Forecasting Reference Group minutes

Forum:	July FRG 2022 (#6)
Date:	Wednesday 27 July 2022
Time:	2:00pm – 4:35pm AEST

Attendees:

Name	Organisation	Name	Organisation
Andrew Turley	AEMO	Adela Gokovi	Ergon
Daniel Collins	AEMO	Kerina Heath	Ergon
Debborah Marsh	AEMO	Brent Hudson	Essential Energy
Greg Staib	AEMO	Anthony Hill	ETSI
Hayley George	AEMO	Christina Sutherland	GLNG
Helen Wang	AEMO	Kat Kiemele	Hydro Tasmania
Jay Stein	AEMO	Johanna Bowyer	IEEFA
Luke Barlow	AEMO	John Godfrey	Individual
Maggie Du	AEMO	Chotima Micallef	Lochard Energy
Magnus Hindsberger	AEMO	David Xu	Origin
Natasha Sinclair	AEMO	Aaron O'Brien	Powercor
Sayani Gupta	AEMO	Dean Knight	Powerlink
Monami Das Gupta	AER	Jonathan Dennis	Powerlink
Suzanne Bentley	Alcoa	Jennifer Brownie	QEUN
Bill Nixey	Ausgrid	Bret Harper	RepuTex
Ed White	Ausgrid	Marino Bolzon	SA DEM
Navid Haghdadi	Ausgrid	Elisia Reed	SAPN
Scarlett Jiang	Ausgrid	Lachlan Hillier	SAPN
Morteza Moallemi	Ausnet Services	Liam Mallamo	SAPN
James Seymour	C4Net	Connor Mcleod	Shell
Anthony Seipolt	Cadency Consulting	Ron Logan	Shell
Jacob Hyslop	CEC	Noel John Sligar	Sligar and associates
Carolyn Moore	CSIRO	Jill Trinh	Synergy
Felicity Splatt	CSIRO	Michael Nelmes	Synergy
Nariman Mahdavi Mazdeh	CSIRO	Rudy Khong	Synergy
Paul Graham	CSIRO	Yuichi Yano	Synergy
Brian Spak	ECA	Dhor Ngor-Apuol	TasNetworks
Caroline Valente	ECA	Herath Samarakoon	TasNetworks
Alex Driscoll	EDGE	Julie Morrison	TasNetworks
Abu Abdullah	ElectraNet	Inushka Dassanayake	Total-Eren
Dennis Van Puyvelde	ENA	Sujeewa Vithana	United Energy
Dor Son Tan	ENA	Jean Paul Dussaubat	VIC DELWP
Shoaib Amjad	ENA	Taryn Gale	VIC DELWP
Justin Xiao	Energy Queensland	Will Clarke	VIC DELWP
Jessie Yeung	Engie		

Disclaimer

This document provides an overview of the main points of discussion at an industry forum convened by AEMO on 27 July 2022 to provide information and invite perspectives and feedback on matters relating to forecasting improvements.

Readers, please note that:

- This document is a summary only and is not a complete record of discussion at the forum.
- For presentation purposes, some points have been grouped together by theme and do not necessarily appear in the order they were discussed.
- The views expressed at the forum and reflected here are not necessarily those of AEMO.

1 Welcome and Introductions

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

- Forward plan of agendas for FRG meetings for the rest of 2022.

2 Presentation 1 – Interval meter and Distributed Energy Resources (DER) heatmap tool

Luke Barlow (AEMO) presented and demonstrated AEMO's Interval meter and DER heatmap tool[1].

