Forecasting Reference Group (FRG) DRAFT MINUTES

MEETING: FRG #5 2022

DATE: Wednesday, 29 June 2022

TIME: 2:00pm – 4:35pm AEST

ATTENDEES:

Name	Organisation	Name	Organisation
Abbas Mohammadi	AEMO	Kate Farnsworth	Hydro Tasmania
Adrian Grantham	AEMO	Thalia Goode	Hydro Tasmania
Ali Habibi Khalaj	AEMO	Jenifer Abedin	IESYS
Andrew Turley	AEMO	John Godfrey	Individual
Ben Jones	AEMO	Chotima Micallef	Lochard Energy
Chang Liu	AEMO	Stephanie Bashir	Nexa Advisory
Daniel Collins	AEMO	David Havyatt	NICE
Debborah Marsh	AEMO	Sarah-Jane Derby	Origin Energy
Deepa Elizabeth Eapen	AEMO	Aaron Obrien	Powercor
Ebby Thomas	AEMO	Ben McGregor	Powerlink
Elijah Walker	AEMO	Dean Knight	Powerlink
Faranak Golestaneh	AEMO	Jennifer Brownie	QEUN
Helen Wang	AEMO	Linda Yu	QLD DEPW
Holly Casey	AEMO	Metabha Wanninayaka	QTC
Jay Stein	AEMO	Sam Lines	QTC
Ken Harper	AEMO	Yatra Forudi	Rennie Partners
Levi Rosenbaum	AEMO	Marino Bolzon	SA DEM
Magnus Hindsberger	AEMO	Brady Martin	SAPN
Oliver Derum	AEMO	Elisia Reed	SAPN
Phil Travill	AEMO	Fraser Hampton	SAPN
Puwasala Gamakumara	AEMO	Jason Steele	SAPN
Tim Abernethy	AEMO	Jerome Devera	SAPN
Dominic Price	AEMO Services	Lachlan Hillier	SAPN
Suzanne Bentley	Alcoa	Li Yen Sim	SAPN
Bill Nixey	Ausgrid	Steven Maxwell	SAPN
Ed White	Ausgrid	Ron Logan	Shell Energy
Navid Haghdadi	Ausgrid	Noel John Sligar	Sligar and associates
Morteza Moallemi	Ausnet Services	Joseph Hemingway	Stanwell
Nick Cimdins	Ausnet Services	Stephen Meiklejohn	Stanwell
Jacob Hyslop	CEC	Anna Callan	Synergy
Joe Somers	CleanCo Qld	Julie Morrison	TasNetworks
Sam Ingram	CleanCo Qld	Inushka Dassanayake	Total-Eren
Lucienne Burnham	DISER	Arindam Sen	TransGrid

Caroline Valente	ECA	Gang Cao	TransGrid
Abdullah Abu	ElectraNet	Jahan Peiris	TransGrid
Kedem Levy	Enel	Sujeewa Vithana	UE
Lawrence Irlam	Energy Australia	Anders Vandenberg	VIC DELWP
Shoaib Amjad	Energy Australia	Andrea Espinosa	VIC DELWP
Kerina Heath	Ergon	Catherine Laurie	VIC DELWP
Anthony Hill	ETSI	Chris Girardi	VIC DELWP
Cameron Potter	FMGL	Jeanpaul Dussaubat	VIC DELWP
Alanna Gibson	GLNG	Taryn Gale	VIC DELWP
Christina Sutherland	GLNG	Will Clarke	VIC DELWP

1. Welcome and Introductions

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

- Draft FRG Minutes – 25 May 2022 circulated.
- Upcoming engagement on scenarios.
- Upcoming FRG agenda forward plan.
- Update to the Forecasting Approach register on 23 June.
- Submissions to Energy.forecasting@aemo.com.au are appreciated.

2. Presentation 1 – Draft 2022 Demand Side Participation (DSP) forecasts

Faranak Golestaneh (AEMO) presented AEMO's draft 2022 DSP forecasts, specifically the components of the DSP Information submissions in 2022 and the differences from 2021.

