

# DRAFT MINUTES – Forecasting Reference Group (FRG)

MEETING: #8

DATE: Tuesday 12 June 2018

CONTACT: [Energy.Forecasting@aemo.com.au](mailto:Energy.Forecasting@aemo.com.au)

## ATTENDEES:

NAME	ORGANISATION	LOCATION
Eli Walker	AEMO	Brisbane
Jason West	AEMO	Brisbane
Magnus Hindsberger	AEMO	Brisbane
Steve Meiklejohn	Stanwell	Brisbane
Nicola Falcon	AEMO	Melbourne
Tania McIntyre (Chair)	AEMO	Melbourne
Daniel Guppy	AEMO	Melbourne
Greg Staib	AEMO	Melbourne
Vivian Mai	AEMO	Melbourne
Hua Min Situ	AEMO	Melbourne
Adrian Grantham	AEMO	Melbourne
Ben Skinner	Australian Energy Council	Melbourne
Sujeewa Vithana	United Energy	Melbourne
Richard Paprzycki	Energy Australia	Melbourne
Panos Priftakis	Snowy Hydro	Melbourne
John Sligar	Silgar and Associates	Sydney
Dee Butler	Australian Energy Regulator	Adelaide
Rina Belsen	South Australian Government	Adelaide
Abe Abdallah	ESCOSA	Adelaide
Jacqueline Pham	Department of Environment and Energy	Teleconference
Glen Whitehead	Department of Environment and Energy	Teleconference
<del>Brett</del> Brent Hudson	Essential Energy	Teleconference
Prasad Tadipatri	NSW Planning and Environment	Teleconference
Amjad Adil	NSW Planning and Environment	Teleconference
Franki Lee	Endeavour Energy	Teleconference
Paul Graham	CSIRO	Teleconference
Lucy Cooper	ARENA	Teleconference
Husam El-Tarifi	BIS Oxford Economics	Teleconference
Liam Ryan	NSW Planning and Environment	Teleconference
Samantha Kristy	NSW Planning and Environment	Teleconference
Daniel Sim	AUSGRID	Teleconference
James Googan	Origin	Teleconference
Jennifer Brownie	Queensland Electricity Users Network	Teleconference
Gabriele Sartori	EUAA	Teleconference
Jonathan Dennis	Powerlink Queensland	Teleconference
Shane Branker	Energy Queensland	Teleconference
Brad Parker	ElectraNet	Teleconference
<a href="#">Damian Dwyer</a>	<a href="#">Appea</a>	<a href="#">Teleconference</a>
Bryn Williams	SA Power Networks	Teleconference
Cherry Wynn	TasNetworks	Teleconference

NAME	ORGANISATION	LOCATION
Daniel Fracalossi	TasNetworks	Teleconference
Herath Samarakoon	TasNetworks	Teleconference
Bray Scott	Hydro Tasmania	Teleconference
Khai Change	Energy Australia	Teleconference
Maya Muthuswamy	Engie	Teleconference
Nick <del>Cimdins</del> Cimdins	Ausnet Services	Teleconference
David Headbury	Major Energy Users	Teleconference

### 1. Welcome and Introductions

Tania McIntyre (AEMO) welcomed attendees to the June 2018 Forecasting Reference Group (FRG) meeting.

### 2. Previous minutes and action items

The meeting minutes from the 29 May 2018 FRG were accepted by attendees and finalised. Tania McIntyre (AEMO) provided updates on the actions register which are appended to these meeting minutes.

Special reference was given to the previous action 5.3.1, in relation to the Connection Point Forecast updates. No feedback has been provided by stakeholders in relation to this action so the due by date has been extended until the next FRG meeting in July 2018.

