RELIABILITY FORECAST GUIDELINES

FINAL REPORT AND DETERMINATION

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EXECUTIVE SUMMARY

The publication of this Final Report and Determination (Final Determination) concludes the Rules consultation process conducted by AEMO to finalise the Reliability Forecast Guidelines (Guidelines) by 28 February 2021 in accordance with clauses 4A.B.4 and 11.116.4 of the National Electricity Rules (NER). The finalised Guidelines will replace the Interim Reliability Forecast Guidelines (Interim Guidelines) made under clause 11.116.4(a) of the NER.

AEMO published an Issues Paper on 11 November 2020 asking stakeholders for submissions to updates to the Reliability Forecast Guidelines and Section 6.1.2 of the Electricity Statement of Opportunities (ESOO) and Reliability Forecast Methodology.

In response, AEMO received four submissions with feedback summarised under the following themes:

- Consultation Effectiveness – assessing engagement effectiveness, enhancing engagement, including consumers in stakeholder engagement, implementing an issues register, consultation on document updates and engaging stakeholders on a Draft Reliability Forecast.
- Conservatism and bias – reflecting some stakeholder concerns that AEMO has a conservative approach to forecasting that increases consumers' energy costs.
- Demand Side Participation – ensuring DSP is treated appropriately in the modelling.
- Data and Reporting – regarding data requests from and to AEMO, and the content and timing of Forecast Accuracy Reporting.
- Updating the Reliability Forecast – defining trigger events to update the Reliability Forecast.
- An incalculable Forecast Reliability Gap – determining methods for widening the reliability gap period in the event it is incalculable.
- Other matters – classifying large and small business definitions, transmission line rating traces, reliability gap calculation methodology.

AEMO received no submissions to the Draft Determination, which detailed AEMO's responses to the above matters. The Guidelines were updated accordingly and have seen further minor administrative updates, in particular, to align terminology with the recently published Forecasting Approach webpage[1].

AEMO's Final Determination is to amend the Reliability Forecast Guidelines in the form published with this Final Determination.

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

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1. STAKEHOLDER CONSULTATION PROCESS

As required by clause 4A.B.4 of the NER, the Australian Energy Market Operator (AEMO) is consulting on its Reliability Forecast Guidelines in accordance with the Rules consultation process in Rule 8.9.

The timeline followed by AEMO for this consultation is outlined below.

Deliverable	Indicative date
Notice of first stage consultation and Issues Paper published	11 November 2020
First stage submissions closed	16 December 2020
Draft Determination & Notice of second stage consultation published	20 January 2021
Submissions due on Draft Determination	4 February 2021
Final Determination published	26 February 2021

The publication of this Final Determination marks the conclusion of the consultation. Note that there is a glossary of terms used in this Final Determination at **Appendix A**.

2. BACKGROUND

2.1. Context for this consultation

AEMO is required to publish Reliability Forecast Guidelines (Guidelines) to meet the requirements under NER clause 4A.B.4. The Guidelines must be finalised by 28 February 2021 under transitional Rule 11.164.4.

The finalised Guidelines replaces the Interim Reliability Forecast Guidelines (Interim Guidelines) that were in effect since 19 December 2019.

2.2. First stage consultation

AEMO issued a Notice of First Stage Consultation on 11 November 2020. The accompanying Issues Paper[2] outlined the key proposed changes compared to the Interim Guidelines, made to align with the relevant aspects of the AER's Forecasting Best Practice Guidelines (FBPG)[3] regarding:

- Inputs and assumptions.
- The Reliability Forecast gap.
- The consultation process with relevant stakeholders.
- Confidentiality.
- The Forecasting Accuracy Report (FAR) and Forecasting Improvement Plan (FIP), including analysis of how data and methodology updates affect the Reliability Forecast.

AEMO received four written submissions in the first stage of consultation: from Energy Users Association of Australia (EUAA), ERM Power, Major Energy Users (MEU) and Queensland Energy Users Network (QEUN).

Copies of all written submissions, excluding any confidential information, have been published on AEMO's website[4].

[2] Available at: https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2020/rfg/issues-paper---reliability-forecast-guidelines.pdf?la=en

[3] The FBPG were published in August 2020. Available at https://www.aer.gov.au/system/files/AER%20-%20Forecasting%20best%20practice%20guidelines%20-%2025%20August%202020.pdf

[4] Available at: https://aemo.com.au/consultations/current-and-closed-consultations/reliability-forecast-guidelines

2.3. Second stage consultation

AEMO published its Draft Determination[5] on 20 January 2021 outlining its responses and determination to each issue raised in the first stage consultation. AEMO received no submissions to the Draft Determination in the second stage consultation, which closed on 4 February 2021. Therefore, AEMO's Final Determination is that the Draft Guidelines replace the Interim guidelines from 28 February 2021.

3. SUMMARY OF MATERIAL ISSUES

The key topics arising from the proposal and raised by Consulted Persons in stage one consultation are described below:

- Section 4 discusses consultation effectiveness. This includes measuring effectiveness, enhancing the forms of engagement, and including consumers in stakeholder engagement. Issues regarding the Forecasting Approach Register, consultation process requirements and publishing a draft Reliability Forecast are clarified.
- Section 5 discusses stakeholder perception of conservatism and bias.
- Section 6 discusses the placement of Demand Side Participation (DSP) within the overall Reliability Forecast process diagram and how it is classified.
- Section 7 discusses Data, Classification and Reporting. Matters include data requests both from and to AEMO and the timing and review process of the annual Forecast Accuracy Report (FAR).
- Section 8 deals the timing and scope of updates to the Reliability Forecast.
- Section 9 discusses arrangements for an incalculable Reliability Forecast gap.
- Section 10 discusses other material issues not specifically relevant to this consultation.

AEMO considers that all matters raised in the stakeholder submissions are dealt with in the body of this consultation, so there is no appendix containing minor points addressed in abridged form.

4. CONSULTATION EFFECTIVENESS

4.1. Assessing effectiveness

4.1.1. Issue summary and submissions

The Reliability Forecast Guidelines Issues Paper identified considerations for effective stakeholder consultation and, in Section 2 of the Draft Guidelines, AEMO proposed a set of engagement types to suit the Reliability Forecasts.

QUEN proposed that AEMO categorise stakeholders into "generation, networks, retailers, business consumers, residential consumers, government and other" to increase the objectivity of its claims of effective consultation. QUEN further suggested that AEMO be required to report on stakeholder engagement and submissions by those categories.

