

# ISP Methodology Stage 1 Webinar

AEMO Planning and Forecasting

1 April 2021

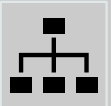
*We acknowledge the Traditional Owners  
of country throughout Australia and  
recognise their continuing connection to  
land, waters and culture.*

*We pay our respects to their Elders past,  
present and emerging.*

# Objectives of the day



To provide clarity on the wider context of the ISP, and where this webinar fits in



To provide an overview of our modelling methodologies we propose to use in the ISP



To detail common areas of feedback in the submissions and provide an indication of AEMO's current intentions and considerations



To seek feedback on AEMO's reflections on the Methodology Issues Paper submissions

# Slido – Today's discussion

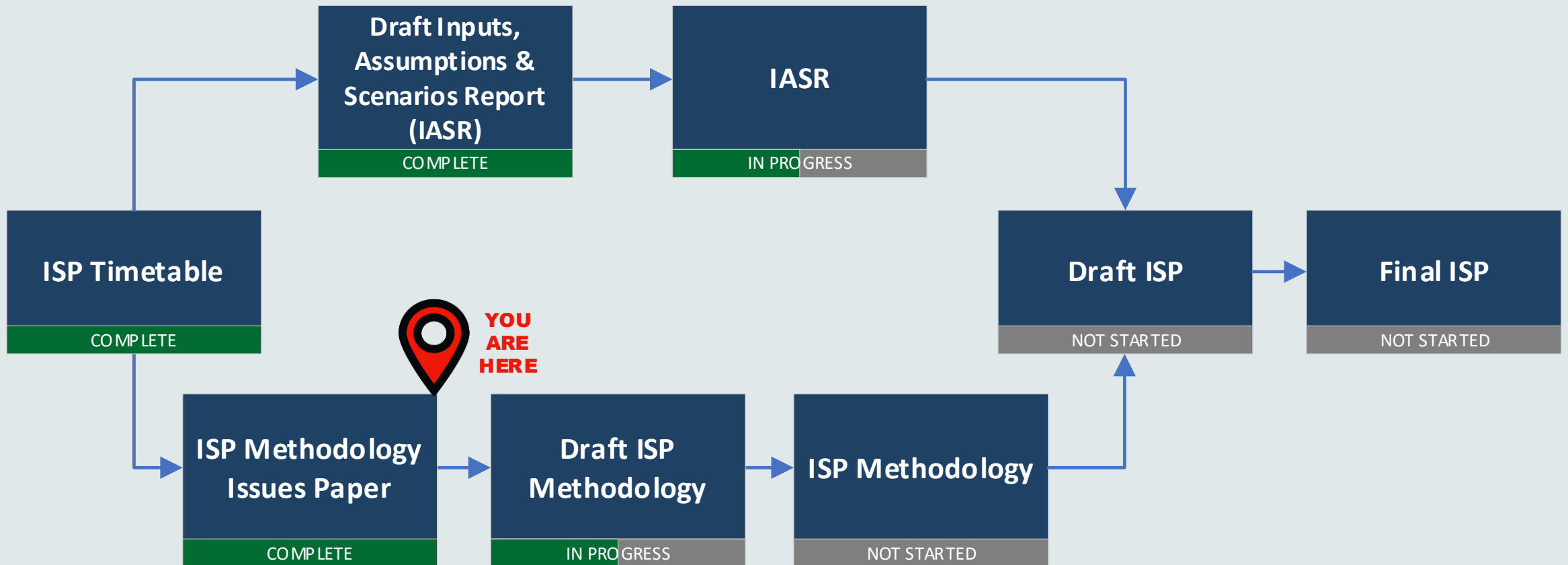


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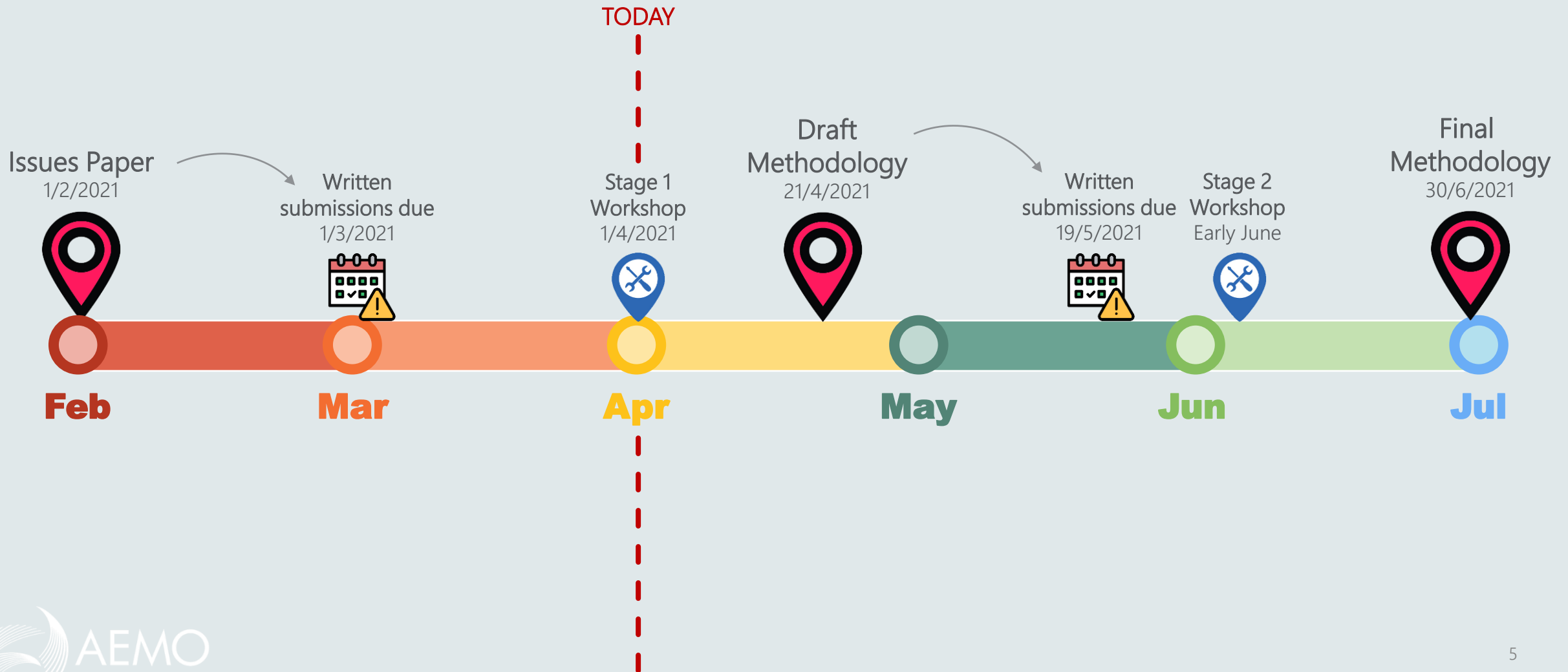


Slido will be used throughout the session for Q&A and polls

# 2022 ISP Progress



# Methodology consultation timeline



# 2022 ISP consultation milestones

AEMO Publication
AER Publication
TNSP Publication
Consumer Panel Report

Publication	Timing	Responsibility
ISP Timetable	30 October 2020	AEMO
Establish ISP Consumer Panel	By 30 November 2020	AEMO & ISP Consumer Panel
Draft IASR	11 December 2020	AEMO
<u>ISP Methodology Issues Paper</u>	<u>1 February 2021</u>	<u>AEMO</u>
<u>Draft ISP Methodology</u>	<u>21 April 2021</u>	<u>AEMO</u>
<u>ISP Methodology</u>	<u>30 June 2021</u>	<u>AEMO</u>
Preparatory Activity Reports	By 30 June 2021	TNSPs
IASR	30 July 2021	AEMO
AER's IASR Review Report	By 30 August 2021	AER
Consumer Panel Report on IASR	By 30 September 2021	ISP Consumer Panel
Draft 2022 ISP	10 December 2021	AEMO
AER's ISP Review Report	By 10 January 2022	AER
Consumer Panel Report on Draft ISP	By 10 February 2022	ISP consumer panel
2022 ISP	30 June 2022	AEMO



