Insight brief

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Partnerships for INFRASTRUCTURE
AN AUSTRALIAN GOVERNMENT INITIATIVE

Making interconnectors work: Australia's experience in regulation and planning

November 2025

Australia's experience in developing interconnectors – high-capacity transmission lines linking regional power grids – offers practical insights that may resonate with ASEAN member states. As ASEAN works to enhance cross-border electricity trade, improve grid reliability, integrate renewable energy and meet emissions reduction targets, Australia's approach to planning and regulating interconnectors can contribute to a shared regional dialogue on power system development.

Abbreviations and acronyms

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ISP	Integrated System Plan
MNSP	market network service provider
NEM	National Electricity Market
NER	National Electricity Rules
ODP	optimal development path
RIT-T	regulatory investment test for transmission
TNSP	transmission network service provider

Interconnectors in Australia's National Electricity Market

Interconnectors play an important role in linking regions within Australia's National Electricity Market. Australia's regulatory system supports the efficient development of interconnectors.

The role of interconnectors

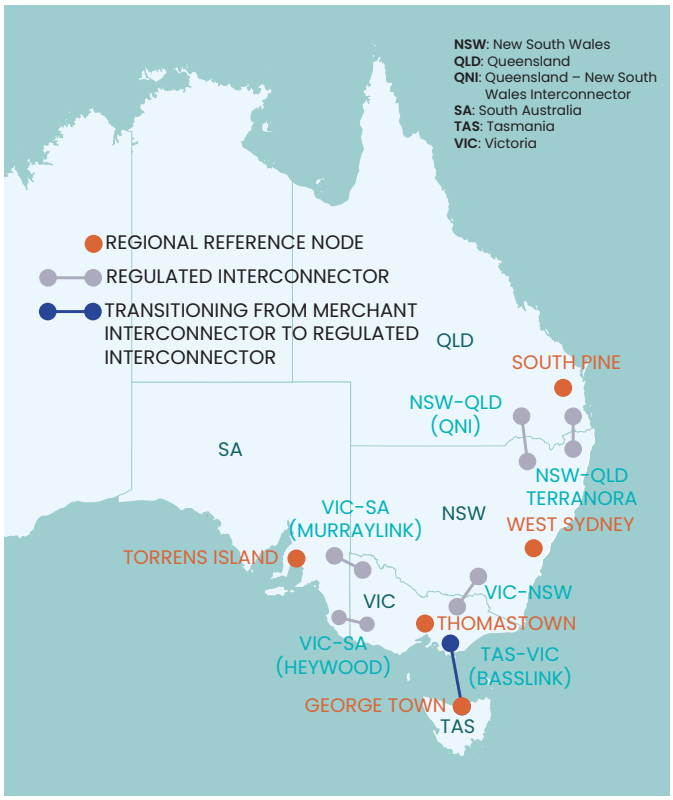
Interconnectors are transmission assets that link the electricity networks of different states, enabling electricity to flow across regions. In Australia, interconnectors currently link 5 key regions – Queensland, New South Wales (including the Australian Capital Territory), Victoria, Tasmania and South Australia (Figure 1) – forming an integrated **National Electricity Market (NEM)**.[1]

The NEM provides system-wide benefits in balancing supply and demand, optimising electricity prices, enhancing reliability and cost-effective security of supply, and supporting decarbonisation objectives.

Australia's regulatory framework has played an important role in the development of interconnectors. It provides clarity and consistency in planning, construction and oversight – strengthening commercial feasibility and investor confidence.

The **Australian Energy Regulator (AER)** plays a central role in this framework by monitoring performance and compliance with the regulatory mechanisms outlined in the **National Electricity Rules (NER)**. These mechanisms underpin the economic viability of interconnectors and support the continued evolution of the NEM into a resilient, interconnected electricity system capable of meeting Australia's current and future energy needs.

