

# **Integrated System Plan Methodology**

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## About the Justice and Equity Centre

The Justice and Equity Centre is a leading, independent law and policy centre. Established in 1982 as the Public Interest Advocacy Centre (PIAC), we work with people and communities who are marginalised and facing disadvantage.

The Centre tackles injustice and inequality through:

- legal advice and representation, specialising in test cases and strategic casework;
- research, analysis and policy development; and
- advocacy for systems change to deliver social justice.

## Energy and Water Justice

Our Energy and Water Justice work improves regulation and policy so all people can access the sustainable, dependable and affordable energy and water they need. We ensure consumer protections improve equity and limit disadvantage and support communities to play a meaningful role in decision-making. We help to accelerate a transition away from fossil fuels that also improves outcomes for people. We work collaboratively with community and consumer groups across the country, and our work receives input from a community-based reference group whose members include:

- Affiliated Residential Park Residents Association NSW;
- Anglicare;
- Combined Pensioners and Superannuants Association of NSW;
- Energy and Water Ombudsman NSW;
- Ethnic Communities Council NSW;
- Financial Counsellors Association of NSW;
- NSW Council of Social Service;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW;
- Salvation Army;
- Tenants Union NSW; and
- The Sydney Alliance.

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The Justice and Equity Centre office is located on the land of the Gadigal of the Eora Nation.

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# 1. Introduction

The Justice and Equity Centre (JEC) welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO) issues paper on the Integrated System Plan (ISP) methodology (the issues paper).

Co-optimisation of investments in the supply and demand side is crucial to guiding the energy transition at least cost to consumers and with the fastest viable decarbonisation of the electricity sector. This view is widely held by stakeholders.

At this point AEMO is unlikely to be able to expand the range of outputs from the ISP beyond electricity transmission infrastructure and co-optimize investments across the entire energy system until after the 2026 ISP. However, it is possible to consider adding interim solutions to the 2026 ISP with the explicit intention of providing contingent advice to policymakers, investors, and others on questions that substantive co-optimisation would answer. We recommend that these include adding sensitivities on a high consumer energy resource (CER) uptake and a high storage uptake.

## 2. Consideration of gas market developments

The JEC supports AEMO's proposal to expand the gas supply model. We support the intent to more accurately depict potential changes to the gas network, storage and supply situations and compare assumptions about consumption levels in the capacity outlook model with the levels observed in the market.

We appreciate AEMO's intent to ensure these changes do not amount to the ISP producing any outputs relating to gas investment or to in any way complicate the aim of the ISP to optimise electricity infrastructure investments.

### **Risks of providing unintended gas investment signals**

There is, however, scope for ambiguity in the outputs of the ISP, and this creates the possibility that they could be interpreted as a signal to gas network investors that investment is needed. Most substantially, the gas supply model considers the adequacy of the existing, committed, and anticipated gas projects to meet the future gas needs of consumers. This alone produces the possibility for the ISP to identify an 'inadequacy', which implicitly invites the solution of increased gas infrastructure or project investment.

This is an existing element of the ISP and so not necessarily a comment on the proposed changes. In the proposed changes, the gas supply model will be more rigorously developed in terms of inputs. It will introduce an iteration between it, the capacity outlook model and the time-sequential model. AEMO insists that the exercise will not identify an 'optimal' gas supply solution alongside each electricity development solution, but does note that the ISP will consider trade-offs that might exist between gas and electricity sector investments.

There is a real potential for these 'considerations' to be treated as outputs for the purpose of signaling investment in gas infrastructure or projects.

## **Measures to address risks of providing unintended investment signals**

We propose three additions to mitigate the risk of ‘considerations’ being treated as outputs signaling investment in gas infrastructure or projects.

1. ‘Electricity sector investments’ must not be limited to network investment. They must also allow investment in non-network options (such as batteries or demand response) in the consideration of trade-offs between hypothetical investments in the gas network and electricity network. Failure to do this will risk circumscribing analysis and not considering the direct competitors to gas peaking generation.
2. The trade-off comparisons must take a long-term time horizon. A short-term horizon could distort assessment of gas network investment, making it appear to be cost minimising relative to alternatives, without accounting for long term investments which would be involved, and the excess costs to consumers which would result over the longer term. Dynamics such as incremental decision-making and the sunk cost fallacy may mean that gas infrastructure investments made today will not be considered when comparing at a later point the costs of gas network solutions with other solutions.
3. Emissions reductions must be included in the assessment of competing options within these considerations of investment trade-offs. The considerations of emissions reductions must take an adequately long temporal horizon given the capacity of investments in infrastructure to lock in development pathways (and higher intensity emissions) well into the future.