# AEMO received 14 submissions and held a verbal feedback session with consumer advocates

Advisory



Consumer  
Advocacy

ISP Consumer  
Panel

Verbal  
feedback  
session



Electricity &  
Gas Network



Generation/  
Retail



Developer



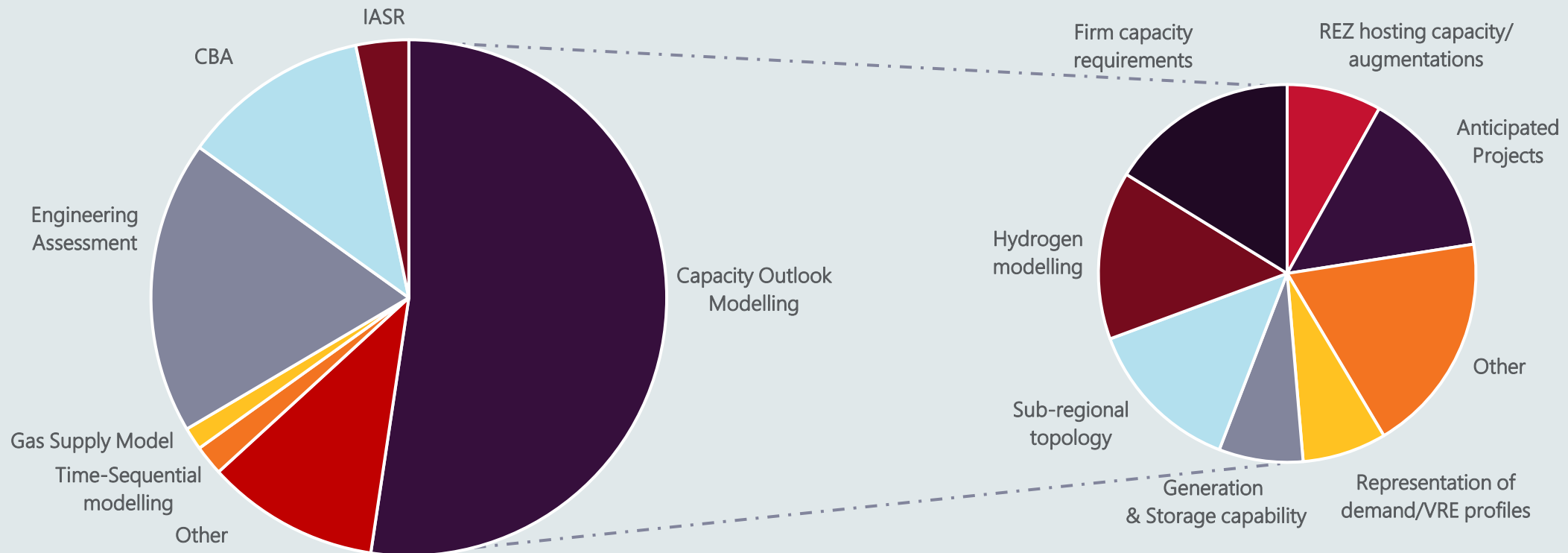


# Summary of feedback

🕒 Submissions have been categorised into high-level topics

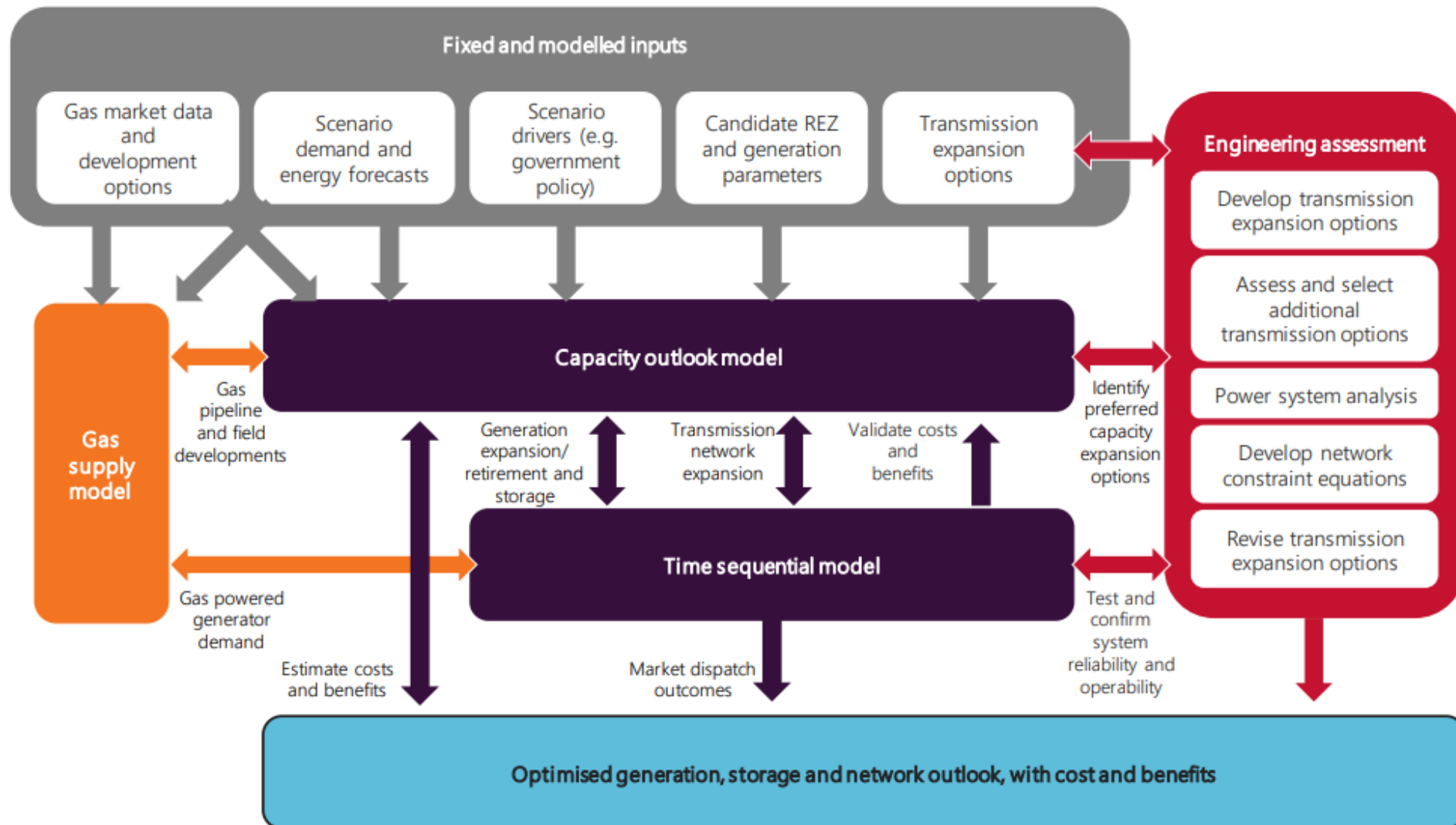
🧠 Several key themes raised by stakeholders

👥 The topic that received the most feedback was the Capacity Outlook Model



# Modelling approach: overview

# ISP modelling approach



# Modelling approach: Main themes

# Theme 1: Capacity outlook modelling details

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## Issues

A number of the submissions requested further detail on individual aspects of the capacity outlook modelling approach.

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More prominent issues were the:

- Approach to including firm capacity requirements
- Interactions between the models used in the ISP process
- Approach to development hydrogen assumptions and the methodology used.

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## Our current consideration

Requests for clarification and further details are being considered in the development of the draft methodology to ensure that more clarity is provided where needed.

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Following the release of the draft methodology, the ISP Methodology Stage Two workshop will provide an opportunity for greater clarity on any aspect which is still considered unclear.

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# Theme 2: Exploring impacts on coal operation/retirements

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## Issues

Feedback suggested that the methodology should take into account the complexities of coal operation including their flexibility, plant degradation, risk management practices such as contracting/settlement residue auctions, role of generation as part of a portfolio, etc.

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Continued feedback that economic retirements need to be taken into account.

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## Our current consideration

AEMO is continuing to engage with generators on how to improve the representation of coal generation and fixed cost assumptions to better enable an assessment of the potential for earlier than expected economic retirements.

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There exists an inherent asymmetry of information that precludes detailed consideration of plant-specific and portfolio-specific considerations to retirement planning. AEMO's approach seeks to strike a balance between complexity and transparency, relying on public information but applying economic retirement principles.

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# Theme 3: REZ methodologies

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## Issues

Feedback generally supported the use of 'soft' land use penalty factors rather than hard limits.

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Continued feedback on REZ network hosting capacity and the linearisation of REZ network expansion.

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More information requested on the treatment of REZs in the counterfactual.

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## Our current consideration

AEMO intends to use 'soft' land use penalty factors and an improved REZ network hosting capacity approach in line with feedback

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AEMO will include more detailed information on the REZ counterfactual and linearization of network expansion within the draft methodology.

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# Theme 4: Sub-regional Model

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## Issues

General agreement on the proposed implementation of a sub-regional model, with some amendments proposed.

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Mixed feedback on the treatment of intra-regional and inter-subregional losses, but highlighting the importance of modelling losses.

