission line and Crowlands to Bulgana 220 kV transmission line. • Cut-in, termination and switching of the existing Ballarat to Moorabool No. 2 220 kV transmission line at Elaine Terminal Station, forming Ballarat to Elaine No. 2 line and Elaine to Moorabool No. 2 line. • Re-alignment and switching of the existing Ballarat to Elaine transmission line and Elaine to Moorabool transmission lines at Elaine Terminal Station and renaming them to Ballarat to Elaine No. 3 line and Elaine to Moorabool No. 3 line. • Implementation of new Special Control Schemes and/or amend some existing ones at multiple stations. • Validation of the capabilities of the existing earthing systems at multiple stations and the connected 220 kV transmission lines optic ground wire and/or earth wire. • Minor augmentations at existing terminal stations impacted by the WRL works. 				
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A5.2.7 Project Marinus Stage 1

Summary

Marinus Link is a proposed 1,500 MW capacity undersea and underground electricity interconnection between Tasmania and Victoria delivered by Marinus Link Pty Ltd, which will be operating in parallel with the existing Basslink interconnector. It is proposed to be delivered as two 750 MW HVDC developments between Burnie area in Tasmania and Latrobe Valley in Victoria.

This project also includes HVAC transmission network developments in Tasmania progressed by TasNetworks, referred to as the North West Transmission Developments (NWTD), to support the interconnector capacity to be provided by Marinus Link.

Collectively, these investments are referred to as Project Marinus.

Project Marinus was identified as an actionable ISP project in the 2022 ISP, and confirmed in the 2024 ISP. Marinus Link Pty Ltd and TasNetworks have completed a RIT-T for this network augmentation. The Project Assessment Conclusions Report (PACR)³⁷, the third report of the RIT-T, was published in June 2021. This RIT-T analysis was updated in July 2025³⁸. Project Marinus passed AEMO's feedback loop assessment in August 2025³⁹.

Project Marinus Stage 1 is now considered an anticipated project. On 1 August 2025, Tasmanian, Victorian and Australian governments confirmed a Final Investment Decision to proceed with Stage 1 of Project Marinus⁴⁰. Stage 2 is re-assessed for actionability (see section A5.3.7).

Existing network capability

The transfer capacity between Tasmania and South East Victoria is limited by the thermal capability of Basslink (HVDC system between Tasmania and Victoria).

Transfer capacity from Tasmania to South East Victoria is limited to 594 MW and from Victoria to Tasmania is limited to 478 MW at times of peak demand, summer typical and winter reference periods. Additionally, a seasonally variable daily energy limit of around 10,600 MWh per day is applied to maintain gross flows within allowable thermal ratings of the cable.

Additional network upgrades may also be required for the Central Highlands REZ for new generation connecting in the south of the REZ to access the network upgrades associated with Project Marinus. In particular, incremental upgrades associated with the Waddamana to Palmerston network sections are expected (see section A5.3.8).



³⁷ TasNetworks. Project Marinus PACR. At <https://www.marinuslink.com.au/wp-content/uploads/2021/06/Project-Marinus-RIT-T-PACR.pdf>.

³⁸ Marinus Link. RIT-T update report – 2025, at <https://www.marinuslink.com.au/rit-t-process/>.

³⁹ See <https://www.aemo.com.au/newsroom/news-updates/project-marinus-passes-feedback-loop-assessment>.

⁴⁰ See <https://www.recfit.tas.gov.au/what-is-recfit/major-investment-projects/project-marinus>



Delivery scope						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>Project Marinus Stage 1:</p> <ul style="list-style-type: none"> • A 750 MW monopole HVDC link between Burnie area in Tasmania and Hazelwood area in Victoria. • A new 750 MW HVDC monopole converter station in Burnie area. • A new 750 MW HVDC monopole converter station in Hazelwood area. • A new 220 kV switching station at Heybridge adjacent to the converter station. • A new double-circuit 220 kV transmission line between Sheffield, Heybridge and Burnie • A new 220 kV double-circuit line from Palmerston to Sheffield with decommissioning of the existing single-circuit line. • A new 500 kV connection from converter station in Hazelwood area. • Decommission existing Sheffield – Burnie 220 kV line. • Some enabling design, survey and civil works for Stage 2 HVDC are assumed to be included in Stage 1. <p>Note: HVDC interconnector components are referred to as Marinus Link 1. Pre-requisite: None</p>	Anticipated	Forward: 750 Reverse: 750 ⁴¹	Anticipated project		December 2030	

⁴¹ The combined transfer limit from Victoria to Tasmania is 978 MW, and from Tasmania to Victoria 1,344 MW. This is based on an assumption that the largest single contingency in Tasmania is limited to 500 MW.



A5.3 Actionable transmission projects

Eleven actionable projects are identified:

- Three newly actionable ISP projects are identified in this Draft ISP:
 - Two are situated in Victoria and intended to progress under the new Victorian Transmission Investment Framework (VTIF) for planning and developing its future REZs⁴² rather than through the NER framework for actionable ISP projects.
 - One is situated in New South Wales where the relevant TNSP shall begin assessing the project under the RIT-T framework by considering the ISP candidate option as one of the RIT-T credible options and publishing a Project Assessment Draft Report (PADR). See sections A5.3.1 to A5.3.10.
- Two actionable New South Wales projects – where augmentations will be assessed under the *Electricity Infrastructure Investment Act 2020* (NSW)⁴³ rather than through the NER framework for actionable ISP projects. See sections A5.3.1 to A5.3.3.
- One actionable Queensland project – where the augmentation will progress under the *Energy (Renewable Transformation and Jobs) Act 2024* (Qld) rather than the NER framework for actionable ISP projects. See Section A5.3.4.
- Five projects identified as actionable in the 2024 ISP remain actionable for this Draft 2026 ISP - where the relevant TNSP is currently assessing or has already assessed the project under the RIT-T framework by considering the ISP candidate option as one of the RIT-T credible options.
- Two projects identified as actionable in the 2024 ISP (including one currently remaining actionable for this Draft 2026 ISP) require further analysis to ascertain whether they will provide benefit to consumers as previously determined in the 2024 ISP. See Section A5.4.

One actionable project listed in this appendix is for reliability corrective action (Gladstone Project)⁴⁴. Project staging is applied to several ISP projects considered in this appendix. Where multiple stages of the same project are identified as actionable, that project is identified as a single actionable project without decision rules.

⁴² The VTIF is a new integrated approach to planning and delivering transmission infrastructure. See <https://engage.vic.gov.au/victorian-transmission-investment-framework>.

⁴³ See <https://legislation.nsw.gov.au/view/html/inforce/current/act-2020-044>.

⁴⁴ Gladstone Project: Candidate Priority Transmission Investment Assessment Final Assessment Report. See https://engage.powerlink.com.au/download_file/view/116/494.



A5.3.1 Sydney Ring North (Reinforcing Sydney, Newcastle, and Wollongong Supply)

Summary	
<p>The transmission network in the Sydney, Newcastle, and Wollongong (SNW) area was originally designed to connect large coal-fired generators in the Hunter Valley to supply SNW load centres. When these coal-fired generators retire, the network has insufficient capability to supply SNW load centres from generators located outside of the Hunter Valley. The Sydney Ring North Project increases transfer capacity into the SNW load centres.</p> <p>This project is named the Hunter Transmission Project and includes the Waratah Super Battery and related upgrades. This option increases the transfer capacity by up to 5,000 MW, and allows additional power to be exported from Central-West Orana REZ, New England REZ, and the Hunter- Central Coast REZ to SNW load centres.</p> <p>The Hunter Transmission Project (Sydney Ring North Project⁴⁵) is classified as a ‘priority transmission infrastructure project’⁴⁶ under the <i>Electricity Infrastructure Investment Act 2020</i> (NSW). This project was identified as an actionable project in the 2022 ISP and 2024 ISP, and is continuing to proceed as an actionable New South Wales project rather than under the RIT-T framework. It is scheduled to be completed by November 2029.</p> <p>The Waratah Super Battery (WSB) project is a priority transmission project in New South Wales. WSB with a System Integrity Protection Scheme (SIPS) is proposed to increase transfer capacity from Central NSW (CNSW) to SNW. This project also includes minor network augmentation to increase thermal capacity of Bannaby – Sydney West, Yass – Marulan and Yass – Collector – Marulan 330 kV lines. A network transfer capacity increase resulting from WSB with SIPS and minor network augmentation was included in ISP modelling.</p>	
Existing network capability	
<p>The existing transfer capability varies depending on load and generation distribution within the SNW area, as well as the generation within CNSW and power transfer from northern NSW (NNSW) and southern NSW (SNSW) subregions to CNSW. For better representation of these limitations, the existing transfer capability between CNSW and SNW is separately identified as North and South flow paths:</p> <p>CNSW-SNW North flow path is assumed to be the sum of flows on Bayswater – Sydney West, Bayswater – Regentville, Liddell – Newcastle, Liddell – Tomago, Wallerawang – Ingleburn and Wallerawang – Sydney South 330 kV lines and Stroud – Brandy Hill, Stroud – Tomago, Hawks Nest tee – Tomago and Singleton – Rothbury 132 kV lines. The maximum transfer capability of the CNSW-SNW North flow path is 4,490 MW at peak demand and summer typical periods, and 4,730 MW at winter reference periods. The maximum northern transfer capability is limited by several 330 kV lines and the most limiting elements are Liddell – Newcastle and Liddell – Tomago 330 kV lines.</p> <p>The WSB with SIPS increases the transfer capacity between CNSW to SNW when paired with selected generators. When enabled during the five-year contract period, the SIPS will be capable of increasing the transfer capability of the CNSW-SNW North by up to 700 MW.</p>	
Identified need	
<p>The identified need for Sydney Ring project has not changed since the 2022 ISP and 2024 ISP. This section covers the Sydney Ring North Project. The identified need for the Sydney Ring North project is to deliver net market benefits for consumers by increasing the power system’s capability to supply the SNW load centres, replacing supply capacity that will be removed on the closure of coal-fired power stations in the Newcastle area.</p>	

⁴⁵ The Sydney Ring North project is named the Hunter Transmission Project and may include the Waratah Super Battery and related upgrades.

⁴⁶ See <https://www.energyco.nsw.gov.au/projects/hunter-transmission-project>.



Progress and next steps				
The Hunter Transmission Project (Sydney Ring North project) will progress as an actionable New South Wales project and will proceed under the <i>Electricity Infrastructure Investment Act 2020</i> (NSW) rather than the RIT-T framework.				
Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>Sydney Ring Northern 500 kV loop or the Hunter Transmission Project (HTP)⁴⁷ (CNSW-SNW Option 1).</p> <ul style="list-style-type: none"> A new 500 kV double-circuit line between Olney substation and Bayswater South substation. New switching stations at Bayswater South (near Bayswater substation) and Olney (near Eraring substation). 500 kV connections between Bayswater and Bayswater South substations, and between Eraring and Olney substations. Two 500/330 kV 1,500 MVA transformers at Eraring substation. <p>Line reactors on 500 kV transmission lines between Olney and Bayswater South.</p> <p>Pre-requisite: None</p>	<p>Actionable NSW Project⁴⁸ [New South Wales candidate option]</p>	<p>Forward: 5,000 (This capacity increase for accommodation of additional new generation from North of Bayswater and 2/3 generation from Central West NSW) Reverse: N/A</p> <p>REZ: N10: 2,000</p>	<p>1,364 Class 5b (±50%)</p>	<p>Timing advised by proponent: November 2029</p>

⁴⁷ The Sydney Ring North project is named the Hunter Transmission Project and may include the Waratah Super Battery and related upgrades.

⁴⁸ Sydney Ring North project is an actionable NSW project rather than an actionable ISP project. This project will progress under the *Electricity Infrastructure Investment Act 2020* (NSW) rather than the ISP framework. See <https://www.energyco.nsw.gov.au/our-projects/hunter-transmission-project/transmission-infrastructure>



A5.3.2 Sydney Ring South (Reinforcing Sydney, Newcastle, and Wollongong Supply)

Summary

The transmission network in the Sydney, Newcastle, and Wollongong (SNW) area was originally designed to connect large coal-fired generators in the Hunter Valley to supply the SNW load centres. When these coal-fired generators retire, the network has insufficient capability to supply SNW load centres from generators located outside of the Hunter Valley. The Sydney Ring South Project increases transfer capacity into the SNW load centres.

AEMO identified the Sydney Ring South project as an actionable ISP project in the 2024 ISP. It remains as an actionable ISP project in this Draft ISP. Timing for any need to increase power system capability to support the SNW load centres from the south of New South Wales depends on load distribution and sizing within SNW, as well as power transfer from Southern NSW (SNSW) to Central New South Wales (CNSW), Northern NSW (NNSW) to CNSW and CNSW to SNW. Direction and amount of power transfer on the 500 kV lines between Bannaby and Mt Piper would highly influence timing of the Sydney Ring South project.