Figure 1: Trading regions in the National Electricity Market, with key nodes and connections



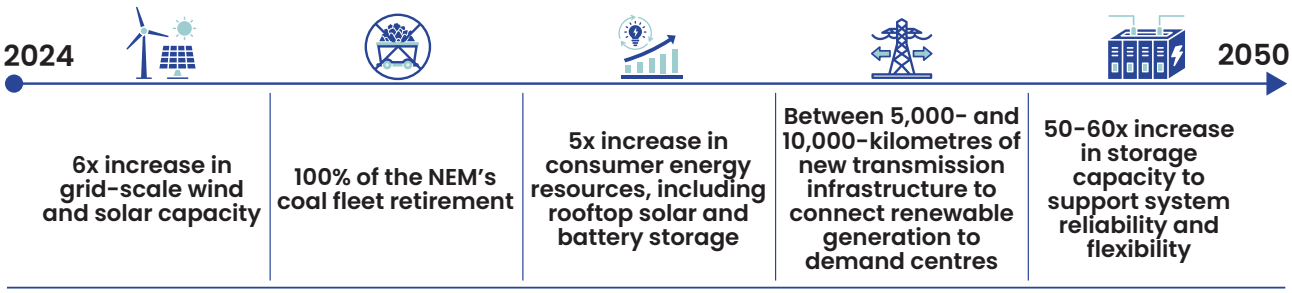
Note: The Basslink interconnector, which links Tasmania and Victoria, is currently undergoing a transition. See Box 1 on page 4.

Source: Adapted from Australian Energy Market Commission (AEMC), *How power is dispatched across the system*, AEMC website, n.d., accessed 30 October 2025.

[1] For more information about Australia's National Electricity Market, see: Partnerships for Infrastructure (P4I), *Forming the National Electricity Market: Australia's electricity market reforms*, P4I, November 2025.

With the transition to renewable energy, generation assets are no longer located in areas close to demand and are much more dispersed. According to projections of the **Australian Energy Market Operator (AEMO)** in its 2024 **Integrated System Plan (ISP)** – a whole-of-system roadmap guiding the efficient development of the NEM to 2050 – Australia is expected to undergo significant transformation (Figure 2).

Figure 2: National Electricity Market transition to renewable energy, 2024 to 2050



Source: Australian Energy Market Operator (AEMO), *2024 Integrated System Plan*, AEMO, June 2024.

Strategic coordination of generation and transmission investments – including interconnectors – is essential to ensure Australia's energy transition is delivered reliably, efficiently, and at the lowest cost to consumers.

Evolution of Australia's interconnector framework

The role of Australia's interconnectors has evolved over time:

Initial phase (1)

Early interconnectors connected state-owned utilities, mainly for power sharing rather than market integration.

Market integration (2)

Later projects were built as a critical part of a national grid, and were driven by the benefits of a larger, more integrated system – the National Electricity Market (NEM), which commenced in 1998.

Merchant interconnectors (3)

In 1999, Australia introduced a model allowing private entities to develop interconnectors as **market network service providers (MNSPs)**. MNSPs earned revenue by taking advantage of electricity price differences between regions. However, they weren't regulated by the AER, which meant their income could fluctuate depending on market conditions and energy flows. While this approach offered flexibility, it also created revenue uncertainty – making it harder to attract investment and ensure energy security.

Regulated interconnectors (4)

Today, all operational interconnectors (except one in transition – see Box 1) are operated by **transmission network service providers (TNSPs)**. These entities build, maintain and operate transmission infrastructure under AER oversight, with costs recovered through consumer tariffs. This model provides revenue certainty for investors and operators, ensures open access, and supports efficient dispatch across regions – enhancing system reliability and supporting Australia's energy transition.

Box 1

Recent change in the interconnector landscape

APA Group, a leading Australian energy infrastructure company, acquired Basslink Pty Ltd in October 2022. Basslink operates the undersea electricity interconnector between Tasmania and Victoria. Following the acquisition, APA applied to convert Basslink from a market network service provider to a regulated transmission network service provider. The Australian Energy Regulator (AER) approved this application on 26 June 2025, with the conversion expected to take effect on 1 July 2026, pending APA's final decision on accepting to convert.

If implemented, this change would mark the end of market network service provision in Australia – for now. It reflects a broader shift toward regulated interconnection, highlighting the importance of predictable investment environments and system-wide coordination in supporting Australia's energy transition. However, future developments may prompt a resurgence of market-based models, depending on evolving policy, technology and market conditions.

Source: Australian Energy Regulator (AER), *Final decision: Application for Basslink's network service to be classified as a prescribed transmission service*, AER, June 2025.

Regulatory and technical changes

Over the past 5 years, the **Australian Energy Market Commission (AEMC)** has finalised a comprehensive overhaul of the technical requirements for connecting new generation to the national electricity grid. These reforms represent the most substantial update to the NEM connection standards since 2018, and come at a critical time as Australia accelerates its transition to renewable energy.

