

# Draft 2024 Integrated System Plan (ISP)

Submission reflection webinar

2 April 2024



*Please note that this webinar will be recorded and published online.*



We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.

**We pay respect to Elders past and present.**

# Agenda

- Welcome
- Submissions overview
- Key themes raised, and AEMO's proposed approach
- Next steps
- Q&A

# How to interact today

[www.sli.do](https://www.sli.do)  
#AEMO

- Please ask question using Slido
  - Either open the Slido tab at the top of your Teams window
  - Or open [www.sli.do](https://www.sli.do) #AEMO
- Up-vote questions that you are interested in
- Written replies may be provided through Slido if appropriate
- AEMO will not provide responses to unanswered questions

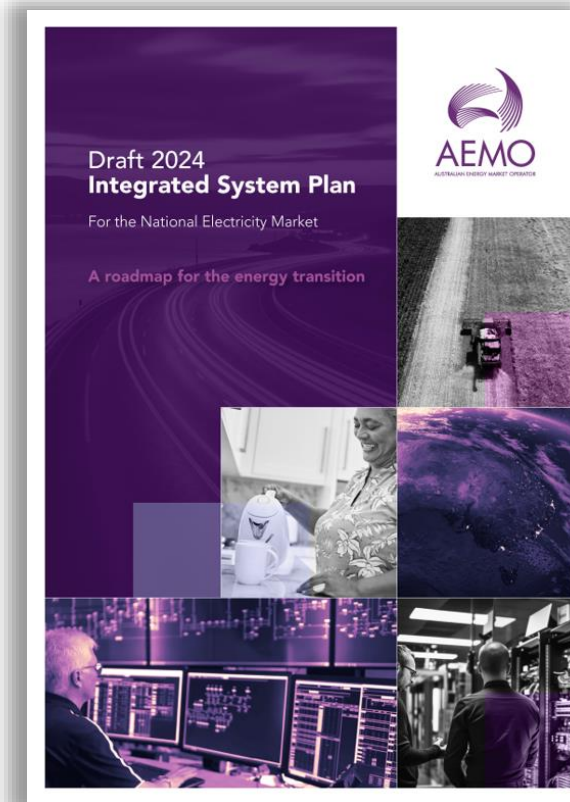
# Today's objective



Present key stakeholder feedback from submissions on the *Draft 2024 Integrated System Plan* (ISP).



After the presentation, you will have the opportunity to ask AEMO questions, using Slido.



Read the [report and associated material](#)

