Forecasting Reference Group (FRG) DRAFT MINUTES

MEETING: FRG #12 2020

DATE: Wednesday, 30 September 2020

TIME: 2:00pm – 4:45pm AEST

LOCATION: Teleconference

ATTENDEES:

Name	Company	Name	Company
Abbas Mohammadi	AEMO	Anna Evans	DISER
Ali Habibi	AEMO	David Gourlay	DISER
Ana Orozco	AEMO	Lipakshi Dhar	Economic Regulation Authority WA
Anula Abeygunawardana	AEMO	Abu Abdullah	ElectraNet
Azadeh Keshavarzmohammadian	AEMO	Connor McLeod	Enel
Bella Pennington	AEMO	Florie Fong	Energy Australia
Cameron Potter	AEMO	Patrick Gan	Energy Australia
Carla Ziser	AEMO	Matt Herington	Energy Policy WA
Dane Winch	AEMO	Noel Ryan	Energy Policy WA
Daniel Collins	AEMO	Steven Kruit	Energy Policy WA
Daniel Guppy	AEMO	Craig Pollard	Energy Queensland
Debborah Marsh	AEMO	Shane Brunker	Energy Queensland
Ebby Thomas	AEMO	Jakes Jacobs	Energy Skills Queensland
Gregory Staib	AEMO	Anita Zhao	Engie
Helen Wang	AEMO	Ron Logan	ERM Power
Jin Lim	AEMO	Brent Hudson	Essential Energy
Joachim Tan	AEMO	Alan Antonov	ExxonMobil
Jose Viada	AEMO	Neil Humphries	Fortescue Metals Group
Juliana Nunes	AEMO	Allan McDougall	Gas Trading
Kent Hanh	AEMO	Cara Baker	GLNG
Leslie Lay	AEMO	Vanessa Taylor	GLNG
Levi Rosenbaum	AEMO	Jonathan Jorgensen	Hydro Tasmania
Luke Dowling	AEMO	Robert Pane	Intergen
Natasha Sinclair	AEMO	Stephen Coghlan	Jemena
Nick Culpitt	AEMO	Tan Bui	Jemena
Nicola Falcon	AEMO	Peter Kolf	KPK Specialist Advisory Services
Roberta Maher	AEMO	Richard Lewis	Lewis Grey Advisory
Shahzad Billimoria	AEMO	David Headberry	Major Energy Users
Siobhan Attwood	AEMO	Sanja Kolonic	Mitsui E&P Australia
Vivian Mai	AEMO	David Havyatt	Network of Illawarra Consumers of Energy
Elsie Zhao	AGIG	Bill Nixey	NSW DPIE
Mark Riley	AGL	Sarah-Jane Derby	Origin Energy
Paul Bresloff-Barry	Agora Retail	Anna Livsey	PIAC
Audelle Hong	Alinta Energy	Adam Ryan	Powercor

Michelle Nguyen	Alinta Energy	Dean Knight	Powerlink
Sam Lei	Alinta Energy	Enrique Montiel	Powerlink
Karan Sharma	APPEA	Jacqui Bridge	Powerlink
Ed White	Ausgrid	Jennifer Brownie	QEUN
Marc Thiebaut	Ausgrid	Phil Pollard	QEUN
Ricky Chen	Ausgrid	Andrew Manson	SA Gov
Morteza Moallemi	AusNet Services	Elisia Reed	SA Power Networks
Nick Cimdins	AusNet Services	Matt Sherwell	Santos
Duncan MacKinnon	Australian Energy Council	Charles Loh	Shell
Ruchira Ray	BIS Oxford Economics	Noel John Sligar	Sligar & Associates
Sarah Hunter	BIS Oxford Economics	Brendan Ash	Stanwell
Christopher D'Costa	Chevron	Colby Hauser	Strike Energy
Robert Rintoul	Chevron	Herath Samarakoon	TasNetworks
Sieu Vuong	Chevron	Julie Morrison	TasNetworks
Thakshila Gunaratna	Clean Energy Council	Prateek Beri	TasNetworks
Dan Dempsey	DELWP	Arindam Sen	TransGrid
Felicity Sands	DELWP	Michael Connarty	UPC\AC Renewables
Henryk Smyczynski	DELWP	Noelle Leonard	WA Gov DJTSI

1. Welcome and Introductions

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

- Open Actions, proposing to close Action 4.3.2 regarding Electric Vehicle charging profiles.
- Asked for any corrections for the following minutes to be provided by October 2:
  - June 10th
  - June 24th
  - July 29th
  - August 26th
- A Forecasting and Planning Scenarios Workshop was held on October 14th.
- The first stage of the Demand Side Participation Information consultation. Submissions closed on 30th September 2020. (Action 4.5.2)
- Submissions to Energy.forecasting@aemo.com.au are appreciated.