In parallel, a 2024 rule change introduced a new pathway for jurisdictions to agree on cost-sharing arrangements for new or upgraded interconnectors. This reform enables state energy ministers to jointly determine cost allocation agreements, providing greater flexibility for funding critical transmission infrastructure. It removes key barriers to timely delivery and promotes more efficient development of interconnectors across the NEM.

These regulatory changes ensure:

- **improved recognition of system-wide benefits**: In an integrated market like the NEM, interconnectors serve more than just the 2 states they physically connect. Their benefits – such as enhanced reliability, price efficiency, and decarbonisation – are shared across the entire system.
- **fairer cost allocation**: The new framework provides clearer guidance on how costs should be distributed among jurisdictions and market participants that benefit from interconnector investments, supporting equitable and efficient infrastructure delivery.

Coordinated regulatory frameworks and flexible cost allocation mechanisms minimise delays and encourage investment.

Planning future interconnectors

The AEMC is responsible for making and amending the National Electricity Rules, which outline the responsibilities of AEMO and network service providers in system planning and investment.

Interconnectors in the 2024 Integrated Systems Plan

AEMO's 2024 Integrated System Plan (ISP) identifies interconnectors as critical infrastructure for achieving Australia's net-zero emissions target by 2050.[2] Through scenario modelling and cost–benefit analysis, the ISP outlines an **optimal development path (ODP)** – a coordinated sequence of investments designed to deliver system-wide benefits under current policy settings.

Interconnector projects are classified into 3 categories: committed and anticipated, actionable, and future (Table 1).

[2] Australian Energy Market Operator (AEMO), *2024 Integrated System Plan*, AEMO, June 2024.

Table 1: Interconnector projects classification and estimated investment

Project category	Description	Estimated investment (A$) under the 2024 Integrated System Plan
Committed and anticipated	Projects already under development or with strong investment signals	**A$11.2 billion**
Actionable	Projects eligible for fast-tracked regulatory approval	**A$27.8 billion**
Future	Projects requiring futher investigation before commitment	**A$8.6 billion**
Total		**A$47.6 billion**

Source: Australian Energy Market Operator (AEMO), *2024 Integrated System Plan*, AEMO, June 2024.

The AER's role in regulating interconnector planning

The AER provides regulatory oversight for interconnector planning within Australia's NEM. While it does not directly plan or approve investments, the AER plays a critical role in shaping the framework that guides system development:

- **Guideline development**: The AER sets out requirements for AEMO through a series of guidelines that support the development of the ISP. These include:
  - cost–benefit analysis guidelines
  - forecasting best-practice guidelines
  - regulatory investment test instruments and application guidelines.
- **Transparency and compliance**: The AER enhances transparency by publishing reports, resolving disputes raised by stakeholders, and monitoring compliance with the National Electricity Rules and its own guidelines.

Clarifying the AER's role

The AER develops and updates planning guidelines for transmission projects. However, it does not:

- undertake system investment planning or determine the optimal development path;
- approve or review the outcomes of cost benefit analyses conducted by AEMO or TSNPs.

TSNPs are responsible for planning and investing in their networks in accordance with the NER and AER's regulatory instruments.

The AER's role in the Regulatory Investment Test

The Australian Energy Regulator (AER) oversees the framework for assessing major electricity network investments through the regulatory investment test for transmission (RIT-T). The RIT-T is a structured cost–benefit analysis used by TNSPs to evaluate and compare potential investment options that address identified needs in the electricity network.

[3] The AER exercises other functions in relation to this process, as outlined in the National Electricity Rules.

The AER's responsibility

The AER's role in the RIT-T process includes:

- developing and publishing the RIT-T application guidelines consistent with the National Electricity Rules
- engaging with TNSPs throughout a RIT-T process, as needed
- resolving disputes raised after the completion of an RIT-T.[3]

Purpose and process

The RIT-T framework supports TNSPs in selecting investment options that deliver the greatest economic benefit to electricity producers, transporters and consumers in the NEM, in line with AER guidance.

Key considerations include:

- what types of costs and benefits may be included in the analysis
- how those costs and benefits should be valued
- the level of stakeholder consultation required at each stage
- reporting expectations and publication timelines
- thresholds that determine when certain RIT-T requirements apply or are exempt.