Key topics raised by stakeholders during this session included:

- Ron Logan (Shell): Do "Time-Of-Use (TOU) tariffs" only refer to structured tariffs with fixed daily start and end times, or flat tariffs with off-peak components too?
  - AEMO: Any consistent fixed-time tariffs, including peak/off peak, TOU and day/night tariff structures, are excluded as per the DSP forecast methodology[1].
- Jennifer Brownie (QEUN): Has AEMO researched if Wholesale Demand Response (WDR) participants have backup generation?
  - AEMO's Forecasting department has not researched this.
- Ron Logan (Shell): Are DSP response values based on observed responses in the last 12 months or over multiple years?
  - AEMO: WDR uses data since its 2021 inception. DSP uses the last 3 years' data in accordance with the DSP Forecasting Methodology[2]. Observed yearly DSP responses fluctuate due to the number of weather and price events in a given year, so one year's responses may not be indicative of the longer term probabilistic forecast .
- Jennifer Brownie (QEUN): Were AEMO able to measure "unpaid" demand response from residential and small business customers during the recent electricity crisis?
  - AEMO: The cut-off date for DSP responses was March 2022, following a mild summer and before recent high market prices.

3. Presentation 2 – Draft 2022 maximum and minimum demand forecasts

Adrian Grantham (AEMO) presented AEMO's draft 2022 maximum and minimum demand forecasts, outlining key themes across regions for 2022. Adrian highlighted drivers for maximum and minimum demand for each individual region's *Step Change* forecasts.

Key topics raised by stakeholders during this session included:

[1] Available at: https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-approach
[2] See AEMO's DSP forecasting methodology, available at: https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-approach

- Joe Hemmingway (Stanwell): What is driving the change in PV and Electric Vehicle (EV) outlooks, causing lower minimum demand from the 2030s for NSW & QLD?
    - AEMO: The 2022 ESOO uses *Step Change* as the central scenario, whereas 2021 used *Progressive Change*. These scenarios have different assumptions regarding the PV and EV uptake. The difference between 2021 and 2022 forecasts comparing *Step Change* in both cases is more muted.
    - Joe Hemmingway: It would be great to see graphs to show the change drivers.
- Ron Logan (Shell): NSW has been winter peaking in 45% of years and summer peaking in 55% of years. Why do AEMO assume that NSW traditionally peaks in summer?
    - AEMO: Only three of the last 12 years of data had winter maximums.
- Ron Logan (Shell): What is causing the increase in peak demand and pushing the timing to later in the evening?
    - AEMO: Underlying behaviour and growth drivers are increasing the peak, while longer term changes in distributed PV, batteries and EVs are pushing the peak to later in the evening, from 5pm to 7pm.
- Jennifer Brownie (QEUN): Retail prices don't fall as fast as they increase, therefore cooling will be expensive over the next few summers, lowering peak demand. How are AEMO factoring in increasing retail prices?
    - AEMO: Retail price is an input to the consumption forecast, using ASX future prices to assess retail price elasticity for residential and business consumption. This forecast flows into the maximum and minimum demand forecasts.
- John Godfrey: Do minimum demand forecasts assume improved energy efficiency (EE)?
    - AEMO: Minimum demand traditionally occurs when there is no heating or cooling load to gain from improved energy efficiency, however there would be some energy efficiency savings in baseload from water heating, lighting and point loads.
- John Godfrey: Is electrification due to high gas prices reflected in these forecasts?
    - AEMO: Electrification is not included in the draft forecasts presented, but will be added to the final forecasts.
    - Ron Logan (Shell): Will electrification of gas heating impact Victoria's maximum demand less since it occurs in summer?
    - AEMO: Electrification from gas in Victoria will eventually change the timing of peak demand from summer to winter.
- Will Clarke (Solar Victoria): How will forecasting earlier negative minimum demand in Victoria impact the safe operating threshold?
    - AEMO: These forecasts are unconstrained, without power system constraints. AEMO uses these forecasts to explore mitigation options for low minimum demand risks[3].
- Jean Paul (DELWP): Will future forecasts consider how market mechanisms and interventions such as DSP and Virtual Power Plants (VPP) contribute to demand management?
    - AEMO: The DSP forecast is added to demand forecasts, while VPPs are modelled as a form of supply. Therefore VPPs affect supply adequacy assessments but do not influence unconstrained maximum demand forecasts[4].
- Steven Maxwell (SAPN): SAPN has observed PV panels saturating inverters at times of minimum demand. Is the 1MW of installed PV reducing minimum demand by 0.7MW based on historical averages?
    - AEMO: The 1:0.7 ratio is a spatial average across all sub-regions and times.
- Jennifer Brownie (QEUN): Will the 2022 ESOO still use the *Step Change* scenario in light of current global events which are unlikely to be solved in the near future?
    - AEMO: The ESOO provides forecasts all four scenarios, however *Step Change* is considered the most likely scenario, and defined as the ESOO Central scenario.