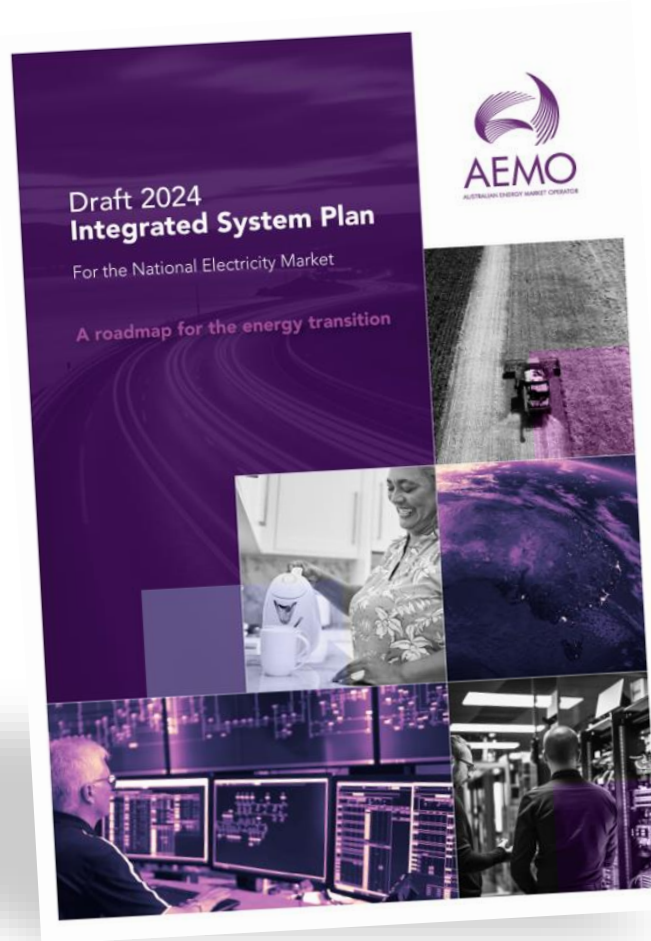


# Introduction

Eli Pack

Group Manager, System Planning

# Draft 2024 Integrated System Plan



- A roadmap for the National Electricity Market (NEM) energy transition
- Optimal development path for reaching net zero by 2050
- Least-cost path for transition within Commonwealth and State policies
- Provides lots of detailed information for policy makers, investors, consumers, communities, researchers and other stakeholders
- Serves regulatory purpose of justifying actionable and future new transmission



***Renewable energy connected with transmission, firmed with storage and backed up by gas-powered generation is the lowest cost way to supply electricity to homes and businesses throughout Australia's transition to a net-zero economy.***



# Stakeholder feedback

Samantha Christie

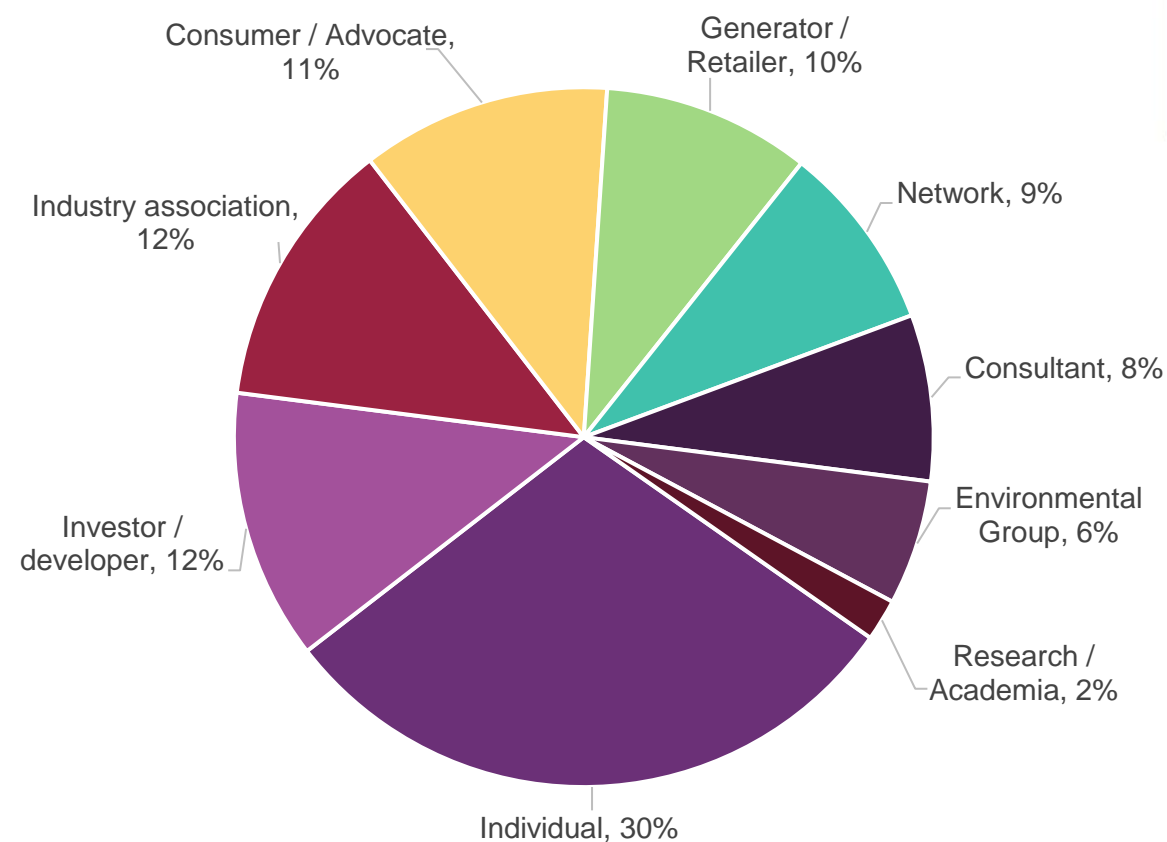
Manager Strategic Planning, System Design

