MEDIA RELEASE

THURSDAY, 16 JUNE 2016

Flat forecasts for consumption from the grid

For the first time, the Australian Energy Market Operator (AEMO) has explored trends in household electricity usage as part of its *2016 National Electricity Forecasting Report* (NEFR), which also provides operational consumption and maximum and minimum demand forecasts for each National Electricity Market (NEM) region over a 20-year outlook period to 2035–36.

AEMO Managing Director and Chief Executive Officer Matt Zema said that while households today use more lighting, have larger televisions, more web-connected devices, larger capacity whitegoods, and more heating and cooling capacity, the growth in these services has not resulted in more electricity being consumed from the grid.

Mr Zema said that these new and improved appliances are replacing energy intensive appliances such as halogen lights, plasma televisions, desktop computers and stereos. Despite an expected population growth of 30 per cent, operational consumption across the NEM is forecast to remain flat over the 20-year outlook period.

“Operational consumption declined from 2009–10 to 2013–14 and has since increased moderately with the commencement of liquefied natural gas (LNG) exports from Queensland. Aggregate NEM operational consumption of electricity from the grid has fallen from 195,000 gigawatt hours (GWh) in 2009–10 to a forecast 183,000 GWh in 2015–16[1], a decline of six per cent,” said Mr Zema.

Queensland’s new export LNG sector is projected to increase the state’s electricity consumption by 8.3%, or 4,144 GWh, from 2015-16 levels, and then flatten after the next few years.

Mr Zema said that these flat forecasts are not because consumers are reducing the use of electric appliances, but rather a result of advancing energy technology and more consumers producing their own electricity from rooftop solar photovoltaic (PV), offsetting demand for electricity supplied from the grid.

“Projected energy efficiency savings by the year 2035–36 are expected to total around 27,000 GWh,” said Mr Zema. “This translates to an equivalent of close to 15 per cent of current grid-supplied electricity use.”

While rooftop solar PV installation is forecast to slow after 2030, electricity generated from rooftop solar PV is expected to increase from 5,600 GWh today to 25,000 GWh by 2035–36.

“This is close to four times today’s levels or an increase of almost 350 per cent, equivalent to 11 per cent of current electricity consumption from the grid. This is despite the fact that by 2035–36, the average solar panel age will then be 13 years old and running at a reduced generation efficiency.”

Mr Zema said the 2016 NEFR shows that the transformation underway within the energy sector has some way to go yet and will continue to change the demand profiles in the NEM beyond the outlook horizon.

“Maximum demand is forecast to remain flat across the outlook period, despite increased use and capacity of heating and air conditioning as growth is offset by energy efficiency and rooftop PV. In particular rooftop PV is changing power flows so the maximum electricity demand of the system is projected to occur later in the day when the sunshine is less intense,” added Mr Zema.

“However minimum demand for electricity is forecast to remain flat for five years and then reduce rapidly with forecast increases in rooftop PV, starting to shift minimum demand from overnight to near midday when the sun is strongest and overhead. This is already the case for South Australia.”

Mr Zema said that operational consumption is becoming increasingly separate from usage trends, as clearly evidenced in business sector forecasts.

[1] 2015–16 consumption is estimated on a weather-normalised basis, assuming long-run median climate outcomes.

"While electricity is still important for business growth, this growth appears to be increasingly decoupled from electricity consumption. This trend can be most clearly seen in some of Australia's industries, such as the services sector incorporating education and health care, and food and beverage manufacturing, which are expected to grow, despite using relatively less energy than traditional energy-intensive industries such as the automotive manufacturing industry, which is exiting the market," said Mr Zema.

Mr Zema said AEMO's challenge is to anticipate and plan for how the market will respond to these changing demand profiles and energy usage trends and how it might impact power system security and reliability.

"AEMO is working closely with the local and international energy community to monitor, analyse and report on changing demand profiles and energy usage trends in the NEM and how this compares globally," said Mr Zema. "We are also consulting with industry to explore possible impacts on the security and reliability of the grid as a result of these changes, and what actions if any, may need to be taken to maintain power system security."

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ABOUT AEMO

AEMO is responsible for operating Australia's largest gas and electricity markets and power systems, including the National Electricity Market and interconnected power system in Australia's eastern and south-eastern seaboard, and the Wholesale Electricity Market and power system in Western Australia.

AEMO also operates the Victorian Declared Wholesale Gas Market and the Victorian gas transmission system; the wholesale gas Short Term Trading Market hubs in Adelaide, Sydney and Brisbane; the Wallumbilla Gas Supply Hub in Queensland.

As Australia's independent energy markets and power systems operator, AEMO provides critical planning, forecasting and power systems security advice and services to deliver energy security for all Australians. For more information, head to www.aemo.com.au