2024 Transition Plan for System Security

10 December 2024

We acknowledge the Traditional Custodians of the land, seas and waters across Australia. We honour the wisdom of Aboriginal and Torres Strait Islander Elders past and present and embrace future generations.

We acknowledge that, wherever we work, we do so on Aboriginal and Torres Strait Islander lands. We pay respect to the world's oldest continuing culture and First Nations peoples' deep and continuing connection to Country; and hope that our work can benefit both people and Country.

'Journey of unity: AEMO's Reconciliation Path' by Lani Balzan

AEMO Group is proud to have delivered its first Reconciliation Action Plan in May 2024. '*Journey of unity: AEMO's Reconciliation Path*' was created by Wiradjuri artist Lani Balzan to visually narrate our ongoing journey towards reconciliation – a collaborative endeavour that honours First Nations cultures, fosters mutual understanding, and paves the way for a brighter, more inclusive future.

Read our RAP

Today's agenda

Time	Item	Speaker
11:00 am	Acknowledgement and agenda	Angela Heck, Principal Stakeholder Advisor, System Design
11:05 am	Transition Plan for System Security	Chris Davies, Group Manager, Future Energy Systems, and Chris Mock, Manager, Engineering Strategy
11:35 am	Q&A	Niraj Lal, Principal, Engineering Roadmap Engagement
12:00 pm	Survey and close	

How to interact today

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7836630

- Please ask questions using Slido www.sli.do #7836630
- Enter with your name, no need to log in.
- Ask your questions or up-vote others' questions.
- We will also have an engagement survey following the webinar for stakeholder feedback.

Objectives of webinar

Communicate how the Transition Plan for System Security fits into the broader suite of AEMO's responsibilities

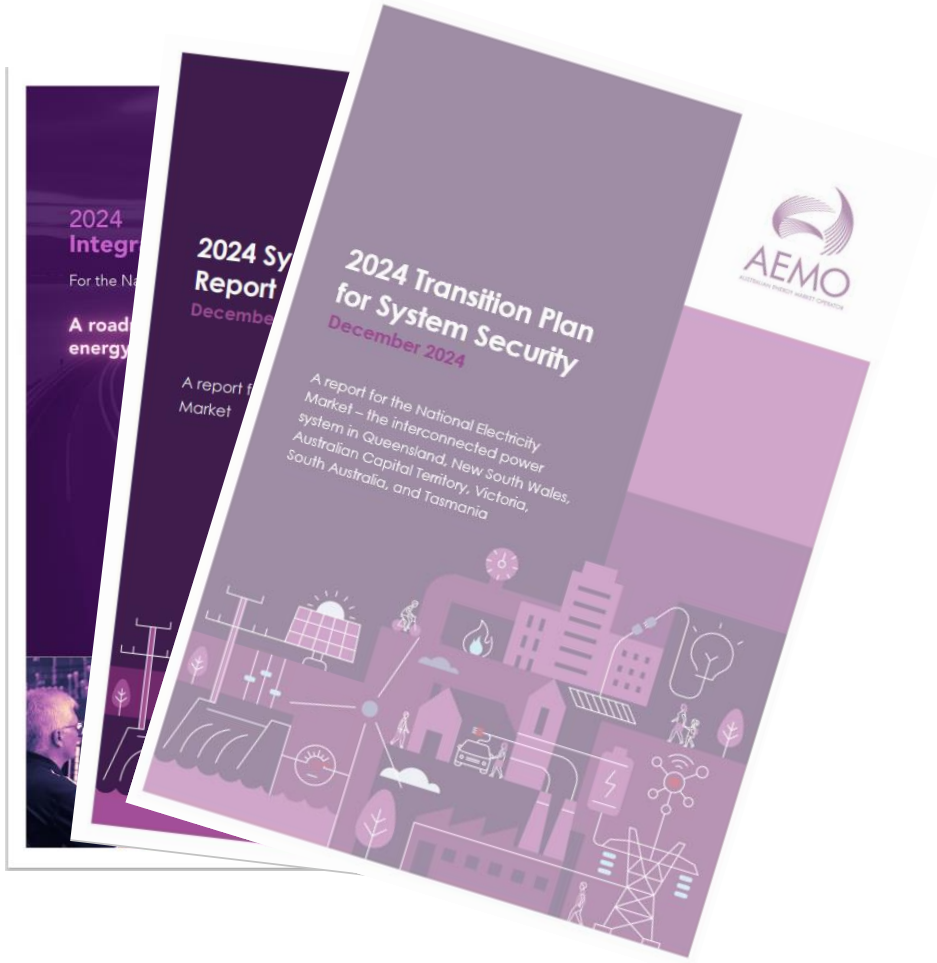
Provide an overview of the Transition Plan and highlight some of its key findings