Existing network capability

The existing transfer capability varies depending on load and generation distribution within the SNW area, as well as the generation within central NSW (CNSW) and power transfer from northern NSW (NNSW) and southern NSW (SNSW) subregions to CNSW. For better representation of these limitations, the existing transfer capability between CNSW and SNW is separately identified as North and South flow paths:

- CNSW-SNW South flow path is assumed to be the sum of flows on Bannaby – Sydney West, Marulan – Dapto, Marulan – Avon and Kangaroo Valley – Dapto 330 kV lines. The maximum transfer capability of CNSW-SNW South flow path is 2,540 MW at peak demand and summer typical, and 2,720 MW at winter reference periods. The maximum southern transfer capability is limited by several 330 kV lines and the most limiting element is Bannaby-Sydney West 330 kV line.

The Waratah Super Battery (WSB) with System Integrity Protection Scheme (SIPS), which increases the transfer capacity between CNSW to SNW when paired with selected generators. When enabled during the 5-year contract period, the SIPS will be capable of increasing the transfer capability of the CNSW-SNW South flow paths by up to 250 MW.



Identified need

The identified need for the Sydney Ring South project, is:

- to deliver net market benefits for consumers to increase the power system’s capability to supply the Sydney, Newcastle and Wollongong load centres, replacing supply capacity that will be removed on the closure of coal-fired power stations in the Newcastle area, and
- efficiently service increasing peak demand.



Progress and next steps				
<ul style="list-style-type: none"> AEMO identified the Sydney Ring South project as an actionable ISP project in the 2024 ISP. It remains as an actionable ISP project in this Draft ISP, with power flow control as the ISP candidate option. The Sydney Ring South 500 kV option identified in the 2024 ISP is considered a future ISP project in this Draft 2026 ISP. On 30 May 2025, the Australian Energy Regulator (AER) agreed to an extension to the date by which Transgrid must publish the Project Assessment Draft Report (PADR) for the Sydney Ring South project to 30 April 2026⁴⁹. <p>The Sydney Ring South PADR will assess the near-term actionable ISP project (i.e. the power flow control option) and also further test the scope and timing of the 500 kV transmission future ISP project, to identify which option best positions New South Wales for a range of credible futures, delivering the best long-term outcome for consumers. As part of the RIT-T process, Transgrid may consider engaging communities in relation to both the actionable Sydney Ring South project (power flow control option) and the future ISP project (Sydney Ring South 500 kV option) to provide greater certainty to communities on the overall project scope and timing, and to minimise the impacts of duplicated consultation processes.</p> <p>The Project Assessment Draft Report (PADR) for Sydney Ring South is expected to be published in April 2026.</p>				
Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>CNSW-SNW Option 2d</p> <ul style="list-style-type: none"> Power flow control on the 330 kV network Install power flow control devices in the 330 kV network supplying Sydney from the south. <p>(The scope, cost and timing of this option is under development by Transgrid for inclusion in the PADR for Sydney Ring South to be published by 30 April 2026.)</p> <p>Pre-requisite: CNSW-SNW Option 1</p>	<p>Actionable ISP Project [ISP candidate option]</p>	<p>Forward: 0 MW (This option improves power flow sharing between the northern and southern segments of the CNSW-SNW flow paths. This allows more generation to be transferred to Sydney from SNSW.) Reverse: N/A</p>	<p>261⁵⁰ Class 5(±50%)</p>	<p>Timing advised by proponent: July 2030</p>

⁴⁹ See the AER decision at <https://www.aer.gov.au/news/articles/communications/project-assessment-draft-report-publication-date-extended-sydney-ring-south-project>.

⁵⁰ This is the \$2025 cost of the power flow controller option for Sydney Ring South provided by Transgrid. The Project Assessment Draft Report for Sydney Ring South is expected to be published in April 2026.

A5.3.3 New England REZ Network Infrastructure Project

Summary

New England REZ is located to the east of and along the existing QNI. The capacity of this REZ is supported by extensive Northern NSW – Central NSW corridor network options and it will be part of New England REZ Network Infrastructure Project.

This REZ has moderate to good wind and solar resources in close proximity to the 330 kV network. Interest in the area includes large scale solar and wind generation as well as pumped hydro generation.

The New England REZ was declared on 17 December 2021 under the *NSW Electricity Infrastructure Investment Act 2020* (NSW) with an intended 8,000 MW⁵¹ of additional transmission network capacity to be constructed in the New England region of the state. The declaration identifies that EnergyCo NSW will be the infrastructure planner responsible for coordinating the development of the REZ⁵². REZ design and community engagement is currently progressing.

The New England REZ Network Infrastructure Project includes proposed 500 kV and 330 kV transmission lines and substations between central and northern NSW to access increased renewable generation in northern NSW, as well as a 330 kV REZ extension. In the 2022 ISP and 2024 ISP, major augmentation of the CNSW-NNSW flow path was identified as an actionable New South Wales project (New England REZ Transmission Link) rather than an actionable ISP project.

EnergyCo has advised that this project will be completed in two parts – Part 1 (CNSW-NNSW Option 1 and REZ N2 Option 1) by July 2032 and Part 2 (CNSW-NNSW Option 2) by January 2034⁵³. This project is expected to progress under the *Electricity Infrastructure Investment Act 2020* (NSW). The latest 2025 Infrastructure Investment Objectives Report modelling included a second stage (CNSW-NNSW Option 2 below) in the 20-year development pathway that best met New South Wales' legislated objectives for energy infrastructure. Only Stage 1 (both parts) is included in the proposed ODP in the Draft 2026 ISP and ongoing analysis and stakeholder engagement between now and June 2026 is needed to ascertain whether the second stage will optimise benefits to consumers in the 2026 ISP.



Existing network capability

The CNSW to NNSW maximum transfer capability is 910 MW at peak demand, summer typical and winter reference periods. The maximum transfer capability is limited by voltage stability for loss of Kogan Creek generator.

The NNSW to CNSW maximum transfer capability is 930 MW at peak demand and summer typical periods and 1,025 MW at winter reference period. The maximum transfer capability is limited by thermal capacity of Armidale – Tamworth 330 kV lines following a credible contingency.

The Waratah Super Battery (WSB) with System Integrity Protection Scheme (SIPS) increases the transfer capacity between NNSW to CNSW when paired with selected generators. When enabled during the five-year contract period, the SIPS will be capable of increasing the transfer capability of the NNSW to CNSW flow path by 300 MW in one direction only.

⁵¹ See Government Gazette No 580 of Friday 15 December 2023, at https://gazette.legislation.nsw.gov.au/so/download.w3p?id=Gazette_2023_2023-580.pdf.

⁵² See <https://www.energyco.nsw.gov.au/ne-rez>.

⁵³ See AEMO's Transmission Augmentation Information page, at <https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-planning-data/transmission-augmentation-information>.



Identified need				
<p>The identified need for this project is to increase the capability of the transmission network to enable the connection of expected generation in the New England REZ by:</p> <ul style="list-style-type: none"> • increasing the transfer capacity between expected generation in the New England REZ and the existing transmission network in the Hunter region, and • ensuring sufficient resilience to avoid material reductions in transfer capacity during an outage of a transmission element. <p>or as otherwise consistent with the New South Wales Government’s Electricity Infrastructure Roadmap.</p>				
Progress and next steps				
<p>On 17 December 2021, the New England REZ was formally declared to progress under the <i>Electricity Infrastructure Act 2020</i> (NSW) rather than through the RIT-T framework. This declaration identifies that EnergyCo is the appointed infrastructure planner responsible for coordinating the delivery of the REZ. In November 2025 three potential network operators were shortlisted to build and operate the new transmission network for the REZ (inclusive of the full scope described below, i.e. Options 1 and 2). More information about the delivery of the New England REZ is available on EnergyCo New South Wales’ website⁵⁴.</p>				
Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>Flow path (CNSW-NNSW Option 1):</p> <ul style="list-style-type: none"> • A new 500 kV Double-circuit steel tower (DCST) line between Central (Hub 5) and Bayswater with Quad Orange conductor. • A new Central (Hub 5) 500/330 kV substation with 3 x 500/330/33 kV 1,500 MVA transformers and cut into existing 330 kV lines between Tamworth and Armidale. • A new 4 x 330 kV 340 MVA phase shifting transformers at Central (Hub 5). • 4 x 500 kV 150 MVA line shunt reactors (in total) are required for 500 kV DCST line between Central Hub 5 and Bayswater. 	Actionable NSW Project [New South Wales candidate option]	Forward: 2,400 Reverse: 2,400 ⁵⁵	2,583 Class 5b (±50%)	Timing advised by proponent: July 2032
<p>REZ (N2 Option 1):</p> <ul style="list-style-type: none"> • New 330 kV Northern (Hub 10), Central South (Hub 1) and East (Hub 4) switching stations. • New 500 kV built and initially 330 kV operated DCST line from Central (Hub 5) to Central South (Hub1) with Quad Orange conductor. • New 500 kV built and initially 330 kV operated DCST line from Central (Hub 5) to Northern (Hub 10) with Quad Orange conductor. 	Actionable NSW Project [New South Wales candidate option]	REZ N2: 2,400	1,090 Class 5b (±50%)	Timing advised by proponent: July 2032

⁵⁴ See <https://www.energyco.nsw.gov.au/ne-rez>.

⁵⁵ AEMO assumes a symmetrical uplift in both directions and reverse direction network capacity is dependent on the location of future generation.



<ul style="list-style-type: none"> New 330 kV DCST line between Central (Hub 5) and East (Hub 4) with Twin Olive conductor. <p>Pre-requisite: CNSW-NNSW Option 1</p>				
<p>Flow path (CNSW-NNSW Option 2):</p> <ul style="list-style-type: none"> Expand Northern (Hub 10) switching station to 500/330kV substation with 3 x 500/330/33kV 1,500 MVA transformers and cut into the existing 330 kV lines between Armidale to Sapphire/Dumaresq. Expand Central South (Hub 1) switching station to 500/330 kV substation with 3 x 500/330/33 kV 1,500 MVA transformers. A new 500 kV DCST from Central South (Hub 1) to Bayswater with Quad Orange conductor. Operate line between Central Hub 5 and Central South Hub 1 from 330 kV to 500 kV. Operate line between Central Hub 5 and Northern Hub 10 from 330 kV to 500 kV. 4 x 500 kV 150 MVA line shunt reactors (in total) for 500 kV double-circuit line between Central South (Hub 1) and Bayswater. <p>Pre-requisite: CNSW-NNSW Option 1, REZ N2 Option 1</p>	<p>Actionable New South Wales project from 2024 ISP</p> <p>This option is not included on the Draft 2026 ODP.</p> <p>This project is expected to be evaluated under the <i>NSW Electricity Infrastructure Investment Act 2020</i> (NSW)</p>	<p>Forward: 3,600 Reverse: 3,600 REZ N2: 3600</p>	<p>2,241 Class 5b(±50%)</p>	<p>Timing advised by proponent: January 2034</p>



A5.3.4 Switching Station Near Wondalga

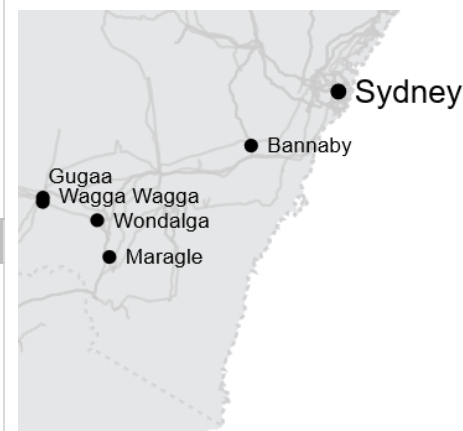
Summary

The Switching Station Near Wondalga project increases the transfer capacity between southern and central New South Wales.

The transmission network between Southern New South Wales (SNSW) and Central New South Wales (CNSW) provides access for the hydroelectric generation in the Snowy mountains, renewable generation in SNSW, and import from Victoria and South Australia to New South Wales major load centres.

Humelink⁵⁶ is a committed project that reinforces the southern New South Wales network, connecting the Snowy Mountains Hydroelectric Scheme and Project EnergyConnect to Bannaby, and is expected to be completed by December 2027.

The Draft 2026 ISP proposes the Near Wondalga Switching Station as an actionable ISP project.



Existing network capability

The maximum transfer capability from SNSW to CNSW is 2,700 MW at peak demand and summer typical and 2,950 MW winter reference periods. The maximum transfer capability is limited by thermal capacity of Collector – Marulan 330 kV lines following a credible contingency.

The maximum transfer capability from CNSW to SNSW is 2,320 MW at peak demand and summer typical and, 2,590 MW at winter reference periods. The maximum transfer capability is limited by thermal capacity of Yass–Canberra or Marulan–Yass or Gullen Range–Bannaby 330 kV lines following a credible contingency.

The Waratah Super Battery (WSB) with System Integrity Protection Scheme (SIPS) increases the transfer capacity between SNSW to CNSW when paired with selected generators. When enabled during the five-year contract period, the SNSW to CNSW transfer capability is expected to increase by 250 MW in one direction only.

After Humelink is in service, the transfer capability between SNSW and CNSW will increase by 2,200 MW in both directions.

