GRATTAN Institute

Reforming the Integrated System Plan:

How to make it a real plan

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Overview

The Australian energy system is in an era of unprecedented change, and Australia is struggling to manage this change without a plan. Governments are unwilling to leave this change to the market to sort out, even though the market has been developed and overseen by governments. Time has become an enemy because of difficult emissions-reduction goals and rapidly ageing assets.

The Integrated System Plan (ISP) was introduced in 2018 as a whole-of-system blueprint by the Australian Energy Market Operator (AEMO) for the National Electricity Market. Despite biennial reviews since then to incorporate a range of evolving circumstances, the ISP has more recently been criticised on several bases:

- It falls short of being a plan to be implemented.
- The requirement that all government policies and commitments be included in the plan leaves it open to accusations of political bias.
- While the plan identifies infrastructure projects that should be built, there is no process that drives that result, allocates responsibility for costs, and coordinates regulated and unregulated investments.

The result is that the purpose of the ISP has become increasingly unclear and its results misunderstood or misused.

The current review of the ISP and the recommendations of the 2026 Ray review of AEMO should form the basis for a better model.

The ISP should be the central, whole-of-system plan for the east-coast energy system to get to net zero at lowest cost while remaining reliable and secure. It should be owned by the ministers of the Energy and Climate Change Ministerial Council, and it should be reformed in the following ways.

Energy ministers should decide on a set of high-level assumptions and policy constraints that feed into the full set of assumptions on which AEMO bases its modelling. The result should be a robust and credible plan to meet that objective.

Scenario analysis should be used to assess how the ISP will perform under a range of plausible risks, and the consequences if those risks manifest. Such risks include changes in technology costs, financial market developments, and major delivery delays.

Where requested by ministers, individual jurisdictional policies or derogations should be modelled as sensitivities against the base case for their impact on reliability, costs, and emissions.

Achieving a low-emissions future is the only rational objective and should be the key driver of the ISP. The ISP cannot solve for increasingly contradictory policies across the federal and state governments, most notably in emissions-reduction targets.

To improve delivery against the ISP, the Ministers should be responsible for decisions on projects identified as actionable in the ODP and delivery performance for connection of new generation and storage should be publicly reported.

The scope of the ISP should be extended to cover distribution assets and the whole energy system, both electricity and gas. While investment in unregulated assets should rest with market participants, gas generation and storage should be integrated into the analysis.

The result should be an ISP that supports policy makers and the industry in delivering on shared objectives and outcomes.

Recommendations

Energy ministers should take ownership of the Integrated System Plan, and they should use it to calibrate policy. They also need to take more responsibility for determining the costs and benefits of policies, especially when those costs are born by consumers. It should not be the role of AEMO to independently assess policies.

The ISP and its development framework should be reformed in several key ways that extend the strategic scope of the current review and include recommendations from the separate review of AEMO's governance:

- It's purpose should be agreed by the Energy and Climate Change Ministerial Council as the strategic whole-of-system plan for the east-coast energy system (the NEM). To ensure that AEMO can discharge its role in facilitating the implementation of government policy, the ECMC should reconcile jurisdictional differences before giving AEMO the objectives to frame its modelling.
- The scope of the ISP should be expanded to extend the optimisation of distribution and gas assets and include consumer energy and demand-side resources, and there should be a faster process for economic assessment of projects.
- The base case should meet national emissions-reduction and reliability objectives at least cost.
- It should use plausible scenarios to test the underpinning assumptions and policies, and to test the case for jurisdictional priorities.
- The framework used to identify, assess, and deliver actionable projects is cumbersome and, despite the best efforts of the Australian Energy Regulator, cost accountability remains a contested space. Ministers should take direct responsibility for decision-making on actionable projects, and the processes for cost controls and reviews should be overhauled to ensure the AER has adequate authority.
- Without diluting the role of national and jurisdictional planning authorities, AEMO should report on expectations and delivery of generation and storage connections that flow from the ODP.
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1 Introduction

This submission is by Alison Reeve, Tony Wood, and Hamish McKenzie from the Grattan Institute, an independent think tank focused on Australian domestic public policy. Grattan aims to improve policy by engaging with decision makers and the broader community. Grattan has advocated for energy market reform since 2010.

The Australian Energy Market Commission is reviewing the rules that make up the Integrated System Plan (ISP) framework[1]. This submission responds to the discussion paper published in July 2026, but we have deliberately gone beyond the apparent scope of the review.

