

23 August 2024

Andrew Turley
Group Manager, Forecasting
Australian Energy Market Operator (AEMO)

Lodged via email: electricity.forecasting@aemo.com.au

Dear Mr Turley,

2024 ELECTRICITY DEMAND FORECASTING METHODOLOGY CONSULTATION

Origin Energy Limited (Origin) welcomes the opportunity to provide input on AEMO's review of its electricity demand forecasting methodology.

Origin supports the intention of the changes presented in the consultation paper which more accurately capture the electricity demand dynamics of the industry. The following comments and suggestions are provided to help support this intention and strengthen forecasting outcomes.

- Spatial forecasting/Weather and climate: Developing more granular spatial forecasts will help capture localised parameters that drive electricity demand dynamics. AEMO should consider reflecting regionally distinct parameters such as load composition and population density through individual sub-regional forecasts. Additionally, given the dependence of demand on weather, it will be important to select weather stations that are demographically representative. By including these sub-regional considerations, the demand forecasting approach will be more consistent with the Integrated System Plan (ISP) methodology.
- Large industrial load (LIL) consumption forecasting: The proposed changes to the LIL demand surveys and inclusion of 'anticipated' loads will better capture LIL demand dynamics. This approach would also align with how anticipated generation developments are considered in the forecasting methodology. The forecasting approach should, however, use demand surveys for short term forecasting only. Modelling that considers distinct economic parameters within different scenario settings may be more appropriate to provide accurate and robust longer term LIL forecasts.
- Business mass market (BMM) consumption forecasting: Data centres are likely to be a significant driver of demand growth, and Origin supports the proposal to forecast it as a separate segment within the BMM model. As with LILs, data centre demand surveys should only be used for short term forecasting. Longer-term forecasts should employ modelling with distinct economic parameters within different scenario settings.
- Residential annual consumption: Origin suggests there may be improvements to residential consumption modelling if a more diverse range of weather data sources is incorporated, particularly irradiance. Including such factors would likely reduce variable biases such as the significant annual differences in irradiance due to La Nina/El Nino.
- Small non-scheduled generation, losses and auxiliary loads: AEMO suggests using a recent network utilisation forecast, from the ISP for example, to model losses. This could have unintended consequences, however, as ISP forecasting includes various potential future network augmentations and their effects on losses are not well-defined. Inconsistencies in loss forecasting may also be introduced through the different augmentation assumptions used in each ISP scenario. Loss uncertainties related to future network augmentations and generation

capacity should be carefully considered if this approach is taken. Alternatively, AEMO could retain the existing approach of forecasting distribution and transmission losses based on the most recent year of actual losses.

- Rooftop PV and energy storage: Origin welcomes efforts to increase transparency in AEMO's, and its consultant's, approach to forecasting PV, battery and VPP uptake and operation.
- Half-hourly demand traces: Origin generally supports the intention of incorporating synthetic weather years into the reference years used to create demand traces. As noted in AEMO's 2023 Forecast Accuracy Report¹, however, it will be essential to transparently validate the appropriateness of synthetic weather traces relative to those purely based on historical data. How the increasingly unpredictable and extreme weather events that are being more frequently observed will be incorporated into synthetic weather years will need to be carefully considered. Origin suggests consulting further on the methodology used to create synthetic weather years and the validation of output through a forum such as AEMO's Forecasting Reference Group.
- Maximum and minimum demand: Origin welcomes the maximum and minimum demand forecasting model improvements made recently and presented in the Forecasting Reference Group (FRG) meeting in April and June 2024. The methodology should provide more detail on how the half-hourly model and Generalised Extreme Values (GEV) model are integrated to produce long term 30-year forecasts. This would help stakeholders understand and reconcile the output.

If you wish to discuss any aspect of this submission further, please contact me at Megan.Findlay@originenergy.com.au or by phone, on +61 434 934 793.

Yours sincerely,



Sarah-Jane Derby
Senior Manager, Regulatory Policy

¹ AEMO, 2023 Forecast Accuracy Report, https://aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/accuracy-report/2023-forecast-accuracy-report.pdf?la=en