4. Presentation 3 – Draft 2022 unplanned transmission outage and generator forced outage rate (FOR) forecasts – FRG Consultation

[3] See "Distributed Photovoltaics (DPV) Contingency and / or Minimum System Load market notice framework" at: https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/system-operations/power-system-operation
[4] See Slide 3 of presentation 1.

Ben Jones (AEMO) presented AEMO's draft 2022 unplanned transmission outage rates and generator forced outage rate (FOR) forecasts. AEMO is seeking stakeholder comments on the consultation questions, the inclusion of "emergency outages" that are planned at very short notice and any other factors, including breakdown maintenance delays.
Written submissions are due to enegy.forecasting@aemo.com.au by 13 July 2022.

Key topics raised by stakeholders during this session included:

- Steve Meiklejohn (Shell): Is a common generation forced outage rate definition and methodology applied consistently across respondents within fuel groups?
    - AEMO: Definitions follow standard industry definitions. The AEMO survey explains each question and collects full, partial, derating and other outage data. These are combined into full outage rates.
- John Godfrey: What is the lead time for an outage to be considered "planned". Managers can hold off outages until they become "forced" to aid their performance.
    - AEMO: Such events are currently excluded from the definition of forced outages considered by AEMO in these forced outage forecasts, however AEMO is open to stakeholder feedback on the impact and consideration of such planned outages. Another issue for stakeholder consideration is plant outage overruns; how to treat the "forced" component of a "planned" outage extending beyond its expected return date. Responses will be considered for the 2022 forecast improvement plan.
    - Ron Logan (Shell): There are international standards for emergency outages[5]: if it can be delayed until the next weekend.
    - AEMO: Reporting by generators also has to be done according to the standards.
- Ron Logan (Shell): When AEMO asked generators to review their submissions, did they report more or less outages?
    - AEMO: There was a balance of revisions in both directions. Most follow up conversations with survey respondents were to assist with forecasts later in the forecast horizon or to justify responses.
- Ron Logan (Shell): Constraint values applied to outage events are significantly lower than that applied to reclassification events. Event types should be modelled separately.
    - AEMO: The methodology consultation in January determined this application[6].
- Ron Logan (Shell): Why was 5 months chosen for long duration outages?
    - AEMO: This was used in the methodology, consulted on in 2020[7]. The definition is slightly different to what others use, but has held up reasonably in forecasts.
- Jennifer Brownie (QEUN): Do international FOR definitions[5] account for commercial outage decisions, which would remove Basslink outages?
    - AEMO: The ESOO and MTPASA use physical/technical availability and reliability, rather than commercial availability.

5. Meeting close

- Ron Logan (Shell): AEMO should circulate responses to questions not responded to during the meeting.
    - AEMO: FRG discussion sessions focus on the most important stakeholder topics raised. If particular topics were not covered in the discussion time, stakeholders can email AEMO for a response.

The next FRG meeting will be held on Wednesday 27 July 2022.

[5] See the Institute of Electrical Engineers Standards Association's (IEEE SA) Standard Definitions for Use in Reporting Electric Generating Unit Reliability, Availability, and Productivity – P762, available at: https://standards.ieee.org/ieee/762/6856/

[6] See 2022 FRG Consultations, available at https://aemo.com.au/en/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg

[7] Available at: https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-approach

Forecasting Reference Group (FRG) Actions Items

FRG Action Items (at 22 June 2022)

Item	Date Raised	Topic	Action required	Responsible	Details		Status
4.3	25/5/2022	Email submissions	Circulate FRG related material	AEMO	Ron Logan (Shell) proposed that AEMO circulate:	• Responses to outstanding FRG chat questions, follow-up questions or issues	**CLOSED** • As per the FRG Terms of reference, AEMO does not respond, by default, in writing to unanswered discussion topics, unless participants email them to energy.forecasting@aemo.com.au
						• Corrections to responses provided during an FRG meeting	• Draft FRG meeting minutes are circulated by email. AEMO publish final minutes on the FRG webpage, incorporating any corrections.
						• Details of additional submissions, reports or documents supplied by FRG members that add knowledge to an FRG discussion or analysis topic	• AEMO circulates additional relevant material when deemed worthwhile.