UPDATE

NATIONAL ELECTRICITY FORECASTING REPORT

FOR THE NATIONAL ELECTRICITY MARKET

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AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

IMPORTANT NOTICE

Purpose

AEMO publishes the National Electricity Forecasting Report (NEFR) in connection with its national transmission planning and operational functions for the National Electricity Market, to provide MW demand and consumption forecasts for each region in the National Electricity Market.

This NEFR Update is published to give updated information about consumption and demand forecasts after significant new information became available.

This publication is based on information available to AEMO as at 31 October 2015, although AEMO has endeavoured to incorporate more recent information where practical.

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CHAPTER 1.   ABOUT THE NEFR UPDATE

The 2015 NEFR was published on 18 June 2015. It provides independent forecasts for operational consumption and maximum demand for each National Electricity Market (NEM) region over a 20-year outlook period (2014–15 to 2034–35).

AEMO considers that significant new information, which was not available for 2015 NEFR published in June, is now available regarding Queensland annual operational consumption and maximum demand using additional operational data, and regarding Tasmanian maximum demand using winter 2015 data (as Tasmania is a winter peaking region in the NEM).

CHAPTER 2. QUEENSLAND UPDATE

The forecast of annual operational consumption and maximum demand in Queensland has been updated to incorporate more recent information on electricity usage from Queensland's LNG projects.[1] This information was not available when the 2015 NEFR was developed and AEMO forecast future usage based on typical processing requirements. These forecasts have now been refined with the benefit of actual data and further information.

Updated data has been obtained from the following sources:

- Lewis Grey Advisory updated forecasts for gas and electricity used in Queensland LNG projects, as part of modelling for AEMO's 2015 National Gas Forecasting Report.[2]

- Further information has been obtained on LNG projects' upstream energy use through discussions with LNG project owners.

- A report released by APLNG through the regulatory approval process for construction of the Talinga Condabri Interconnect Pipeline provided additional information on upstream processing requirements.[3]

This additional data has led to a decrease in the estimates of grid-supplied electricity used in gas production by the LNG projects, lowering both maximum demand and annual energy consumption forecasts for the Queensland region as set out in the following sections.

2.1   Maximum demand update

The Queensland maximum demand forecasts have been updated to reflect revised estimates of electricity usage for gas compression in LNG projects. The notable changes are:

- Updated LNG peaks have decreased by 18% (210 MW) in winter and 22% (260 MW) in summer, compared to the June 2015 forecast. The difference between winter and summer is due to assumed seasonality in gas usage.[4]

- The updated 10% Probability of Exceedance (POE)[5] maximum demand forecasts show a delay in the ramp up of electricity demand, with demand beginning from a lower 2014–15 starting point (9,216 MW compared to 9,465 MW as calculated in the June 2015 report).

A short-term growth rate in Queensland maximum demand of 2.8% is still forecast. Table 1 compares 10% POE maximum demand forecasts for Queensland over the next ten years in the 2015 NEFR and this NEFR Update.[6]

Table 1   Queensland summer 10% POE for operational maximum demand

	2015 NEFR (MW)	2015 NEFR update (MW)
2014–15	9,465	9,216
2015–16	9,691	9,263
2016–17	10,130	9,832
2017–18	10,282	10,015
2018–19	10,366	10,103
2019–20	10,493	10,230
2020–21	10,630	10,366
2021–22	10,610	10,347
2022–23	10,767	10,505
2023–24	10,832	10,570

[1] Modelling of LNG project requirements in the 2015 NEFR was based on seven months of actual demand data from July 2014 to January 2015, and five months of forecast data. Lewis Grey Advisory, Projections of Gas and Electricity Used in LNG, 15 April 2015.
[2] Lewis Grey Advisory: Updated Projections of Gas and Electricity Used in LNG, 26 October 2015.
[3] Upstream Basis of Design, APLNG Upstream Project. Attachment 2 to APLNG application to construct Talinga Condabri Interconnect Pipeline. Available at http://www.dilgp.qld.gov.au/.
[4] Lewis Grey Advisory: Updated Projections of Gas and Electricity Used in LNG, 26 October 2015.
[5] A probability of exceedance (POE) refers to the likelihood that a maximum demand forecast will be met or exceeded. A 10% POE maximum demand projection is expected to be exceeded, on average, one year in 10.
[6] 20-year forecasts are available on AEMO's website: http://forecasting.aemo.com.au/.