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Feedback highlighted the importance of sub-regional inputs, including transfer limits.

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## Our current consideration

AEMO will consider feedback and update the approach to sub-regional modelling and the approach to losses accordingly.

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AEMO will clarify how sub-regional model inputs are developed and are fit for purpose in the ISP – including deriving seasonal time-of-day transfer limits.

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# Discussion



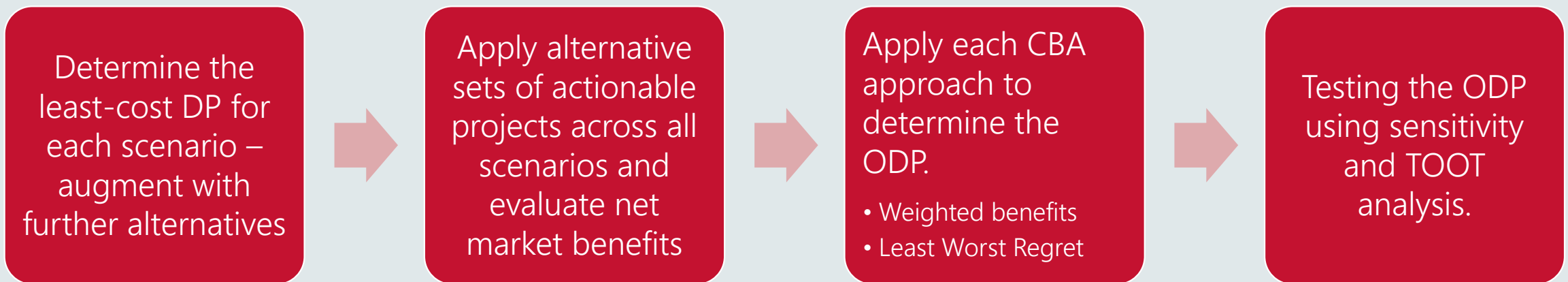
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Please type in your questions in the Q&A section

# CBA approach: overview

# Overview of the approach to developing the ODP



## Common terminology:

DP: Development Path  
ODP: Optimal Development Path  
TOOT: "Take one out at a time"

# Key features in the approach to testing development paths

Suites of actionable projects are tested, including options where projects are deferred (and therefore not actionable).

The approach reflects the ability to “adapt” to conditions in each scenario beyond any actionable project.

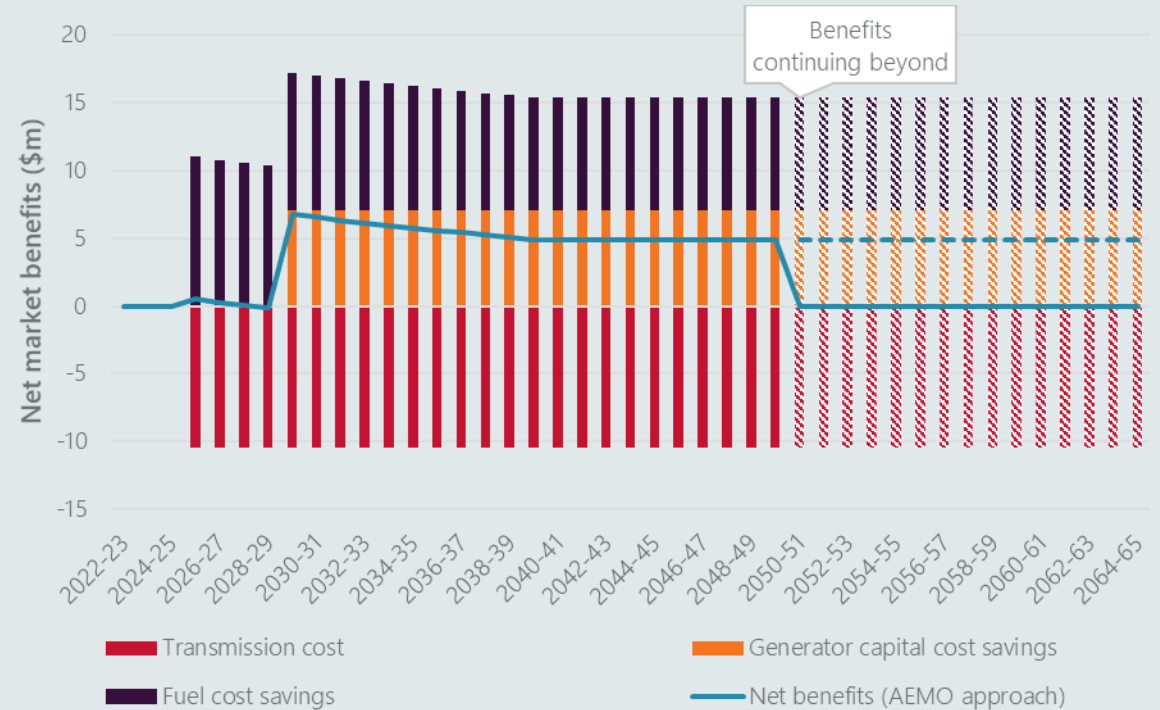
The approach includes staging where possible to maximise option value and minimise the risk of over-investment.