4.1.2. AEMO's assessment

AEMO reports on its stakeholder engagement and consultation to the AER via its FBPG Compliance Report, as described in Section 5.2 of the FBPG. The Compliance Report covers the consultations and engagement activities that have occurred throughout the IASR and ISP processes, allowing the AER to assess whether

[5] Available at: https://aemo.com.au/consultations/current-and-closed-consultations/reliability-forecast-guidelines

effective consultation has occurred. The AER publishes AEMO's compliance report on its website[6] along with an assessment of whether effective consultation has occurred.

4.1.3. AEMO's conclusion

Interested parties may refer to AEMO's Compliance Report, and the AER's corresponding review, to help inform their view on AEMO's consultation effectiveness. AEMO's report contains some basic measures that indicate the breadth and depth of consultation. Interested parties may choose to develop their own measures which they believe reflect consultation effectiveness. Such measures can be formulated from various publicly available raw data, including:

- Public submissions made to AEMO consultations published online7 with the name of the submitting party.
- AEMO forum attendees published in the minutes. For example, the Forecasting Reference Group (FRG) meetings minutes, available on AEMO's website[8], lists attendees and the organisations they represent.

The Guidelines have been amended with Section 2.4.1 clarifying that AEMO is to provide transparency on who is engaged in public consultations, and the AER is to assess engagement effectiveness.

4.2. Enhancing engagement

4.2.1. Issue summary and submissions

AEMO described various forms of engagement with implementation examples in the Draft Guidelines Section 2.3 - Forms of Engagement. In response, several stakeholders emphasized the importance of engagement forms beyond 'inform'. EUAA expressed its perception that AEMO may rely on the 'inform' level of engagement given current funding levels for consumer engagement. Similarly, MEU noted that:

> AEMO needs to ensure that it gets the maximum value from the consumer cohort in its deliberations, especially moving from the 'inform' element of the IAP2[9] spectrum to aspects to the right of 'inform'. This requires AEMO to make significant steps towards getting better consumer engagement and to enable those consumer representatives to provide informed input to those deliberations.

4.2.2. AEMO's assessment

In the past few years, AEMO has been focusing on building greater transparency and stakeholder understanding of its forecasting approach to enable well-informed stakeholders to contribute effectively in discussions and utilise the forecasts in their own businesses. This has included improved documentation of forecasting approaches, more direct access to AEMO's consultants, and structuring presentations in forums and workshops to allow more time for discussion.

To date, much of the discussion time is used by stakeholders to ask further questions of clarification about draft forecast components and AEMO acknowledges that this could lead to the perception that the purpose of engagement was to "inform" rather than "consult".

AEMO is striving for a more consultative style, when appropriate. As well as deeper engagement on the forecasting specific content, AEMO is increasingly seeking stakeholder input on priorities, timing and

[6] Available at: https://www.aer.gov.au/system/files/Compliance%20Report%20for%20Interim%20Forecasting%20Best%20Practice%20Guidelines.pdf
[7] Available at: https://aemo.com.au/consultations/current-and-closed-consultations
[8] Available at: https://aemo.com.au/en/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg
[9] Available at: https://www.iap2.org.au/resources/spectrum/

materiality. The headings below describe how AEMO intends to move further to the right on the IAP2[9] spectrum.

Forecasting Reference Group (FRG) Meetings

AEMO is continually improving its FRG engagement style to place greater emphasis on consultation, and is committed to:

- Present 'for discussion', which includes AEMO seeking feedback and multilateral discussion whereby everyone can contribute to the discussion with their insights and points of view.
- Provide ample time for discussions and use questions to prompt discussion on aspects under consultation.
- Ensure consultation occurs at a point in the process where there remains time to genuinely take feedback onboard and adjust forecasts or approaches as appropriate.
- Be accountable for circulating both agenda and presentations a week prior to the meeting, as per FRG Terms of Reference, to facilitate informed discussion.
- Develop presentations with stakeholders in mind:
  - Provide a recap of recent and upcoming stakeholder engagements and topic milestones
  - Include insights and implications to accompany data
  - Actively seek stakeholder perspectives and insights
- Demonstrate willingness to adapt the schedule and agenda to incorporate stakeholder feedback, and include additional workshops if needed
- Frequently seek feedback on engagement and FRG effectiveness and adapt accordingly.

AEMO seeks feedback on the effectiveness of FRG meetings annually, most recently in November 2020. FRG participants noted that:

- AEMO has already made progress on some elements of the style in 2020, such as increased discussion time[10].
- Online meetings had increased participation opportunities for regionally located participants[11]. (MEU)
- FRG discussion quality has improved with "AEMO Forum and Meeting Expectations[11]."

Consultations

Recent ISP workshops demonstrated progress in a participatory workshop style. The remote format, necessitated by AEMO's response to COVID-19, allowed for users to create shared workspaces as they developed and reviewed scenarios.

AEMO acknowledges that workshops can further improve, and has logged associated stakeholder feedback in the Forecasting Approach Register, for transparency and guidance on future workshops.

Forecasting Workshops

AEMO includes, in parallel to the FRG, technical workshops to support a deeper and more technical involvement in forecasting topics where it is needed.

[10] See FRG Meeting Pack 37, available at: https://aemo.com.au/en/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg

[11] Available at: https://aemo.com.au/en/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg

The recent Technical Forecasting Workshop enhanced the skills and knowledge of stakeholder participants who already have forecasting centric roles.

Future workshops include an Energy Efficiency workshop scheduled for March 2021. The workshop will be an opportunity for external stakeholders to share ideas, and provide feedback on:

- The methodology used to develop the energy efficiency forecasts for the 2021 electricity and gas forecast publications
- Draft energy efficiency forecasts.

Stakeholder initiated engagement

Stakeholders have a range of opportunities to not only engage in AEMO initiated topics, but to initiate engagement on topics of interest to them, including:

- The 'other business' section of the FRG. The Hydrogen workshop conducted in September 2020 is an example of a stakeholder requested engagement. Another example is the inclusion of an Electric Vehicle presentation and discussion in February 2021 FRG. Following stakeholders expressing interest during the FRG, AEMO conducted a follow up meeting with several stakeholders to better understand their interest in this subject, and revised the FRG forward plan.
- FRG submissions: attendees are invited to correspond via energy.forecasting@aemo.com.au and can request that their contribution be circulated to other FRG attendees. This has occurred numerous times.
- Request that a matter, from the above or other channels, be considered for the Forecasting Approach Register.

Selecting the right level of engagement

As can be seen above, where appropriate, AEMO is progressively increasing the forms of engagement beyond 'inform'. However, there are limitations on the forms of engagement, such as:

- Inform – there will still be times when informing is appropriate, for example when informing how AEMO has incorporated feedback.
- Collaborate or empower – AEMO needs to use caution at the "collaborate" and "empower" end of the IAP2 engagement spectrum:
  - AEMO has statutory functions which cannot be delegated to stakeholders
  - Stakeholders may advocate for an approach that does not meet the NEO – for example this may occur due to a commercial interest in that outcome

Funding for consumer representatives

In November 2020, AEMO established the Consumer Panel[12] to better engage with consumer perspectives in the 2022 ISP development process[13].