Identified need

- The identified need for this project is to realise net market benefits by:
- increasing the capability of the transmission network between southern and central New South Wales, and
 - enabling access to lower-cost generation from Victoria, South Australia and southern New South Wales to meet demand in the New South Wales major load centres.

Progress and next steps

- AEMO has identified Switching Station Near Wondalga as an newly actionable ISP project for this Draft ISP.
- For this project, AEMO specified that:
- RIT-T proponent(s): Transgrid,
 - ISP candidate option: Option 5 see below,

⁵⁶ See Transgrid's website for project updates <https://www.transgrid.com.au/projects-innovation/humelink/>.



- The PADR must be published and made available to relevant persons by 30 April 2027, and
- AEMO has called for submissions on non-network options⁵⁷ for this project with the potential to satisfy, or contribute to satisfying, the identified need. AEMO will provide all submissions to the RIT-T proponent for consideration in the PADR.

Early works for the Near Wondalga Switching Station may include:

- **Stakeholder engagement** – implementing meaningful engagement programs, including engagement with Traditional Owners and land councils, landholders, government, local communities, councils, environmental groups and other impacted stakeholders.
- **Land use planning** – planning approval activities, cultural heritage studies, environmental impact assessments and other necessary approval activities.
- **Land acquisition** – secure access to enable investigations; and acquire land and/or negotiate binding land options.
- **Procurement activities** – contractor engagement, procurement of equipment with long lead times, tendering activities to refine accuracy of cost estimates, and pre-construction works.
- **Project development** – Additional activities required to support timely delivery of the project, for example some project management and design activities.

Credible option(s)

Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
SNSW-CNSW Option 5 <ul style="list-style-type: none"> • A new Switching Station near Wondalga at the Y point connecting the 3 x 500 kV HumeLink lines: <ul style="list-style-type: none"> – Bannaby – Gugaa 500 kV line. – Bannaby – Maragle 500 kV line. – Gugaa – Maragle 500 kV line. • 4 x 150 MVAR line reactors Pre-requisite: HumeLink	Actionable ISP Project [ISP candidate option]	Forward: 450 Reverse: 450	220 Class 5b (±50%)	Timing advised by proponent: July 2029

⁵⁷ For details on the call for submissions on non-network options, please refer to Part C of the Draft 2026 ISP.



A5.3.5 Gladstone Project

Summary

Following the retirement or reduced generation from Gladstone Power Station and increased generation in North and Central Queensland, the transmission network supplying the Gladstone area will be constrained. As a result, forecast demand at Boyne Island, Calliope River, Larcom Creek and Raglan substations cannot be supplied. If major industrial loads are electrified, there is a potential for a material shift in the supply-demand balance in the Gladstone area.

The Gladstone Project was identified as an actionable Queensland project in the 2024 ISP. This project progressed under the *Energy (Renewable Transformation and Jobs) Act 2024* (Qld) rather than the ISP framework. In the Draft 2026 ISP, the Gladstone Project remains an actionable Queensland project. The updated options include outcomes of Powerlink’s development of the project through the Gladstone Priority Transmission Investment framework to increase thermal capability of transmission corridor to supply loads following retirement of generators in Gladstone and increased generation from North and Central Queensland. The majority of the project is expected to be delivered in March 2029 with some minor works to be completed later⁵⁸.

The Gladstone Project is expected to be implemented in three stages, subject to several factors, including the Priority Transmission Investment (PTI) assessment, Ministerial direction, responsiveness to load growth in the region, and the need to be flexible and maximise delivery efficiency⁵⁹.



Existing network capability

The maximum power transfer capability is influenced by the amount of generation dispatch within northern and central Queensland, particularly at Gladstone. This limit is influenced by the thermal capacity of the Calvale – Wurdong, Bouldercombe – Calliope River, Bouldercombe – Raglan, Larcom Creek – Calliope River or Calliope River – Wurdong 275 kV circuits.

With typical generation output from Stanwell and Callide, Central Queensland to Gladstone Grid maximum transfer capability is 700 MW at peak demand and summer typical levels, and 1,050 MW at winter reference condition. In the reverse direction, Gladstone Grid to Central Queensland maximum transfer capability is 750 MW at peak demand and summer typical levels and approximately 1,100 MW at winter reference periods.

Identified need

The identified need for Gladstone Project is to ensure ongoing reliability and security of supply in the Gladstone area to:

- meet the forecast electrical load in anticipation of the closure of the Gladstone Power Station,
- support the decarbonisation of major industries, and
- compensate for loss of essential system services, such as inertia, system strength and voltage control capability, following the closure of Gladstone Power Station.

This project is classified as a reliability corrective action to meet reliability and service standards specified within Powerlink’s Transmission Authority, consistent with Powerlink’s Final Assessment Report as part of the Candidate Priority Transmission Investment Assessment released in June 2025⁶⁰.

⁵⁸ AEMO and Powerlink to consult between Draft and Final to assess the complete timeline of the project.

⁵⁹ See project overview at <https://www.powerlink.com.au/projects/gladstone-project>.

⁶⁰Gladstone Project: Candidate Priority Transmission Investment Assessment Final Assessment Report see https://engage.powerlink.com.au/download_file/view/116/494



Progress and next steps				
<ul style="list-style-type: none"> In June 2025, Powerlink published and submitted the Final Assessment Report to the Queensland Government. The report assesses options to meet the identified need and recommends a preferred option. A summary of non-confidential submissions is available in the Final Assessment Report.. Gladstone priority transmission investment process has commenced⁶¹. 				
Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>CQ-GG Option 2^{62, 63}:</p> <ul style="list-style-type: none"> New Gladstone West 275 kV switching station. New 275 kV high capacity double-circuit line between Calvale and Calliope River (switched into Gladstone West). A new (third) 275/132 kV transformer at Calliope River. Power flow control of Calvale – Wurdong 275 kV line. 200 MVar capacitor bank at Larcom Creek and Calliope River. 150 MVar reactor at Gladstone West. 2 synchronous condensers at Gladstone West. Wide area monitoring, control and protection scheme. Rebuild Bouldercombe – Calliope River 275 kV (#812) as a high capacity Bouldercombe – Larcom Creek 275 kV double-circuit line (switched into Gladstone West). <p>Notes:</p> <ul style="list-style-type: none"> Retain the existing Calliope River – Larcom Creek – Raglan – Bouldercombe 275 kV line (#s 8859, 8875, 871, 818 and 811) in service. Decommission #812 from Bouldercombe to Gladstone West but retain #812 from Gladstone West to Calliope River. <p>Pre-requisite: None</p>	Actionable Queensland Project [Queensland candidate option]	Forward: 2,600 Reverse: 500	2,367 ⁶⁴ Class 5 (-20% to +30%)	Timing advised by proponent March 2029

⁶¹ Assessment reviewed by Queensland Government at <https://engage.powerlink.com.au/pti-gladstone-project>.

⁶² Powerlink recommended this option under the Priority Transmission Investment. Final assessment report at <https://engage.powerlink.com.au/pti-gladstone-project>.

⁶³ Powerlink has provided an update to the scope that removes the power flow controller and capacitor bank, with the two synchronous condensers at Gladstone West relocated within the Gladstone area. AEMO will consult Powerlink on the updated scope regarding their impact on cost, transfer capability and earliest in-service date.

⁶⁴ Powerlink has provided a cost estimate for this project as part of its ongoing consideration of options for this flow path. This estimate includes Queensland landholder payments. AEMO will adjust the ISP inputs accordingly to account for this inclusion. This estimate excludes the costs of synchronous condensers.

A5.3.6 Victoria – New South Wales Interconnector West (VNI West)

Summary

VNI West is a proposed 500 kV interconnector from near Bulgana in Victoria to a new substation named Dinawan in southwest New South Wales. The 2022 and 2024 ISPs identified VNI West (via Kerang) as the ISP candidate option in the ODP. VNI West remains actionable for the Draft 2026 ISP. In May 2023, AEMO Victorian Planning (AVP)⁶⁵ and Transgrid concluded the RIT-T and confirmed option 5A (VNI West Project Assessment Conclusions Report Volume) as the preferred option. Also in May 2023, the Victorian Minister for Energy and Resources used powers under the *National Electricity (Victoria) Act 2005* to issue an order that identifies VNI West as a specified augmentation⁶⁶. This option connects from near Bulgana to Dinawan via a new Tragowel Terminal Station, which is near Kerang.

VNI West will connect, at a terminal station near Bulgana, to Western Renewable Link (WRL), which is an anticipated double-circuit 500 kV line from Sydenham to near Bulgana. VNI West remains as an actionable ISP project for the Draft 2026 ISP, as it was in the 2022 ISP and 2024 ISP.

Existing network capability

Transfer capability of future options has been modelled with the VNI Minor upgrade and Victoria SIPS with battery storage in-service for increased transfer capability from Southern New South Wales (SNSW) to Victoria.

Victoria to SNSW maximum transfer capability is 870 MW at peak demand and 1,000 MW at summer typical and winter reference periods. The maximum transfer capability is limited by voltage stability or transient stability limit.

The maximum transfer capability from SNSW to Victoria is 400 MW at peak demand, summer typical and winter reference periods. This is limited by a voltage stability limit. When available, Victoria's SIPS allows the 330 kV lines between South Morang and Murray to operate at a higher thermal capacity for a short period following a critical contingency.



Identified need

The identified need for the VNI West project has not changed since the previous ISPs. VNI West will increase transfer capacity between New South Wales and Victoria to realise net market benefits by:

- efficiently maintaining supply reliability in Victoria following the closure of further coal-fired generation and the decline in ageing generator reliability – including mitigation of the risk of existing plant closing earlier than expected,
- facilitating efficient development and dispatch of generation in areas with high quality renewable resources in Victoria and southern New South Wales through improved network capacity and access to demand centres, and
- enabling more efficient sharing of resources between NEM regions.

⁶⁵ From 1 November 2025, AEMO's Victorian network functions transferred to a new State Business Corporation, VicGrid Body Corporate (VicGrid), including responsibility for Transmission Company Victoria (TCV) and the VNI West project.

⁶⁶ See <https://www.vicgrid.com.au/transmission-projects/victoria-to-nsw-interconnector-west>.



Progress and next steps				
<p>VNI West was determined to be an actionable ISP project in the 2020, 2022 and 2024 ISPs and remains actionable in the Draft 2026 ISP. The RIT-T proponents for this project are Transgrid and AVP (now VicGrid). The RIT-T was completed in May 2023. AEMO provided feedback loop confirmation to Transgrid in December 2023 that the project addresses the identified need and aligns with the optimal development path in the most recent ISP. Early works and community engagement and consultation are being undertaken by Transgrid and Transmission Company Victoria (TCV)⁶⁷. The Minister issued the final scoping requirements for the Environment Effects Statement (EES) for VNI West, following consideration of public comments received on the Draft scoping requirements⁶⁸. In November 2025, Iberdrola was awarded the contract to design and develop the project in collaboration with TCV and subsequently submit a proposal to build, own and operate the transmission line.</p> <p>Independent experts are carrying out a range of technical studies and field surveys to assist in identifying potential project impacts.</p>				
Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>VNI West⁶⁹:</p> <p>South West NSW REZ (N5 Option 1) Stage 1</p> <ul style="list-style-type: none"> Upgrade Dinawan – Wagga Wagga – Gugaa double-circuit line from 330 kV to 500 kV operation and bypass at Wagga Wagga (lines built at 500 kV as part of Project EnergyConnect and HumeLink). Establish Dinawan 500 kV switchyard with two 500/330 kV 1,500 MVA transformers. 500 kV line shunt reactors at both ends of the 500 kV double-circuit Dinawan – Gugaa lines. Bring forward the line shunt reactors for the Dinawan – Tragowel 500 kV double-circuit for voltage support at Dinawan. Cut-in Gugaa substation between Lower Tumut - Wagga 330 kV single-circuit overhead line (line TL51). Rebuild 330 kV line between Gugaa and Wagga (section of TL51) as a new double-circuit overhead line, using the Line TL51 easement. 	Actionable ISP Project [ISP candidate option]	<p>Forward: 1,890</p> <p>Reverse: 1,670</p> <p>REZ:</p> <p>V1: 1,580</p> <p>WV1: 200</p> <p>N5: 600</p>	<p>7,600⁷⁰</p> <p>Class 4</p> <p>(-30%/+50%) (\$2025)</p>	<p>Timing advised by proponent:</p> <p>November 2031.</p>

⁶⁷ From 1 November 2025, AEMO’s Victorian network functions transferred to a new State Business Corporation, VicGrid Body Corporate (VicGrid), including responsibility for Transmission Company Victoria (TCV) and the VNI West project.

⁶⁸ See Transmission Victoria Company <https://www.transmissionvictoria.com.au/about-vni-west/project-overview>.

⁶⁹ The South West New South Wales REZ component (N5 Option 1) from the VNI West project, which upgrades Dinawan – Gugaa double-circuit line from 330 kV to 500 kV operation (lines built at 500 kV as part of Project EnergyConnect) was tested in stages to allow the capacity outlook model to optimise costs and benefits of building South West New South Wales REZ ahead of increasing the transfer capacity between New South Wales and Victoria.