### 3. Forward Plan for FRG

Tania McIntyre (AEMO) presented the forward plan which highlighted proposed agenda items until the September FRG meeting. Participants were encouraged to email any suggestions or queries regarding the forward plan to [energy.forecasting@aemo.com.au](mailto:energy.forecasting@aemo.com.au)

A question was raised in regard to the scope of the FRG content going forward. Nicola Falcon (AEMO) advised that AEMO aims to create a transparent and collaborative environment for open discussions on the methodology and inputs employed in AEMO's medium to long term forecasts. Matters that relate to transmission planning, short-term or near-to-real-time forecast are to be covered by alternate reference groups.

### 4. Draft Final Electricity Demand Forecasts for Electricity Statement of Opportunities (ESOO) 2018

Greg Staib (AEMO) presented the *ESOO18 Forecast Update* slides (included in the meeting pack), providing an overview of the current methodology and assumptions used in the upcoming forecasts. This information was supported with an overview of the data sources, along with figures detailing the NEM and regional annual forecasts.

David Headberry (Major Energy Users Inc.) stated his view of the criticality to ensure forecasts by AEMO are accurate given companies may be financially penalised under the reliability clause of the National Electricity Guarantee. Nicola Falcon (AEMO) noted that the scope of

the FRG is to enable open discussion with the industry and AEMO aims to address any specific concerns or improvements relating to forecasts in these forums. In the upcoming 26 July 2018 FRG, current forecasting performance metrics will be assessed and discussion around future work and improvements will take place.

Discussion points relating to methodology and drivers included:

- Panos Priftakis (Snowy Hydro) queried whether the other non-scheduled generation (ONSG) forecast is from the CSIRO. Greg Staib (AEMO) noted that whilst the PV forecast component is from the CSIRO, the non-PV non-scheduled generation forecast (ONSG) is completed by AEMO.
- Nick Cimdins (Ausnet Services) queried whether Demand Side Participation (DSP) is considered in the forecast. Greg Staib (AEMO) and Daniel Guppy (AEMO) confirmed that both annual consumption and maximum demand forecasts are assumed to have no DSP occurring, with the DSP forecast separately. Magnus Hindsberger (AEMO) noted that information about DSP will be discussed in the 26 July 2018 FRG.
- Liam Ryan (NSW Planning and Environment) enquired as to the key variables driving the change in forecasts compared with the last National Electricity Forecasting Report. Greg Staib (AEMO) responded that the change is not driven by any one input but is a net effect of many component updates. These include (but are not limited to) new connection forecast, new energy efficiency figures, new battery data, new PV data and new electric vehicle forecasts.
- Bryn Williams (SA Power Networks) sought further clarification on the battery storage aggregation scenarios provided in the assumptions. These show that 90% battery storage aggregation by 2050 is associated with the slow change scenario and 10% is associated with the fast change scenario. Greg Staib (AEMO) advised that the scenarios used in the ESOO are consistent with the scenarios and assumptions that are implemented in the Integrated System Plan (ISP). The ISP assumptions book is provided with the [hyperlink](#) in at the bottom of slide six. Nicola Falcon (AEMO) added that there was previously extensive consultation on scenarios for the ISP. One of the motivations of the ISP scenarios was to find different plausible combinations of inputs which would put more or less operational demand on the grid, influencing decisions made on transmission investment. These scenarios are to be carried forward to other related forecasting reports such as the ESOO.
- Jacqueline Pham (Department of Environment and Energy) raised a question regarding assumptions in relation to government policy assumptions. Greg Staib (AEMO) conveyed that several current state based policies concerning energy efficiency outcomes were included. Nicola Falcon (AEMO) also added that the renewable and energy efficiency schemes/policies are consistent with the ISP assumptions. It was noted that a carbon price is not in the forecast.

- Jennifer Brownie (QLD Electricity Users Network) queried how AEMO captures information from commercial users as the surveys and interviews conducted by AEMO are weighted to the large industrial consumers. Greg Staib (AEMO) and Daniel Guppy (AEMO) advised that the information regarding commercial users are captured in the inputs and the econometric methodology used to create the forecast. Greg Staib (AEMO) also noted that components forecasts such as NMI consumption, PV uptake and electric vehicle adoption consider the small business sector directly. Jennifer Brownie (QLD Electricity Users Network) raised a concern that although large industrial loads may represent a large portion of electricity consumption, these users do not necessarily contribute the same proportions to the revenue of a network service provider. Greg Staib (AEMO) advised that the scope of ESOO is at the aggregate level of NEM and region forecasts, nonetheless, the insight shared by Jennifer has been taken on notice for future work.