AEMO notes that the Energy Consumers Australia (ECA) Grants Program provides funding to support a consumer voice, and help ensure energy consumers' needs and interests are at the centre of policy and regulatory decisions. Its CEO Grants Program is designed specifically to assist consumer advocates input to government, regulatory and industry processes, with grants of up to $15K (excluding GST), recognising that

[12] See: https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp/get-involved/consumer-panel

[13] For more information, see: https://aemo.com.au/en/newsroom/media-release/aemo-announces-isp-consumer-panel

consumers may need to respond within short timeframes. For larger projects, grants are also approved three times a year for high quality and innovative advocacy and research initiatives[14].

4.2.3. AEMO's conclusion

As indicated above, AEMO has significant plans to engage beyond the 'inform' level, and none of the material in Section 2.3 of the Guidelines was intended to indicate anything contrary. AEMO has now amended the Guidelines to better reflect the type of engagements beyond 'inform'. See Section 2.3.2 of the Guidelines - Engagement approach for the Reliability Forecast Guidelines.

Additionally, IASR stakeholder engagement opportunities, many of which are beyond 'inform', are detailed in Table 7 of the Draft 2020 IASR report[15]. If stakeholders see the proposed forms of engagement as insufficient or inappropriate, they can make a submission to the IASR consultation[15] to that effect.

In relation to funding for consumer representatives, AEMO notes stakeholder views regarding the level of funding being modest relative to the underlying need, however this is a matter broader than the Guidelines currently under consultation.

4.3. Including consumers in stakeholder engagement

4.3.1. Issue summary and submissions

Several stakeholders suggested changing the title on Section 2 of the Guidelines from "Industry Engagement" to "Stakeholder Engagement" to ensure that consumers are included in engagement opportunities for the Reliability Forecast.

4.3.2. AEMO's assessment

Consumers are an important stakeholder group for the Reliability Forecast and AEMO in general. AEMO understand that using the word "industry" can be seen to overlook consumers and have therefore updated the wording.

4.3.3. AEMO's conclusion

The title of Section 2 of the Guidelines has been amended to "Stakeholder Engagement."

4.4. Implementing an Issues Register

4.4.1. Issue summary and submissions

The AER's FBPG broadly described an 'issues register' in Section 2.1 - Consultation on AEMO's Forecasting Approach. AEMO described its plans to meet this best practice in the Guidelines Section 2.5 - Forecasting Approach Register. Other references throughout the FBPG refer to the AER maintaining a public compliance issues register.

In response to this consultation, several stakeholders requested that AEMO creates an additional issues register to better recognise and respond to consumers' issues.

EUAA and ERM Power submitted that the Forecasting Approach Register should include informal and formal consultation issues raised by stakeholders, to report disagreements and how such issues were resolved or determined, to the AER. QEUN suggested that:

[14] For more information about the ECA Grants Program, including eligibility and how to apply, see https://energyconsumersaustralia.com.au/for-applicants.

[15] See: https://aemo.com.au/consultations/current-and-closed-consultations/2021-planning-and-forecasting-consultation-on-inputs-assumptions-and-scenarios

An issues register should document all stakeholder concerns pertaining to Reliability Forecasting and AEMO's response to the concerns. This would go some way to levelling the playing field between stakeholder groups and removing any underlying bias by AEMO.

4.4.2. AEMO's assessment

AEMO has recently published a Forecasting Approach Register[16] to track matters from a broad range of submission avenues. The webpage describes the purpose of the register as follows:

The Forecasting Approach Register summarises and responds to:

- Matters raised outside formal consultation processes. Note that the register does not duplicate matters raised within formal consultations.
- Feedback on AEMO's Forecasting Approach and consultation timeline, as per best practice described in Section 2.1 of the AER's Forecasting Best Practice Guidelines.
- Actionable feedback on how AEMO engages with stakeholders on forecasting matters.

The following points address key differences between AEMO's view of the Forecasting Approach Register and those of the submissions noted above:

- EUAA - As per the webpage description, the register does not log differences between AEMO's determination outcomes and stakeholder suggestions – to do so would be to duplicate existing publicly accessible consultation documents.
- QEUN referred to "maintaining details" of "all stakeholder concerns" and even "informal consultation" and ERM Power mentioned "issues raised during any informal or formal consultation." AEMO do not consider it cost-effective or productive to log all feedback, or even all detail of selected feedback. To ensure the register is a time-effective resource for tracking material matters, AEMO summarises material stakeholder feedback (combining with similar matters where appropriate), or excludes on the basis that it is currently under consultation.
- ERM Power's distinction between the Forecasting Approach Register and an 'issues register' does not appear to match with the intention of the FBPG. The FBPG's 'issues register' is under the heading 'Forecasting Approach' – AEMO interpret the 'issues register' to be one and the same thing as the Forecasting Approach Register.

4.4.3. AEMO's conclusion

AEMO's interpretation of the FBPG is:

1. It is best practice for AEMO to develop and maintain a public issues register to record matters associated with the Forecast Approach.
2. The AER will maintain its own public register in relation to AEMO's compliance with the FBPG.

AEMO agrees with the AER's view that a public register is best practice. AEMO notes the Forecasting Approach Register was first published around the time draft submissions to this consultation were being drafted, so submission authors may not have been aware of it at that time. However, as no final submissions were made by stakeholders on the topic, AEMO believes it has addressed stakeholder feedback.

AEMO considers that the AER's decision to maintain a public register be a matter for the AER and not a matter under consideration in this consultation.

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

4.5. Consultation on document updates

4.5.1. Issue summary and submissions

ERM Power suggested that methodology documents detailed in the FBPG should be subject to the NER 8.9 consultation requirements rather than the parameters set out in the FBPG Appendix A.

4.5.2. AEMO's assessment

AEMO follows the Rules consultation procedure, outlined in the NER 8.9, when required by the Rules, including for the guidelines within the forecasting approach. Otherwise, AEMO follows the AER's FBPG Appendix A[17].

NER 8.9 and FBPG Appendix A differ slightly and AEMO must follow the relevant process for each consultation.

4.5.3. AEMO's conclusion

AEMO follows the Rules consultation procedure when required by the Rules, and the AER's FBPG in other instances, including when updating or reviewing methodology documents.