⁷⁰ AEMO has reported the total project cost. Transgrid has advised \$565 million of this amount relates to approved early works and other incurred costs that should be excluded from the cost estimate for the 2026 ISP in accordance with the AER’s CBA Guidelines.



<p>Victoria – New South Wales (Bulgana – Kerang – Dinawan) Stage 2:</p> <ul style="list-style-type: none"> • A new 500 kV double-circuit overhead line from near Bulgana to Tragowel (near Kerang) to locality of Dinawan, including series compensation on the line near Tragowel. • Establish new Tragowel Terminal Station with two 500/220 kV 1,000 MVA transformers. • 220 kV connections from the new Tragowel Terminal Station to the existing 220 kV lines near Kerang. • Eildon – Thomastown and Rowville – Thomastown 220 kV lines are to be cut into at South Morang creating normally operating direct connection between Eildon 220 kV and Rowville 220 kV, in place of previously proposed modular power flow controllers, to prevent overloading on the 220 kV lines between Dederang and Thomastown. South Morang – Thomastown sections of lines are to be bridged together with existing South Morang – Thomastown lines increasing the capacity of those lines. • 500 kV line shunt reactors at both ends of the two following 500 kV circuits: <ul style="list-style-type: none"> – (i) near Bulgana – Tragowel – (ii) Tragowel – Dinawan at Tragowel • Two new 500 kV bays and line exits with a total of two 500 kV line shunt reactors at the Terminal Station near Bulgana. • Up to +/- 400 MVar dynamic reactive compensation at the new 220 kV Tragowel Terminal Station. • Install 2 x 120 MVar reactors at Wagga 330 kV substation for voltage support. • Series compensation capacitors on both of the 500 kV circuits between Tragowel and near Bulgana, to reduce impedance on the new 500 kV network and thereby improve network load sharing with, and manage network loading on the existing 330 kV Victoria – New South Wales Interconnector and the existing 220 kV western Victoria network between Bendigo and Kerang. <p>Pre-requisite: Victorian Western Renewables Link, HumeLink, Project EnergyConnect</p>				
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A5.3.7 Project Marinus Stage 2

Summary

Marinus Link is a proposed 1,500 MW capacity undersea and underground electricity interconnection between Tasmania and Victoria delivered by Marinus Link Pty Ltd, which will be operating in parallel with the existing Basslink interconnector. It is proposed to be delivered as two 750 MW HVDC developments between Burnie area in Tasmania and Latrobe Valley in Victoria.

This project also includes HVAC transmission network developments in Tasmania progressed by TasNetworks, referred to as the North West Transmission Developments (NWTN), to support the interconnector capacity to be provided by Marinus Link.

Collectively, these investments are referred to as Project Marinus.

Project Marinus was identified as an actionable ISP project in the 2022 ISP, and confirmed in the 2024 ISP. Marinus Link Pty Ltd and TasNetworks have completed a RIT-T for this network augmentation. The Project Assessment Conclusions Report (PACR)⁷¹, the third report of the RIT-T, was published in June 2021. This RIT-T analysis was updated in July 2025⁷². Project Marinus passed AEMO’s feedback loop assessment in August 2025⁷³.

Project Marinus Stage 1 is now considered an anticipated project. On 1 August 2025, Tasmanian, Victorian and Australian governments confirmed a Final Investment Decision to proceed with Stage 1 of Project Marinus. Stage 2 reassessed to be actionable for this Draft 2026 ISP.



Existing network capability

The transfer capacity between Tasmania and South East Victoria is limited by the thermal capability of Basslink (the HVDC system between Tasmania and Victoria).

Transfer capacity from Tasmania to South East Victoria is limited to 594 MW and from South East Victoria to Tasmania is limited to 478 MW at times of peak demand, summer typical and winter reference periods. Additionally, a seasonally variable daily energy limit of around 10,600 megawatt hours (MWh) per day is applied to maintain gross flows within allowable thermal ratings of the cable.

Following the anticipated Stage 1, the transfer capacity will increase by 750 MW in both directions.

Additional network upgrades may also be required for the Central Highlands REZ for new generation connecting in the south of the REZ to access the network upgrades associated with Project Marinus. In particular, incremental upgrades associated with the Waddamana to Palmerston network sections (see section A5.3.8) are expected.

Identified need

The identified need for Project Marinus Stage 2 has not changed since the 2022 ISP:

- The characteristics of customer demand, generation and storage resources vary significantly between Tasmania and the rest of the NEM. Increased interconnection capacity between Tasmania the other NEM regions has the potential to realise a net economic benefit by capitalising on this diversity.

⁷¹ TasNetworks. Project Marinus PACR. At <https://www.marinuslink.com.au/wp-content/uploads/2021/06/Project-Marinus-RIT-T-PACR.pdf>.

⁷² Marinus Link. RIT-T update report – 2025, at <https://www.marinuslink.com.au/rit-t-process/>.

⁷³ See <https://www.aemo.com.au/newsroom/news-updates/project-marinus-passes-feedback-loop-assessment>.



Progress and next steps				
<p>On 15 August 2025, AEMO confirmed that Project Marinus passed the feedback loop assessment. AEMO’s feedback loop assessment confirms that:</p> <ul style="list-style-type: none"> Project Marinus addresses the relevant identified need specified, and aligns with the ODP referred to, in the 2024 ISP, and the total cost (in \$2023) of the project (\$7,570 million), including Stage 1 (\$5,035 million) and Stage 2 (\$2,535 million), does not change the status of the actionable ISP project as part of the ODP specified in the 2024 ISP⁷⁴. 				
Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>Project Marinus Stage 2:</p> <ul style="list-style-type: none"> An additional 750 MW monopole HVDC link between Burnie area in Tasmania and Hazelwood area in Victoria. An additional new 750 MW HVDC monopole converter station in Burnie area. An additional new 750 MW HVDC monopole converter station in Hazelwood area. A new 220 kV switching station at Staverton. A new double-circuit 220 kV transmission line from Staverton to Burnie via Hampshire Cut-in both Sheffield–Mersey Forth double-circuit 220 kV lines at Staverton. Capacity increase of the four Sheffield–Staverton 220 kV transmission circuits. A new 500 kV connection from converter station in Hazelwood area. <p>Pre-requisite: Project Marinus Stage 1</p>	Actionable ISP Project [ISP candidate option]	Forward: 750 Reverse: 750 ⁷⁵	2,680 ⁷⁶ Class 2(±30%)	Timing advised by proponent: December 2034.

⁷⁴ Project Marinus passes feedback loop assessment, at <https://www.aemo.com.au/newsroom/news-updates/project-marinus-passes-feedback-loop-assessment>.

⁷⁵ The combined transfer limit from Victoria to Tasmania is 1,728 MW, and from Tasmania to Victoria 2,094 MW. This is based on an assumption that the largest single contingency in Tasmania is limited to 500 MW.

⁷⁶ \$2,680 million is the \$2025 cost modelled in the Draft 2026 ISP, escalated from the \$2023 proponent cost of \$2,535 million.



A5.3.8 Waddamana to Palmerston transfer capability upgrade

Summary	
<p>The Waddamana to Palmerston transfer capability upgrade increases hosting capacity in Tasmania’s Central Highlands REZ for potential renewable generation development. The Tasmania Central Highlands REZ has excellent quality wind resources and has good pumped hydro resources for potential future build. It is located close to major load centres at Hobart. Timing of the Tasmania Central Highlands REZ augmentation options is influenced by the timing of Project Marinus augmentations. Waddamana to Palmerston transfer capability upgrade was an actionable project in the 2024 ISP. The 2024 ISP had Option 1 as the candidate ISP option. For the Draft 2026 ISP, TasNetworks updated the option to Option 1A, which is lower cost and provides similar amounts of capacity. The updated options have been provided by TasNetworks through joint planning and are being modelled as part of the RIT-T.</p>	
Existing network capability	
<p>The current total REZ transmission limit for existing (144 MW Cattle Hill Wind Farm) and new VRE before any network upgrade (but considering minor operational improvements) in the Central Highlands is approximately 702 MW for peak demand and summer typical conditions and 843 MW for winter reference condition. VRE development opportunities are anticipated around the Waddamana substation.</p> <p>Note that a runback scheme is not considered for any new transmission lines.</p>	
Identified need	
<p>The identified need for the Waddamana to Palmerston transfer capability upgrade is to:</p> <ul style="list-style-type: none"> • increase power system capability of the transmission network between Central and North Western Tasmania, and • support the expected increase in renewable generation in the Central Highlands REZ in the vicinity of the Waddamana region. 	
Progress and next steps	
<ul style="list-style-type: none"> • The AER has agreed to extend the date by which TasNetworks must publish the Project Assessment Draft Report (PADR) for the Waddamana to Palmerston Transfer Capability Upgrade project, to 28 February 2026⁷⁷. 	

⁷⁷ AER decision to grant PADR extension for the Waddamana to Palmerston Transfer Capability Project , at <https://www.aer.gov.au/news/articles/communications/project-assessment-draft-report-extension-waddamana-palmerston-transfer-capability-upgrade-project>.



Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>T3 Option 1A:</p> <ul style="list-style-type: none"> Convert Waddamana-Palmerston 110 kV line to 220 kV operation (line did previously operate at 220 kV). <ul style="list-style-type: none"> Re-string with High Temperature and Low Sag conductor. Re-build 3 km 220 kV transmission line with High Temperature and Low Sag conductor. Install 220/110 kV transformer at Waddamana Substation. <p>Pre-requisite: Project Marinus Stage 1</p>	Actionable ISP Project [Draft 2026 ISP candidate option]	555	224 Class 4 (-30% to +50%)	Timing advised by proponent: July 2030 ⁷⁸
<p>T3 Option 1⁷⁹:</p> <ul style="list-style-type: none"> Build a Palmerston-Waddamana 220 kV double-circuit line. <p>Pre-requisite: Project Marinus Stage 1</p>	(2024 ISP Candidate Option)	555	621 Class 4 ⁸⁰ (-30% to +50%)	Timing advised by proponent: September 2032

⁷⁸ Project Marinus Stage 1 is a pre-requisite for this option. While Project Marinus Stage 1 and T3 Option 1A have the same nominated in service date, the capacity release date for T3 Option 1A differs from that of Project Marinus Stage 1. AEMO will continue to joint plan with TasNetworks to understand most recent release date estimates for this option.

⁷⁹ T3 Option 1 is superseded by T3 Option 1A in the Draft 2026 ISP.

⁸⁰ This \$2025 cost estimate has been provided by TasNetworks.



A5.3.9 Gippsland Offshore Transmission Project

Summary	
<p>The Gippsland Offshore REZ has been identified for offshore wind resource potential in relatively shallow waters, with a connection point close to existing 500 kV networks at Loy Yang/Hazelwood. There is currently significant interest in this area, but proposed projects have not developed sufficiently to be considered anticipated.</p> <p>The Victorian Government has announced that VicGrid will provide a coordinated transmission connection point for offshore wind near the Gippsland Shoreline. New transmission lines will also be developed where needed to link the common connection points with the existing energy grid.</p> <p>AEMO understands that transmission augmentation projects for Gippsland Shoreline REZ are likely to be delivered as a dedicated asset of some kind.</p> <p>VicGrid is currently undertaking consultation on the development of this infrastructure and AEMO will continue to co-ordinate with VicGrid on this matter⁸¹.</p>	
Existing network capability	
<ul style="list-style-type: none"> Gippsland Offshore REZ requires connection to the 500 kV network. Gippsland Offshore has no existing capability. 	
Identified need	
<p>The identified need for the Gippsland Offshore Transmission Project is to unlock Gippsland offshore REZ to meet the Victorian government offshore wind targets.⁸²</p>	
Progress and next steps	
<p>VicGrid is managing the Project on behalf of the Victorian Government developing the Gippsland offshore wind transmission project:</p> <ul style="list-style-type: none"> VicGrid has developed a roadmap for offshore wind transmission planning and refined the study area through surveys and community engagement. VicGrid is also preparing an Environment Effects Statement (EES) for the project. 	

⁸¹ See <https://www.energy.vic.gov.au/renewable-energy/vicgrid/offshore-wind-transmission>.

⁸² See Victorian Government has legislated offshore wind energy generation targets at <https://www.energy.vic.gov.au/renewable-energy/offshore-wind-energy/developing-offshore-wind-in-victoria>.



Credible option(s)				
Description ⁸³	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
V8 Option 1: <ul style="list-style-type: none"> 500 kV double-circuit radial line from Loy Yang to Giffard. Pre-requisite: None	Actionable Victoria project ⁸⁴	REZ V8: +2,000	1,500 ⁸⁵ Class 5 (+100%/-50%)	Timing advised by proponent: July 2031
V8 Option 2: <ul style="list-style-type: none"> Second 500 kV double-circuit radial line from new terminal station near Woodside to new terminal station near Hazelwood. Pre-requisite: V8 Option 1	Actionable Victoria project	REZ V8: +2,000	790 Class 5 (+100%/-50%)	Timing advised by proponent: July 2033
South East Victoria group constraint (SEVIC1) Option 1 <ul style="list-style-type: none"> Tie-in loop between Giffard and new terminal station near Woodside (500 kV double-circuit line linking the two Gippsland radial lines). Pre-requisite: V8 Options 1 and 2	Actionable Victoria project	REZ V8: +3,000 SEVIC1: +4,600	400 Class 5 (+100%/-50%)	Timing advised by proponent: July 2038

⁸³ V8 Option 1, V8 Option 2 and SEVIC1 Option 1 refer to Gippsland offshore wind transmission Stage 1, Stage 2-Phase 1 and Stage 2-Phase 2 respectively in 2025 Victorian Transmission Plan.