Key topics raised by stakeholders during this session included:

- Dor Son Tan (ENA): ESB data strategy is also looking into this area to fill priority data gaps[2].
- Anthony Seipolt (Cadency Consulting): What are the tool's current uses and future plans?
  - AEMO: Stakeholders can access the data for their own uses. Load and generation information may be included in the future.
- Ron Logan (Shell): Has growth in solar PV installations reduced over the last 3 years?
  - AEMO: Growth in interval metering has slowed, general DER growth has not.
- Ron Logan (Shell): Are sites with solar PV and storage represented as one or two sites?
  - AEMO: Sites with multiple DER components are considered one site.
- Jennifer Brownie (QEUN): Can the dashboard distinguish between business and residential?
  - AEMO: The dashboard does not differentiate, but the heat map does.
- James Seymour (C4Net): Is the Local Government Area (LGA) data an approximation?
  - AEMO: The Geo-scape Geocoded National Address File (GNAF) step means that the LGA data is very accurate. The MSATS Standing Data Review project (November 2022) is improving NMI address information that will assist aligning data to LGAs.
- Jennifer Brownie (QEUN): Does the dashboard show the size of DER installations per site?
  - AEMO: No. The DER register[3] provides capacity related data.
- Kerina Heath (Ergon): Can the spreadsheet show the number of installations?
  - AEMO: The total number of sites are published, as is the percentage of installations in each LGA. The numbers are not explicitly there, but can be easily calculated.

[1] Now available at https://www.aemo.com.au/energy-systems/electricity/national-electricity-market-nem/data-nem/metering-data/nem-der-and-interval-metering-dashboard
[2] See https://esb-post2025-market-design.aemc.gov.au/data-strategy#esb-data-strategy
[3] See https://aemo.com.au/en/energy-systems/electricity/der-register

- Ron Logan (Shell): It is interesting that while interval metering is increasing, new PV installations with interval metering is relatively stagnant in NSW.
  - AEMO: There are known issues with NSW DER data collection, and there is a lag with PV installation data updates.
- Stakeholder suggested future improvements:
  - Ron Logan (Shell): The top three LGAs in NSW are building significant new housing with new interval meters. AEMO should normalise for this in the future.
  - James Seymour (C4Net): To increase usability, the data should be mapped to distribution areas. And include Electric Vehicle (EV) uptake to support electrification.
  - Jennifer Brownie (QEUN): The heatmap should pick up failure and removal of PV systems.
  - Jennifer Brownie (QEUN): All information is useful but the interpretation and public reporting of the information is the concern.

3 Presentation 2 – Electric Vehicle (EV) charging update

Natasha Sinclair and Maggie Du (AEMO) presented AEMO's EV fast charging profile initiative and the impact on its EV forecasting methodology.

Key topics raised by stakeholders during this session included:

- Dor Son Tan (ENA): The Electric Vehicle Council (EVC) has access to fast charging profiles.
  - AEMO has collaborated with EVC in the past and can ask for fast charging profile data.
  - James Seymour (C4Net): C4NET are interested in collaborating on further EV charging research opportunities.
  - John Godfrey: AEMO should ask data collecting organisations to share this type of data.
    - James Seymour (C4Net): Data sharing permissions are very complicated.
- Regarding convenience charging:
  - Brian Spak (ECA): What does "convenience" charging mean? Fast highway charging will be convenient too. All charging will have to be convenient for consumers.
    - AEMO: Convenience EV charging typically refers to charging immediately on arrival home from work, during peak time. This does not consider any impacts to household or grid energy loading. This is opposed to 'delayed' or 'scheduled' charging that avoids amplifying peak demand.
    - Anthony Seipolt (Cadency Consulting): Smart chargers will transform 'convenience' charging into scheduled charging based on market, or other, conditions.
    - Brian Spak (ECA): EV coordinated charging will happen through built in settings, in a much simpler way than expected.
    - Dennis Van Puyvelde (ENA): What needs to happen to change consumers habits from convenience charging to the other charging patterns?
      - AEMO: Time of Use tariffs, technology availability and education, among other factors.
  - Jennifer Brownie (QEUN): Consumers will likely use fast chargers like petrol stations.

- John Godfrey: The difference is that non EVs cannot be charged at home.
- James Seymour (C4Net): EV charging focuses on where the car is parked, not where it is travelling, as opposed to petrol vehicles. Most charging is currently happening overnight.