Request your feedback

Answer your initial questions

Read the **report and associated material**

AEMO: NEM Planning Analysis and Publications



Data Infrastructure Reliability Security

Where the Transition Plan fits

System security planning reports

System strength report

*System strength requirements for a **10-year** outlook, including minimum fault levels, and the efficient level of system strength.*

Identifies system strength requirements

→ ***System Strength Service Provider*** **procurement of system strength**

Inertia report

*Inertia requirements for a **10-year** outlook, for use when planning for both normal and islanded operation*

Identifies inertia requirements

→ ***Inertia Service Provider*** **procurement of inertia**

NSCAS report

*Assessment of NSCAS needs for a 5-**year** outlook (plus system strength & inertia over 3-years)*

Identifies security investment needs and gaps

→ **TNSP and AEMO* procurement of Reliability and Security Ancillary Services**

TNSP procurement of Market Benefit Ancillary Services

TPSS

Transition plan for system security

AEMO's current understanding of how to keep the power system secure through the energy transition. ***Now to 5+ years***

Preparation for upcoming transition points
Outlining work to define capabilities and progress understanding across three time-horizons

→ **AEMO and NSP operational transition planning frameworks**

AEMO procurement of Transitional Services

*Note: Under the NSCAS framework, AEMO can only procure Reliability and Security Ancillary Services under last resort planning powers.

Transition plan for system security

Horizon 1
Now – 2 years

Planning for specific operational transition points, working within the constraints of today's system and available technology.

Horizon 2
2 – 5 years

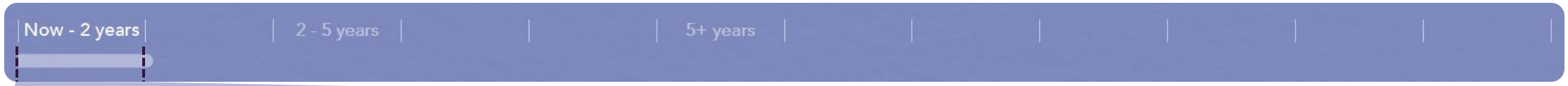
Planning for transition points before they arise in operations. Building understanding and defining capabilities of services.

Horizon 3
5 years+

Screening for transition points. Growing understanding of the requirements of a low-emissions power system. Outlining long lead-time activities to support investment.

Horizon 1

Now to 2 years ahead:
Working within the constraints of today's system and available technology.



Horizon 1 Activity Focus

Transition point planning

Enabling operation of SA with 1 synchronous generating unit under certain conditions

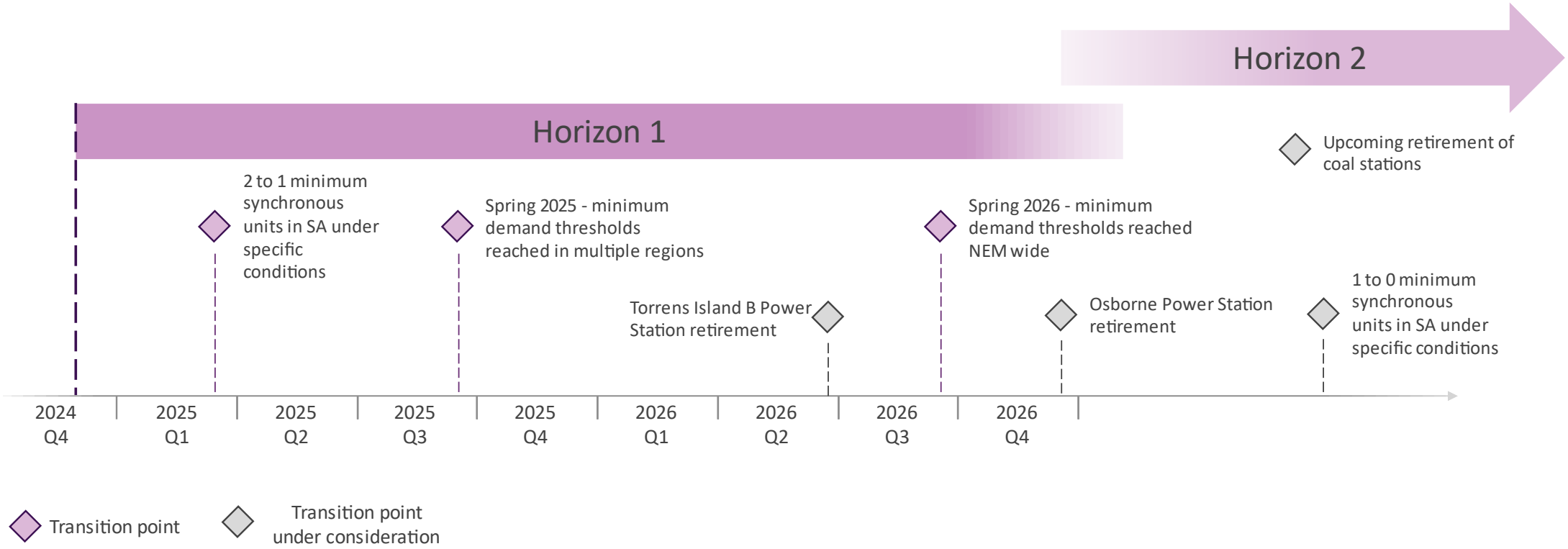
Managing approaching minimum demand thresholds in Spring 2025 (regional) and Spring 2026 (NEM-wide).