⁸⁴ VTIF sets the policy framework for the development of the Victorian Transmission Plan (VTP), see https://www.planning.vic.gov.au/_data/assets/pdf_file/0028/719506/Gippsland-Offshore-Wind-Transmission-Project-Project-Outline.pdf.

⁸⁵ As advised by VicGrid, AEMO has used the upper bound of the range for the purposes of use in the ISP modelling. VicGrid is undertaking further assessment of this project and will publish the updated costs later this year.



A5.3.10 Western Victoria Reinforcement program

Summary	
<p>The Greater Melbourne and Geelong (MEL) to West and North Victoria (WNV) flow path represents connections between the main load centre of Melbourne and Geelong to the north via South Morang to Dederang and Thomastown to Eildon, and connections to the west via Geelong to Moorabool, Sydenham to Moorabool, and Sydenham to Bulgana.</p> <p>The 2024 ISP identified a future ISP project in the west (Western Victoria Reinforcement), and this new flow path allows more detailed analysis of this corridor. Since then, AEMO Victorian Planning (AVP)⁸⁶ has published a Project Specification Consultation Report (PSCR)⁸⁷ and VicGrid has published the 2025 Victorian Transmission Plan⁸⁸ which initiates the public consultation process.</p>	
Existing network capability	
<p>Generation from MEL is not expected to supply WNV (forward direction) at times of high demand periods. MEL to WNV maximum transfer capability is 3,000 MW for cases where Victorian load is between 4,000 MW and 6,000 MW. The maximum transfer capability is limited by the thermal capability of the 220 kV lines between Ballarat and Bendigo.</p> <p>WNV to MEL maximum transfer capability is 2,300 MW at peak demand, 2,550 MW at summer typical and 4,880 MW at winter reference periods. The maximum transfer capability is limited by the thermal capability of the 220 kV lines between Moorabool and Geelong.</p>	
Identified need	
<p>The identified need for the Western Victoria Reinforcement program is to deliver net market benefits for consumers by:</p> <ul style="list-style-type: none"> meeting forecast demand growth and avoiding expected unserved energy with limitations identified in the western metro network, and enabling greater transfer capacity between the Western Victoria REZs, key load centres within the greater western metropolitan network, and western metropolitan Melbourne. 	
Progress and next steps	
<ul style="list-style-type: none"> AVP published the PSCR for this Western Victoria Reinforcement program RIT-T in March 2025. 	

⁸⁶ On 1 November, Victoria’s electricity transmission network planning responsibilities will transition from AEMO, through its AEMO Victorian Planning (AVP) division, to VicGrid. See <https://www.aemo.com.au/newsroom/media-release/aemo-supports-vicgrids-new-role-in-leading-victorias-transmission-planning>.

⁸⁷ Western Metropolitan Melbourne Reinforcement, at <https://aemo.com.au/-/media/files/initiatives/western-metropolitan-melb-reinforcement/western-metropolitan-melbourne-reinforcement-project-specification-consultation-report.pdf?la=en>.

⁸⁸ 2025 Victorian Transmission Plan, at <https://www.energy.vic.gov.au/renewable-energy/vicgrid/the-victorian-transmission-plan>.



- On 1 November 2025, responsibility for planning Victoria's transmission network transfers to VicGrid. VicGrid will be responsible for coordinating the planning, procurement and development of the Western Victoria Reinforcement program⁸⁹.

Credible option(s)

Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>MEL-WNV Option 1</p> <ul style="list-style-type: none"> Cut-in both existing Geelong to Keilor 220 kV lines into Deer Park. Replace existing Keilor 500/220kV transformers with 1,000 MVA units (expected to be completed as part of asset replacement project). Operate the three Deer Park to Keilor 220kV circuits as normally open, with supply to Deer Park provided from Geelong. Install minor interplant replacements to increase rating on both existing Geelong to Moorabool 220 kV lines. <p>Pre-requisite: None</p>	Actionable Victoria project	Forward: N/A Reverse: 800	128 Class 5b (±50%) ^{90, 91}	Timing advised by proponent: June 2029 ⁹²

⁸⁹ The passage of the *National Electricity (Victoria) Amendment (VicGrid – Stage 2 Reform) Bill 2025* in the Victorian Parliament allows VicGrid to plan and procure transmission augmentations effectively. See <https://www.legislation.vic.gov.au/bills/national-electricity-victoria-amendment-vicgrid-stage-2-reform-bill-2025>.

⁹⁰ This is the 2024 cost of Option 1B of the Western Metropolitan Melbourne Reinforcement project presented in the PSCR.

⁹¹ The estimated cost includes only the incremental cost of upgrading the Keilor transformers to 1000 MVA. Costs for the replacement of the transformers is expected to be covered by the asset replacement RIT-T that is nearing completion. Further information is at https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nsp_consultations/2025/kts-a-transformer-replacement-padr-final.pdf?la=en.

⁹² AusNet has recently published the PADR with an updated date. AEMO and VicGrid will consult between Draft and the final 2026 ISP to update timing of the project.



A5.4 Projects with analysis ongoing

Queensland – New South Wales Interconnector (QNI) Connect and Northern Transmission Project (Ntx, previously known in the 2024 ISP as Mid North SA REZ expansion) are two actionable projects from 2024 ISP. While the identified needs for these projects remain, recent commitments made by the South Australian Government in relation to system security (including the Firm Energy Reliability Mechanism (FERM)) and the Queensland Government’s Queensland Energy Roadmap could have implications for these projects that and have not yet been fully defined or analysed. Further analysis and stakeholder engagement between now and June 2026 is needed to ascertain whether they will provide benefit to consumers as previously determined in the 2024 ISP. The New England REZ Network Infrastructure Project and QNI Connect project dependencies will be further considered as part of this further analysis.



A5.4.1 Queensland – New South Wales Interconnector (QNI) Connect

Summary

The Northern New South Wales (NNSW) and Southern Queensland (SQ) corridor represents a portion of the network which forms part of the QNI. Development options on this corridor include the northern sections of proposed QNI Augmentations.

A project to increase the transfer capacity of the existing QNI (referred as ‘QNI Minor’) has been completed. The QNI Minor project which increases the transfer capacity of the existing QNI has been commissioned and inter-network testing is at the final hold point stages. The QNI Minor project continues to look for opportunities to undertake the testing.

An additional new interconnection between Queensland and New South Wales (QNI Connect) would increase transfer capacity between Queensland and New South Wales to share renewable energy and firming services between regions. Powerlink and Transgrid completed preparatory activities report⁹³ for QNI Connect 500 kV and 330 kV options in June 2023, and Transgrid provided an addendum to that report in March 2024⁹⁴.

QNI Connect was identified an actionable ISP project in the 2024 ISP and remains actionable in the Draft 2026 ISP based on current assumptions. QNI connect provides positive benefits and is part of the optimal development path for the Draft 2026 ISP.

These updated options have been provided by Transgrid and Powerlink through joint planning and reflect a change in scope from 2024 ISP with QNI Connect now having New England REZ Network infrastructure as pre-requisite and connecting to Northern (Hub 10) which makes it shorter in length compared to the 2024 ISP. This updated option is being modelled as part of the RIT-T.

Existing network capability

Transfer capabilities are modelled with the QNI Minor upgrade now in service, which is nearing the final stages of inter-network testing to release the designed maximum capacity.

NNSW to SQ expected transfer capability is 950 MW at peak demand, summer typical and winter reference period.

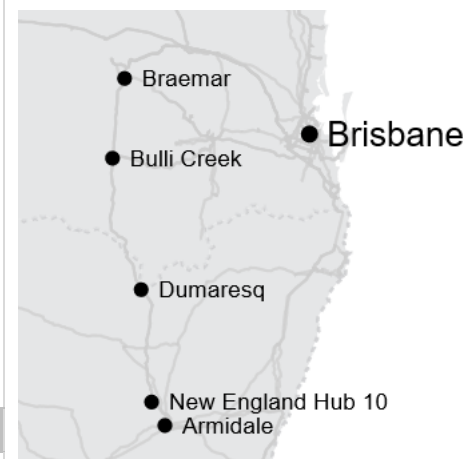
In the reverse direction, SQ to NNSW expected transfer capability is 1,450 MW at peak, summer typical and winter reference periods.

The maximum transfer capacity is limited by the thermal capacity of Sapphire-Armidale 330 kV line for an outage of Dumaresq-Armidale 330 kV line.

Identified need

The identified need for QNI Connect is to increase power transfer capability of the transmission network to:

- support the expected increase in renewable generation in Queensland and New South Wales,
- enable integration of REZs into existing networks by providing alternative flow paths for REZ generation and facilitating energy supply to consumers, and
- optimise generation sharing between Queensland and New South Wales by increasing interconnector capacity, leading to cost effective substitution of high fuel cost plants with low-cost renewables.



⁹³ See Preparatory Activities page, at <https://aemo.com.au/consultations/current-and-closed-consultations/2023-transmission-expansion-options-report-consultation>.

⁹⁴ See 2023-24 inputs, assumptions, and scenarios page, at <https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2024-integrated-system-plan-isp/current-inputs-assumptions-and-scenarios>.



Progress and next steps				
<p>AEMO has identified QNI Connect as an actionable ISP project in 2024 ISP and Draft 2026 ISP, but as the Queensland Energy Roadmap was published in October 2025, further time is required to understand policy intent fully:</p> <ul style="list-style-type: none"> • Powerlink and Transgrid are jointly responsible for progressing QNI Connect through the RIT-T process. This includes publishing the Project Assessment Draft Report by 25 June 2026. • Between Draft 2026 ISP and final 2026 ISP, AEMO will explore a combination of technical and policy analysis with stakeholder consultation. 				
Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>NNSW-SQ Option 1:</p> <ul style="list-style-type: none"> • A new 330 kV single-circuit line from New England REZ North Hub (Hub 10) to Dumaresq to Bulli Creek to Braemar. • A new 330/275 kV transformer at Braemar. • 330 kV line shunt reactor at New England REZ North Hub, Dumaresq, Bulli Creek, and Braemar for the New England North Hub – Dumaresq - Bulli Creek - Braemar 330 kV circuits. <p>Pre-requisite: CNSW-NNSW Option 1, N2 Option 1</p>	Alternative option	Forward: 730 Reverse: 900	2,395 Class 5b (±50%)	Alternative option
<p>NNSW-SQ Option 2 (ISP candidate option):</p> <ul style="list-style-type: none"> • A new 330 kV double-circuit line from New England North Hub (Hub 10) to Dumaresq to Bulli Creek to Braemar. • New 330/275 kV transformers at Braemar. • 330 kV Line shunt reactors at New England North (Hub 10), Dumaresq, Bulli Creek, and Braemar, for the 330 kV lines between North (Hub 10) and Braemar (via Dumaresq and Bulli Creek). <p>Pre-requisite: CNSW-NNSW Option 1, N2 Option 1</p>	Actionable ISP Project [ISP candidate option]	Forward: 1,260 Reverse: 1,700	2,989 (Total project cost) Class 5b (±50%) (NSW)	Timing advised by proponent: March 2034



A5.4.2 Northern Transmission Project (formerly Mid North South Australia REZ Expansion)

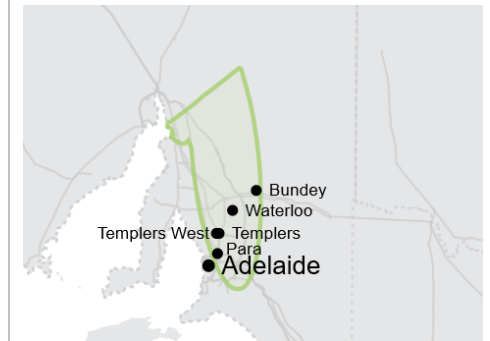
Summary

There are several major wind farms in service in this REZ, totalling over 1,700 MW installed capacity.

The Mid North limit represents the maximum generation limit applied to the S3, S4, S5, S6, S7, and S8 REZs. This constraint is necessary because these REZs all must export any additional power generation south towards Adelaide primarily along the existing four 275 kV parallel circuits from Davenport to near Adelaide (Para). This corridor of the network forms a bottleneck for these REZs.

In the 2024 ISP, Mid North South Australia REZ Expansion was identified as actionable. The project is now considered as the Northern Transmission Project and is planned to extend the footprint and capability of the transmission network to meet projected demand growth and unlock renewable energy resources outside of the high value farming lands in the mid-north and in the northern and eastern regions of the state where massive growth in mining, renewable generation, green iron and steel, and other industry is being planned for.

