2020

AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

Electricity Statement of Opportunities (ESOO)

AEMO's ESOO forecasts electricity supply reliability in the NEM over a 10-year period to help inform decision-making of market participants, investors and policymakers.

Reliability Standard

Outlined in the National Electricity Rules (NER), the reliability standard is set to ensure sufficient supply resources exist to meet 99.998% of electricity demanded by consumers each year.

Key findings

The ESOO observes an improved reliability outlook over the next five years driven by the rapid development of distributed and large-scale renewables, increased transmission capacity and reduced peak demand.

Variable renewable energy (VRE) continues to grow, with a forecast additional 4,300 MW of new capacity operational this summer compared to what was available last summer.

Distributed PV continues to boom with 10.4 GW of new capacity expected to be installed by 2030.

Experiences last summer, with extreme weather events and devastating bushfires, demonstrate the need for increased vigilance and planning to increase system resilience to minimise disruptions for consumers and businesses.

Impacts of COVID-19 are expected to dampen peak demand growth and energy consumption in the short term.

The uncertainty range of this ESOO has increased compared to previous years, due to the ongoing nature of the pandemic.

Unserved energy (USE) is not forecast to exceed the reliability standard in any NEM region over the first nine years of the outlook.

Daytime minimum operational demand is forecast to decline over the outlook period in all NEM regions, with reductions most evident in South Australia and Victoria.

As aging coal plants are expected to become less reliable over the later years in the outlook, forecast reliability decreases slightly.

Timely commissioning of planned new generation, storage and transmission investment will help address these risks.

Unserved energy (USE)

Is the amount of customer demand that cannot be supplied within a region due to a shortage of generation, demand-side participation or interconnector capacity. Under the reliability standard, expected USE must not be more than 0.002% of the total energy demanded in a given year. The interim reliability measure sets a maximum expected USE of 0.0006%.

Minimum demand is declining largely due to increasing contributions of distributed PV generation. Declining minimum demand could lead to issues with managing voltage, system strength, and inertia. To help address these challenges, AEMO is looking towards innovative solutions and technologies to enter the market.

Distributed photovoltaic (PV)

Distributed PV includes residential and commercial rooftop systems less than 100 kilowatts (KW) and other smaller non-scheduled PV capacity ranging between 100 kW and 30 Megawatts (MW) in the NEM

Peak time shift

The continuous uptake of distributed PV is expected to shift the timing of peak demand toward sunset.

Operational consumption

Total operational consumption in FY2020 was 180.9 terrawatt hours (TWh).

Residential

Residential consumption is forecast to decline due to continued growth of distributed PV and improvements in energy efficiency, partially offset by growth in electric vehicles.

by 2029-30
6,258GWh

Commercial and industrial

Commercial and industrial consumption is forecast to decline from increases in distributed PV and energy efficiency, partially offset by growth in electric vehicles.

by 2029-30
2,458 GWh

NEM fast facts

- The NEM incorporates around **40,000km** of transmission lines and cables.
- The NEM supplies about **200 TWh** of electricity to businesses and households each year.
- The NEM supplies approximately **ten million** customers.
- The NEM has approximately **9,980 MW** of distributed solar (as at May 2020). Collectively the largest generator in the NEM.

Fuel mix/changing generation mix

Existing scheduled and semi-scheduled capacity (MW) includes generation in service and in commission:

+ PROJECTS COMMITTED OR WELL ADVANCED TO BECOMING COMMITTED IN THE 2020 ESOO.

Coal	Gas + other	Wind	Large-scale Battery	Solar	Hydro	NEM (total)
23,086MW	11,497MW	6,180 MW	260 MW	3,583MW	7,637MW	52,243MW
+165 MW	+138 MW	+1,993 MW	+20 MW	+1,808 MW	+2,040 MW	+6,164 MW