We have not addressed all of the issues canvassed in the review. Instead we argue that the broader issues around the purpose of the ISP, how the optimal pathway is developed, and the use of scenario planning are too important to be ignored, diluted, or postponed.

We have also incorporated relevant recommendations from the 2026 Ray review of the Australian Energy Market Operator's governance arrangements[2].

Chapter 2 assesses the strengths and weaknesses of the current ISP and the processes through which it is developed. Chapter 3 reviews the matters raised by the AEMC's discussion paper and its options for development. Chapter 4 does the same for the AEMO governence review. We would welcome the opportunity to engage further with the AEMC on any of the matters raised in this submission. And will will continue to engage with the review.

1. AEMC (2026).
2. Ray (2026).

2 Understanding the ISP

As stated by AEMO, the Integrated System Plan 'outlines an optimal path for the development of generation, storage, and network investments in the NEM to meet both consumer needs and government policies, at least cost to 2050' – the so-called Optimal Development Path, or ODP.

The ISP achieves a number of objectives. The analytical elements are robust, and the biennial updates valuable. However, the political, technical, and economic environments have evolved more rapidly than the ISP and in ways not previously envisaged, so that it is not as effective as previously.

2.1 What does the ISP do?

The ISP began as an extension of AEMO's role as transmission planner to plan for the connection of renewable energy zones, and now extends to generation and storage. It uses economic modelling to identify the Optimal Development Path.

It applies government policies as constraints – that is, it assumes they must be met. A direct consequence is that commitments by the federal or state governments to proceed with, modify, or abandon a project, policy, or target are adopted in the modelling that delivers the ODP.

As well as identifying transmission investment opportunities, the ISP has a focus on delivery of transmission investment and Renewable Energy Zones (REZs) and prioritises projects that are on the optimal path. There are three project categories:

- Committed and anticipated projects are already underway. Their costs are assumed to be sunk and are not included in the ODP.
- Actionable projects are those assessed as necessary and urgent.
- Future projects are those forecast to be actionable under plausible future scenarios.

The ODP cost is a weighted blend of three plausible future scenarios: step change, slower growth, and accelerated transition. These scenarios are carefully defined and modelled, but the nature of what is being costed is not well understood and is often misrepresented.

Within the ODP, the highest priority infrastructure projects are classified as actionable so that the relevant transmission system business is obliged to initiate a formal regulatory investment test.

If the transmission infrastructure is built, investment in generation and storage is expected to follow. The nature of that new investment and the closure of old investment will be driven by demand and supply and by other policies and regulations that determine and support the operation of the NEM.

The original purpose of the ISP has been expanded to include its being a reference point for policy makers, investors, and independent analysts.

2.2 What does it not do?

The ISP is not really a plan:

- It does not directly lead to the delivery of investments in line with the ODP.
- No one is directly accountable for its delivery.

- It does not make any assessment of the economic benefits or consequences of government policies or targets.
- It is not subject to sensitivity testing against plausible scenarios outside government policies and targets. The 2026 version does test the ODP against a scenario in which projects are delayed. It concludes that the structural elements remain optimal, even though the total cost increases.

2.2.1 What is not OK?

The analysis and modelling for the ISP and its ODP are consistent with the stated purpose and constraints imposed on AEMO.

Yet, there is much confusion about the meaning of the ODP and least cost, especially when state governments choose high-cost options such as offshore wind and keeping coal. Unilateral decisions by jurisdictions about their own transmission infrastructure mean Australia doesn't get the optimal national outcome.

The fact that the ISP is constrained to meet government targets and policies means that it is regarded as politically constrained. It also constrains the way in which AEMO develops its Inputs, Assumptions, and Scenarios Report. The result is criticism of its results and of AEMO. This criticism comes despite AEMO making the constraints very clear in the 2026 ISP[3].

Changes to the original ISP framework by the AEMC, made to make elements of the process more explicit as state and federal climate-change policies targets proliferated, just made the role and purpose of the ISP more unclear and misunderstood.

The scenarios used in the ISP have become thought experiments run by AEMO, rather than clear thinking by government to develop long-term policies and test them against plausible future scenarios.

Focusing solely on planning and building transmission on a 'build it and they will come' basis is too limited in a world where transmission, generation, and storage must be built at the same time.

Gas-powered generation is emerging as a critical component in a high-renewables system, yet AEMO doesn't yet treat electricity and gas as a single energy system. As with some regulated distribution assets, failure to include gas investment may deliver a sub-optimal development pathway.