The Draft 2026 ISP assumes significant volumes of grid-scale batteries can be efficiently connected into the South Australian power system in the next five years, to support demand growth and firm renewables, reducing benefits of this Ntx project. While the identified need for this project remains, further analysis and stakeholder engagement will be undertaken to try and reduce some of the input uncertainty and ascertain whether it will provide benefit to consumers as previously determined in the 2024 ISP.



Existing network capability

The individual REZs which form this group constraint each have their own individual existing network capabilities. The collective generation from S3 and S4, the reverse flow on the Central South Australia-Northern South Australia flow path, and 20% of Project EnergyConnect flow into South Australia cannot exceed 1,630 MW without additional network augmentation between Davenport and Adelaide.

Identified need

The identified need for Mid North South Australia REZ Expansion (now known as Northern Transmission Project) is to increase power system capability of the transmission network to:

- support the expected increase in renewable generation north of Adelaide to support growing demand in Adelaide,
- ensure adequate network capacity and supply for large industrial loads, and
- alleviate congestion on renewables from the Mid North to rest of the NEM.

Progress and next steps

- The RIT-T on this project was initiated when AEMO's 2024 ISP declared the Mid North SA REZ Expansion to be an actionable project.
- ElectraNet plans to publish the PADR by mid 2026, and are continuing to explore the impact of policies, certainty of large industrial load growth, engagement with consumers and communities, capital costs, augmentation design and non-network options.
- AEMO will undertake further analysis and stakeholder engagement to explore the interaction of South Australia Firm Energy Reliability Mechanism (FERM), Capacity Investment Scheme dispatchable targets and the technical feasibility of storage and GPG locating in areas that could minimise the total system cost.



Credible option(s)				
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Timing
<p>Mid North South Australia scope⁹⁵ (MN1 Option 1)</p> <ul style="list-style-type: none"> • Build a 275 kV double-circuit line between Bunday and Para. • 2 x new line-connected reactors at Bunday. • 2 x new line-connected reactors at Para. • Disconnect existing Waterloo-Templers 132 kV line at each end. • Build a 132 kV single-circuit line from Templers West to Templers. • 1 x 160 MVA, 275/132 kV transformer at Templers West. 	<p>Actionable Project from 2024 ISP [ISP candidate option]</p>	<p>1,200</p>	<p>620⁹⁶ Class 5b (±50%)</p>	<p>Timing advised by proponent: July 2029</p>

⁹⁵ ElectraNet and AEMO to consult between Draft and Final regarding Northern Transmission Project scope.

⁹⁶ This is the \$2025 cost of this option provided by ElectraNet.



A5.5 Future ISP projects

Future ISP projects deliver net market benefits to consumers but are not needed until later in the horizon. The optimal timing for each scenario for the least-cost candidate development path is shown in this section.

There are seven future ISP projects that are developed in two or more scenarios by 2050 and the development of the build is meeting a transmission option. Other future ISP projects that are developed in only the *Accelerated Transition* scenario are listed in Section A5.5.8.



A5.5.1 Sydney Ring South – 500 kV option

Summary						
<p>The transmission network in the Sydney, Newcastle, and Wollongong (SNW) area was originally designed to connect large coal-fired generators in the Hunter Valley to supply the SNW load centres. When these coal-fired generators retire, the network has insufficient capability to supply SNW load centres from generators located outside of the Hunter Valley. Both the Sydney Ring North and Sydney Ring South projects increase the transfer capacity into the SNW load centres.</p> <p>Transgrid's Sydney Southern Ring project is a 500 kV transmission line project from Bannaby to South Creek which will form the southern element of the Sydney Ring. It is intended to support the growing demand centres of Sydney, Newcastle, and Wollongong.</p> <p>The Sydney Ring South project power flow controller option (Option 2d) is currently the actionable project for this Draft ISP. The Draft 2026 ISP identifies the large Sydney Ring South option as future ISP project. The next steps for this project are listed in section A5.3.2.</p>						
Existing network capability						
<p>The existing transfer capability varies depending on load and generation distribution within the SNW area, as well as the generation within central NSW (CNSW) and power transfer from northern NSW (NNSW) and southern NSW (SNSW) subregions to CNSW. For better representation of these limitations, the existing transfer capability between CNSW and SNW is separately identified as North and South flow paths:</p> <ul style="list-style-type: none"> CNSW-SNW South flow path is assumed to be the sum of flows on Bannaby – Sydney West, Marulan – Dapto, Marulan – Avon and Kangaroo Valley – Dapto 330 kV lines. The maximum transfer capability of CNSW-SNW South flow path is 2,540 MW at peak demand and summer typical, and 2,720 MW at winter reference periods. The maximum southern transfer capability is limited by several 330 kV lines and the most limiting element is Bannaby – Sydney West 330 kV line. Refer to section A5.3.1 for information on the northern CNSW to SNW flow path. <p>The Waratah Super Battery (WSB) with System Integrity Protection Scheme (SIPS) increases the transfer capacity between CNSW to SNW when paired with selected generators. When enabled during the five-year contract period, the SIPS will be capable of increasing the transfer capability of the CNSW-SNW North and South flow paths by up to 250 MW.</p>						
Credible option(s)						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>CNSW-SNW Option 3: Sydney Ring South initially operated at 330 kV Stage 1:</p> <ul style="list-style-type: none"> Establish a new 330 kV South Creek switching station cutting into 330 kV Sydney West – Bayswater (#32), Sydney West - Regentville (#38) and Bannaby - Sydney West (#39). 	Future	<p>Forward: Stage 1: 1,300 MW Stage 2: 2,300 MW</p> <p>Reverse: N/A</p> <p>REZ: N11 + N12: 2,000</p>	<p>2,360⁹⁷ Class 5(±50%)</p>	-	2037-38	2037-38

⁹⁷ This is the \$2025 cost of this option provided by Transgrid.

Other future ISP projects



<ul style="list-style-type: none"> • Double-circuit 330 kV transmission line built to a 500 kV design between Bannaby substation and the new South Creek switching station along a new 70 m wide greenfield easement. • Two new 330 kV transmission line switch bays at Bannaby. • Rebuild 7 km of existing single-circuit 330 kV between South Creek and Sydney West as double-circuit, including stringing with high temperature low sag (HTLS) conductor. • Re-conductor 7 km of existing double-circuit 330 kV lines 32 and 38 with HTLS conductor between South Creek and Sydney West. • One new 330 kV transmission line switch bay at Sydney West. <p>Stage 2:</p> <ul style="list-style-type: none"> • Upgrade South Creek to a 330/500 kV substation with separate 500 kV and 330 kV yards connected by underground cable cutting into 500 kV Eraring - Kemps Creek (#5A1, #5A2) with three 1,500 MVA 500/330 kV transformers. • Two new 500 kV transmission line switch bays at Bannaby. • Re-termination of 500 kV designed transmission lines at Bannaby and South Creek. • 4 x 120 MVA line shunt reactors on the 500 kv lines between Bannaby and South Creek. <p>Pre-requisite: None</p> <p>Earliest in-service date: 2033-34.</p>		SNW1: 3,600				
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A5.5.2 Eastern Victoria Reinforcement program

Summary

The South East Victoria (SEV) to the Greater Melbourne and Geelong (MEL) flow path represents connections between the Gippsland region of Victoria to the main load centre of Melbourne and Geelong.

The 2024 ISP identified a future ISP project for the Eastern Reinforcement program which is now called Eastern Victoria reinforcement program, and this new flow path allows more detailed analysis of this corridor. Since then, AEMO Victorian Planning (now VicGrid) has published a Project Specification Consultation Report (PSCR)⁹⁸ and VicGrid has published a 2025 Victorian Transmission Plan⁹⁹ which initiates the public consultation process.

The Draft 2026 ISP identifies the Eastern Victoria reinforcement program as a future ISP project.



Existing network capability

SEV to MEL maximum transfer capability is 7,100 MW at peak demand, 7,430 MW at summer typical and 8,170 MW at winter reference periods. The maximum transfer capability is limited by the thermal capability of the 220 kV lines between Rowville and Yallourn or Brunswick and Richmond.

The same transfer limits apply in the reverse direction however power is not expected to frequently flow from MEL to SEV since the major load centre is Greater Melbourne and Geelong, represented in the MEL sub-region.

These transfer limits are applicable for the existing network before retirement of Yallourn Power Station. After the retirement of Yallourn Power Station and the implementation of the modified parallel operation mode of Latrobe Valley reconfiguration and inter-trip protection project being progressed by VicGrid¹⁰⁰, the forward direction limit is expected to reduce by 1,175 MW for peak demand, 1,560 MW for summer typical and 2,000 MW for winter reference.

Credible option(s)

Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>SEV-MEL Option 2¹⁰¹:</p> <ul style="list-style-type: none"> Install a third 1,000 MVA 500/220kV transformer at Rowville on bus 3-4 group. Install series impedance on the Hazelwood 500/220 kV transformers. Pre-requisite: Post Yallourn power station closure. Latrobe Valley modified parallel mode switching configuration and inter-trip protection scheme to prevent overloads on Hazelwood-Yallourn 220 kV lines or Hazelwood 500/220 kV transformers. <p>Earliest in-service date: 2031-32.</p>	Future	Forward: 2,700 Reverse: N/A	350 Class 5 (+100/-50%)	2038-39	2033-34	2033-34

⁹⁸ Eastern Victoria Grid Reinforcement, at <https://aemo.com.au/-/media/files/initiatives/eastern-victoria-grid-reinforcement/eastern-victoria-grid-reinforcement-pscr.pdf?la=en>.

⁹⁹ 2025 Victorian Transmission Plan, at <https://www.energy.vic.gov.au/renewable-energy/vicgrid/the-victorian-transmission-plan>.

¹⁰⁰ AEMO 2024 Victorian Annual Planning Report at https://www.aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/vapr/2024/2024-victorian-annual-planning-report.pdf?la=en.

¹⁰¹ AEMO acknowledges that there may be substation space challenges with SEV-MEL Option 2 and will continue to joint plan with VicGrid on alternative options.



A5.5.3 Central-West Orana REZ Expansion

Summary						
<p>The project to establish the Central-West Orana REZ Network Infrastructure Project is considered a committed project as discussed in Section A5.2.2.</p> <p>Central-West Orana REZ has been identified by the New South Wales Government as the state’s first pilot REZ. The Central-West Orana REZ is electrically close to the Sydney load centre and has moderate wind and solar resources.</p> <p>The Central-West Orana REZ was declared on 5 November 2021 and amended in December 2023 under the <i>NSW Electricity Infrastructure Investment Act 2020</i> (NSW)¹⁰². The Central-West Orana REZ has an intended 6,000 MW¹⁰³ of additional network capacity, with an initial stage of 4,500 MW to be delivered from December 2028, to be constructed in the Central West New South Wales region of the state. The declaration identifies that EnergyCo New South Wales will be the infrastructure planner responsible for coordinating the development of the REZ.</p> <p>The project to establish the Central-West Orana REZ is considered committed. EnergyCo has awarded 7.7 GW of generation and storage projects under its access rights scheme¹⁰⁴.</p> <p>This ISP identifies the Central-West Orana REZ extension as a future project.</p>						
Existing network capability						
<p>With the committed ISP project for Central-West Orana REZ Network Infrastructure Project as identified in Section A5.2.2, the Central-West Orana REZ transfer capacity increases by 4,500 MW, subject to the downstream Hunter Transmission project augmentation completing</p>						
Credible option(s)						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>N3 Option 1:</p> <ul style="list-style-type: none"> Construct Merotherie-B 500/330 kV substation with 3 x 500/330/33 kV 1,500 MVA transformers (at least 2 km away from Merotherie substation – re-named as Merotherie-A). Terminate one of the existing 500 kV DCST transmission lines between Merotherie – Barigan Creek at Merotherie-B and Wollar 500 kV substations respectively. 	Future	1,500	855 Class 5b (±50%)	2041-42	2034-35	2032-33

¹⁰² See <https://www.energyco.nsw.gov.au/cwo-rez>.

¹⁰³ See Government Gazette No 580 of Friday 15 December 2023, at <https://gazette.nsw.gov.au/gazette/2023/12/2023-580.pdf>.

¹⁰⁴ See <https://www.energyco.nsw.gov.au/central-west-orana-access-scheme>.

