

The Australian Energy Market Operator (AEMO) has released its 2020 Integrated System Plan (ISP), which sets out a roadmap for the eastern seaboard’s power system over the next two decades. As a whole-of-system plan, the ISP sets out AEMO’s focus areas for the National Electricity Market (NEM) through a period of transformational change.

The energy transition to 2040

- Coal-fired generation expected to fall from 23GW to 9GW
- Small-scale Distributed Energy Resources (DER) expected to double, in some scenarios, triple
- Over 26GW of new grid-scale Variable Renewable Energy (VRE) needed beyond what is already committed and anticipated to meet demand – based largely around Renewable Energy Zone (REZ) developments
- 6-19GW of new dispatchable resources needed to firm up these variable renewables

Queensland in focus

Committed projects	
Project outline	Timing
Queensland New South Wales Interconnector (QNI) Minor: Minor upgrade of the existing interconnector to increase transfer capacity	This project has been approved by the Australian Energy Regulator and work is underway, with completion anticipated in 2021-22. All material works associated with this minor upgrade are within TransGrid’s network.
Future transmission network upgrades	
Project outline	Timing
QNI Medium: A single 500kV circuit strung on double circuit towers in the western part of the existing QNI.	Required by 2032-33
QNI Large: A second 500kV circuit to be strung on the QNI Medium double circuit towers to become QNI Large.	Expected to be required in 2035-36
Central to Southern Queensland Network Project: Upgrading the transmission network from Central to Southern Queensland	Early 2030s
Gladstone Grid Reinforcement: Reinforcing the network around Gladstone	2030s
Far North Queensland network and REZ expansion: Augmentation of the Far North Queensland transmission network	In the 2030s, based on connection interest from renewable generators

Queensland Renewable Energy Zone (REZ) Developments

A number of REZ development opportunities for the Queensland region have been identified in the ISP's optimal development path. The REZs are proposed in three overlapping development phases, with timings based on actionable¹ ISP projects in the optimal development path satisfying relevant decision rules.

Phase 1 involves renewable developments to help meet Queensland's renewable energy target (QRET) and where there is relatively good access to existing network capacity and system strength. The ISP identified wind and solar generation in Darling Downs and Fitzroy REZs using existing transmission capacity.

Phase 2 developments are to replace energy provided by retiring coal-fired generators and supported by actionable ISP projects. The 2020 ISP did not propose any phase 2 developments in Queensland.

Phase 3 renewable developments are associated with future ISP projects. Larger VRE development in the Fitzroy REZ (wind and solar) and Isaac REZ (wind) are supported by future ISP projects which include the Gladstone Grid Reinforcement, Central to Southern Queensland transmission project and expansions of QNI. Renewable developments in the Far North Queensland REZ also require upgrades within this REZ. Additional strengthening of the 275kV network is also required.

Next steps for Powerlink

The 2020 ISP requires Powerlink to start on preparatory works for future transmission projects. These preparatory works are to be completed by 30 June 2021. This is in anticipation of some projects becoming actionable in the 2022 ISP.

AEMO, TransGrid and Powerlink will be working together to develop best possible inputs to the next ISP through:

- preliminary engineering design
- desktop easement assessment
- cost estimates based on preliminary engineering design and route selection
- preliminary assessment of environmental and planning approvals
- appropriate stakeholder engagement

AEMO also flagged in the ISP that it will work with Powerlink and TransGrid to explore further options in relation to virtual transmission lines (VTLs). The ISP outlined that VTLs, coupled with suitable wide area protection systems, could provide a technically feasible solution to increase the capacity of QNI.

This may require a new Regulatory Test for Transmission (RIT-T) process to explore options to justify and implement a solution.

For further information visit [AEMO's forecasting and planning interactive map](#) and [AEMO's 2020 ISP](#).

¹ Projects identified as 'actionable' in the ISP are network projects which are either underway (having already gone through the RIT-T process to identify the preferred option and successfully passed the contingent project application process with the AER) or those identified to commence regulatory approval immediately.

Contact Us

Further information about Powerlink and our projects can be downloaded from www.powerlink.com.au

General Enquiries FREECALL 1800 635 369 (during business hours)

In case of emergency FREECALL 1800 353 031 (24 hours, 7 days a week)

Email pqenquiries@powerlink.com.au

www.powerlink.com.au |    



SAFE FOR LIFE
Everyone. Everywhere. Everyday.