Given Australia’s commitment to achieving net zero in a relatively short period of time (from an investment perspective) it is crucial to ensure that increases in gas supply and infrastructure are only made where zero/low-emission alternatives have been considered and deemed ineligible.

## **3. Distributed network capacities and opportunities**

The JEC supports improving demand side modelling in the ISP. However, the proposed changes are overly narrow, both in terms of the sources of information and the analytical questions posed.

### **Demand side modelling inputs**

Only engaging with distribution network service providers (DNSP) about expected developments in consumer energy resources (CER) is inadequate. DNSPs are not best-placed to provide information on many important developments.

Alongside DNSPs, input should be sought from providers of demand response, battery providers, virtual power plant service providers, retailers, and providers of goods such as electric vehicles, chargers, home batteries, heat pumps, water heat pumps, and service providers involved in home energy efficiency and energy management upgrades. There is no reason to believe that DNSPs will have accurate and detailed information about the expectations of this broad range of actors. Even if they do, there is no reason that AEMO would be better served by accessing these expectations via DNSPs rather than from the set of market participants themselves.

## Demand side modelling outputs

The scope of demand side modelling is overly narrow. We are aware that the task AEMO is setting itself falls short of co-optimisation and that distribution network investment planning falls outside of the purview of the ISP. Nonetheless, improving demand side modelling is intended to identify opportunities for distribution network augmentation to facilitate increased operation from CER. This comes very close to producing outputs outside of the formal aims of the ISP as a whole.

The JEC supports progress towards the ISP better identifying opportunities relating to more aspects of the energy sector than just transmission network development.

To improve the quality and value of the outputs of demand side modelling a high CER uptake sensitivity should be added to test and validate the 2026 ISP outputs concerning distribution augmentation. This falls short of co-optimisation between the supply and demand sides of the energy system, but would be a valuable interim step in the direction of co-optimisation.

## 4. Process regarding actionable projects

The JEC does not support the change to AEMO only running cost-benefit analyses on identified transmission projects at the delivery date proposed by the project proponent and then at the restart timing as necessary.

This constitutes a change from AEMO optimising project timings from the perspective of consumers to merely ensuring that projects pass a minimum threshold of returning positive net benefit if delivered at the project proponent's preferred time.

There is a cost to consumers from projects being delivered before or after their optimal delivery date. A good example of this is Humelink. While successive ISPs have identified an optimal delivery date in 2028, the NSW provider, Transgrid, has retained its proposed delivery dates of July and December 2026 for the two parts of the project. When questioned about this, Transgrid has insisted that moving the delivery date back now would not be in consumers interests, as the costs of breaking contracts with third party service providers would outweigh the benefits consumers would receive from delaying the project to the ISP-identified time.

Acknowledging that AEMO has no power to impose delivery dates on project proponents, there is still value for consumers in the planner identifying the optimal delivery time of projects. Identifying the projects needed *and their timing* is the central task of the ISP. Outsourcing the second half of this to actors with a vested interest in projects proceeding as early as possible, is a retrograde step that does not best promote the consumer interest.

While AEMO is right to acknowledge their powers to set target delivery dates are inadequate, the response to this should be to consider (once again<sup>1</sup>) introducing new powers or mechanisms to bring TNSP incentives in line with consumer interests. In the meantime, it is preferable to at least

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<sup>1</sup> The question was considered at length in the Transmission Planning and Investment Review.

provide consumer advocates the materials in which to identify and quantify the costs to consumers of project delivery times diverging from their optimal times.

## 5. Progressive Change does not conform to the Paris Agreement

The 2.6 Progressive Scenario is fundamentally inconsistent with our Paris commitments and Government emissions targets and should be removed.

Australia has committed in the Paris Agreement to cutting emissions so that global temperatures remain below no more than 2°C more than pre-industrial levels, with an aim to maintain a 1.5C maximum temperature rise.<sup>2</sup>

AEMO has previously claimed the Progressive Change Scenario meets Australia's Paris Agreement commitment of 43% emissions reduction by 2030 and net zero emissions by 2050.<sup>3</sup>

This is not true.

The Progressive Scenario is neither consistent with –

- The commitment to net-zero by 2050 or before, nor
- The commitment to ensure global temperatures remain below no more than 2C more than pre-industrial levels, and to aim to maintain a 1.5C maximum temperature rise.