# Draft 2024 ISP consultation update

Draft 2024 ISP submissions	
Formal written submissions	97
2024 ISP Consumer Panel report	1
Consumer advocates verbal session	6
<b>Public submissions</b>	<b>104</b>

Webinars	Publication webinar (15 Dec 2023)	Submission reflection webinar (2 April)
Attendees	480	-
Registrants	591	320

Proportion of submissions per stakeholder cohort



# Draft 2024 ISP – submission key themes

(top themes)

Top themes	Individual	Industry Association	Generator / Retailer	Consumer / Advocate	Investor / Developer	Network	Environment Group	Consultant	Research / Academia	Total
Consumer energy resources & distribution networks	12	2	4	4	4	4	3	3	1	37
Modelling approach	13	1	4	6	2	2	2	2		32
Generation & storage developments	10	3	3	1	6	1	2	2	2	30
Social licence	4	7	2	4	3	1	4	1	1	27
Delivery risks		5	6	5	4	1	2	1	1	25
Role of gas	3	5	3		1	3	2	2	2	21
Actionable projects	5	2	1	2	3	4			1	18
Demand forecast	3	3	3	2	1	4				16
Communication	1	2	3	4		2	1	1	1	15
Hydrogen		3	4		3	2			1	13
2026 ISP				1	1	1		1	1	5
<b>Total</b>	<b>51</b>	<b>33</b>	<b>33</b>	<b>29</b>	<b>28</b>	<b>25</b>	<b>16</b>	<b>13</b>	<b>11</b>	<b>239</b>
<i>Average pages per submission</i>	<i>7.7</i>	<i>5.5</i>	<i>6.5</i>	<i>10.6</i>	<i>5.5</i>	<i>12</i>	<i>6.8</i>	<i>11.3</i>	<i>24.0</i>	<i>8.3</i>

# Key themes raised

AEMO's proposed response



# Concerns over gas-powered generation expansion

## What we heard from stakeholders:

- Investment in gas infrastructure is not currently supported by market or policy settings and makes deliverability uncertain
- Economic viability of gas expansion is uncertain for the forecast low utilisation levels
- Further clarity and transparency on the anticipated role for gas and underlying assumptions is needed

“

*the likely high cost of gas supply and potential unavailability of gas pipeline capacity, will impact on the economic viability and competitiveness of [gas-powered generation]*

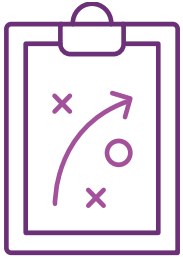
**- Clean Energy Council**

“

*it may be that the draft 2024 ISP continues to under forecast the amount of [gas-powered generation], that is required in the NEM, and the important role of [gas-powered generation] in the transition overall*

**- APA Group**

AEMO is undertaking further analysis to explore the limitations of gas infrastructure and will endeavour to include greater detail in the final 2024 ISP.



# Delivery risks to the optimal development path may compound

What we heard from stakeholders:

- Insufficient commentary on policy measures needed to reduce risks to delivery of the optimal development path
- Further analysis is needed on a sensitivity where multiple risks materialise and compound
- Provide cross-sectional breakdown forecast of workforce requirements to help identify gaps

“

*the regulatory framework acts as a serious blocker to delivering new transmission, generation and storage*

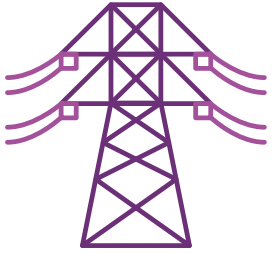
**- Nexa Advisory**

“

*the ETU continues to be concerned with the lack of inclusion of workforce development and worker transition in the ISP process.*

**- Electrical Trades Union**

AEMO is considering a sensitivity where multiple risks compound to increase costs and time delays. AEMO will deliver the requested workforce calculations.