4.6. Engaging stakeholders on a Draft Reliability Forecast

4.6.1. Issue summary and submissions

AEMO's Reliability Forecast engagement cycle focusses on stakeholder input to the inputs (including assumptions and scenarios), and the methodologies. This is detailed in Section 2.2 and Figure 1 of the Guidelines. In response, ERM Power requested AEMO consider the inclusion of a draft Reliability Forecast as part of the engagement cycle. It stated:

> We believe this would add value to the process as it would provide the ability for the identification of any potential errors prior to issuing the Reliability Forecast. Whilst this is not a Rules requirement, we believe that the engagement cycle would be significantly improved by its inclusion.

4.6.2. AEMO's assessment

AEMO considers it of high importance that all stakeholders are informed of the Reliability Forecast outcomes at the same time, especially given the potential stakeholder obligations arising from a Reliability Forecast. However, under this request, not all stakeholders may be willing or able to attend any particular engagement opportunity, and thus AEMO considers this request to be potentially inequitable for stakeholders. Further, there is a risk that some stakeholders may rely on these preliminary reliability forecasts to make decisions when the forecasts have not yet been fully scrutinised internally by AEMO or approved through AEMO's robust governance process.

The current process is:

- AEMO consults on the component forecasts in the lead up to performing its Reliability Forecast (as ERM Power acknowledged). This consultation process is an important opportunity for stakeholders to identify any potential errors.
- AEMO follows the methodology for producing the Reliability Forecast as published in the ESOO and Reliability Forecast Methodology Document, which is also subject to this consultation.

[17] Available at: https://www.aer.gov.au/system/files/AER%20-%20Forecasting%20best%20practice%20guidelines%20-%2025%20August%202020.pdf

- Should a Reliability Forecast result in a reliability instrument request being made to the AER, the AER will have regard to whether there are any material errors or inaccurate assumptions in the Reliability Forecast, and will consult with stakeholders, prior to making a reliability instrument.

AEMO considers the above arrangements avoids errors, provides an opportunity for stakeholders to add value to the process, and transparently delivers the final Reliability Forecast results to all stakeholders as soon as possible after they have been appropriately reviewed and approved through AEMO's internal governance processes.

4.6.3. AEMO's conclusion

AEMO's Final Determination is not to publish a draft Reliability Forecast, as the inputs and methodologies by which it is generated are already subject to consultation[18]. In the case of a Reliability Instrument being requested, stakeholders can provide submissions to the AER.

5. IDENTIFYING AND ADDRESSING CONSERVATISM AND BIAS

5.1.1. Issue summary and submissions

Submissions by ERM Power, EUAA and MEU claimed that AEMO's forecasts are inherently conservative, in that AEMO over-forecasts demand and/or under-forecasts supply so as to result in a bias towards triggering Retailer Reliability Obligations (RRO). The submissions took the view that a bias towards triggering such obligations unreasonably increases consumers' energy costs.

EUAA submitted:

> In our view AEMO has a conservative approach to forecasting and that it has every incentive to continue this approach because it does not face the costs of that conservatism, only the reputational damage if the lights go out, irrespective of whether the reliability standard is still met. It is our members, and consumers generally, who pick up the tab.

ERM Power submitted:

> In our view the Draft Guideline is unclear how AEMO will ensure that no [sic] internal AEMO bias will be prevented from entering the data inputs, assumptions and methodologies. Whilst AEMO consult with stakeholders, the decision to include or exclude data, assumption or steps in a methodology is made solely by AEMO. We believe the Guideline requires amendment to set out the steps AEMO will undertake to ensure the exclusion of AEMO internal bias in their process.

MEU submitted:

> As an overarching observation, the MEU is very concerned that AEMO implements an excessively conservative approach to its forecasting and this point has been made by the MEU representative to the FRG on numerous occasions… The MEU points out that over-forecasting by AEMO is an advantage to AEMO in its role as the market operator and its reputation if "the lights go out" but the costs of over forecasting are borne by consumers.

5.1.2. AEMO's assessment

The claim of bias towards a conservative forecast is not new; stakeholders made similar submissions to the Reliability Forecasting Methodology for the 2019 ESOO[19].

AEMO notes the concerns of bias tend to be "overarching" (MEU) and "overall" (EUAA), but neither the previous nor current submissions provide specific evidence of such bias towards conservatism. Each year,

[18] See: https://aemo.com.au/consultations/current-and-closed-consultations/2021-planning-and-forecasting-consultation-on-inputs-assumptions-and-scenarios

[19] Available at: https://aemo.com.au/consultations/current-and-closed-consultations/reliability-forecasting-methodology-issues-paper

AEMO analyses forecast performance and publishes the FAR to transparently report on the results. To the extent that concerns about bias were warranted, evidence should be apparent in the forecast performance results. In the FAR Methodology consultation[20], AEMO assessed stakeholder perceptions of apparent bias shown in the FAR results, and found them not to have statistical support.

5.1.3. AEMO's conclusion

AEMO rejects the suggestion that it biases the Reliability Forecasts. In the absence of specific evidence supporting the suggestions, AEMO simply notes there is in fact evidence to the contrary; the AER recently assessed AEMO's T-3 instrument request, which was based on the Reliability Forecast contained within the 2020 ESOO. The AER, when subsequently issuing the T-3 Reliability Instrument (December 2020) reported in relation to AEMO's request (including the Reliability Forecast):

> We are satisfied that accuracy, comprehensiveness and lack of bias have been achieved.

AEMO consults on the full Forecast Accuracy Reporting methodology at least once every four years, and this is an appropriate opportunity to provide further assurance that the Reliability Forecasts are free of bias. AEMO has amended the Section 4 of the Guidelines to include an independent assessment of approach and potential for bias in the FAR reporting metrics at least once every four years, prior to a full FAR methodology consultation.

6. DEMAND SIDE PARTICIPATION

6.1.1. Issue summary and submissions

AEMO outlines the Demand Forecasts, Supply Forecasts and Supply Adequacy analytical workstreams in the Guidelines, Section 3.2 - Forecast methodologies. For consistency with the AER's FBPG description of the Supply Forecast analytical workstream, AEMO replaced the term 'DSP' with 'dispatchable load' in the text above the diagram.

ERM Power recommends that Demand Side Participation (DSP) be listed as a component within the "supply" workstream in Section 3.2 of the Guidelines, as it was in the interim Guidelines. They stated that DSP is a broader (and thus more appropriate) term than "dispatchable loads", which are only loads responding to dispatch signals from AEMO.

6.1.2. AEMO's assessment

AEMO agrees that the term DSP is more appropriate than "dispatchable loads" and notes, as shown in the guidelines' subsequent Figure 2, this is consistent with AEMO's treatment of DSP as a supply side component.

