Forecasting Reference Group (FRG) DRAFT MINUTES

MEETING: FRG #10 2020

DATE: Wednesday, 29 July 2020

TIME: 2:00pm – 4:15pm AEST

LOCATION: Teleconference

ATTENDEES:

Name	Company	Name	Company
Harriet Tienstra	Acil Allen	Patrick Gan	Energy Australia
Adrian Grantham	AEMO	Franki Lee	Endeavour Energy
Ben Jones	AEMO	Nicholas Clippingdale	Energy Australia
Ben Tudman	AEMO	Patrick Gan	Energy Australia
Cameron Potter	AEMO	Ben Skinner	Energy Council
Carla Ziser	AEMO	Carol Tran	Energy Council
Chang Liu	AEMO	Craig Pollard	Energy Queensland
Daniel Collins	AEMO	Jakes Jacobs	Energy Skills Queensland
Daniel Guppy	AEMO	Justin Gardner	Ergon Energy
Dean Soste	AEMO	Ron Logan	ERM Power
Elijah Walker	AEMO	Abe Abdallah	ESCOSA
Faranak Golestaneh	AEMO	Brent Hudson	Essential Energy
Grant McKinnon	AEMO	Mark Grenning	EUAA
Helen Wang	AEMO	Clare Giacomantonio	EY
Hua Situ	AEMO	David Heard	FinnCorn Consulting
Joachim Tan	AEMO	Jessica Smith	IES Advisory Services
Jose Viada Galvez	AEMO	David Headberry	MEU
Kent Hanh	AEMO	Bill Nixey	NSW DPIE
Leslie Lay	AEMO	Sharon Young	NSW DPIE
Levi Rosenbaum	AEMO	Yvonne Scorgie	NSW DPIE
Linton Corbet	AEMO	David Xu	Origin Energy
Luminita Baloi	AEMO	Sarah-Jane Derby	Origin Energy
Magnus Hindsberger	AEMO	Scott Robinson	Philip Riley
Matthew Marston	AEMO	Anna Livsey	PIAC
Nick Culpitt	AEMO	Adam Ryan	Powercor
Rachael Saw	AEMO	Enrique Montiel	Powerlink
Rimjhim Kapoor	AEMO	Dean Knight	Powerlink QLD
Roberta Maher	AEMO	Jennifer Brownie	QEUN
Steven Zollo	AEMO	Phil Pollard	QEUN
Vivian Mai	AEMO	Ben Denehy	QLD Gov DNRME
Adam Day	AER	Peter Degorski	RepuTex Energy
Paul Grzinic	Aurora Energy	Marino Bolzon	SA DEM
Jacqui Bridge	AusNet Services	Elisia Reed	SA Power Networks

Morteza Moallemi	AusNet Services	James Bennett	SA Power Networks
Nick Cimdins	AusNet Services	Steve Fraser	SA Power Networks
Judith Landsberg	BOM	Noel John Sligar	Sligar & Associates
Thakshila Gunaratna	CEC	Brendan Ash	Stanwell
Sonja Lekovic	CitiPower	Joe Hemingway	Stanwell
Sam Ingram	CleanCo Queensland	Sharon Raymond	Tas Gov - Growth
Anna Evans	DISER	Herath Samarakoon	Tas Networks
Katie Filippello	DISER	Julie Morrison	Tas Networks
David Havyatt	ECA	Prateek Beri	Tas Networks
Abu Abdullah	ElectraNet	Arindam Sen	TransGrid
Brad Harrison	ElectraNet	Norman Jip	Vic DELWP
Ngoc N Tho	ElectraNet	Charlie Cao	WestWind Energy

1. Welcome and Introductions

Daniel Collins (AEMO) welcomed everyone and covered the following:

- Open Actions.
- Noted that minutes from both the June 10th and June 24th had only recently been sent out and invited feedback via email.
- The second stage of the Forecast Accuracy Report Methodology consultation. Submissions closed on 11th August 2020. (Action 4.4.1)
- Reliability Standard Implementation Guidelines and Demand Side Participation Methodology consultations will be updated shortly.
- Submissions to Energy.forecasting@aemo.com.au are appreciated.

2. Presentation 1 – Connection Point Forecasts

Faranak Golestaneh (AEMO) presented AEMO's new methodology for Connection Point (CP) forecasting, its improvements in forecasting minimum demand and incorporating embedded generation and population growth.