Defining capabilities and progressing understanding

Managing system security when coal and gas generators are offline, alongside new frameworks for system strength and inertia

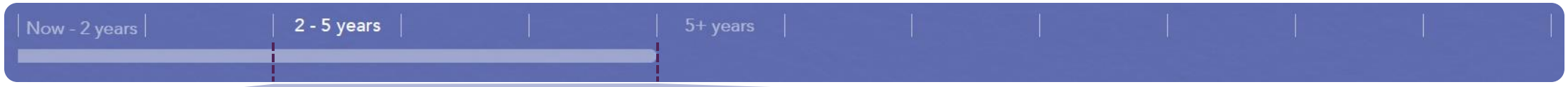
Potential contracting of Type 1 Transitional Services to reduce need for directions (e.g., for minimum system load events)

Transition point planning



Horizon 2

Preparation for 2 – 5 years ahead:
Planning for transition points before they arise in operations.
Building capabilities needed to manage future transition points.



Horizon 2 Activity Focus

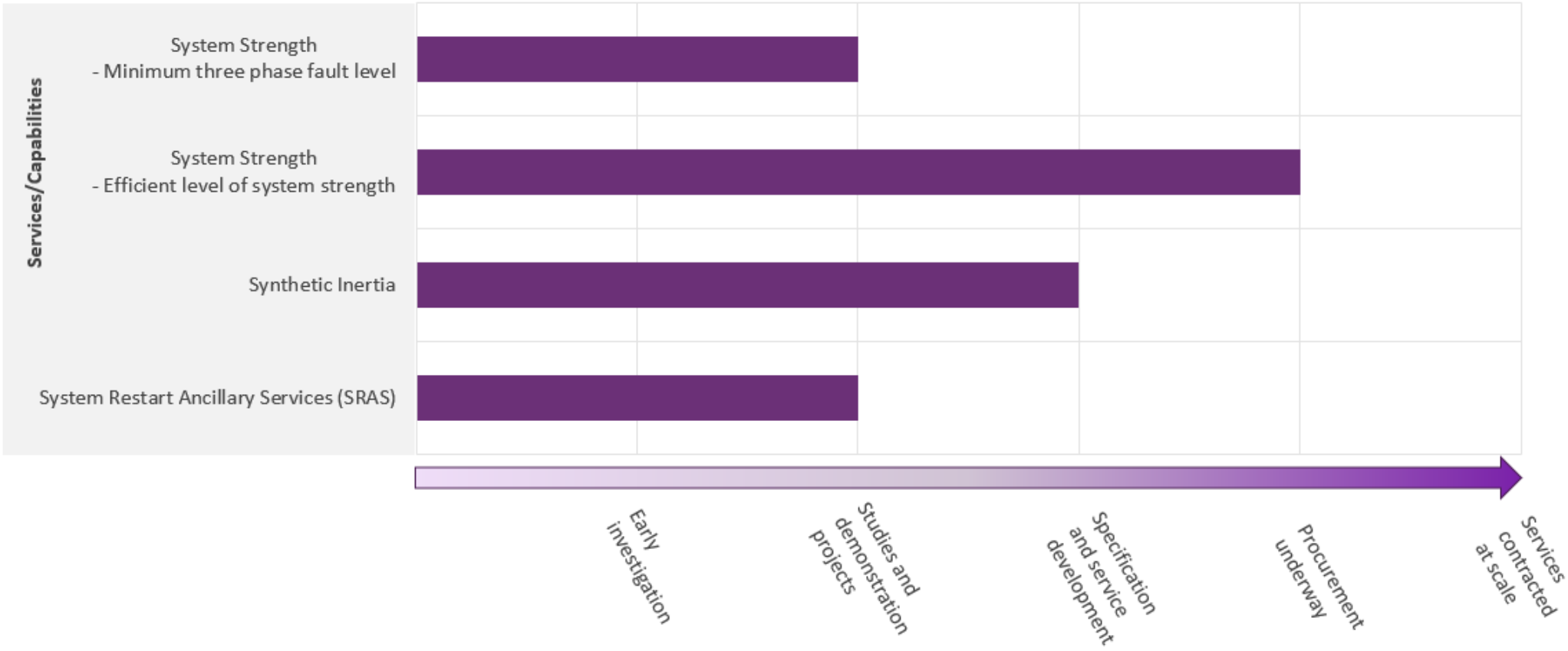
Transition point planning

- Conducting power system studies for emerging operational transition points.