6.1.3. AEMO's conclusion

AEMO agrees that the term DSP is more appropriate than "dispatchable loads" and has amended Section 3.2 of the Guidelines accordingly.

[20] See: https://aemo.com.au/consultations/current-and-closed-consultations/forecast-accuracy-report-methodology

7. DATA AND REPORTING

7.1. AEMO data requests

7.1.1. Issue summary and submissions

Occasionally, AEMO seeks information from Market Participants via "information requests." ERM Power requested that only information requests required for AEMO to fulfil its Reliability Forecasting obligations should be included in Section 3.3.2 of the Guidelines - Information requests.

7.1.2. AEMO's assessment

NER clause 3.13.3A(d) specifies that AEMO can request information to facilitate the objectives of the ESOO, which is broader than the Reliability Forecast. AEMO considers it unwarranted to restrict information requests to Reliability Forecasting obligations only, as AEMO may wish to request information for other aspects of future ESOOs, particularly as future power system requirements evolve.

AEMO acknowledges that information requests place a burden on participants and should not be done without good reason. Consequently, the Draft Guidelines make it clear that significant changes to information requests will be consulted on prior to being requested. Further, the rationale for making the data request will be clearly linked to ESOO objectives. To date, the Guidelines have neither:

- reflected that AEMO information requests must be reasonably required for the preparation of an ESOO, per NER 3.13.3A(d), nor
- required AEMO to provide any justification for information requests.

7.1.3. AEMO's conclusion

AEMO's Final Determination is to amend the Guidelines such that AEMO shall provide a rationale for information requests that is clearly linked to the ESOO objectives. This has been done in Section 3.3.2(i) of the Guidelines.

7.2. Data requests from stakeholders

7.2.1. Issue summary and submissions

AEMO produces numerous assumptions, component forecasts, and draft results during the development of the Reliability Forecast. ERM Power's submission requested the Guidelines detail the process for stakeholders to request such information from AEMO. The submission noted the provision of information and data may progressively form part of the stakeholder engagement process, but in some instances, the provision of information and data may be delayed until the release of the ESOO.

7.2.2. AEMO's assessment

AEMO values transparency, and therefore outlines the range of data AEMO will make available as part of the ESOO process in the Guidelines Section 3.5.2 - Supporting material.

Specifically, draft inputs are published in December each year for consultation as part of the Inputs, Assumptions and Scenarios Report (IASR) consultation[21], with updates presented at FRG meetings when available, and the final IASR published in July. This is the earliest finalisation date which ensures proper review of all data series. If there is an additional input that stakeholders would like published, this should

[21] See: https://aemo.com.au/consultations/current-and-closed-consultations/2021-planning-and-forecasting-consultation-on-inputs-assumptions-and-scenarios

be requested during IASR consultation. To the extent practicable, AEMO seeks to make all useful non-confidential data available.

The key outcome of the Reliability Forecast, the unserved energy results, is published with the ESOO itself.

7.2.3. AEMO's conclusion

AEMO publishes the input assumptions along with its final IASR ahead of the ESOO in July, following stakeholder consultation.

AEMO has amended the Guidelines Section 3.5.2 to make it clear that stakeholder information requests should be made as part of the IASR consultation.

The unserved energy results are published with the ESOO itself.

7.3. Forecast Accuracy Reporting

7.3.1. Issue summary and submissions

The Reliability Forecast Guidelines utilises the FAR and Forecast Improvement Plan (FIP) as the mechanisms to respectively assess performance of, and improve on, the Reliability Forecast. Section 4.3 of the AER's Final FBPG (2020) introduced best practice guidance regarding providing visibility of the performance of updated inputs and models within demand forecasts:

> In general, where there are material changes to relevant forecast input data, AEMO should publish an updated dataset on its website, subject to its confidentiality obligations. Where AEMO has updated its forecasting inputs or methodology, this dataset should show how demand forecasts using the updated inputs/methodology would have performed against the previous five years of corresponding data. In providing its forecast performance review, AEMO should consider the reporting metrics and methods recommended by external experts that it may engage from time to time. At a more detailed level, this information may be able to correlate a lower or higher than expected outcome with variations of some input parameters from their expected ranges.

AEMO's Issues Paper supported the motivations of the above guidance, but noted challenges including:

- Conducting such forecasts would be costly given the scale and complexity of AEMO's forecasts.
- Accessing additional historical training data may be costly or impossible: gathering and quality checking such data is often expensive, and may even be impossible if a model's explanatory variable has not existed for a sufficiently long period.

Thus, the initial Draft Guidelines included "AEMO will assess how new methodologies or inputs would have performed if they had been executed over the previous five years of forecasting if practicable, considering the costs and benefits of doing so."

ERM Power's submission stated: "the Draft Guideline then fails to set out how the FAR review process will consider this cost-benefit in the context of the FAR or information as to how AEMO determined that the costs of doing so where prohibitive." The submission went on to request the Guidelines specify that where AEMO considers it impractical or too costly to perform the analysis, "AEMO should set out their reasonings for not including this analysis in the FAR."

7.3.2. AEMO's assessment

At a high level, the Guidelines do recognise the factors at play which add cost and complexity to applying updated forecasting methodologies to prior years:

> Such considerations will include the time and cost required to develop systems and resources to reproduce historical forecasts, the availability of historical input data at the spatial and temporal

resolution needed to train the models, and the materiality of the change in methodology. The potential for cost effective assessment against historical years will differ by methodology and input.

However, it is impractical for the Guidelines to definitively set out a fixed cost benefit methodology for forecast assessment in historical periods – there are simply too many variables to consider. A hypothetical example illustrates the varying challenges that could evolve over time:

Suppose that a new category of consumer electrical appliance gained popularity to the extent that it warranted specific consideration as a component forecast.

Initially, applying the new component's forecasting methodology to prior years would likely be hampered by lack of data –there is no long time series to utilise. After several years of data, there may be sufficient data points to warrant movement to a more sophisticated model using a newly available set of quarterly appliance sales records, but not enough to realistically test that model's effectiveness in prior years.

In following years, an interest develops in reporting energy forecasts at sub-regional level. Some forecasting components already utilise geographically detailed data that supports the change, whereas the consumer appliance sales figures are reported at a state level. The effort to estimate sub-regional figures would be specific to the data and characteristics of the forecasting component.

This brief example illustrates just three constraints that could feasibly occur. Real world cases may face even more, related to the interplay of data and methodology. Also, the opportunity cost of producing historical forecasts for one complex component versus two more simple components would need to be assessed. Thus, given this complexity, it is inappropriate for the Guidelines to define a cost benefit analysis process for running forecasts in historical periods.