# Further analysis is required on potentially actionable projects

What we heard from stakeholders:

- Mid North South Australia expansion should be actionable to mitigate risks in South Australia
- A proposed case for Sydney Ring Southern to be actionable
- Inter-network testing increases the lead time for QNI Connect by 12-18 months
- Lead time for Waddamana to Palmerston upgrade is 5 years



*critical that the southern section of the Sydney Ring be reinforced to support the future reliability and operability of the [New South Wales] power system*  
- Transgrid

AEMO is continuing joint planning with transmission network service providers and has updated inputs to the final 2024 ISP to ensure fit-for-purpose modelling.



# Suggested improvements to the ISP modelling approach

## What we heard from stakeholders:

- Include a do-nothing assessment where government targets are not met
- Test optimal development path on different weather years
- Demand-side solutions should be considered
- Include a value of emission reductions
- Costs for consumer energy resources, distribution networks and retirements are not considered



*It is impossible to know exactly in which year such challenging weather events will arise, and a reliable system will require that we are ready for any weather year every year.*

**- Centre for Independent Studies**

AEMO is still considering the feedback received about consumer energy resources. AEMO is looking to test the resilience of the optimal development path to different weather years. AEMO will include a value of emission reductions, consistent with materials recently released by the Australian Energy Regulator.





# More work is needed to integrate consumer energy resources

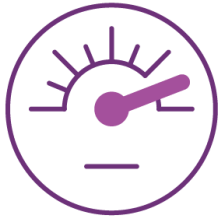
What we heard from stakeholders:

- Assumed levels of orchestrating consumer energy resources are too high
- Include recommendations on how to help the delivery of orchestrated consumer energy resources
- Consider how consumer energy resources can displace the need for mid- and large-scale generation and transmission



*[Consumer energy resources] orchestration is such a critical input to the achievement of the [optimal development path] that it could be considered and managed as an actionable project*  
- Endeavour Energy

AEMO is conducting a low orchestration sensitivity to explore the impacts of low orchestration of consumer energy resources on the optimal development path.



# Adjustment to the demand forecast could be included

What we heard from stakeholders:

- Forecast uptake of electric vehicles and their contribution to peak demand is too high
- The future plans of large industrial loads and data centre loads are not adequately considered
- More detail needed on the drivers underpinning each component of the consumption forecast

“

*consequences of over-estimating [electric vehicle] uptake in the integrated system plan is to inflate the amount of energy existing generation will need to provide*

**- Electric Vehicle Council**

“

*the current Draft ISP appears to lack sufficient consideration of potential load growth in South Australia*

**- ElectraNet's Consumer Advisory Panel**

AEMO is exploring the need for a sensitivity to test the impact of potential additional demand from future large industrial loads. AEMO is still considering feedback about the electric vehicles forecast.



# Social licence for the energy transition requires broad consultation

## What we heard from stakeholders:

- Further exploration of reduced social licence for specific technologies and broader social impacts
- Insufficient detail provided on current policy barriers
- Include a diverse mix of consumer, industry, developer, and non-technical expertise in consultation
- More exploration of getting social licence for optimal development path projects

*“There’s a large emphasis on the project proponents to get social licence, but there is a big role that the wider industry, AEMO and governments could be playing to provide consistent messaging.”*  
- RE-Alliance

AEMO will continue developing this area for the 2026 ISP and may re-run the social licence sensitivity for the final 2024 ISP with offshore wind included.