	2015 NEFR (MW)	2015 NEFR update (MW)
2024–25	10,956	10,660

2.2 Annual operational consumption update

Queensland actual operational consumption in 2014–15 was 48,356 GWh. This was 67 GWh (0.1%) higher than was estimated in the 2015 NEFR.
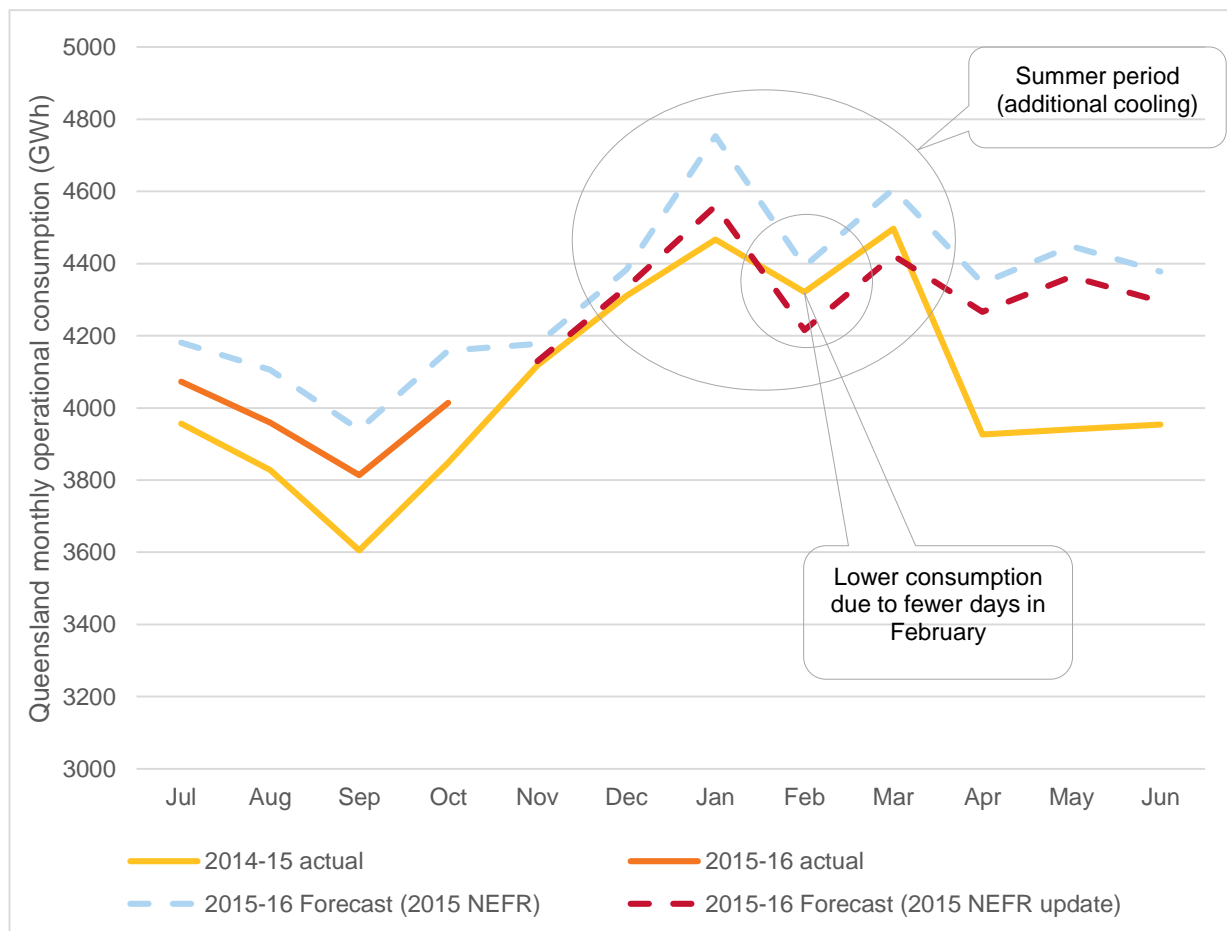
Revised estimates of the electricity use per unit of gas produced are the major driver for a slower projected increase in consumption for the LNG projects.

