AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

FRG CONSULTATION FOR THE 2021 INPUTS, ASSUMPTIONS AND SCENARIOS REPORT

ENERGY EFFICIENCY (EE) FORECASTS

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1. STAKEHOLDER CONSULTATION PROCESS

AEMO utilises Energy Efficiency (EE) forecasts from Strategy. Policy. Research. (SPR) to develop its EE forecasts in its 2021 Inputs, Assumptions and Scenarios Report (IASR). The IASR is used in major publications such as the 2021 Electricity Statement of Opportunities (ESOO), Gas Statement of Opportunities (GSOO) and the 2022 Integrated System Plan (ISP).

In April 2021 AEMO conducted a Forecasting Reference Group (FRG) Consultation on the draft EE forecasts, according to Section 2.3.2 of AEMO's Reliability Forecast Guidelines[1] and as advised in the Draft IASR published for consultation in December 2020.

AEMO's timeline for this consultation is outlined below.

Deliverable	Indicative date
Draft IASR[2] published for consultation with FRG Consultation dates and information	11 December 2020
Draft IASR Consultation Submissions due	1 February 2021
Draft IASR Scenario and Submissions webinar	3 March 2021
Energy Efficiency Workshop	24 March 2021
Notice of FRG Consultation circulated to registered FRG and ISP stakeholders	21 April 2021
Forecasting Reference Group Presentation and discussion	28 April 2021
FRG Consultation Submissions due	12 May 2021
FRG Consultation Report published	8 June 2021
Final IASR published	30 July 2021

This document should be read in conjunction with the consultation material, FRG meeting and discussion minutes, and written submissions available under "FRG Consultations" at: https://aemo.com.au/en/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg

2. CONSULTATION DETAILS

The 2021 Draft IASR included interim draft EE forecasts based on the previous forecasts developed in March 2020 for use in the 2020 ESOO. An interim input is one that is intended to be updated before the release of the final IASR. It is shared in the Draft IASR to stimulate discussion on appropriateness and seek feedback on areas of continuous improvement to be considered during the remaining IASR development process.

The forward plan provided in Table 6 of the Draft IASR indicated when interim inputs would be updated and how stakeholders could provide feedback on the updated inputs.

Section 4.4.8 of the Draft IASR sought feedback on whether EE forecasts cover all material drivers of efficiency savings and whether the long term assumption of persistent savings is reasonable. It also highlighted that these forecasts would be updated in early 2021, with opportunity for stakeholders to get involved through an EE Workshop in March and an FRG Consultation in April 2021.

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

[2] See Table 6 in the Draft IASR, available at: https://www.aemo.com.au/consultations/current-and-closed-consultations/2021-planning-and-forecasting-consultation-on-inputs-assumptions-and-scenarios

Two EE related stakeholder submissions to the Draft IASR[3] focussed on the consistent application of National Construction Code (NCC) Futures across all scenarios, the social and financial limits to EE initiatives, and take up of new appliances.

When initiating the EE FRG Consultation, AEMO provided stakeholders the Energy Efficiency workshop material[4], to guide stakeholder understanding and consideration of the suitability of the Energy Efficiency forecasts for their use in the ISP, ESOO and GSOO. AEMO posed the question of whether both policy and market led energy efficiency savings should be considered in the consumption forecast. Market led savings could, for example, include technology improvements in the absence of policy.

Following the 2021 Draft EE forecast FRG presentations, AEMO requested feedback during the FRG meeting and/or during the subsequent two week written submission window. Feedback during the meeting was responded to in the FRG meeting minutes. This report focuses on the two written submissions received from Energy Efficiency Council (EEC) and Alan Pears.