The recommendations in this submission clarify the purpose of the ISP and address the matters for reform identified in this chapter.

3. AEMO (2026).

3 The position of the AEMC Review

In its discussion paper, the AEMC says it wants to consider:

- The scope of the ISP and its optimisation – what is included in the optimisation beyond transmission and grid-scale generation and storage.
- The actionability framework – once the Optimal Development Pathway is identified, to what extent does that lead directly or indirectly to investment in regulated and unregulated assets.

The discussion paper includes four 'straw person' models of how these elements could be framed. Each of the models defines a different purpose for the ISP:

- Model 1 – Continue with the current model, with targeted improvements to the Regulatory Investment Test for Transmission (RIT-T) and to address gaps in the ODP.
- Model 2 – The same scope as Model 1, but with a faster process for economic assessment of actionable projects. The primary benefit would be to speed up the delivery of the ODP. There is no detail on how the process would be made faster or how the RIT-T could be accelerated. There seems to be an implicit assumption that actionable projects would proceed unless they meet a major obstacle with the RIT-T.
- Model 3 – A wider scope that extends the co-optimisation of distribution assets and includes consumer energy resources and demand-side resources, plus a faster process for economic assessment of actionable projects. The primary benefit would be to ensure that investment in transmission projects would not proceed if there were better, more localised, projects. There is no detail on how far the scope could be widened or how AEMO's modelling capacity could be expanded to cover the wider scope. Actionability would not cover distribution projects.
- Model 4 – As for Model 2 but with an extension of actionability beyond transmission to major distribution investments.

The AEMC has expressed an initial preference for Model 3. Within the scope of the AEMC's review and subject to confirming that the expanded modelling work is tractable, this is an appropriate step, provided the above caveats are addressed.

The discussion paper includes a fifth model that integrates gas infrastructure with the electricity system, leading to an Integrated Energy System Plan. Grattan was one of the proponents of this proposal. The case flows from the extent to which what happens in the gas market affects the electricity market and vice versa.

The cross-market impacts extend beyond including gas as a source of generation. The transition from gas to electricity, alongside vehicle electrification and data centre demand, will increase electricity demand. Electricity infrastructure will need to be upgraded. The need for gas in a firming role will require integration with both gas and electricity transmission infrastructure, a key planning activity. Without some level of integration, the ODP for electricity based on electricity-only may not be the optimal pathway.

Electrification of gas demand is already being incorporated in the ISP. It may not be realistic or even possible to expect a comprehensive ODP for a fully integrated electricity and gas sector. AEMO should identify the best approach to add modelling capacity covering gas infrastructure for firming generation as an extension of Model 3.

4 The Ray Review has made relevant recommendations

In December 2025, the Energy and Climate Change Ministerial Council commissioned Nigel Ray to review whether AEMO's governance arrangements remain fit for purpose and allow AEMO to operate effectively and transparently. The report of review was published in June 2026[4].

Ray concluded that AEMO should continue as the independent real-time market and system operator and as the system planner. Ray said that a key objective for AEMO as system planner was to facilitate implementation of government policies. It therefore made recommendations for structural change to make AEMO accountable and responsive to governments.

The deliberate outcome of these recommendations is that AEMO's planning role could be seen as more overtly political, because it will get its direction from the ECMC. The reality is that the system will not work without that direction.

The roadblock will be if the ministers cannot agree on how to set AEMO's policy priorities – but that is what accountability for the ISP should mean in practice. Agreement along these lines will get increasingly difficult with the positions already taken by Queensland, and possibly Victoria if there is a change of government there at the November 2026 state election. The alternative would be further fragmentation of the NEM into a system of regional markets physically and financially loosely connected.

Ray observed that the framework that identifies, approves, and implements actionable projects needs further consideration and recommended consideration of a decision making role for ministers. If the economic assessment in the ISP is robust, then the role of the RIT-T, at least in its current form should be significantly overhauled.

Primary responsibility for the connection of generation and storage infrastructure to the transmission system rests with planning authorities. Jurisdictions have taken different approaches to how this infrastructure is planned and delivered and that may appropriate to their different physical circumstances. The Review reported feedback that these processes remain "slow, iterative, and uncertain". The recommendation for a transparent connections KPI to report on clear gaps would be a step in the right direction towards improving connection times.

The recommendations in this submission capture ideas for reforming the ISP as

explored in the Ray report and described above..

4. Ray (2026).