With this updated data, the medium scenario forecast results in:

- A projected increase of 5.0% (2,414 GWh) in operational consumption between 2014–15 and 2015–16. This is 2.4% less than the increase forecast in the June 2015 NEFR.

- A projected average annual growth rate of 4.4% in operational consumption in the short-term (2014–15 to 2017–18). This 1.2% less than the increase forecast in the June 2015 NEFR.

Figure 1 compares Queensland forecasts for 2015–16 between the June 2015 NEFR and 2015 NEFR Update relative to the previous year's 2014–15 actuals, on a month by month basis.

Figure 1 Comparison: Qld actual, NEFR, and NEFR Update consumption forecasts, 2015–16

CHAPTER 3.   TASMANIAN UPDATE

3.1.1   Maximum demand

Tasmania's maximum demand is expected to occur in winter. The actual 2015 maximum demand was 1,690 MW and occurred at 6:30 p.m. on 3 August 2015.

AEMO has re-run the maximum demand model using the actual demand data from the 2015 winter. The modelling revealed no notable changes to the Tasmania maximum demand forecasts in the 2015 NEFR. A summary of the findings are as follows:

- The updated short-term maximum demand forecasts are flat, with maximum demand projected to fall by 43 MW from 2015 to 2017, which is an annual average rate of only -0.8%. This is a minor change from the June 2015 NEFR forecast of maximum demand, when an increase of 0.1% was forecast in this period.

- Beyond 2018, the longer term winter maximum demand forecasts remain relatively flat consistent with the June 2015 NEFR, as shown in Table 2.[7]

Table 2   Tasmanian (winter) 10% POE for operational maximum demand

	2015 NEFR (MW)	2015 NEFR update (MW)
2015	1,755	1,811
2016	1,766	1,765
2017	1,769	1,763
2018	1,762	1,768
2019	1,762	1,765
2020	1,769	1,773
2021	1,759	1,773
2022	1,763	1,771
2023	1,780	1,775
2024	1,769	1,778
2025	1,766	1,771

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[7] 20-year forecasts are available on AEMO's website: http://forecasting.aemo.com.au/.

CHAPTER 4. NEM-WIDE OPERATIONAL CONSUMPTION UPDATE

The NEM-wide operational consumption for 2014–15 was 180,466 GWh. This was 76 GWh (0.04%) higher than was estimated in the 2015 NEFR. Revised growth rates are based on 12 months of actual data for 2014–15, rather than 6 months used for the June 2015 NEFR forecasts.

Changes to the annual operational consumption forecasts for Queensland affect NEM-wide forecasts as follows:

- The operational consumption forecast for 2015–16 is 0.6% (1,101 GWh) lower than in the June 2015 NEFR.
- The forecast short-term average annual growth rate is 1.8%, compared to 2.1% in the June 2015 NEFR.

Table 3 shows NEM aggregated and regional operational consumption forecasts (medium scenario).[8] Updates have been made to the Queensland and NEM annual consumption forecasts for the revisions described in this report.