# What is the role of the Integrated System Plan?

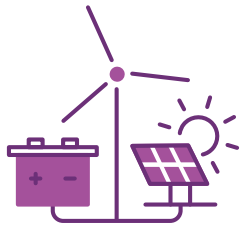
What we heard from stakeholders:

- AEMO should make clearer what the ISP is, and is not
- Clarify how Australian Energy Regulator guidelines are applied and the role of input policy assumptions
- More details on challenges, common good benefits, and related transition costs
- Explain more clearly what affordability means in the ISP

*focus on communicating the objective and scope of the ISP – both what it is, and what it is not*

*- Australian Energy Council*

AEMO is working on addressing concerns about communicating the role of the ISP and providing details on other key matters raised.



# Additional suggestions for generation and storage technologies

What we heard from stakeholders:

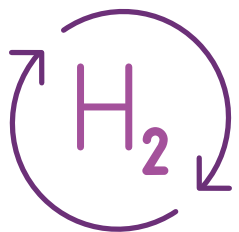
- Nuclear should be considered as a generation option for a fair cost comparison to renewables
- Consider using the draft CSIRO 2023-24 GenCost results
- More offshore wind modelling, including in NSW
- Revisit renewable energy zones design parameters and consider minor NEM-grid build outside renewable energy zones

“

*Nuclear energy is a highly developed source of carbon free dispatchable electrical energy which cannot be ignored.*

**- Roderick Sinclair**

AEMO will not model nuclear generation as an option for the 2024 ISP because it is prohibited under the Environment Protection and Biodiversity Conservation Act (1999). AEMO intends to use 2022-23 GenCost results for the final ISP because they have undergone full consultation and they are similar to the draft 2023-24 numbers.



# Hydrogen assumptions could be explored further

What we heard from stakeholders:

- Explore the impact of hydrogen load flexibility assumptions to inform selection of the optimal development path
- Step Change scenario should include higher hydrogen uptake and should model hydrogen sector-wide workforce needs
- Provide more detail about hydrogen modelling assumptions



*the [optimal development path] should allow some reasonable headroom for export-oriented large-scale hydrogen project development.*  
- **Clean Energy Council**

AEMO is considering updates to assumptions on hydrogen load flexibility for the final 2024 ISP, for testing through sensitivity analysis.



# 2026 ISP scope to expand as the energy transition continues

What we heard from stakeholders:

- Develop further measures of the distributional effects of the ISP
- Expand analysis of the role of demand-side energy resources
- Develop a gas cost database and use AEMO's Gas Statement of Opportunities to identify gas supply and pipeline augmentation requirements



*“The ISP is an integral part of the NEM transition. The CEC commends AEMO for delivering such a highly detailed and considered piece of work.”*

