30 November 2018

Andrew Turley, Manager, Integrated Energy Systems
National Electricity Market Demand Forecasting Methodology
Australian Energy Market Operator
GPO Box 2008
MELBOURNE VIC 3001

Submitted electronically: energy.forecasting@aemo.com.au

Dear Mr Turley,

AEMO – National Electricity Market Demand Forecasting Methodology Consultation

EnergyAustralia is one of Australia's largest energy companies with around 2.6 million electricity and gas accounts in NSW, Victoria, Queensland, South Australia, and the Australian Capital Territory. We also own, contract and operate an energy generation portfolio across Australia, including coal, gas, battery storage and wind assets with control of over 4,500MW of generation in the National Electricity Market (NEM).

We welcome the opportunity to comment on AEMO's consultation on the National Electricity Market Demand Forecasting Methodology (the paper). We thank AEMO for publishing the paper and consulting stakeholders for feedback. This transparency is greatly welcomed, and we look forward to continuing this collaborative approach.

Our submission addresses the questions posed in the paper.

If you would like to discuss this submission, please contact me on 03 8628 1630 or Andrew.Godfrey@energyaustralia.com.au.

Regards

Andrew Godfrey

Industry Regulation Lead

Question 1: *Does it (the paper) help improve transparency of AEMO's approach to forecasting annual consumption, maximum demand and minimum demand in the NEM? What more could practically be done to ensure the forecasting process is well understood, and build greater confidence in the forecasts for decision-makers?*

EnergyAustralia's response to question 1:

- The articulation of the adopted methodology improves the transparency greatly compared to other AEMO forecasting publications. These other publications have generally focused more on the modelling outcome.

- Having a forecast input accuracy/review would aid in building greater confidence in the forecasts over the long term. The Forecast Accuracy Report[1] reviews the performance of the regional annual consumption and max demand. While we recognise that it is difficult to attribute inaccuracies to specific underlying drivers, information such as this would improve stakeholders understanding of the supply-demand dynamics given the aggregated nature of the demand data. Separately we believe there is value in reviewing accuracy at the inputs level. For example, if a TNSP or DNSP consumption forecast has a consistent bias, then the modelling process could make some adjustment (or at least make a note of it).

- Forecasting accuracy should not just be based on actuals vs. the latest forecast but should also include comparison to different versions of forecast. This gives stakeholders an understanding of forecast accuracy for different forecasting years. For example, AEMO should report not only on the most recent forecast but also include Y+1 and Y+2 (e.g. forecasts for 2017 created in both 2016, 2015, 2014 respectively). This would allow stakeholders to gain an understanding of historically how AEMO's forecasts have changed.

- Finally, we would like to see a further breakdown of maximum demand Probability of Exceedance (POE) levels by segment. For example, split residential and business separately.

Question 2: *Does it (the paper) adequately explain and justify the choice of inputs and drivers used for each forecast component?*

EnergyAustralia's response to question 2:

- Choice of drivers is well explained; however, more detail could be included on the choice of input assumptions. What data has AEMO used to derive the assumptions? For example, how does AEMO test the accuracy of its back calculated rooftop PV generation? How does AEMO 'estimate' the underlying consumption by removing impact of rooftop PV generation? Is there any justification for the 20% assumption on solar PV rebound effect and is there any plan to back-test this assumption?

Question 3: *Is the level of detail provided sufficient to allow you to understand the methodologies applied?*

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[1] https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/National-Electricity-Forecasting-Report

- *Is the annual energy consumption forecasting approach adequately explained?*

- *Are the maximum and minimum demand forecasting approaches adequately explained? If not, what additional information/explanations are required?*

EnergyAustralia's response to question 3:

- Section 5.5. POE – Further clarity would be beneficial, is an annual growth index applied to every single half hour of every simulation? Is this AEMO's intent? If so, why apply the annual growth index at half hourly level, and not just to the POE level of a standard year? Further, many of the mentioned 'economic conditions' (e.g. retail price) are actually variables. What consideration will AEMO give to these variables?

Question 4: *Does it (the paper) adequately capture any recent issues or influences affecting each forecast component? Are there any data quality or data latency issues with the data sources used?*

EnergyAustralia's response to question 4:

- Currently there is significant uncertainty on the impact that rooftop PV and energy storage systems will have on future demand. Therefore, the sensitivity of the model to these inputs is of great interest to EnergyAustralia. Beyond detailing the CSIRO modelled forecast we would like AEMO to provide more detailed data to allow stakeholders to perform further sensitivity/scenario analysis.

- The CSIRO modelling Energy Storage Systems considers all the systems are acting to minimise costs at the individual household/commercial level without concern for the aggregate outcome. Going forward there is a distinct possibility that over time as technology improves this may not hold true. For example, AEMO have just released a consultation on Virtual Power Plant (VPP) demonstrations.[2] As such, we would appreciate AEMO completing modelling on a centrally-coordinated behaviour and make it possible for stakeholders to run scenarios on the uptake of such systems.

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[2] https://www.aemo.com.au/Stakeholder-Consultation/Consultations/Virtual-Power-Plant-Demonstrations?Convenor=AEMO%20NEM