Regarding benefit assessment, performing additional assessment of proposed models may or may not reveal insights that lead to forecast accuracy improvement, and the dollar value of a particular forecasting improvement is typically nuanced as well. Thus, quantifying benefits of running forecasts in historical time periods is also complex.

Regarding ERM Power's second point that AEMO should describe the costs and benefits in the relevant FAR, AEMO notes this would be ideal and has further considered the practicality of assessing new methodologies/ inputs via forecasts of historical periods. While AEMO stated in the initial draft that "AEMO will assess how new methodologies or inputs would have performed if they had been executed over the previous five years of forecasting if practicable, considering the costs and benefits of doing so." AEMO now consider such review to be impractical in the majority of cases for the reasons outlined in the paragraphs above. Furthermore, AEMO notes the AER's guidance is 'in general' and their use of the word 'should' indicates the activity is their view of best practice guidance as opposed to a requirement. Based on these considerations, AEMO sees that materiality of changes should have a role in any decision to explore forecasts of historical periods.

7.3.3. AEMO's conclusion

Regarding performing forecasts in historical periods to assess new models or inputs: For the reasons outlined in the section above, AEMO now considers it:

- Impractical in all cases to provide a quantitative cost benefit assessment on the value of the historical forecast.
- Impractical in the majority of cases to comprehensively list, even qualitatively, all the factors needing consideration in determining whether the historical forecast would be of overall value.

Thus, AEMO's Final Determination is to amend Section 4.1 of the Guidelines - The forecast accuracy report, to acknowledge that:

- Conducting historical forecasts of new inputs or methodologies is extremely challenging in complex forecasting environments.
- Where a change to inputs or forecast is considered a "continuous improvement" it is consulted on via a single stage consultation (as per Appendix B of the FBPG). In general, such changes would not warrant a forecast of historical periods as part of the assessment unless it would require minimal effort to do so.
- In contrast, more fundamental changes are consulted on via a two stage consultation as per Appendix A of the FBPG. In these cases, AEMO will endeavour to measure performance of the fundamental new method over historical periods and clearly articulate, through the consultation process, any factors that may lead to this not being possible.

7.4. Forecast Accuracy Report timing

7.4.1. Issue summary and submissions

The FAR is published annually as detailed as in Section 4.1 of the Guidelines - The forecast accuracy report. ERM Power suggested that the FAR timing be set out in the Guidelines, and delivered as early as possible, thus allowing improvements to be included in the current year's Reliability Forecast.

7.4.2. AEMO's assessment

AEMO considers the FAR to be an important stage of the Reliability Forecasting cycle, and already prioritises it accordingly. AEMO views specifying a publication date in the Guidelines as unnecessarily limiting AEMO's flexibility to reprioritise work, for example in years where a reliability instrument request is needed, or an emerging issue needs to be addressed first.

Regarding the FAR publication timing itself: at a practical level, undertaking an accuracy assessment of the previous year's forecast can only be done once you have actual observations. Summer maximum demand cannot be fully assessed until the end of summer, however a post-summer assessment would leave insufficient time to analyse, develop, consult and execute on improvements for the current year's Reliability Forecast.

Also, a post-summer FAR publication timing would be too early to assess accuracy of other components of the Reliability Forecast, such as the consumption forecast, winter maximum demand and generator availability.

Instead, AEMO performs assessment of all forecast components after the end of winter, which still allows time to consult and implement any identified forecast improvements ahead of the following year.

It should also be noted that AEMO monitors the performance of its previous summer maximum demand forecast. The performance data is used in the forecasting process, ensuring the models are trained on the most recent data and validated against the latest observations.

7.4.3. AEMO's conclusion

AEMO's Final Determination is for AEMO to continue with the current practice of publishing the FAR following the end of winter (just after the publication of the ESOO). This has been clarified in Section 4 of the Guidelines - Forecast improvements. AEMO also determines that to maintain its agility in responding to evolving priorities and stakeholder preferences, the Guidelines do not specify an exact FAR publication date.

8. UPDATES

8.1. Trigger events to update the Reliability Forecast

8.1.1. Issue summary and submissions

The Draft Guidelines set out what AEMO must do in the event of a material update to the Reliability Forecast in Section 5.2 - Updating the Reliability Forecast. However, ERM Power noted the Draft Guidelines do not mention trigger events for an update:

> ERM Power remains concerned that framework governing the issue of an update to a Reliability Forecast remains vague. As demonstrated by the recent request from AEMO for a T-3 reliability instrument for the NSW region in financial year 2023/24, it remains unclear to ERM Power that an updated Reliability Forecast will be issued where an improvement in the Reliability Forecast would result. AEMO's request to the AER included the recognition of changes in the supply side which would have reduced the level of forecast unserved energy, potentially below the interim reliability measure, on which the request for issue of a T-3 reliability instrument was based. We recommend the Guideline should be amended to set out clear trigger events where AEMO will issue an update to the Reliability Forecast. We propose that a suitable trigger may be the classification of additional supply side resources as "committed" or a reduction in a regional maximum demand forecast greater than or equal to 50% of any identified reliability gap.

ERM Power went on to suggest that updating only the year and region of the material change would make it easier and more reasonable to update the Reliability Forecast in the event of a material improvement:

> When considering the process for updating a Reliability Forecast, the Rules and the FBPG do not indicate that a Reliability Forecast must be issued which contains all 5 years of the Reliability Forecast for all regions. In our view, an update of only the year and the region in which a material change has been identified which may impact the Reliability Forecast in which a T-3 or T-1 reliability gap has been or not been identified should be considered. This would significantly reduce the workload required to issue a Reliability Forecast update.

MEU characterised the proposed triggers to updates of the Reliability Forecast as AEMO's "conservative approach to forecasting". It cited AEMO's recent trigger of a T-3 instrument as highlighting "the shortcomings in the current forecasting approach where known investments occur after the release of the ESOO but will have a significant impact, potentially initiating unnecessary investments." MEU proposed that the Guidelines be amended to "require AEMO to update forecasts more frequently than annually, especially where these updated forecasts would otherwise defer or eliminate the potential for any investments."

8.1.2. AEMO's assessment

AEMO notes the high frequency of changes to committed supply and considers that a change to a single project's commitment status would (in most cases) not materially change the ESOO (the trigger for an update set out in the NER). Changes to multiple projects' commitment status would be assessed in aggregate for their materiality to the ESOO.

With regard to the T-3 reliability instrument for the NSW region in financial year 2023-24, the change in supply side commitments at the time of making the reliability instrument request were insufficient to remove the forecast reliability gap. Thus, it was not sufficiently material to trigger an ESOO update.