Key topics raised by stakeholders during this section included:

- Jennifer Brownie (QEUN): Should night-time minimum demand be decreasing as demand shifts to the day to soak up the solar sponge with controlled loads and hot water systems?
  - AEMO: No controlled loads were forecast; they will be included in the future.
- Craig Pollard (Energy Queensland): What does 50 POE mean for minimum demand when there are complications such as thermal and capacity constraints and reverse flows?
  - AEMO: These forecasts are unconstrained and have therefore allowed negative values, without assuming any specific network constrains.
  - AEMO: Minimum demand POEs come from the lower tail of demand. Demand will go below the 50 POE of minimum demand every second year on average.
- Arindam Sen (TransGrid): Each CP is configured differently and has different levels of embedded generation. Additionally, distributers don't have access to transmitter's data, complicating the forecasting process. How has reactive power been implemented in the methodology?
  - AEMO: Individual CP reactive power has only been roughly estimated by assuming unity power factor for inverter-based technologies. Past work has been conducted on the subject, but was not included in this methodology. Further discussion is welcome.
- Sonia Lekovic (CitiPower): How has the uncertainty of COVID-19 been considered for reconciliation with the heterogeneous impact across different regions?
  - AEMO: CP forecasts are reconciled to the 2020 ESOO regional forecasts; Distribution networks will be consulted with to determine the contribution of each individual CP to the regional COVID-19 impact. (Action 4.3.1)

- Brent Hudson (Essential Energy): Is the historical data weather normalised?
    - AEMO: 12 years of weather data is simulated to produce temperature corrected POEs for the base year.
- Ron Logan (ERM Power): How are contribution factors for technologies determined, and how has population growth been factored in?
    - AEMO: The contribution factors of each embedded technology are used for simulating demand. In the new methodology, the contribution of each embedded generation is predicted independently for each time of day/week/year.
    - AEMO: Analysis of historical population growth has created unique contribution factors for demand growth of individual CPs. This indirectly accounts for CP characteristics such as residential/industrial and dwelling types.
- James Bennet (SA Power Networks): For Smaller CPs, historical data may not be relevant as they are impacted more by industrial evolution, which can only be determined from local surveys.
- Jennifer Brownie (QEUN): Future housing type is an important driver of demand growth. How has this been incorporated?
    - AEMO: For dwelling types to be included, historical and forecast data must be available. Data on future dwelling types is being investigated for regional energy efficiency purposes, but is unavailable at a CP level.
- Abu Abdullah (ElectraNet): Was the COVID-19 financial impact on demand considered?
    - AEMO: The economic impact is included in regional DER and demand projections, which are included in the CP coincident forecasts. Additionally, Distribution networks will be consulted with regarding the individual CP COVID-19 impact.

3. Presentation 2 – Climate and Extreme weather

Ben Jones (AEMO) presented an update with one year to go on the Electricity Sector Climate Information (ESCI) project and AEMO's proposed forecast improvements to better capture climate and resilience risks. Considering the suggestions within the 2020 Integrated System Plan (ISP) to further consider resilience and climate change, AEMO is proposing to simulate power system responses to extreme events to help identify resilience risks and risk mitigation opportunities. AEMO is working closely with the energy industry, other sectors, BOM and CSIRO to determine which extreme weather scenarios may impact the energy system. The ESCI project begins the conversation of incorporating and quantifying these risks into energy market decisions.

Key topics raised by stakeholders during this section included:

- Phil Pollard (QEUN): Has the project considered the diversity and the varying engineering needs of NEM regions?
    - AEMO: The engineering of the NEM considers diverse climates. This project highlights the system's weakened resilience to mitigate risks of more commonly occurring extreme and compound events.
- Mark Grenning (EUAA): How is the probability of compound events occurring estimated? Are society willing to bear the cost of increasing resilience to mitigate extremely rare events?
    - AEMO: The probability of compound events often can't be quantified, are hard to value and are therefore sometimes ignored. AEMO is consulting with other sectors on how to consider less quantifiable risks in cost-benefit analysis.
    - AEMO: Risk analysis of compound extreme weather risks will not necessarily increase system costs, but will allow consideration for mitigating resilience risks in project and system evaluation. It will help differentiate future projects that enhance systems resilience from those that do not.
- Patrick Gan (Energy Australia): Will the wind traces be applied to any other modelling?
    - AEMO: These wind traces are relatively advanced and will be used for gap-filling purposes.
    - Resilience and climate change are included in 2020 ISP appendix 8.
- Noel John Sligar (Sligar & Associates): The speed of restoration and the duration of disruption should be key considerations for resilience.
    - AEMO: These are certainly valid metrics for estimating the impact to customers.