- Ron Logan (Shell): The study is using less than 25% of all fast chargers. Could the characteristics of these chargers skew the results? Has AEMO looked into other available data?
  - AEMO's approach was to use chargers with the best available data to represent the entire fast charging fleet. The load shape from 190 fast charged was similar to 2021 results with only 30. Small data improvements are continually being made. As the fleet grows, the data will hopefully provide more location and other demographic information.
  - Ron Logan (Shell): If fast charging prices rise too much, people will prefer to set up better home charging systems.
- Ed White (Ausgrid): These results validate Ausgrid's fast charging profiles.

4 Presentation 3 – Improving visibility of sectoral consumption

Debborah Marsh (AEMO) presented AEMO's progress on improving sectoral energy consumption forecasting by aligning business electricity consumption to ANZIC Table F.

Key feedback raised by stakeholders during this session included:

- Jennifer Brownie (QEUN): Breaking the data into smaller sectors, specifically "small business" can cause confusion for those who do not understand the potentially large economic impact of small energy using sectors. AEMO should publish the data in a clear, usable manner.
- Dennis Van Puyvelde (ENA): This project should consider each sector's seasonal impacts.
  - AEMO: Noted. There is potential to consider seasonal impacts using MSATS data.
- Ed White (Ausgrid): This ANZIC Table F sectoral breakdown will be very useful for Distribution Network Service Providers (DNSPs) to follow trends within different sectors.

5 Presentation 4 – Solar PV rebound effect on regional demand

Nariman Mahdavi Mazdeh (CSIRO) presented on research into the Solar PV rebound effect on regional demand, a part of the joint AEMO-CSIRO NEAR[4] project.

Key topics raised by stakeholders during this session included:

- Ron Logan (Shell): Are the one-hour-ahead results for summer relative to winter due to daylight savings time?
  - CSIRO: All times are adjusted to NEM time (Australian Eastern Standard Time), so daylight savings will not have any impact. The source of this difference has not otherwise been investigated.
- John Godfrey: Are the results modelled? There may be a secondary effect of PV households becoming more interested in energy consumption and improving efficiency.

[4] See https://near.csiro.au/

- CSIRO: The results are modelled using actual NMI consumption data and estimated PV data. The consumption data is also adjusted for temperature and occupancy characteristics.

- Suggested future research areas:
  - Daniel Collins (AEMO): Investigate the drivers for average regional differences.
  - Jennifer Brownie (QEUN): Future research should investigate whether PV households alter behaviour before and after load shedding events.
  - Caroline Valente (ECA): Linking the PV rebound effect with home energy efficiency ratings[5] could be interesting for outlining underlying causes of increased consumption.
  - Ed White (Ausgrid): This data could be supplemented by qualitative research of asking customers about behaviour changes with PV installation.
- Ron Logan (Shell): Does a factor of 2 mean that household consumption doubles at peak? Why would consumption double with installed PV on the hottest summer day?
  - AEMO: More investigation into the drivers for these results is required. Perhaps the offset is half the expected magnitude, or unidentified behavioural impacts are prevalent, including additional air conditioner installation.
  - John Godfrey: Air conditioners can be used to pre-cool a house while electricity is cheap.
- Brian Spak (ECA): Are the results robust enough for networks and AEMO to update their load profiles, to incorporate a rebound effect for consumers with PV?
  - CSIRO: Currently, the research is preliminary, but it can add value to regional PV rebound ratios at different times of the day.
  - AEMO: This research is currently preliminary, but it observes impacts that reflect AEMO's annual consumption forecasting approach of including a PV rebound variable. As further research into this topic matures, more variables or adjustments to existing variables, may be appropriate.

6 Meeting close

The next FRG meeting will be held on Wednesday 31 August 2022, presenting updates to scenarios, followed by BIS Oxford Economics' macroeconomic projections.

[5] See https://www.nathers.gov.au/

Forecasting Reference Group (FRG) Actions Items

Table 1 FRG Action Items (at 26 September 2022)

Item	Date Raised	Topic	Action required	Responsible	Details	Status
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