New committed investment announcements[22] (from government or private investors) not requiring extensive stakeholder consultation can be considered as soon as AEMO has information about how the

[22] That have satisfied the commitment criteria as outlined in AEMO's ESOO and Reliability Forecast methodology.

investment will impact the power system. If changes of this nature occurred that close (or open) a forecast reliability gap, then AEMO would publish an ESOO update as soon as practicable.

In establishing the materiality of any supply side changes (and their effect on the Reliability Forecast), AEMO will consider whether those changes are of any regulatory consequence in its assessment of materiality. AEMO understands that, once the AER makes a T-3 reliability instrument, the NER do not permit AEMO to alter or withdraw its request (irrespective of whether there is an ESOO update). In this respect, if AEMO received information that sufficient committed supply was available such that the reliability gap was closed, this would not necessarily trigger an ESOO update. AEMO's 2021 ESOO will report how the forecast reliability gaps have changed since the 2020 ESOO.

For other types of significant and legislated policy initiatives, for example those that relate to energy efficiency, AEMO would undertake the following process before making an assessment of whether an updated ESOO should be issued: a substantial refresh of the inputs, consultation on those inputs, and a demand forecast update. If there is a material change, AEMO would publish an update as soon as practicable, however AEMO acknowledges that an update would take longer to provide in this instance.

AEMO notes ERM Power's suggestion that an ESOO update could be contained to an update of only the year and the region in which a material change has been identified which may impact the Reliability Forecast in which a T-3 or T-1 reliability gap has been or not been identified. AEMO concurs with this approach and has done so previously, an example being the 2016 ESOO Update[23]. AEMO would decide the scope of an ESOO update on a case-by-case basis.

8.1.3. AEMO's conclusion

AEMO acknowledges that theoretically, MEU's suggestion for more frequent updates to the Reliability Forecast would reduce the likelihood of changes occurring between a Reliability Forecast and the request for a Reliability Instrument. In future cases where an ESOO forecasts a reliability gap, any required instrument request will generally be made soon following the ESOO publication, given that the request must be made at least three months before the cut-off day for the relevant forecast reliability gap.

AEMO views the current process, which only performs updates where there is a material reason to, as optimal for consumers. AEMO considers an assessment of materiality must be made in consideration of the circumstances at the time and the type of the change, and that the triggers suggested by ERM Power are not universally workable. Conceptually, AEMO agrees with ERM Power that the regulatory consequence of the change should be considered in an assessment of materiality. AEMO have amended the Guidelines, Section 5.2.1, accordingly.

AEMO's Final Determination is to retain the proposed arrangements for Reliability Forecast updates and frequency, and to retain the existing practice of deciding the scope of an ESOO update on a case-by-case basis.

9. INCALCULABLE FORECAST RELIABILITY GAP

9.1.1. Issue summary and submissions

AEMO's proposed Draft Guidelines described the situation whereby the methodology for calculating a Reliability Gap was not possible, terming this as "incalculable" (See Sections 6.1.2 and 6.1.3 of the ESOO and Reliability Forecast Methodology Document). In its submission, ERM Power proposed a slight rewording to "reduce the potential for over estimation of both the duration and size of a reliability gap by AEMO."

From:

[23] See https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/NEM_ESOO/2016/update/2016-ESOO-Update---Hazelwood-Retirement.pdf

> Should the calculation of the forecast reliability gap be incalculable, the calculation of the forecast reliability gap period (see Section 6.1.2) is widened to include periods where the probability of lost load exceeds 5%, rather than including periods where the probability of lost load exceeds 10%.

To:

> Should the calculation of the forecast reliability gap be incalculable, the calculation of the forecast reliability gap period (see Section 6.1.2) is progressively widened in 2% increments to include periods where the probability of lost load is less than 10%, rather than including only those periods where the probability of lost load exceeds 10%.

9.1.2. AEMO's assessment

AEMO considers ERM Power's proposed progressive widening of the forecast reliability gap period to be reasonable and practical.

9.1.3. AEMO's conclusion

AEMO has amended Section 3.1.3 the ESOO and Reliability Forecast Methodology Document to reflect ERM Power's proposal, clarifying that the probability of lost load threshold will be lowered in 2% increments in order to progressively widen the forecast reliability gap period until such time as the reliability gap is calculable.

10. OTHER MATTERS

The following matters were not in the intended scope of this consultation, but AEMO has chosen to address them in this Final Determination document.

10.1. Classifying large and small businesses

10.1.1. Issue summary and submissions

QUEN commented on inconsistencies in how AEMO defines and reports on business segment consumption and expressed concerns if that could affect forecast accuracy:

> As the ongoing viability of the National Electricity Market will be determined by business demand, it is critical that consumers be classified by the primary consumer class for which they advocate. At present AEMO is publicly contradicting itself with regards to who is the largest consumer of NEM supplied electricity; small or large business. If AEMO is internally unable to agree on who is the largest consumer of NEM supplied electricity then it is impossible for AEMO to accurately forecast demand or to ensure sufficient engagement with its largest consumer group. Inaccurate demand forecasts can lead to an unnecessary application by AEMO to the AER for a T-3 Reliability Instrument.
>
> In AEMO's 2020-21 Budget it states "57% of consumption relates to large business, 28% to households and 15% to small business". The AEMO budget further states "consumption of less than 10 MWh per annum is considered a household".
>
> The Queensland Competition Authority in its 2020-21 Determination of regulated retail prices for regional Queensland used an annual consumption of 6,831 kWh to estimate the impact of their determination on *small* business consumers. The consumption data was provided by Ergon Network and represented the median consumption of the main small business tariff – Tariff 20. This means thousands of small businesses in regional Queensland would be classified as households by AEMO as the median annual consumption is less than 10,000 kWh. In AEMO's Electricity Statement of Opportunities – a critical input to the Retailer Reliability Obligation - small and medium size businesses are the largest consumers (Figure 1 and 2). This contradicts AEMO's 2020-21 Budget where 57% of NEM

consumption is from large business. We recommend AEMO defines SMEs and large business consumers to ensure accurate demand forecasts and effective stakeholder engagement.

10.1.2. AEMO's assessment

There are no strict definitions of what determines if a business is small, medium and large. It is typically purpose driven, and thus varies between organisations, for example, AEMO understands that the Australian Tax Office (ATO) base their definition of business size on turnover, whereas the Australian Bureau of Statistics (ABS) base their definition on employee headcount.

AEMO agrees that different AEMO documents have adopted "Large Industrial Load" (Forecasting), "Large customers" (Budget) and "Large Load" (Operations) which may be confusing. AEMO will aim to rectify this, or at the very least be transparent regarding the alternative definitions and the reasons for them.