- Ben Skinner (Energy Council): Force majeure events such as bushfires can occur in many ways, which can't all be mitigated. Such events should not be used to simulate unserved energy (USE) since existing solutions may not be adequate for all disasters.
- Ron Logan (ERM Power): The bushfire case study solution of reliability USE is not appropriate for extreme weather events, which are the result of multiple credible contingency events.
    - AEMO: The system was built with considerations for resilience to such disasters, but due to changing circumstances of generation type and location and the increase in compound extreme events, a renewed focus on resilience considerations is required to adapt the grid.
    - AEMO: The bushfire case study identifies the risk of unserved energy but does not comment on risk mitigation solutions. While system reliability risks are often best mitigated by increasing supply availability, resilience risks require consideration of a different combination of risk mitigation solutions including investments, systems and processes. AEMO should avoid presenting resilience risks in a way that would confuse interpretation.
- Jennifer Brownie (QEUN): Has the impact of hail on rooftop PV been considered? There is available data on the areas more at risk of these types of extreme events.
    - AEMO: This scenario should be explored as a case study.
- Ron Logan (ERM Power): The methodology for simulating customer demand from synthetic weather already includes extreme weather.
    - AEMO: The simulation is stretched to targets, the issue is to ensure the hours before and after are realistic ramping events of demand.
- Abu Abdullah (ElectraNet): How can wind and solar traces be used to planning purposes? Additionally, how will these demand traces be used for other modelling?
    - AEMO: The ESCI project may be able to help networks with Asset modelling.
    - AEMO: There are no proposed modelling changes besides the wind trace for gap filling. Modelling changes are currently only being explored to understand the impact of compound events and prove capability.

4. Other Business

Steven Zollo (AEMO) addressed submissions regarding South Australian emergency diesel fired temporary generators Generation Information and ESOO modelling status'. Temporary Generation North is not considered Committed at present. Temporary Generation South is being treated as Committed generation, at the current site, with Infigen to take over operation. The Generation information publication is released quarterly.

Key topics raised by stakeholders during this section included:

- David Headberry (ECA) and Mark Grenning (EUAA): Is the non-committed Temporary Generation North generation available for RERT?
    - AEMO: Public RERT information is published on the website, further information is confidential.

5. Meeting close

The next FRG meeting is scheduled for Wednesday 26th August 2020. The agenda includes discussion on Commitment Criteria, Demand Side Participation Information (DSPI) and Reliability Forecast Guidelines.

Appendix A Forecasting Reference Group (FRG) Actions Items

FRG Action Items – OPEN (as at 1st August 2020)

Item	Date Raised	Topic	Action required	Responsible	Due	Status
4.1.4	27/05/2020	Demand forecasts "as generated"	Demand forecasts to be discussed in terms of "operational as generated" to align with real time data.	AEMO	Aug 2020	OPEN (Slides will be updated when available)
4.2.2	10/06/2020	Improve FOR data collection	Improve data collection to include causes of outages	AEMO	Dec 2020	OPEN
4.3.2	24/06/2020	EV charge profiles	Publish the assumptions behind EV charge profiles shown in the 2020 ESOO.	AEMO	ESOO (Aug 2020)	OPEN
4.3.3	24/06/2020	Zoomed in Graphs	Provide graphs for NSW which show the difference between scenario plots	AEMO	Aug 2020	OPEN
4.4.1	14/06/2020	FAR methodology Consultation	Submissions for he Forecast Accuracy Report Methodology consultation	FRG	11 August 2020	OPEN

FRG Action Items – CLOSED (as at 1st August 2020)

Item	Date Raised	Topic	Action required	Responsible	Details	Status
4.2.1	25/05/2020	RSIG, MTPASA, EAAP Consultation	Submissions for first stage of the RSIG consultation	FRG	6 July 2020	CLOSED
4.2.3	10/06/2020	DSP portal upgrade	Ensure the DSP portal is easy to use and understand.	AEMO	Incorporated in DSPI Guidelines consultation	CLOSED
4.2.4	10/06/2020	HILP outages in ISP	Provide details on how HILP outages impact the ISP.	AEMO	Next ISP assumptions release	CLOSED
4.3.1	24/06/2020	Connection Point Forecasts	AusNet to engage with AEMO to assist with the COVID-19 impact on different connection points.	AusNet	August 2020	CLOSED