National Electricity Market

December 2024

Transition Plan for System Security

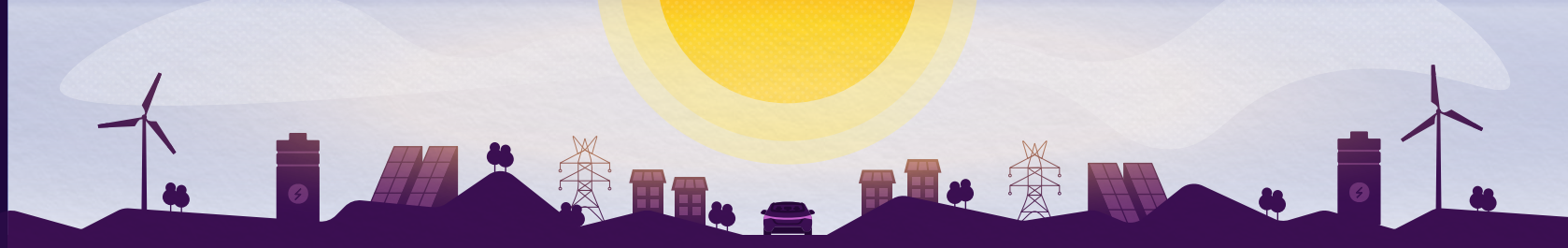
AEMO is planning how the power system can remain secure as it transitions to higher amounts of renewables.

The Transition Plan for System Security is a new annual publication by AEMO required under the National Electricity Rules to communicate a plan to maintain power system security in the National Electricity Market (NEM) through the transition to a low-emissions power system.

AEMO maintains power system security with the help of Network Service Providers (NSPs), market participants, and increasingly with the support of consumer energy resources (CER). The Transition Plan outlines the preparation required for key upcoming transition points that require operational changes in managing power system security. This includes planning ahead to accommodate the retirements of large synchronous generators and for periods when low underlying demand and high levels of rooftop solar output reduce the need for operation of plant that currently provide essential system services.

The Transition Plan outlines considerations for maintaining system security across three time horizons. This includes use of the new Transitional Services Framework with opportunities for Type 1 transitional services contracts to reduce the need for security directions and Type 2 transitional services contracts to trial new technologies. Actions are identified in each of these horizons to support near term changes in the power system while also supporting adequate preparation for the long-term energy transition.

AEMO



The Transition Plan for System Security outlines AEMO's current understanding of how to keep the power system secure through the energy transition to lower emissions.
It is updated annually covering preparation for upcoming transition points and outlining work to define capabilities and progress understanding across three time horizons with actions identified for each.

Actions are required now to prepare for each horizon

Now - 2 years | 2 - 5 years | 5+ years

Horizon 1

Now - 2 years: Planning for specific operational transition points, working within the constraints of today's system and available technology.

Transition point planning

80% | **FOCUS** | 20%

- Enabling operation of South Australia with one synchronous generating unit under certain conditions
- Managing approaching minimum system load events 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)

Now - 2 years | 2 - 5 years | 5+ years

Horizon 2

Preparation for 2 - 5 years ahead: Planning for transition points before they arise in operations. Building understanding and defining capabilities of services needed to manage future transition points.

Transition point planning

50% | **FOCUS** | 50%

- 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 rooftop solar contribution
- Potential contracting of Type 2 Transitional Services to demonstrate new technology capability

Now - 2 years | 2 - 5 years | 5+ years

Horizon 3

Preparation for 5+ years ahead: Screening for transition points in the planning horizon. Growing understanding of the requirements of a low-emissions power system. Outlining long lead-time activities to support investment in solutions to meet emerging needs.

Transition point planning

- Screening for future operational transition points

20% | **FOCUS** | 80%

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

To read the full report visit: aemo.com.au