Greg Staib (AEMO) proceeded to present the Annual Energy Forecasts for the NEM.

Discussion points relating to annual draft forecasts included:

- Richard Paprzycki (Energy Australia) queried the wedge change in QLD for the weak scenario compared with the currently published forecast. It was also questioned if this was the result of price sensitivity or economic growth. Greg Staib (AEMO) explained that the discrete changes in the forecast usually result from the forecast of large industrial users of electricity (which are surveyed and forecast separately). Each load differs in response to economic conditions and price sensitivity. The net result is that the forecast will have discrete steps that may be positive or negative at varying points.
- Stakeholders sought clarification as to why this year's forecast is lower than the March 2018 update forecast for Tasmania. Greg Staib (AEMO) explained that it is a net effect of the consideration of many new updates in the drivers. However, Greg Staib (AEMO) will document and provide a detailed explanation in the report for the difference in this year forecast compared to the March update in Tasmania.  
(Action Item 8.4.1)
- Jennifer Brownie (QLD Electricity Users Network) questioned to what extent AEMO accounts for businesses in drought conditions in the NSW and QLD regional forecast. Further adding that some businesses have been in drought for four years and this issue should be reflected in the forecast. Nicola Falcon (AEMO) advised that a regional, long term forecasts should not assume the current drought conditions to persist. Magnus Hindsberger (AEMO) added that the starting point would account for the current electricity consumption usage (and include any impact from the current drought), as would the economic forecast (one of the drivers of AEMO's forecast).

- ~~Nick Cimdins~~ Daniel Sim (~~Ausnet Services~~ AUSGRID) sought clarification as to why climate change and customer behaviour impacts on the forecast are labelled as “reduction”. Greg Staib (AEMO) explained as follows:
  - In regard to climate change, the climate change may cause “peakier” max demand in summer due to higher temperature. However, at the annual energy consumption level, the net effect of climate change is negative. The overall heating load reduction in winter, due to milder temperatures, is expected to be greater than the increase in electricity consumption in summer.
  - In reference to the customer behaviour wedge on the NEM consumption figure, it is the price elasticity effect. This price elasticity effect is estimated separately for base, heating and cooling loads. The apportionment of consumption reduction that is applied for this component, is considered against options available for consumers to hedge against changing energy prices include energy efficiency appliances, rooftop PV, batteries, and retail switching. Nicola Falcon (AEMO) also mentioned that several stakeholders have been discussing the asymmetry of price elasticity – particularly with prices now potentially decreasing - and suggested this could be an item for future workshopping.
- A question was raised as to whether the lower electric vehicle (EV) and battery update forecast in this year forecast were driven by cost assumptions. Greg Staib (AEMO) responded that last year’s higher forecasts for EV and battery uptake were in part due to the higher price forecasts that had been supplied by a consultant. Paul Graham (CSIRO) also noted that this year’s EV forecast has different fluctuation points in the long term based on the development of charging infrastructure. Furthermore, the battery uptake forecast is dependent on the PV forecast which are linked strongly with the changes in government subsidies the short term.

Daniel Guppy (AEMO) discussed the *NEM Draft Max Demand (MD) Forecast* section in the ESOO18 Forecast Update slides (included in the meeting pack).