*- Clean Energy Council*

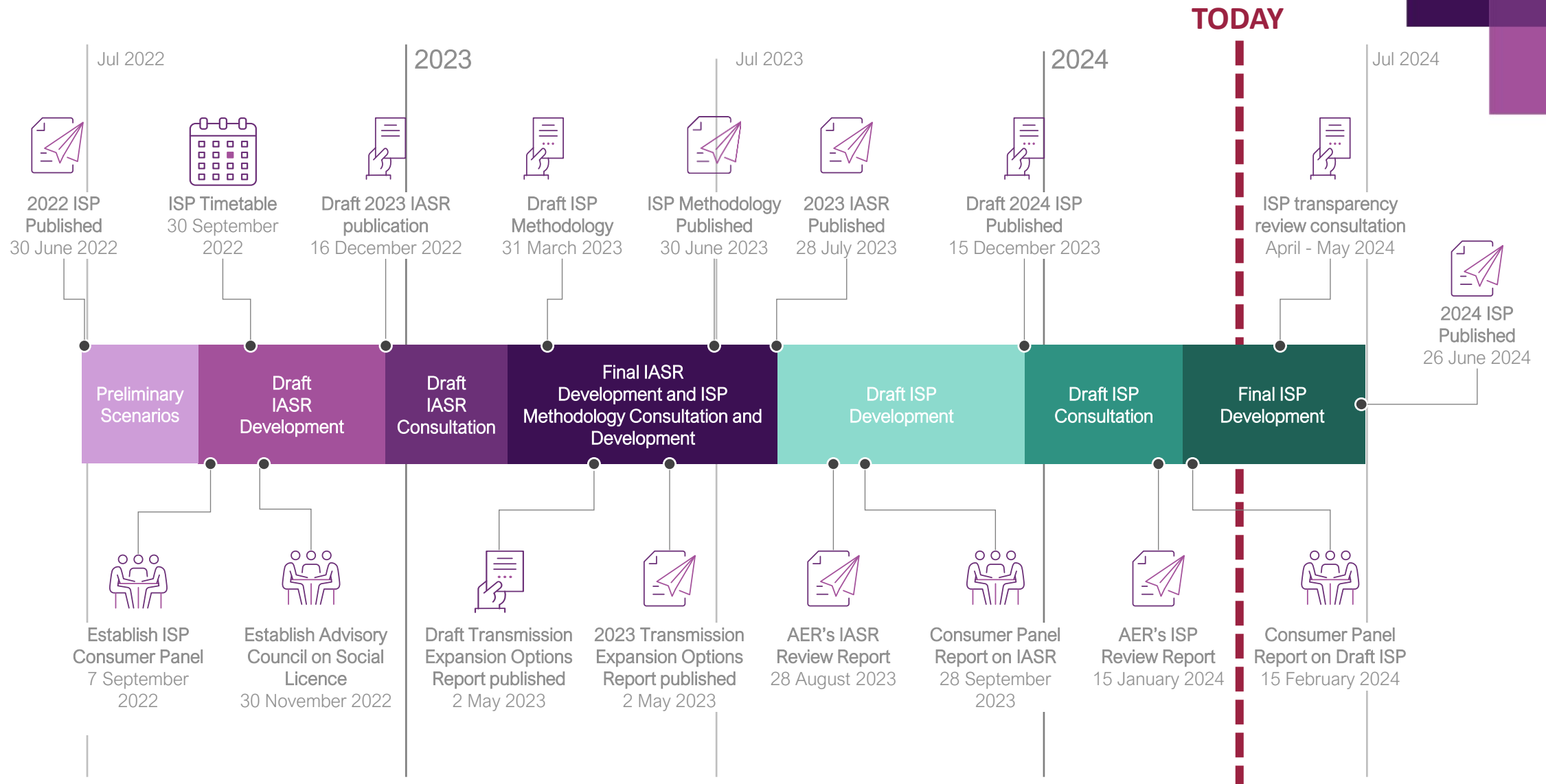
AEMO will include a brief section in the 2024 ISP consultation summary report noting these suggestions. The 2026 ISP scope will be considered through a separate process.

# Next steps





# AEMO will publish the final ISP 26 June 2024



# 2024 ISP key dates

Date	Time (AEDT)	Item	Notes
April – May 2024		Consultation on Draft ISP addendum	AEMO will publish the Draft 2024 ISP addendum in response to the <a href="#">AER's Transparency Review</a> .
26 June 2024	9.00am	2024 ISP publication	Final 2024 ISP to be published on 26 June 2024
*4 July 2024	10.30am	2024 ISP publication webinar	Register to attend the webinar <a href="#">here</a> <i>Note: Date and time is subject to change.</i>

## For more information

- [Join the ISP mailing list](#) to never miss an update
- The 2024 ISP stakeholder engagement strategy and past engagements including webinar recordings can be found on the [2024 ISP Stakeholder Engagement](#) webpage
- Questions? Please contact the AEMO ISP team: [ISP@aemo.com.au](mailto:ISP@aemo.com.au)

# Questions and discussion

Ask your question at [www.Sli.do](http://www.Sli.do) #AEMO

# Next steps

Share your feedback at  
<https://forms.office.com/r/qfwBStcLwB>

The recording and presentation will be published on the [2024 ISP engagement webpage](#)

AEMO will publish the final [2024 ISP](#) on 26 June 2024



For more information visit

[aemo.com.au](http://aemo.com.au)