DRAFT MINUTES – Forecasting Reference Group (FRG)

MEETING: #4

DATE: WEDNESDAY 24 APRIL 2019

CONTACT: Energy.Forecasting@aemo.com.au

ATTENDEES:

Attendee	Company	Site
Kelly Burnhardt	SAPN	Adelaide
Marike de Waard	ACIL Allen Consulting	Brisbane
Mitchell Bishop	ACIL Allen Consulting	Brisbane
Sam	AEC	Brisbane
Andrew Turley	AEMO	Brisbane
Eli Pack	AEMO	Brisbane
Nick Culpitt	AEMO	Brisbane
Nicola Falcon	AEMO	Brisbane
Siobhan Attwood	AEMO	Brisbane
Alex Driscoll	Edge Energy Services	Brisbane
Ben Skinner	AEC	Melbourne
Ali Habibi Khalaj	AEMO	Melbourne
Ben Jones	AEMO	Melbourne
Craig Price	AEMO	Melbourne
Dean Soste	AEMO	Melbourne
Debborah Marsh	AEMO	Melbourne
Greg Staib	AEMO	Melbourne
Linton Corbet	AEMO	Melbourne
Vivian Mai	AEMO	Melbourne
Alessio Bonato	AGL	Melbourne
Jacqui Bridge	AusNet Services	Melbourne
Nick Cimdins	AusNet Services	Melbourne
Michelle Shek	Energy Australia	Melbourne
Stephen James	AEMO	Sydney
John Sligar	Sligar & Associates	Sydney
Bella Pennington	AEMO	Teleconference
Cristina Rocca	AEMO	Teleconference
Daniel Guppy	AEMO	Teleconference
Luke Falla	AEMO	Teleconference
Neil Gascoigne	Citipower	Teleconference
Peter Wormald	Delta Electricity	Teleconference
Prem Panickar	Department of Environment, Land, Water and Planning	Teleconference
Shane McCarthy	EDL Energy	Teleconference
Brad Harrison	Electranet	Teleconference
Franki Lee	Endeavour Energy	Teleconference
Andrew Godfrey	Energy Australia	Teleconference

Florie Fong	Energy Australia	Teleconference
David Havyatt	Energy Consumers Australia	Teleconference
Craig Pollard	Energy Queensland	Teleconference
Mark Grenning	Energy Users Association of Australia	Teleconference
David Hoch	Engie	Teleconference
Ron Logan	ERM Power	Teleconference
David Headberry	Major Energy Users	Teleconference
Liam Ryan	NSW Department of Planning & Environment	Teleconference
Sharon Young	NSW Department of Planning & Environment	Teleconference
Alex Fattal	Origin Energy	Teleconference
David Xu	Origin Energy	Teleconference
Jennifer Brownie	Queensland Electricity Users Network	Teleconference
Marino Bolzon	SA Government	Teleconference
Philip Harrington	Strategy Policy Research	Teleconference
Sujeewa Vithana	United Energy	Teleconference

1. Welcome and introductions

Andrew Turley (AEMO) welcomed everyone to the 24 April FRG meeting.

2. Previous minutes, action items and forward plan

The meeting minutes from the 27 March 2019 FRG were accepted by attendees and finalised.

Ron Logan (ERM Power) clarified his question posed to the reference group at the previous FRG meeting was around whether the demand outcomes that occurred in Queensland on 13 February fell within the possible range of outcomes in AEMO's forecast, as opposed to being consistent with the forecast. The previous minutes have been amended to reflect this clarification.

Andrew Turley (AEMO) responded to action item 3.3.1, stating that the consultant will be disclosed when the paper is published.

3. Update on BOM/CSIRO collaborations

Ben Jones (AEMO) presented on the ongoing collaborations with the Bureau of Meterology (BOM) and CSIRO, with particular focus on the Electricity Sector Climate Information (ESCI) project. The reference group was updated on project deliverables making it in time for this year's Electricity Statement of Opportunities (ESOO), as well as further enhancements scheduled for later in the three-year project timeline.

Key topics raised by stakeholders during this section included:

- Craig Price (AEMO) asked how to register for updates and participation in the ESCI project. Ben Jones (AEMO) replied that anyone interested in further communication with regards to the project should contact the Energy Forecasting mailbox (energy.forecasting@aemo.com.au).
- David Havyatt (Energy Consumers Australia) referred to slide 5, asking whether finer spatial weather analysis has assisted with examining storm exposure on transmission lines. Ben Jones (AEMO) stated that a main goal of the project is to get a better understanding of these sorts of interactions.
- David Havyatt (ECA) asked for clarification when this finer spatial weather analysis would be included in assessments of infrastructure risk. Ben Jones (AEMO) clarified that these assessments would be integral to reliability forecasts as well as system resilience, and that these processes would continually be improved throughout the life of the project.
- Jennifer Brownie (QEUN) sought information on the input of the project to this year's ESOO, noting weather forecast uncertainty may impact RRO reliability

assessments. Ben Jones (AEMO) responded that only the temperature escalation on demand will be included in the 2019 ESOO forecast. The project will explore many long-run seasonal interactions to accommodate for major weather events and occurrences like El Niño and La Niña. Daniel Guppy (AEMO) clarified that the project is mainly concerned with climate change, as opposed to season-ahead projections produced by the Bureau of Meterology (BOM).

- Ron Logan (ERM Power) queried how the accuracy of project deliverables will be assessed. Nicola Falcon (AEMO) responded that the historical and forecasted climate data will be checked thoroughly as part of the result verification process, as well as how this data will be integrated in existing forecast models and methodologies.