Discussion points relating to maximum demand forecast included:

- Richard Paprzycki (Energy Australia) queried whether the winter MD is higher than the summer MD for NSW. Daniel Guppy (AEMO) will check and address this question. (Action Item 8.4.2)
- Ben Skinner (Australian Energy Council) sought explanation as to the step-up of MD in SA. Daniel Guppy (AEMO) responded that it is primarily due to the large industrial load assumptions in the early to mid-2020s as well as a much lower battery forecast.
- Steve Meiklejohn (Stanwell) raised a question on how AEMO calibrate the MD forecast to recent observations of MD. Using QLD as an example, he expressed the

concern that the QLD MD appears to be quite low at POE10 based on his observation of the recent MD record in QLD. Daniel Guppy (AEMO) addressed the concern by pointing out that the QLD MD forecast presented in the slide pack is exclusive of LNG. Removing the impact of LNG, MD in QLD would be very flat over time.

- Jennifer Brownie (QLD Electricity Users Network) queried how the time-of-use tariffs are reflected in AEMO's MD forecast. Daniel Guppy (AEMO) responded that the current MD forecast reflect the demand consumed at the convenience and need of consumers, not constrained by price response or DSP. Greg Staib (AEMO) also added that being in line with the ISP, the tariff type (time-of-use or peak only) is not considered but battery utilisation is considered in the current MD forecast.

## **5. Feedback on Bureau of Meteorology Collaboration for Maximum Demand Forecasting Incorporating Climate Change**

Daniel Guppy (AEMO) presented the *Maximum Demand Forecasting Incorporating Climate Change* slides (included in the meeting pack).

Daniel Guppy (AEMO) confirmed that the temperature increases due to climate change assumption were included in the MD forecasts, in response to the Liam Ryan's (NSW Planning and Environment) query.

## **6. Probability of Exceedance Demand and Weightings to be used in Electricity Statement of Opportunities**

Magnus Hindsberger (AEMO) presented the *Maximum Demand POE forecasts and weightings for assessing USE in ESOO* slides (included in the meeting pack). The methodology behind the original determination of POE weightings was investigated and two approaches going forward were presented.

Dee Butler (AER) queried whether MD POEs are normally distributed. Magnus Hindsberger (AEMO) noted that he was yet to test if the assumption of normality holds.

Richard Paprzycki (Energy Australia) queried whether more POE's could be provided with the new approach proposed by AEMO. Nicola Falcon (AEMO) confirmed that since computational advances have been made in recent years, AEMO was in a position to investigate its feasibility.

Ben Skinner (Australian Energy Council) asked why the 90% POE was not assumed to be zero rather than lumping the probabilities of 90% POE and 50% POE together. Magnus Hindsberger (AEMO) responded that an alternative view is USE under 90% POE and 50% POE will be similar (and close to zero) and could be aggregated into one block combining the weightings (USE can also occur during lower demand periods, such as 90% POE, due to unavailability of plant, and therefore not necessarily zero). Magnus added that this would be addressed as part of this review. Nicola Falcon (AEMO) added that the materiality and

computational expense plays a large role in deciding whether there is value in simulating 90POE demand for reliability assessments, or simply making an assumption of zero USE.

## **7. Other Business**

No other business was raised at the meeting.

## **8. Meeting Close**

The next FRG meeting is scheduled for Thursday 26 July 2018.

### Forecasting Reference Group (FRG) Actions Items

Item	Date Raised	Topic	Action required	Responsible	By	Status
8.4.1	12 June 2018	Tasmanian Annual Energy Forecast	AEMO to provide detailed explanation as to the difference between the March 2018 and the current Annual Energy Forecast for Tasmania.	Greg Staib (AEMO)	August (details will be provided as part of publication)	<b>Completed</b> Individual Regional sessions have now taken place
8.4.2	12 June 2018	NSW Seasonal MD	AEMO to advise whether MD tends to be greater in summer or winter for NSW.	Daniel Guppy (AEMO)	26 July	<b>Completed</b> NSW is expected to continue to be summer peaking for the remainder of the forecast horizon.
5.3.1	27 Mar 2018	Connection Point Forecast Updates	FRG Participants to identify issues or areas of concern in their business. A list will be collated and discussed in the coming meetings.  29/5 No feedback received to date.	FRG Participants	26 July	<b>CLOSED</b> No further stakeholder feedback received