Stakeholder engagement

Throughout the RIT-T process, network service providers must publish reports and consult with a broad range of stakeholders. This includes companies offering alternative solutions, local communities, consumer advocacy groups, the AER and other interested parties.

This inclusive approach ensures that a wide range of perspectives are considered, helping to refine and deliver the best possible investment option.

Cost recovery

The AER assesses and approves the costs that a TNSP incurs to implement a major network infrastructure project, such as an interconnector, that has been identified as the preferred option in the RIT-T.

The TNSP submits a proposal to the AER to increase its revenue to include the cost of implementing the preferred option from the RIT-T. The AER reviews and consults on the proposal and determines the efficient cost of the preferred option. The AER may then update the TNSP's revenue determination to include the efficient cost of delivering the preferred option.

> **Structured, staged planning with rigorous cost-benefit analysis supports transparent, economically justified investments in transmission infrastructure.**

Revenue determination and cost allocation

Revenue determinations involve an extensive regulatory process in which the AER confirms how much a TNSP can recover from consumers over a 5-year period. TNSPs recover costs from consumers in the 2 linked regions of the NEM based on 'electricity use'. However, there are multiple interpretations of 'use' that may be considered consistent with the NER. As such, there are multiple methods that TNSPs might propose under the National Electricity Rules, including the:

- **geographic method** – costs are split based on the value of interconnector assets located in each region
- **energy flow method** – costs are split based on the direction of expected energy flow
- **market size method** – costs are split based on the number of connections or consumers in each jurisdiction.

TNSPs submit a revenue proposal forecasting their expenditure and revenue needs for the regulatory period, which the AER assesses to ensure efficiency for the long-term interests of consumers.

Peer-to-peer exchange of insights

Australia's journey in developing and regulating interconnectors offers valuable insights for countries seeking to enhance regional electricity trade, integrate renewables and improve grid reliability. The following lessons may be particularly relevant for ASEAN energy regulators and planners:

- **Integrated system planning is essential, and regulators have a specific guidance role to play**
  - Coordinated planning between generation and transmission infrastructure ensures efficient delivery of energy transition goals.
  - Australia's Integrated System Plan provides a whole-of-system roadmap, aligning investments with national decarbonisation targets.
- **Transitioning to renewables requires strategic transmission expansion**
  - Australia anticipates up to 10,000 km of new transmission infrastructure to connect dispersed renewable generation to demand centres.
  - Interconnectors play a critical role in balancing supply and demand across regions and integrating variable renewable energy sources.
- **Regulatory certainty drives investment**
  - A clear and consistent regulatory framework can strengthen investor confidence and enable long-term infrastructure development.
  - Transitioning from merchant to regulated interconnectors has provided revenue certainty and strengthened systems coordination in Australia.
- **System-wide benefits must be recognised**
  - Interconnectors deliver benefits beyond the regions they physically connect, including price efficiency, reliability, and greenhouse gas emissions reduction.
- **Transparent investment assessment builds trust**
  - The regulatory investment test for transmission (RIT-T) ensures major projects are economically justified through structured cost–benefit analysis and stakeholder consultation.
  - Transparency and dispute resolution mechanisms enhance accountability and public confidence.

Regulators exchange insights during the 16th ASEAN Energy Regulators' Network Meeting, held on 10 June 2025 in Kuala Lumpur, Malaysia. Source: Asean Secretariat

About this document

This brief outlines Australia's experience in planning, regulating and financing electricity interconnectors. The Australian Energy Regulator (AER), with support from Partnerships for Infrastructure (P4I), presented these insights at the 16th Meeting of the ASEAN Energy Regulators Network (AERN), held on 10 June 2025 in Kuala Lumpur, Malaysia, and hosted by the Energy Commission of Malaysia. P4I prepared this edited and updated version of the AER's presentation to support ongoing knowledge sharing and regional dialogue on the energy transition.

Acknowledgement

This publication has been funded by the Australian Government through the Department of Foreign Affairs and Trade and the Partnerships for Infrastructure (P4I) initiative. P4I partners with Southeast Asia to drive sustainable, inclusive and resilient growth through quality infrastructure. More information about P4I is available at partnershipsforinfrastructure.org.

Partnerships for Infrastructure acknowledges Aboriginal and Torres Strait Islander peoples as the traditional custodians of Country throughout Australia, and we pay our respects to Elders past and present. P4I also recognises early connections between Southeast Asia and the First Nations peoples of Australia.

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