2. Presentation 1 – Economics Update

Sarah Hunter (BIS Oxford Economics) presented a macroeconomic forecast update, focusing on the changes since April. The COVID-19 impact has been lower than expected, but the recovery is expected to take longer with GDP levels not returning to pre-COVID-19 levels for many years,

Key topics raised by stakeholders during this section included:

- Ron Logan (ERM Power): What drives the strong rebound in services?
  - Sarah Hunter: Household income loss has been more than offset by government spending. The subsequent increase in savings, from 5% to 20%, is expected to flow into services as restrictions ease.
- Ron Logan: Why is immigration forecast to return to pre-COVID-19 levels relatively quickly?
  - Sarah Hunter: Increased affordability drives a sharp international student immigration bounce back. Considerable uncertainty remains across scenarios.
- Jennifer Brownie (QEUN): Persistent border closures severely deplete the travel and tourism industries; What drives positive services growth?
  - Sarah Hunter: "Services" groups various public and private industries. Non-travel related industries drive the recovery. Growth rates are positive due to

the current low levels of consumption. A return to pre-COVID-19 GDP growth trend is not expected until FY24 at the earliest. Travelling will not normalise for some time, even after state and international borders reopen.

- Duncan Mackinnon (Australian Energy Council): Does the reduction in forecast demand warrant an ESOO or ISP update?
  - AEMO are actively monitoring the fluid situation. The ESOO and ISP include COVID-19 related sensitivities which capture a range of operational outlooks and as such updates for these publications are not required at this stage.
- David Havyatt (Network of Illawarra Consumers of Energy): Growth rates seem optimistic. Can the numbers behind the graphs be distributed?
  - Sarah Hunter: Long run growth rate trends have been downgraded.
  - AEMO: The underlying numbers will be distributed when finalised. (Action 4.6.1)
- Craig Tupper (Ausgrid): Have structural changes due to COVID-19 been considered?
  - Sarah Hunter: BIS Oxford are considering possible structural changes including; working from home impacts, regional relocation, increased warehouse demand and adjusted spending patterns.
- Nick Cimdins (AusNet Services): Have potential government investments been included?
  - Sarah Hunter: Government intervention was always expected and has been included to varying degrees across scenarios.

3. Presentation 2 – Hydrogen Update

Azadeh Keshavarzmohammadian (AEMO) presented a summary of the proposed Hydrogen scenario in the 2021 Gas Statement Of Opportunities (GSOO). The presentation summarised stakeholder feedback from the recent hydrogen workshop.

Key topics raised by stakeholders during this section included:

- David Headberry (Major Energy Users): Has hydrogen been considered as a firming fuel for electricity?
  - AEMO: Many applications for electrolysers are considered, as are their potential impacts on minimum and maximum electricity demand. Currently, industry views hydrogen as uneconomical compared to other firming fuels.
- David Havyatt (Network of Illawarra Consumers of Energy): Why is there only one hydrogen scenario, dismissing other possibilities?
  - AEMO: The GSOO focuses on the adequacy of gas infrastructure to meet future gas demand. This scenario, defined with collaboration with stakeholders, will examine a reasonable upper range of growth for an emerging hydrogen industry, and the effect this would have on the gas market, and to an extent the NEM given the scale of gas demand for power generation. While other future worlds exist where hydrogen is developed, time and resource limitations mean a single scenario is appropriate for the 2021 GSOO.
- Jennifer Brownie (QEUN): The bullish outlook for hydrogen assumes the NEM will at least double in size. Have capacity limitations been considered?
  - David Havyatt: Some hydrogen assets may not be connected to the electricity or gas grids.
  - AEMO: Grid connected hydrogen generation does not necessarily require a proportionate increase in transmission. The limitations of the power system to deliver the necessary energy for the scale of the NEM's future share of hydrogen production will be examined in greater detail in the 2022 Integrated System Plan, subject to the dimensions of the forward scenarios being developed with stakeholders currently
- David Havyatt: Are AEMO talking to the future fuels CRC?
  - AEMO are engaging broadly to cover the great uncertainty around hydrogen.
- Craig Pollard (Energy Queensland): This scenario is relying on scientific breakthroughs and will remain expensive to transport and export. Has financing and economic viability been considered?

- AEMO: The economic viability of Australia's role has not been explicitly considered in this scenario by AEMO, but is informed by the scale of hydrogen potential informed by stakeholder consultation and the insights of other publications, including the National Hydrogen Strategy[1].

4. Presentation 3 – 2021 GSOO Scenarios and Inputs

Shahzad Billimoria (AEMO) presented a summary of the proposed scenarios for the 2021 GSOO, which are largely consistent with the 2020 GSOO. Debborah Marsh (AEMO) presented an overview of the GSOO inputs for consumption. Shahzad Billimoria outlined that the GSOO will consider a number of proposed integrated solutions to potential supply shortfalls.