Other future ISP projects



<ul style="list-style-type: none"> Construct a DCST 500 kV transmission line between Merotherie-A and Merotherie-B 500 kV substations. Expand Elong Elong as 500/330 kV substation with 3 x 500/330/33 kV 1,500 MVA TxS, Operate Merotherie – Elong Elong transmission lines at 500 kV. Terminate one of the 500 kV DCST transmission lines from Merotherie – Elong-Elong at Merotherie-B. <p>Pre-requisite: Central West Orana REZ Network Infrastructure project</p> <p>Earliest in-service date: 2030-31.</p>						
<p>N3 Option 3:</p> <ul style="list-style-type: none"> New 330 kV Burrendong A and Burrendong B substations. New 500 kV built and 330 kV operated double circuit lines from Elong Elong to Burrendong A Energy Hub. New 330 kV DCST line between Burrendong A and Burrendong B with Twin Olive conductor. <p>Pre-requisite: N3 Option 1</p> <p>Earliest in-service date: 2032-33.</p>	Future	1,400	657 Class 5b (±50%)	2047-48	2041-42	2033-34



A5.5.4 Facilitating Power to South East Queensland

Summary						
<p>The Facilitating Power to South East Queensland project allows generation in the Darling Downs REZ in south-west Queensland to supply Brisbane.</p> <p>The Darling Downs REZ extends from the border of New South Wales around Dumaresq to Columboola within the Surat region of Queensland, and has good solar and wind resources. A number of large solar and wind projects are already connected within the zone.</p> <p>Upgrade options associated with the Group Constraint SWQLD1 may be required to increase the generation capacity in south-west Queensland. These augmentations will facilitate transmission of this generation to load centres in the locality of Brisbane.</p> <p>In the 2024 ISP, the Darling Downs REZ expansion was identified as a future project. The project is now known as Facilitating Power to South East Queensland, which remains as a future project in the Draft 2026 ISP. Both Option 1 and Option 2 are required for this REZ. Joint planning between AEMO and Powerlink will be conducted to further the delivery sequence of these options.</p>						
<p>The existing network facilitates power transfer from south-west Queensland to the load centre in Brisbane. This transmission can support up to approximately 5,300 MW of generation into Brisbane during summer peak, summer typical and winter reference conditions. This capability depends on the generation in the Western Downs area, the generation in the Darling Downs area, the generation in the Southern Downs area, the flow of power from New South Wales and the flow of power from central Queensland.</p>						
Existing network capability						
<p>The existing network facilitates power transfer from south-west Queensland to the load centre in Brisbane. This transmission can support up to approximately 5,300 MW of generation into Brisbane during summer peak, summer typical and winter reference conditions. This capability depends on the generation in the Western Downs area, the generation in the Darling Downs area, the generation in the Southern Downs area, the flow of power from New South Wales and the flow of power from central Queensland.</p>						
Credible option(s)						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
SWQLD1 Option 1: <ul style="list-style-type: none"> Replace existing 330/275 kV 1,300 MVA transformer at Middle Ridge with 330/275 kV 1,500 MVA transformer. Pre-requisite: None Earliest in-service date: 2028-29¹⁰⁵.	Future	150	26 Class 5b (±50%)	2038-39	2035-36	2035-36
SWQLD1 Option 2: <ul style="list-style-type: none"> Implement a limit extension special protection scheme – run-back of generation in south-west Queensland with 300 MW BESS response in south-east Queensland (similar to a virtual transmission line). Pre-requisite: None Earliest in-service date: 2028-29.	Future	330	7 Class 5b (±50%)	2038-39	2035-36	2035-36

¹⁰⁵ AEMO and Powerlink to consult between Draft and final 2026 ISP to update the earliest in-service date.



A5.5.5 Facilitating Power to Central Queensland

Summary						
<p>The Facilitating Power to Central Queensland project allows generation in the Isaac REZ and Northern Queensland to supply Central and Southern Queensland.</p> <p>The Isaac REZ has good wind and solar resources and has a number of large-scale solar generation projects already in operation. There are numerous potential pumped hydro locations to the northeast and southeast of Nebo. This REZ has a good diversity of resources – wind, solar and storage. Locating storage in this zone could maximise transmission utilisation towards Brisbane.</p> <p>Upgrade options associated with the Group Constraint CQ1 may be built to improve the generation capacity in Northern Queensland and Isaac REZs. These augmentations will facilitate transmission of this generation to load centres in the south.</p> <p>The Facilitating Power to Central Queensland project has been identified as a future project in the Draft 2026 ISP.</p>						
Existing network capability						
<p>The current network was designed to facilitate the transmission of power from Central Queensland to support the load in Northern Queensland. Thus, its capacity was designed around North Queensland load, rather than building for future generation projects.</p> <p>The network has the ability to support up to 1,700 MW of generation during summer peak and summer typical conditions and 2,070 MW during winter reference conditions.</p>						
Credible option(s)						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>CQ1 Option 1:</p> <ul style="list-style-type: none"> String and energise the second circuit between Broadsound and Stanwell 275 kV. <p>Pre-requisite: None</p> <p>Earliest in-service date: 2030-31.</p>	Future	600	209 Class 5b (±50%)	2049-50	2039-40	2033-34



A5.5.6 Central Queensland to Southern Queensland Expansion (formerly Queensland SuperGrid South)

Summary						
<p>The project formerly known as Queensland SuperGrid South, and now called Central Queensland to South Queensland Expansion project, involves new 500 kV transmission lines to connect Central Queensland into Southern Queensland.</p> <p>This project was identified as an actionable Queensland project in the 2024 ISP.</p> <p>In October 2025, the Queensland Government Energy Roadmap updated the Borumba pumped hydro completion date to July 2035. The Central Queensland to South Queensland Expansion project is now required later to align with the benefits that Borumba pumped hydro provides.</p> <p>The Central Queensland to South Queensland Expansion project has been identified as a future project in the Draft 2026 ISP.</p>						
Existing network capability						
<p>From CQ to SQ, maximum transfer capability is approximately 2,100 MW. This capability is applicable in peak demand, summer typical, and winter reference periods.</p> <p>The maximum power transfer from CQ to SQ grid section is limited by transient or voltage stability following a Calvale to Halys 275 kV circuit contingency.</p> <p>From SQ to CQ, maximum transfer capability is 1,100 MW at peak demand, summer typical levels and at winter reference periods. This assumes Powerlink establishes a new 3.5 km double-circuit line from Blackwall to Karana Downs allowing dedicated double-circuit connections from Blackwall to Rocklea and Blackwall to South Pine. Following these works, the maximum transfer capability from SQ to CQ is limited by thermal capacity of the Palmwoods – South Pine 275 kV line following a credible contingency.</p>						
Credible option(s)						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>SQ-CQ Option 2:</p> <ul style="list-style-type: none"> Mid-point switching substation (Auburn River) on the existing Calvale to Halys 275 kV double-circuit line. <p>Pre-requisite: None</p> <p>Earliest in-service date: 2031-32.</p>	Future	Forward: 0 Reverse: 300	59 Class 5b (±50%)	2041-42	2033-34	2034-35
<p>SQ-CQ Option 5:</p> <ul style="list-style-type: none"> New 500 kV double-circuit line between Halys and Auburn River substations. New 500 kV double-circuit line between Auburn River and Gladstone West substations. Establish 500 KV Halys substation with 3 x 500/275 kV 1,500 MVA transformers. 	Future	Forward: 3,150 Reverse: 1,900 REZ Q7 Hydrogen: 950 SQ1: 1,100	3,751 Class 5b (±50%)	2041-42	2035-36	2035-36


Other future ISP projects



<ul style="list-style-type: none">• New 500 kV substation west of Gladstone (CQ 500 kV substation) with 3 x 500/275 kV 1,500 MVA transformers.• Establish 500 kV substation at Auburn River with 2 x 500/275 kV 1,500 MVA transformers.• New dynamic reactive support at Gladstone West (CQ) substation. <p>Pre-requisite: SQ-CQ Option 2 and CQ-GG Option 2</p> <p>Earliest in-service date: 2031-32¹⁰⁶.</p>						
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¹⁰⁶ AEMO and Powerlink to consult between Draft and final 2026 ISP to update the earliest in-service date.

A5.5.7 South West Victoria expansion program

Summary	
<p>The Greater Melbourne and Geelong (MEL) to West and North Victoria (WNV) flow path represents connections between the main load centre of Melbourne and Geelong to the north via South Morang to Dederang and Thomastown to Eildon, and connections to the west via Geelong to Moorabool, Sydenham to Moorabool, and Sydenham to Bulgana. The primary reason for selecting the South West Victoria expansion program is to increase the flow path capability between the WNV and MEL sub-regions¹⁰⁷.</p> <p>The 2024 ISP identified a future ISP project in the west (Western Victoria Grid Reinforcement, now called Western Victoria Reinforcement program, see section A5.3.10), and this new flow path allows more detailed analysis of this corridor. Since then, AEMO Victorian Planning (now VicGrid) published a Project Specification Consultation Report (PSCR)¹⁰⁸ and VicGrid has published the 2025 Victorian Transmission Plan¹⁰⁹ which initiates the public consultation process.</p> <p>Western Victoria Reinforcement program has been identified as an actionable project in this draft 2026 ISP. In addition, this South West Victoria expansion program has been identified as a future project in the Draft 2026 ISP. The Victorian Transmission Plan option (4.1 and 4.3) has been provided by VicGrid through joint planning, with the South West Victoria expansion program having the Western Victoria Reinforcement program as pre-requisite.</p>	 <p>The map shows the geographical layout of the South West Victoria expansion program. It highlights the main load centre of Melbourne and Geelong, and the connections to the west via Geelong to Moorabool, Sydenham to Moorabool, and Sydenham to Bulgana. The map also shows the Western Victoria Reinforcement program, which is a new double circuit 500 kV line and associated works in South West Victoria.</p>
Existing network capability	
<p>Generation from MEL is not expected to supply WNV (forward direction) at times of high demand periods. MEL to WNV maximum transfer capability is 3,000 MW for cases where Victorian load is between 4,000 MW and 6,000 MW. The maximum transfer capability is limited by the thermal capability of the 220 kV lines between Ballarat and Bendigo.</p> <p>WNV to MEL maximum transfer capability is 2,300 MW at peak demand, 2,550 MW at summer typical and 4,880 MW at winter reference periods. The maximum transfer capability is limited by the thermal capability of the 220 kV lines between Moorabool and Geelong.</p> <p>Following the Western Victoria Reinforcement program (MEL-WNV Option 1 or 2), the MEL to WNV transfer capacity increases by 800 MW.</p> <p>South West Victoria expansion program is a new double circuit 500 kV line and associated works in South West Victoria. To meet significant demand for high-quality wind generation in Victoria’s west, including additional generation in the proposed South West and Central Highlands REZs.</p> <p>VicGrid will evaluate expanding the South West further through the Victorian Transmission Plan and <i>National Electricity (Victoria) Act 2005</i> (NEVA).</p>	

¹⁰⁷ AEMO will continue joint planning with VicGrid to understand any discrepancies between the Draft 2026 ISP and the Victorian Transmission Plan, and will address any necessary changes in the final ISP.

¹⁰⁸ Western Metropolitan Melbourne Reinforcement, at <https://aemo.com.au/-/media/files/initiatives/western-metropolitan-melb-reinforcement/western-metropolitan-melbourne-reinforcement-project-specification-consultation-report.pdf?la=en>.

¹⁰⁹ 2025 Victorian Transmission Plan, at <https://www.energy.vic.gov.au/renewable-energy/vicgrid/the-victorian-transmission-plan>.



Credible option(s)						
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition
<p>MEL-WNV Option 3</p> <ul style="list-style-type: none"> A new 500 kV double-circuit line from Moorabool to locality of Truganina. A new 500 kV single-circuit line from locality of Truganina to Sydenham. New 500 kV substation in locality of Truganina with two 500/220 kV transformers, cut-in between Moorabool and Sydenham. Two new 220 kV double-circuit lines from locality of Truganina to Deer Park. Operate the three Deer Park to Keilor 220 kV circuits as normally closed, and operate the three Geelong to Deer Park circuits as normally open. Rebuild the three existing Deer Park to Keilor 220 kV lines as high capacity lines. <p>Pre-requisite: MEL-WNV Option 1 or 2 Earliest in-service date: 2033-34.</p>	Future	Forward: N/A Reverse: 2000	1,330 ¹¹⁰ Class 5 (+100/-50%)	-	2035-36	2035-36

¹¹⁰ This is the \$2025 cost of this option provided by VicGrid.

A5.5.8 Other future ISP Projects

In addition to the projects identified earlier in Section A5.5, **Table 1** lists indicative projects only selected in single scenarios, or required towards the end of the modelling horizon which are expected to evolve from one ISP to the next. These projects are conceptual and are only optimal in *Accelerated Transition*¹¹¹. The augmentation projects listed in **Table 1** refer to projects outlined in the 2025 *Electricity Network Options Report*. AEMO welcomes feedback on these projects.

Table 1 Indicative transmission and REZ augmentations required later in the horizon

REZ / flow path upgrade	Augmentation option (REZ network limit increase)	Slow Growth	Step Change	Accelerated Transition
New South Wales				
N9 – Hunter-Central Coast	N9 Option 2a	-	-	2035-36
	N9 Option 2b	-	-	2036-37
	N9 Option 3	-	-	2039-40
	N9 Option 4	-	-	2040-41
Queensland				
Q1 – Far North Queensland	Q1 Option 1	-	-	2040-41
Q5 – Barcaldine	Q5 Option 1	-	-	2044-45
South Australia				
S2- Riverland	S2 500 kV expansion generic option	-	-	2042-43
S7 - Eastern Eyre Peninsula	S7 Option 1	-	-	2049-50
Group constraint NSA1 (S5, S7, S8)	NSA1 Option 1	-	-	2048-49
Victoria				
V2 Central Highlands	V2 500 kV expansion generic option	-	-	2036-37

¹¹¹ For an outline of each project's scope, see the 2025 *Electricity Network Options Report*, at https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2025/2025-electricity-network-options-report/final/2025-electricity-network-options-report.pdf?rev=7fd2059752bd41eba55184df4e389e1e&sc_lang=en.