3. DISCUSSION OF MATERIAL ISSUES

3.1. Using EE as demand mitigation

3.1.1. Issue summary and submission

Both submissions mentioned the importance of understanding EE for its used in demand response. Alan Pears submitted:

> "With regard to demand-side action, including energy efficiency, demand management and demand response, a key challenge is that we don't have a good understanding of the present situation." and
>
> "More broadly, the emergence of real time data collection, data analytics, connection to multiple data sources, flexible process machinery (eg variable speed drives and electronic controls) means that the potential for demand-side distributed intelligence will have increasing impact on energy use. Electrification in many cases will be combined with greater flexibility and more 'point of use' technologies, modular factories, etc. We could see industry relocating when they no longer rely on access to a gas pipe. And often the decision makers will be driven by overall business productivity/profit or other outcomes for which energy cost is a minor factor. Investment risks may well drive them faster towards more modular energy supply, storage and management solutions as ways of reducing risk exposure.

EEC submitted that understanding demand response will help assess the need for investment in generation, storage and networks.

3.1.2. AEMO's Assessment

AEMO acknowledges the importance of EE forecasts for both its annual consumption and peak demand forecasts.

For its consumption forecasts, AEMO uses a consultant forecast of EE savings, with adjustments where required to net of any elements of the forecast savings that are captured through the historical trend. Some of these savings will affect peak demand consumption too, in particular those reducing heating or cooling loads. Additionally, AEMO forecasts Demand Side Participation (DSP), which reflects deliberate net demand reductions specifically during high price or reliability events (typically coinciding with very high

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

[4] Available at: https://aemo.com.au/energy-systems/major-publications/integrated-system-plan-isp/2022-integrated-system-plan-isp/opportunities-for-engagement

demand days). Care is being taken to ensure AEMO captures all current demand management activities while avoiding double counting such in both the EE and DSP forecast.

Both submissions focus on the role of EE savings and DSP in potential scenarios. This is explored through applying different EE and DSP forecasts across the various scenarios out to 2050. For example, the high ambition scenarios assume the full impacts of EE are understood and savings are captured, by including all currently discussed policies and potential further state schemes. These scenarios also assume significant growth in DSP. On the other hand, the less ambitious scenario settings include only limited growth in EE and DSP. The use of a broad scenario range also addresses the lack of full understanding of the present situation, as noted by Alan Pears.

3.1.3. AEMO's conclusion

While AEMO acknowledge that both submissions explore valid potential EE savings, these are best captured through scenario settings, rather than subtle changes to the forecast. AEMO will continue to apply the impacts of EE in scenarios based on the scenario settings developed in consultation with stakeholders[5].

3.2. Scenario spread

3.2.1. Issue summary and submission

EEC noted that scenarios should include more ambitious policy potential. It included examples of retrofitting existing residential buildings and improved energy management by large users.

3.2.2. AEMO's Assessment

The Residential EE forecast assumes higher Nationwide House Energy Rating Scheme (NatHERS) ratings are achieved in the higher ambition scenarios, including renovation of existing stock that would trigger a development application.

The higher EE ambition scenarios consider savings from future Energy Efficiency Opportunity (EEO)-type programs for the Business Mass Market (BMM) Industrial sector. Note that AEMO models the largest energy users separately from the BMM sector, in the Large Industrial Load (LIL) forecast. AEMO develops the LIL forecasts from surveys and interviews.

3.2.3. AEMO's conclusion

AEMO considers that existing and potential policies, as presented in the FRG[6], cover reasonable policy assumptions and are appropriately applied to the range of scenarios. AEMO will consider the inclusion of retrofits of existing stock in future forecasts, should information be available on the likely timing of such policies.

4. CONCLUSION

AEMO appreciates the submissions provided and have considered their feedback, as addressed in Section 3 above. As the feedback was primarily on scenario application and settings rather than on specific details of the EE forecasts, AEMO will use the draft EE forecasts as final and apply them to scenarios as per the IASR.

[5] See the IASR, available at: https://aemo.com.au/consultations/current-and-closed-consultations/2021-planning-and-forecasting-consultation-on-inputs-assumptions-and-scenarios

[6] See Slide 3 of Presentation 3(b) either in 2021 FRG Meeting 4 – meeting pack or in the EE FRG Consultation pack. Available at: https://aemo.com.au/en/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/forecasting-reference-group-frg