- Preparing for announced retirements of coal stations

Defining capabilities and progressing understanding

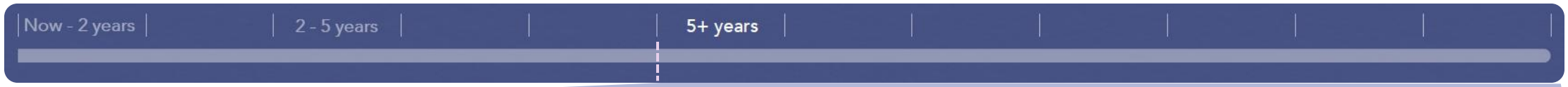
- Accelerating demonstration and delivery of essential system services from grid forming inverters
- Developing enduring requirements to support system operation with high DPV contribution
- Potential contracting of Type 2 Transitional Services to demonstrate new technology capability

Grid-forming inverters: readiness to provide system security services



Horizon 3

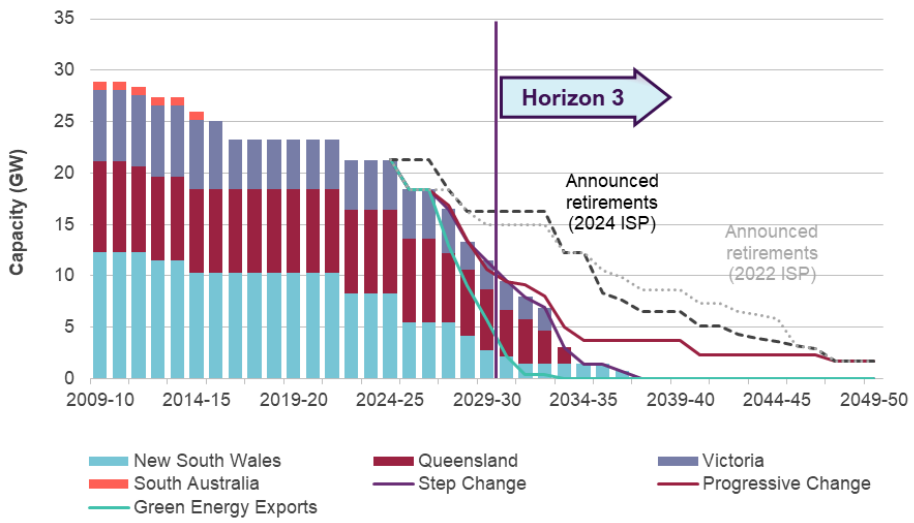
Preparation for 5+ years ahead:
Screening for transition points in the planning horizon. Growing understanding of low-emissions power system requirements.



