

2 August 2024

Mr. Daniel Westerman
CEO, Australian Energy Market Operator
Australian Energy Market Operator
Lodged via email: mlf_feedback@aemo.com.au

Dear Mr Westerman,

Response to AEMO's Issues Paper on Methodology for the Calculation of Forward-looking Transmission Loss Factors

The Clean Energy Investor Group (CEIG) welcomes the opportunity to provide feedback on the AEMO's issues paper on Methodology for the Calculation of Forward-looking Transmission Loss Factors (Issues paper) published in July 2024.

CEIG represents domestic and global renewable energy developers and investors, with more than 16GW of installed renewable energy capacity across more than 76 power stations and a combined portfolio value of around \$38 billion. CEIG members' project pipeline is estimated to be more than 46GW across Australia. CEIG strongly advocates for an efficient transition to a clean energy future on behalf of the investors who will provide the low-cost capital required for this transition.

Key Points

- CEIG advocates for a methodology that **accurately reflects market behaviours** and **supports efficient investment and operation** in the National Electricity Market (NEM).
- CEIG supports in principle measures to **enhance transparency and accuracy in the MLF calculation process** which are crucial for investors to make informed decisions, manage risks, and optimise the location and operation of renewable energy projects
- CEIG supports in principle the use of **improved software and methodologies** that reflect the current and future NEM landscape

- CEIG recommends that **new batteries be included in a bespoke battery scheduling algorithm**. Additionally, battery discharge levels should be minimised first in the minimum extrapolation method during periods of excess supply.
- CEIG recommends that AEMO's estimated generation profile **should include a realistic ramp-up period for renewable energy projects reflecting historical ramp-up times**.
- CEIG recommends that AEMO defines **minimum generation levels for thermal generation reflecting historical behaviour**.
- CEIG supports in principle AEMO's proposed minor changes, including the **handling of loop flows and the introduction of boundary point loss factors**.
- CEIG recommends **semi-scheduled generation should be added to the indicative extrapolation publication**. Additionally, AEMO should annually review the differences between indicative extrapolation data and actual generation data to determine if cluster definitions are working effectively and if other changes to the methodology are required.
- CEIG recommends AEMO should **annually publish a comparison of actual vs. forecast MLF** for the previous year by Renewable Energy Zone (REZ) and by technology (e.g., wind, solar, battery).

GENERAL COMMENTS

CEIG commends AEMO for its efforts to update and improve the FFLF methodology and welcomes the opportunity to provide feedback on its Issues paper. CEIG's recommendations presented throughout our submission aim to ensure the methodology accurately reflects market behaviours and supports efficient investment and operation in the NEM.

CEIG supports in principle measures to enhance transparency and accuracy in the Marginal Loss Factor (MLF) calculation process as proposed in the secondary consultation objectives. Accurate and transparent MLF calculations are crucial for investors to make informed decisions, manage risks, and optimise the location and operation of renewable energy projects. Enhanced transparency will enable stakeholders to better understand the factors influencing MLFs, thus improving investment confidence.

Furthermore, CEIG supports in principle the use of improved software and methodologies that reflect the current and future NEM landscape is crucial. Simplifying the process while ensuring detailed and accurate data is vital for investment planning and operational efficiency.

TREATMENT OF NEW GENERATORS

New Battery Projects

CEIG recognises that the current methodology requires proponents to supply generation/load profiles. However, actual profiles will also depend on wind generation levels, which proponents may not know when creating their profiles. Given the large number of batteries under construction, CEIG recommends that new batteries be

included in a bespoke battery scheduling algorithm. Additionally, battery discharge levels should be minimised first in the minimum extrapolation method during periods of excess supply.

New Wind and Solar Projects

Due to lengthy construction times or extended hold point testing, some projects take a long time to reach full generation. CEIG recommends that AEMO's estimated generation profile should include a realistic ramp-up period reflecting historical ramp-up times.

SUPPLY-DEMAND BALANCE

Minimal Extrapolation Method and Thermal Generation

CEIG recommends that AEMO defines minimum generation levels for thermal generation reflecting historical behaviour. Specifically, the reference year bidding behaviour should be used. For example, if a thermal generator historically bids X MW at a price below - \$100/MW, that MW level should be used as the generator's minimum generation level. To improve accuracy, AEMO should only consider that generator's bids when the Regional Reference Price (RRP) is negative.

Handling of Batteries

Given the increasing importance of battery storage in the NEM, CEIG supports the consideration of more sophisticated methods for incorporating storage into MLF calculations. CEIG recommends AEMO adopts Option 3 (apply a bespoke battery scheduling algorithm over a forward horizon prior to minimal extrapolation).

With batteries shifting focus from Frequency Control Ancillary Services (FCAS) to arbitrage, their dispatch patterns will change significantly compared to historical behaviour. Charging will increasingly occur during periods of excess renewable energy penetration. This approach will better reflect the evolving role of batteries in the energy market and their impact on supply-demand balance, ultimately improving MLF accuracy and investment decisions related to storage projects.

MINOR AND ADMINISTRATIVE CHANGES

CEIG supports in principle AEMO's proposed minor changes, including the handling of loop flows and the introduction of boundary point loss factors. These updates reflect recent developments in the market and regulatory framework, ensuring the MLF methodology remains relevant and accurate.

Inclusion of Semi-Scheduled Generation in Indicative Extrapolation

CEIG recommends semi-scheduled generation should be added to the indicative extrapolation publication. Additionally, AEMO should annually review the differences between indicative extrapolation data and actual generation data to determine if cluster definitions are working effectively and if other changes to the methodology are required.

Comparison of Actual vs. Forecast MLF

Furthermore, CEIG recommends AEMO should annually publish a comparison of actual

vs. forecast MLF for the previous year by Renewable Energy Zone (REZ) and by technology (e.g., wind, solar, battery). This transparency is crucial to demonstrate if the MLF methodology is systematically biased for or against particular technologies.

CEIG thanks the AEMO for the opportunity to provide feedback on its Issues paper and looks forward to continued engagement on those issues. Our Acting Policy Director can be contacted at daniel.zelcer@ceig.org.au if you would like to further discuss any elements of this submission.

Yours sincerely,



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