Key topics raised by stakeholders during this section included:

- Matt Sherwell (Santos): Solutions rely on varying assumptions, avoid assigning preferences.
- Ron Logan (ERM Power): Are population growth forecasts included?
  - AEMO: Yes, population growth drives NMI and gas connection forecasts.
- Jennifer Brownie (QEUN): Have new medium sized businesses been responding to surveys?
  - AEMO understand sensitivities and cost pressures. All new businesses go through an induction process to ensure they respond efficiently and effectively.
- David Havyatt (Network of Illawarra Consumers of Energy): Given the ISP discusses batteries replacing gas, is there a scenario where GPG rapidly heads to zero?
  - AEMO: Electricity models used in the ISP all include gas as part of the energy mix, and GPG forecasts will consider the future balance of renewable energy production, storage development and utilisation, coal and gas generation.
- Stephen Coughlan (Jemena): How will LNG imports impact the east coast gas market?
  - AEMO: The supply adequacy model treats potential imports as increased supply.
  - Stephen Coughlan: Jemena will collaborate with AEMO on this matter. (Action 4.6.2)
- Jennifer Brownie: Has the decision for the Narrabri gas project been included?
  - AEMO: Narrabri is not considered committed yet, with the final investment decision's timing not currently known.

5. Presentation 4 – Gas Price Forecasts

Richard Lewis (Lewis Grey Advisory) presented forecast gas prices, to be used as an input in the 2021 Gas Statement Of Opportunities (GSOO). Cameron Potter (AEMO) mentioned that the slides shown are preliminary and are subject to change following feedback, specifically on oil indexation.

Key topics raised by stakeholders during this section included:

- Bill Nixey (DPIE): Why does Sydney's gas cost profile follow Brisbane's rather than the southern states?
  - Richard Lewis: Wallumbilla's proximity causes Brisbane's gas costs to fall. Sydney's lower relative cost of transmission (compared to Melbourne) keeps its costs low.
  - AEMO: Recent government announcements around gas generation and pipelines investment should be considered for at least some of the modelling.
- David Headberry (MEU): Has international pressure to de-link LNG from oil been modelled?
  - Richard Lewis: The model allows for different prices, other than oil indexation. In all cases, oil indexation is reducing in relevance over the forecast horizon.
- Jennifer Brownie (QEUN): How have the assumptions considered exports from QLD gas producers who only fill domestic contracts?
  - Richard Lewis: Supply is virtually fixed at contracted levels. However, available exports of more than 100 PJ can be filled by excess production capacity.

[1] Available at https://www.industry.gov.au/data-and-publications/australias-national-hydrogen-strategy

- Ron Logan (ERM Power): Have these gas price forecasts been passed through to ElectraNet for use in the Project Energy Connect cost benefit analysis?
    - AEMO: These are draft, subject to change, and have not been sent to the AER yet. Ideas discussed at this meeting will influence the GSOO and final forecasts, and will be consulted on formally as part of the key inputs within the IASR for the 2022 ISP and other forecasting and planning activities.

6. Other Business

AEMO will also host a technical forecasting workshop in November, to discuss forecast methodologies with forecasting practitioners.

Key topics raised by stakeholders during this section included:

- Adam Ryan (Powercor): When are COVID-19 adjusted connection point forecasts due for release?
    - AEMO: There is no official timeline, but there will be an update soon following extensive collaboration with Network Service Providers.
- Ron Logan (ERM Power): With regards to the EV charging profiles, can there be an opportunity to more fully discuss future charging profile assumptions as an inputs update?
    - AEMO: EV charging will be discussed in a future FRG meeting. (Action 4.3.2)

7. Meeting close

The next FRG meeting is scheduled for Wednesday 28th October 2020. The agenda focuses on forecasting improvements with presentations on the Forecast Accuracy Report, Forecasting Improvement Plan, and Forecasting Enhancement Research Projects.

Appendix A Forecasting Reference Group (FRG) Actions Items

FRG Action Items – OPEN (as at 28th October 2020)

Item	Date Raised	Topic	Action required	Responsible	Due	Status
4.2.2	10/06/2020	Improve FOR data collection	Improve data collection to include causes of outages	AEMO	Dec 2020	OPEN
4.6.1	30/09/2020	GDP growth rates	Release final data behind GDP growth rates for the COVID-19 recovery	AEMO	October 2020	OPEN

FRG Action Items – CLOSED (as at 28th October 2020)

Item	Date Raised	Topic	Action required	Responsible	Details	Status
4.3.2	24/06/2020	EV charge profiles	Discuss EV's and charge profile assumptions.	AEMO	EVs will be discussed at the FRG in early 2021	CLOSED
4.5.2	26/08/2020	DSPI Guidelines Consultation	1st stage submissions to energy.forecasting@aemo.com.au	Participants	30th Sep 2020	CLOSED
4.6.2	30/09/2020	Collaborate on LNG imports	AEMO to reach out to Jemena to collaborate on forecasting LNG imports	AEMO	AEMO have arranged a meeting	CLOSED