Table 3 of the consultation paper states that the Progressive Scenario is aligned to the IEA 2021 World Energy Outlook (WEO) scenario 'Stated Policy Scenario (STEPS)', and applies the Representative Concentration Pathway (RCP) 4.5 where relevant.<sup>4</sup> A pathway aligned with those scenarios is not consistent with Australia's emissions targets and Paris commitments in circumstances where both the STEPS scenario and RCP 4.5 involve emissions rising to 2050, and only falling after 2050, with temperature rises of above 2°C.<sup>6</sup>

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<sup>2</sup> See Article 2 of the Paris Agreement. Australia has committed to emissions are cut so that average global temperatures remain well below 2C above pre-industrial levels, and to pursuing efforts to limit the increase to 1.5C.

<sup>3</sup> AEMO, 17 July 2024, '2025 IASR Scenarios; Consultation paper' p.6. See also Table 3, first row, 'National decarbonisation targets'.

<sup>4</sup> AEMO, 17 July 2024, '2025 IASR Scenarios; Consultation paper', p.11-12.

<sup>6</sup> See IEA 2021 report – Scenario trajectories and temperature outcomes, <https://www.iea.org/reports/world-energy-outlook-2021/scenario-trajectories-and-temperature-outcomes#abstract>; See also IEA 2024 report. Further, the IPCC Assessment Report 5, at multiple points references a range of possible temperatures rises under RCP4.5. See IPCC, Assessment Report 5 WGIII Report, p.13. Table SPM.1 details that RCP4.5, leads emissions equivalent to temperature ranges of 2.3-2.6C, and 2.6-2.9C. See also IPCC, Assessment Report 5, Synthesis Report, Summary for Policymakers, [https://www.ipcc.ch/site/assets/uploads/2018/02/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf); p.10 (under RCP 4.5 the likely temperature rise is 1.4C to 3.1C, [https://www.ipcc.ch/site/assets/uploads/2018/02/AR5\\_SYR\\_FINAL\\_SPM.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf); See also the IPCC Assessment Report 6, Summary for Policymakers, Table SPM.1, p.14 [https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC\\_AR6\\_WGI\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf) - updated scenario SSP2-4.5 has estimated warming of around 2.7C. The IPCC Assessment Synthesis Report 5, Summary for Policymakers, details that RCP 4.5 is more likely than not to exceed 2C. See IPCC Assessment Report 5, Summary for Policymakers, p.10.

Further, the IEA WEO asserts the need for advanced economies to achieve net-zero in the electricity sector by 2035.<sup>7</sup> As indicated in Draft 2023 IASR Figure 4, the 2.6°C scenario is the only one of the four scenarios that does not achieve a net-zero emissions NEM by 2035.<sup>8</sup>

AEMO is clear on its obligation to ensure all scenarios align with the Paris Agreement:

For the ISP, AEMO's scenarios consider qualifying public policies that meet the public policy criteria (NER 5.22.3(b)), or are included in the Australian Energy Market Commission (AEMC) Emissions Targets Statement. These policy considerations may narrow the breadth of futures available to the scenario collection for some scenario parameters (for example, the pace of the transition may be influenced by meeting renewable energy targets and emissions reduction commitments in all scenarios).<sup>9</sup>

[...]

AEMO is bound by the NER to consider policies that meet the relevant public policy criteria, and considers that identifying the necessary investments to achieve these policies is an appropriate and important insight from the scenario planning process.<sup>10</sup>

On this basis, the methodology should be amended, replaced or removed to ensure that no scenario which breaches Australia's commitments is included in any modelling or analysis.

## Continued engagement

We welcome the opportunity to meet with AEMO and other stakeholders to discuss these issues in more depth. Please contact Michael Lynch at [mlynch@jec.org.au](mailto:mlynch@jec.org.au) regarding any further follow up.

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<sup>7</sup> International Energy Agency, World Energy Outlook 2022, <https://iea.blob.core.windows.net/assets/830fe099-5530-48f2-a7c1-11f35d510983/WorldEnergyOutlook2022.pdf>, p 123.

<sup>8</sup> Draft IASR 2023, pp.46-47. We understand the Progressive Change as laid out in the 2025 IASR draft report to be largely unchanged in these aspects from the 2023 IASR.

<sup>9</sup> AEMO, 17 July 2024, '2025 IASR Scenarios; Consultation paper', p.9.

<sup>10</sup> AEMO, 17 July 2024, '2025 IASR Scenarios; Consultation paper', p.13.