# Selecting the ODP

- Issues Paper outlined two methods:
  - Scenario-weighted average
  - Least Worst Regrets
- The CBA Guidelines require AEMO to exercise professional judgement in balancing the outcomes of the decision-making approach to select an ODP that maximises the net economic benefit.
- AEMO's methodology will outline how each approach is applied.
  - AEMO considers that both approaches are valuable in demonstrating the robustness of different candidate development paths, combined with further qualitative assessments informed by sensitivity analysis.

# Clarifying the approach to determining the NPV

- The modelling assesses the discounted total system cost of each development plan. This includes many investments being built over the period, with varying economic lives.
- To account for this, all capital costs are annuitised over the economic life.
- The example here illustrates two alternatives for considering net market benefits beyond the modelling horizon.



AEMO's approach is to consider annualised costs within the modelling horizon, effectively assuming neutral net market benefits beyond that point. The alternative is to extrapolate costs and benefits and include (the dashed area)

# CBA approach: Main themes

# Theme 1: Scenario weights

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## Issues

The ISP Consumer Panel and Shell considered that the methodology consultation should include a consultation on the scenario weights or the framework for how weights are determined.

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## Our current consideration

We are delaying a consultation on weights to allow maximum time to inform the likelihoods.

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# Theme 2: Discount rates and calculation of the NPV

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## Issues

The approach to applying discount rates and the consideration of alternative discount rates for different costs and benefits should be considered.

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That a rate more similar to the commercial discount rate must be used.

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Various points of feedback on the approach to terminal value.

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## Our current consideration

As previously mentioned, AEMO has taken on board feedback on the discount rates and is working with the ISP Consumer Panel and will engage with other interested parties on updated discount rate assumptions.

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The approach proposed to terminal value appeared to have been unclear so additional detail will be provided in the draft methodology, as well as the information presented today.

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# Theme 3: Sensitivity and TOOT analysis

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## Issues

General support for TOOT analysis, but some feedback that the approach should be more aligned with the RIT-T, and that the comparison should be with an alternative development rather than no transmission.

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Encouragement to use more qualitative tools to assess key risks including sensitivity analysis, considerations of how far benefits are in the future, etc.

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## Our current consideration

AEMO is not required to complete TOOT analysis as part of determining the ODP, but are intending that the TOOT analysis provides guidance in understanding the sensitivity of a project to transmission cost variations, and will be taking an approach broadly consistent with that described in Example 12 of the AER's CBA Guidelines.

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AEMO is actively considering the use of sensitivity analysis to test the robustness of the candidate development plans and the level of incorporation into the overall CBA analysis.

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# Theme 4: Scenario-weighted vs LWR

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## Issues

General view that the approaches seem reasonable and support for AEMO's approach to maintaining flexibility between the two approaches.

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Origin questioned the need to continue to maintain the LWR approach and considered it had the potential to lead to the overbuild of transmission.

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The ISP Consumer Panel encouraged the exploration of further alternatives and that a development path that was optimal under a range of assessment methods would give consumers more confidence in the ODP.

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## Our current consideration

AEMO is considering alternative approaches to the scenario-weighted approach and would welcome any further suggestions on alternatives in addition to the LWR method proposed in the Issues Paper.

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The ranking of DPs in each of the alternative methods used, and the inclusion of further sensitivity analysis, will be applied to illustrate how the ODP performs under a range of assessment frameworks.

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# Discussion



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# Next Steps

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Draft Methodology to be released on 21 April.



Written submissions to the Draft Methodology and a second webinar will provide opportunities for further engagement.



Final Methodology to be released on 30 June.



**AEMO**

AUSTRALIAN ENERGY MARKET OPERATOR