Horizon 3 Activity Focus

Transition point planning

Screening for future operational transition points



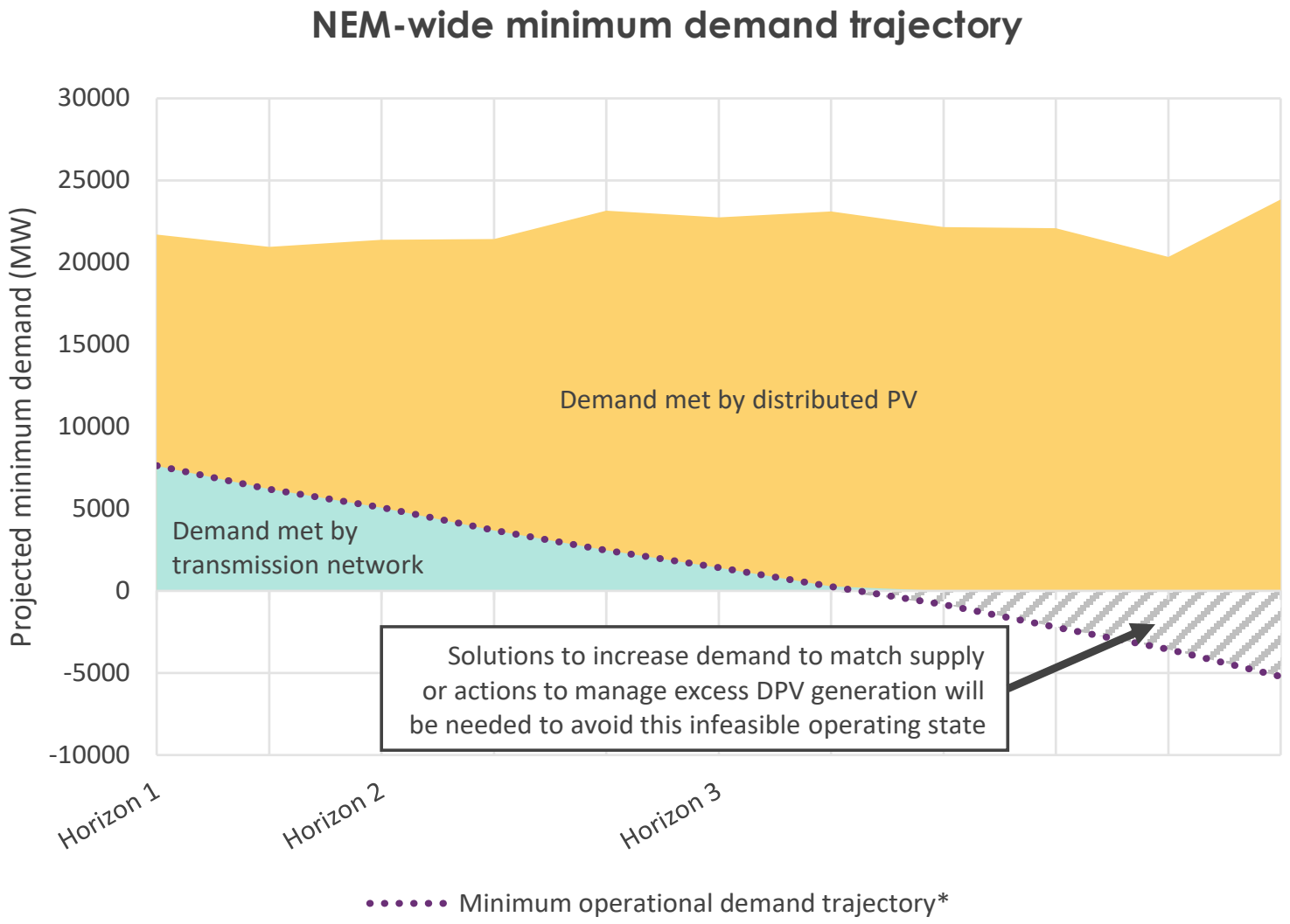
Defining capabilities and progressing understanding

Conducting power system studies for operation at up to 100% renewables contribution for periods of time

Planning for periods when rooftop solar could potentially meet 100% of NEM demand

Evolving system restart processes and resources

Minimum demand trajectory



Requirements to develop:

- Detailed power system studies
- Active market participation of CER (continuing from H1 and H2 activities)
- Cyber security standards and processes

Based on the 10-year forecast for minimum operational demand forecast (ESOO POE90)

AEMO seeks feedback for future iterations of the Transition Plan

Questions

1. What information should AEMO include in subsequent Transition Plans for System Security to help stakeholders navigate upcoming transition points?
2. Where is additional effort required to maintain system security while transitioning to higher contributions of renewables?
3. What potential Type 2 transitional services may support renewable contribution towards 100%?
4. How would you like to be engaged for the development and publication of the *Transition Plan for System Security*?

Interested parties are encouraged to submit feedback to these questions

to futureenergy@aemo.com.au by 1 March 2025.

Summary

How the Transition Plan for System Security fits into the broader suite of AEMO's responsibilities

Overview of the Transition Plan and some of its key findings

Request your feedback

Answer your initial questions

Q&A

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