A5.6 Future distribution projects

Dubbo distribution project has been identified in this Draft 2026 ISP as a future distribution project. This section outlines the distribution and transmission network augmentation options to facilitate the connection of utility-scale generation and storage connecting to the distribution network. The augmentation options contain both distribution and transmission augmentations recognising the impact on both upstream and downstream limitations. The following information is presented for each augmentation option:

- a description of the option,
- the expected increase in transfer capacity,
- the project cost, including the class of the estimate and associated accuracy (both distribution and transmission), and
- the optimal timing in each scenario.

The identification of a future distribution project in this ISP does not confer any regulatory obligation on any DNSP, or substitute for detailed cost-benefit analysis required to be undertaken under a RIT-D or RIT-T. This section refers to a distribution network development opportunity. Please also see Appendix A9 for distribution network development opportunities to support operation of consumer energy resources (CER, and Appendix A2 for generation and storage development opportunities.



A5.6.1 Dubbo distribution project

Summary							
<p>The Dubbo distribution project is located near Dubbo in Central New South Wales, proposing to initially connect 2.4 GW of generation and storage to both distribution (Essential Energy) and transmission (Transgrid). The Dubbo distribution project has been jointly planned between EnergyCo, Essential Energy and Transgrid.</p> <p>The Dubbo Distribution Project is located within the Central-West Orana REZ geographical boundary.</p> <p>AEMO identifies the Dubbo distribution project as a Future Distribution Project. EnergyCo, Transgrid and Essential Energy will continue to jointly plan on this project, which may progress under the <i>NSW Electricity Infrastructure Investment Act 2020 (NSW)</i>¹¹² or alternative framework.</p>							
Existing network capability							
<p>Essential Energy has an existing and substantial pipeline of generation projects that are seeking to connect. The Dubbo expansion is part of the broader Dubbo distribution project to unlock 2.4 GW of generation and is targeting 700 MW of continuous export to the 330 kV system while supporting 200 MW of local load demand. This enables a total transfer capacity of 900 MW to serve New South Wales consumers.</p> <p>The Dubbo distribution project supports the connection of renewable energy projects by enabling energy flows from Essential Energy’s 132 kV network. Its primary objective is to transfer energy to Transgrid’s 132/330 kV bulk supply point through Wellington substation. At the moment the limitation is the Wellington 330/132 kV transformer and the option is to add an additional transformer at Wellington substation.</p>							
Credible option(s)							
Description	Status	Additional network capacity (MW)	Expected cost (\$ million)	Slower Growth	Step Change	Accelerated Transition	
<ul style="list-style-type: none"> New Forest Glen and Mendooran 132 kV Energy Hubs. Rebuild Geurie Zone substation and Narromine to 132 kV switching stations. Rebuild 132 kV lines: <ul style="list-style-type: none"> Narromine switching station – Forrest Glen Energy Hub – Dubbo West Zone Substation (L9GG). 	Future [New South Wales candidate option]	700 CNSW1: 1,185	607 ¹¹³	-	2032-33	2032-33	

¹¹² See <https://www.energyco.nsw.gov.au/cwo-rez> and <https://gazette.nsw.gov.au/gazette/2021/11/2021-569.pdf>.

¹¹³ \$607 million is the \$2025 cost, which has been escalated from the \$2024 proponent cost of \$601 million.

Future distribution projects



<ul style="list-style-type: none">– Narromine switching station – Forrest Glen Energy Hub – New Energy Hub (L943).– Wellington Substation – Geurie switching station – Dubbo Zone Substation (L94F).– New Energy Hub – Mendooran – Dubbo Zone Substation (L94W/1).• Upgrade protection systems.• Expand existing Wellington 330/132 kV substation with one 375 MVA transformer. <p>Pre-requisite: None Earliest in-service delivery date: 2030-31</p>					
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Glossary

This glossary has been prepared as a quick guide to help readers understand some of the terms used in the ISP. Words and phrases defined in the National Electricity Rules (NER) have the meaning given to them in the NER. This glossary is not a substitute for consulting the NER, the Australian Energy Regulator's (AER's) Cost Benefit Analysis Guidelines, or AEMO's *ISP Methodology*.

Term	Acronym	Explanation
Actionable ISP project	-	<p>Actionable ISP projects optimise benefits for consumers if progressed before the next ISP. A transmission project (or non-network option) identified as part of the ODP and having a delivery date within an actionable window.</p> <p>For newly actionable ISP projects, the actionable window is two years, meaning it is within the window if the project is needed within two years of its earliest in-service date. The window is longer for projects that have previously been actionable.</p> <p>Project proponents are required to begin newly actionable ISP projects with the release of a final ISP, including commencing a RIT-T.</p>
Actionable project progressing under a jurisdictional framework	-	A transmission project (or non-network option), other than an actionable ISP project, which optimises benefits for consumers if progressed before the next ISP, is identified as part of the ODP, and which will progress under a jurisdictional policy that AEMO considers under NER 5.22.3 (b) and includes in the ISP.
Actionable New South Wales project and actionable Queensland project	-	A transmission project (or non-network option) that optimises benefits for consumers if progressed before the next ISP, is identified as part of the ODP, and is supported by or committed to in New South Wales Government or Queensland Government policy and/or prospective or current legislation.
Anticipated project	-	A generation, storage or transmission project that is in the process of meeting at least three of the five commitment criteria (planning, construction, land, contracts, finance), in accordance with the AER's Cost Benefit Analysis Guidelines. Anticipated projects are included in all ISP scenarios.
Candidate development path	CDP	<p>A collection of development paths which share a set of potential actionable projects. Within the collection, potential future ISP projects are allowed to vary across scenarios between the development paths.</p> <p>Candidate development paths have been shortlisted for selection as the ODP and are evaluated in detail to determine the ODP, in accordance with the ISP Methodology.</p>
Capacity	-	The maximum rating of a generating or storage unit (or set of generating units), or transmission line, typically expressed in megawatts (MW). For example, a solar farm may have a nominal capacity of 400 MW.
Committed project	-	A generation, storage or transmission project that has fully met all five commitment criteria (planning, construction, land, contracts, finance), in accordance with the AER's Cost Benefit Analysis Guidelines. Committed projects are included in all ISP scenarios.
Consumer energy resources	CER	Generation or storage assets owned by consumers and installed behind-the-meter. These can include rooftop solar, batteries and electric vehicles (EVs). CER may include demand flexibility.
Consumption	-	The electrical energy used over a period of time (for example a day or year). This quantity is typically expressed in megawatt hours (MWh) or its multiples. Various definitions for consumption apply, depending on where it is measured. For example, underlying consumption means consumption being supplied by both CER and the electricity grid.
Cost-benefit analysis	CBA	A comparison of the quantified costs and benefits of a particular project (or suite of projects) in monetary terms. For the ISP, a cost-benefit analysis is conducted in accordance with the AER's Cost Benefit Analysis Guidelines.
Counterfactual development path	-	The counterfactual development path represents a future without major transmission augmentation. AEMO compares candidate development paths against the counterfactual to calculate the economic benefits of transmission.
Demand	-	The amount of electrical power consumed at a point in time. This quantity is typically expressed in megawatts (MW) or its multiples. Various definitions for demand, depending on where it is measured. For example, underlying demand means demand supplied by both CER and the electricity grid.

Term	Acronym	Explanation
Demand-side participation	DSP	The capability of consumers to reduce their demand during periods of high wholesale electricity prices or when reliability issues emerge. This can occur through voluntarily reducing demand, or generating electricity.
Development path	DP	A set of projects (actionable projects, future projects and ISP development opportunities) in an ISP that together address power system needs.
Dispatchable capacity	-	The total amount of generation that can be turned on or off, without being dependent on the weather. Dispatchable capacity is required to provide firming during periods of low variable renewable energy output in the NEM.
Distribution network service provider	DNSP	A business which owns, controls or operates a distribution system (including a distribution network).
Economic offloading	-	Refers to a generator being dispatched below its maximum availability, because some or all of its output was bid into price bands greater than the regional reference price. This may also be referred to as economic 'spill' or 'spilled energy' as generators reduce output due to low market prices or lack of available demand.
Firming	-	Grid-connected assets that can provide dispatchable capacity when variable renewable energy generation is limited by weather, for example storage (pumped-hydro and batteries) and gas-powered generation.
Future distribution project	-	A distribution project that is part of the ODP and forecast to be needed in the future. The project is an ISP development opportunity and does not address an identified need specified in the ISP. The ISP cannot make a distribution project 'actionable' or require commencement of the Regulatory Investment Test for Distribution (RIT-D).
Future ISP project	-	A transmission project (or non-network option) that addresses an identified need in the ISP, that is part of the ODP, and is forecast to be actionable in the future.
Identified need	-	The objective a TNSP seeks to achieve by investing in the network in accordance with the NER or an ISP. In the context of the ISP, the identified need is the reason an investment in the network is required, and may be met by either a network or a non-network option.
ISP development opportunity	-	A development identified in the ISP that does not relate to a transmission project (or non-network option) and may include generation, storage, demand-side participation, or other developments such as distribution network projects.
National Electricity Rules	NER	The Rules are legally binding rules made under the National Electricity Law, which govern the operation of the National Electricity Market and the ways in which AEMO manages power system security. The Rules also provide the regulatory framework for network connections and access, national transmission planning and pricing for network services. The Rules are mainly made by the AEMC having regard to the National Electricity Objective.
Net market benefits	-	The present value of total market benefits associated with a project (or a group of projects), less its total cost, calculated in accordance with the AER's Cost Benefit Analysis Guidelines.
Non-network option	-	A means by which an identified need can be fully or partly addressed, that is not a network option. A network option means a solution such as transmission lines or substations which are undertaken by a Network Service Provider using regulated expenditure.
Optimal development path	ODP	The development path identified in the ISP as optimal and robust to future states of the world. The ODP contains actionable projects, future ISP projects and ISP development opportunities, and optimises costs and benefits of various options across a range of future ISP scenarios.
Regulatory Investment Test for Transmission	RIT-T	The RIT-T is a cost benefit analysis test that TNSPs must apply to prescribed regulated investments in their network. The purpose of the RIT-T is to identify the credible network or non-network options to address the identified network need that maximise net market benefits to the NEM. RIT-Ts are required for some but not all transmission investments.
Reliable (power system)	-	The ability of the power system to supply adequate power to satisfy consumer demand, allowing for credible generation and transmission network contingencies.
Renewable energy	-	For the purposes of the ISP, the following technologies are referred to under the grouping of renewable energy: "solar, wind, biomass, hydro, and hydrogen turbines". Variable renewable energy is a subset of this group, explained below.



Term	Acronym	Explanation
Renewable energy zone	REZ	An area identified in the ISP as high-quality resource areas where clusters of large-scale renewable energy projects can be developed using economies of scale.
Renewable drought	-	A prolonged period of very low levels of variable renewable output, typically associated with dark and still conditions that limit production from both solar and wind generators.
Rooftop and other small-scale solar	-	Solar photovoltaic (PV) generation assets that are not centrally controlled by AEMO dispatch. Examples include residential and business rooftop PV as well as larger commercial or industrial “non-scheduled” PV systems.
Scenario	-	A possible future of how the NEM may develop to meet a set of conditions that influence consumer demand, economic activity, decarbonisation, and other parameters. For the Draft 2026 ISP, AEMO has considered three scenarios: <i>Slower Growth</i> , <i>Step Change</i> and <i>Accelerated Transition</i> .
Secure (power system)	-	The system is secure if it is operating within defined technical limits and is able to be returned to within those limits after a major power system element is disconnected (such as a generator or a major transmission network element).
Sensitivity analysis	-	Analysis undertaken to determine how modelling outcomes change if an input assumption (or a collection of related input assumptions) is changed.
Spilled energy	-	Energy from variable renewable energy resources that could be generated but is unable to be delivered. Transmission curtailment results in spilled energy when generation is constrained due to operational limits, and economic spill occurs when generation reduces output due to market price. This can also be referred to as ‘economic offloading’.
Transmission network service provider	TNSP	A business that owns, controls or operates a transmission network.
Utility-scale or utility		For the purposes of the ISP, ‘utility-scale’ and ‘utility’ refers to technologies connected to the high-voltage power system rather than behind the meter at a business or residence.
Value of greenhouse gas emissions reduction	VER	The VER estimates the value (dollar per tonne) of avoided greenhouse gas emissions. The VER is calculated consistent with the method agreed to by Australia’s Energy Ministers in February 2024.
Virtual power plant	VPP	An aggregation of resources coordinated to deliver services for power system operations and electricity markets. For the ISP, VPPs enable coordinated control of consumer-scale batteries.
Variable renewable energy	VRE	Renewable resources whose generation output can vary greatly in short time periods due to changing weather conditions, such as solar and wind.