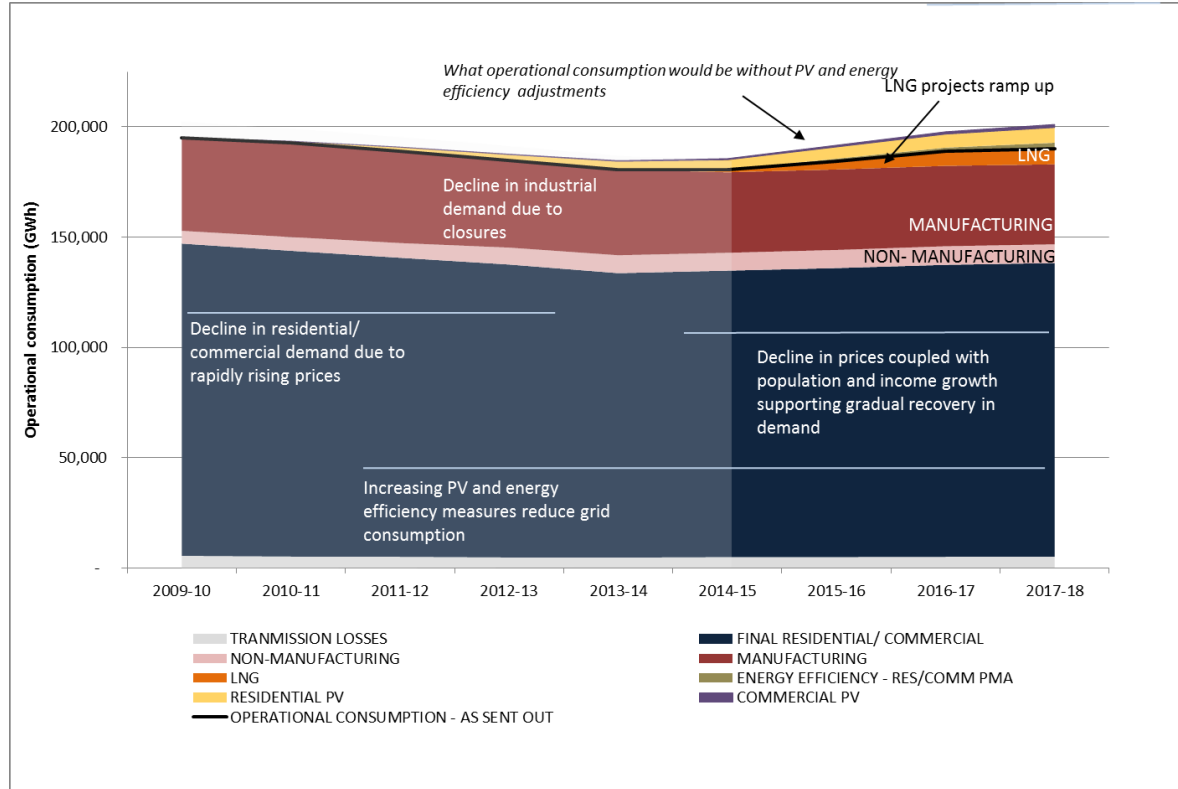**Table 3   Operational consumption NEM-wide 10-year forecast**

	NEM (GWh)	Qld (GWh)	NSW (GWh)	SA (GWh)	Vic (GWh)	TAS (GWh)
2014–15	180,466	48,356	67,145	12,468	42,574	9,924
2015–16	184,241	50,769	67,156	12,728	43,261	10,327
2016–17	188,887	54,194	67,755	12,922	43,672	10,344
2017–18	190,178	54,979	68,151	12,797	43,963	10,289
2018–19	191,301	55,445	68,591	12,712	44,293	10,260
2019–20	192,037	55,420	69,103	12,606	44,677	10,232
2020–21	193,121	55,466	70,010	12,493	44,942	10,210
2021–22	193,243	55,054	70,892	12,275	44,912	10,110
2022–23	194,481	55,281	71,811	12,171	45,067	10,151
2023–24	196,123	55,645	72,859	12,106	45,381	10,133
2024–25	197,545	55,862	73,878	12,034	45,680	10,091

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[8] 20-year forecasts are available on AEMO's website: http://forecasting.aemo.com.au/.

Figure 2 shows a breakdown of forecast operational maximum demand for the NEM to 2017–18 by key components, revised based on updated data.

Figure 2   NEM operational consumption by key component to 2017–18[9]