4. Energy efficiency consultation report

Philip Harrington (Strategy Policy Research) presented on the draft energy efficiency forecasts requested by AEMO out to 2041, including historical estimates from 2001. Efficiency gains were reported to have a significant impact on annual electricity demand, as well as avoided maximum demand due to baseload reductions.

Key topics raised by stakeholders during this section included:

- Ron Logan (ERM Power) asked how the model accounts for the impact of demand destruction, as experienced during the Global Financial Crisis (GFC) of 2008/09. Philip Harrington (Strategy Policy Research) noted there were possible strategies to understand the impact of demand destruction better, however the data is limited besides examining GSP and changes in customer numbers. The objective of the model is to identify year on year efficiency estimates, distinct from broader consumption changes. It was emphasised that energy efficiency was not being overestimated during the GFC period, as consumption during that time was in fact lower than modelled.
- Jennifer Brownie (QEUN) asked how the model accounts for airconditioning loads and household behaviour. Philip Harrington (Strategy Policy Research) explained that space conditioning trends were examined by state and dwelling type, allowing for differing mixes of space conditioning equipment, as well as projected changes to penetration and efficiency of each equipment type.
- Jennifer Brownie (QEUN) followed up with a query on whether time-of-use (TOU) tariffs were included as energy efficiency. Philip Harrington (Strategy Policy Research) confirmed they were not.
- Liam Ryan (NSW Department of Planning & Environment) questioned why some state-based programs were included in the model while others like the Home Saver Rebates and Home Power Savings programs were not considered. Philip

Harrington (Strategy Policy Research) clarified this was mainly to avoid double-counting as many programs were targeting the same energy savings contemporaneously. Additionally, double-counting could also occur in situations where energy savings would have occurred even in the absence of the policy.

- Andrew Turley (AEMO) asked whether there were substantial changes between the current draft forecasts and the previous year's energy efficiency forecasts. Philip Harrington (Strategy Policy Research) noted that while the aggregated efficiency savings seem consistent between reports, there are a significant amount of underlying changes that have mostly cancelled each other out.
- Nick Cimdins (Ausnet Services) remarked that internal data is showing energy efficiency at time of peak demand is significantly lower than on average, and asked whether the models and forecasts take into account this nonlinear relationship. Philip Harrington (Strategy Policy Research) explained that they are looking at this phenomenon closely, and ongoing research and modelling on this is part of AEMO's defined scope of work, with consultant Energy Efficient Strategies (EES) supporting SPR.

5. RRO consultation report

Nick Culpitt (AEMO) presented on the reliability forecast as part of the Retailer Reliability Obligation (RRO), including the similarities and differences to ESOO forecasts. Ongoing consultations, papers and workshops for refining the reliability forecast are scheduled throughout the 2019 ESOO timeline.

Key topics raised by stakeholders during this section included:

- Ben Skinner (AEC) queried what the underlying science or structure behind the 2% and 5% LOLP cutoff values. Nick Culpitt (AEMO) responded that the thresholds were selected based on historical data to remove the effect of outliers and improbable events, but feedback is welcomed on these thresholds.
- David Hoch (Engie) asked for clarification around the assessment of breaching the reliability standard when simulation outcomes can vary significantly, and whether a full worked example of this assessment could be given. Nick Culpitt (AEMO) responded that this will be explored further in the upcoming workshop on 9 May, and that the reliability standard assessment is only done on the expected outcome across all simulated paths.

6. DSP forecast methodology

Stephen James (AEMO) presented on the Demand Side Participation (DSP) forecast methodology, focusing on the process and methodology for estimating demand response to price events.

Key topics raised by stakeholders during this section included:

- Jennifer Brownie (QEUN) asked for clarification on what is meant by 'the review of network reliability programs and whether their contribution needs to be scaled down' (Next Steps, slide 18). Nicola Falcon (AEMO) replied that this is related to the RRO and workshop consultation, as it is assumed there is 100% availability at times of peak demand, and these consultative sessions can assess if this is a reasonable assumption.
- Ron Logan (ERM Power) questioned whether the table on slide 17 was cumulative or additive. Linton Corbet (AEMO) confirmed the table was cumulative.

7. Draft DER charging profiles and traces

Greg Staib (AEMO) presented on the draft Distributed Energy Resources (DER) charging profiles and traces, as provided by consultants Energeia and CSIRO. Uptake of DER, battery charge and discharge profiles, and EV charge profiles were examined and compared, with significant differences shown between Energeia and CSIRO's forecast battery capacity.

Key topics raised by stakeholders during this section included:

- Alessio Bonato (AGL) queried why the battery per unit charge profiles were decreasing between the hours of 8.30am and 10.30am. Andrew Turley (AEMO) clarified that the comparison was a diversified view of the entire fleet, not a single battery, and so the decrease in charging over this time is due to most of the batteries within the fleet already at maximum charge. Discharging to the grid is shown as negative values on the graph.
- Ron Logan (ERM Power) suggested including Operational Demand without PV in the last set of CSIRO slides for a richer comparison. Greg Staib (AEMO) agreed, and noted this wasn't included due to data and time limitations.
- Liam Ryan (NSW Department of Planing & Environment) noted that the previous ESOO forecast had a significant impact on maximum demand due to EVs, and queried whether these draft results are consistent with this outcome. Greg Staib (AEMO) responded that while these are draft forecasts, ongoing consultations on EVs has suggested the impact on maximum demand will be lower than previously expected.

8. Meeting Close

The next FRG meeting is scheduled for Wednesday 26 June 2019.

Forecasting Reference Group (FRG) Actions Items

Item	Date Raised	Topic	Action required	Responsible	By	Status
3.3.1	27 March 2019	Consultant for wholesale pricing projections	Provide information on the consultant collaborated with to produce the wholesale pricing projections	Andrew Turley	24 April 2019	**Closed**