The definition of business size is applied consistently within the development of AEMO's forecasting publications:

- Large Industrial Load is defined as those business customers who are forecast based on survey data. In the NEM, the customers who are selected for surveying are those that meet a "threshold of demand greater than 10 MW for greater than 10% of the latest financial year"[24].
- The remainder of business customers are forecast using econometric techniques.

More broadly, AEMO will utilise QUEN's submission on this matter as an input to the current consultation on AEMO's Electricity Demand Forecasting Methodology[25].

10.1.3. AEMO's conclusion

AEMO notes consistent use of the definition of business size within forecasting ensures that forecast accuracy is not affected by this matter. AEMO has amended the Guidelines to reference the Electricity Demand Forecasting Methodology as the place where customer segments are defined. See Section 6.1 - Demand definitions.

10.2. Transmission Line Rating Traces

10.2.1. Issue summary and submissions

Transmission lines can have dynamic or static ratings. ERM Power suggested improving clarity around how non dynamic rated transmission lines' transfer capabilities are calculated in the ESOO and Reliability Forecast Methodology Document Section 4.4 - Transmission line rating traces. Their submission stated:

> It is unclear to ERM Power how transmission lines with non-varying static ratings or seasonal/monthly static ratings could be subject to the calculation of transmission line rating traces as set out in Section 4.4. We recommend that the document be amended to clearly indicate how dynamic, non-varying static and seasonal/monthly static values are selected and included in the modelling.

Additionally, ERM Power requested that AEMO specify what transmission line rating is used in AEMO's Reliability Forecast modelling.

> We recommend that the transmission line ratings used in the Reliability Forecast model match that used by AEMO at Dispatch and AEMO include in Section 4.4 what rating level in accordance with AEMO's published criteria is used in the modelling.

[24] See https://aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2020/electricity-demand-forecasting-methodology/first-stage/draft-electricity-demand-forecasting-methodology.pdf

[25] See https://aemo.com.au/en/consultations/current-and-closed-consultations/electricity-demand-forecasting-methodology

10.2.2. AEMO's assessment

Section 4 of the ESOO and Reliability Forecast Methodology Document relates to traces and refers to time-varying model inputs. Section 3 of the document refers to the process for calculating all network inputs, including Section 3.2 which covers all constraint equations. This section indicates that constraints are used "for managing the power flow on a transmission element so it does not exceed a rating". These constraints apply to both static and dynamic ratings, and are produced and applied for every scenario modelled, reflecting:

- Extracted constraints from the AEMO Market Management Systems (MMS).
- Network augmentations appropriate for the scenario.
- Adjustments to reflect the impact of new generation capacities.
- Other adjustments to reflect assumptions of system operating conditions.

Given the forward-looking nature of the Reliability Forecast, it would be inappropriate to entirely use constraints used by AEMO at dispatch, which may not reflect system normal conditions or new developments.

10.2.3. AEMO's conclusion

AEMO rejects the assertion that the Reliability Forecast should exclusively use ratings or constraints used by AEMO at dispatch. Section 4.4 of the ESOO and Reliability Forecast Methodology already indicates that line ratings are used as an input to constraint equations, however this is now clarified.

10.3. Reliability gap calculation methodology

10.3.1. Issue summary and submissions

The methodology for determining the reliability gap is explained in the ESOO and Reliability Forecast Methodology Document Section 6.1 - Reliability Forecast and indicative Reliability Forecast. ERM Power suggested that the forecast reliability gap may be overestimated as sharing resources between regions is limited, submitting:

> We remain concerned that the methodology used for calculating the size of any reliability gap continues to overestimate the size of any forecast reliability gap and that the sharing of additional resources between regions where a forecast reliability gap is indicated in the same financial years is not permitted. This outcome fails to acknowledge the weather diversity misalignment of maximum demand outcomes between regions and unnecessarily increases the size of reliability gap in each region.

10.3.2. AEMO's assessment

AEMO does not consider that limiting the reliability gap calculation (in megawatts) to trading intervals identified within the reliability gap period would artificially inflate the assessment, because the intention of the RRO is to encourage sufficient contracting within the period where compliance is enforced. To assume that any additional megawatts procured to fill the gap are available at all times would be to assume a certain response, for example the entry of new generation. This is not the intention of the RRO, and would not be a technology-neutral approach, because it precludes other means of addressing the reliability gap such as demand response or Virtual Power Plants (VPPs).

However, to provide more information to market to support decision making, AEMO also reports an equivalent reliability gap (expressed in megawatts) assuming capacity was available at all times of the year in any reliability instrument request. In the event of a compliance trigger, the reliability gap (expressed in megawatts) on which the Procurer of Last Resort (POLR) costs are apportioned will still be based on assumed availability during the reliability gap period and trading intervals only.

On the issue of reserves sharing, this was considered by the Energy Security Board (ESB) as part of the design process and decided that it was a complication that was not warranted given that the size of the gap is used for POLR cost allocation only. AEMO notes the methodology is expected to provide the appropriate incentives in this context. Accordingly, AEMO will account for potential reserves sharing during the POLR process instead, so the magnitude of Reliability and Emergency Reserve Trader (RERT) purchased will be lower should interregional generation be deemed available.

10.3.3. AEMO's conclusion

AEMO will continue to calculate the size of the reliability gap (in megawatts) required to reduce the annual expected USE to the reliability standard, based on the assumption that the additional megawatts are 100% available during all identified trading intervals within the reliability gap period only.

AEMO will make no adjustment for reserve sharing.

11. FINAL DETERMINATION

Having considered the matters raised in submissions, AEMO's Final Determination is to amend the Reliability Forecast Guidelines[26], in accordance with clause 4A.B.4 of the NER.

[26] Available at: https://aemo.com.au/consultations/current-and-closed-consultations/reliability-forecast-guidelines

APPENDIX A. GLOSSARY

Term or acronym	Meaning
ABS	Australian Bureau of Statistics
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ATO	Australian Taxation Office
ECA	Energy Consumers Australia
EUAA	Energy Users Association of Australia
ESB	Energy Security Board
ESOO	Electricity Statement Of Opportunities
FAR	Forecasting Accuracy Report
FBPG	Forecasting Best Practice Guidelines
FIP	Forecasting Improvement Plan
IASR	Inputs, Assumptions and Scenarios Report
IFBPG	Interim Forecasting Best Practice Guidelines
IRFG	Interim Reliability Forecast Guidelines
ISP	Integrated System Plan
MEU	Major Energy Users
NER	National Electricity Rules
POLR	Procurer of Last Resort
QEUN	Queensland Energy Users Network
RERT	Reliability and Emergency Reserve Trader
RRO	Retailer Reliability Obligation