ESC
Pacific

16 January 2020

Mr John Pierce AO

Chairman
Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Lodged Via AEMC Website

Dear Mr Pierce,

NATIONAL ELECTRICITY AMENDMENT (TRANSMISSION LOSS FACTORS) RULE (ERC0251)

ESCO Pacific is an Australian focused utility-scale solar developer and asset manager with a market leading project pipeline and a proven track record, having delivered 496MW of operational projects. ESCO Pacific welcomes the opportunity to make this submission on the AEMC Transmission Loss Factors Draft Determination (ERC0251).

Status of Transmission Loss Factors in the NEM

Immediate changes to the current Marginal Loss Factor ("MLF//) framework are required to address material risks to current and future generation investment in the NEM which will ultimately impact the long-term interests of customers through higher electricity prices. The critical concern is that the current MLF methodology results in revenue that is highly volatile and increasingly difficult to forecast.

- Volatility significantly impacts incumbent and future generator revenue predictability and thus the certainty of project investment performance. This uncertainty negatively influences future investment decisions exactly at the time when the NEM requires commitment to new generation to replace ageing coal-fired capacity and achieve the dual objectives of system security and a transition to a lower carbon environment.
- Given the escalation of year-on-year volatility of MLFs, an immediate response is necessary to ensure that investment is efficiently priced, new generation projects are located in parts of the network with the highest resource intensity (not just highest grid strength) and to mitigate higher risk premiums so as to avoid an investment strike or moratorium.
- Retaining the current MLF framework is likely to:
    - materially increase the cost of new generation projects, resulting in higher wholesale and ultimately retail prices for consumers (which is contrary to the National Energy Objective);
    - reduce the volume of appropriately sited, cost effective new renewable energy generation capacity as the risk premium applied to equity and debt hurdle rates resulting from ongoing MLF uncertainty for generators saddles these projects with much higher costs; and
    - result in an investment moratorium for some investors (as already publicly reported in recent AEMO and Clean Energy Council publications).
- A reduction in the development of appropriately sited, efficient new generation until broader reforms (such as the Post-2025 NEM Review and COGATI initiatives) are

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developed, agreed and implemented could severely impact the ability to maintain an efficient electricity supply in the medium to long term.

- ESCO Pacific proposes moving to an Average Loss Factor ("ALF") methodology as an immediate step to achieve an optimal balance between the need for investor certainty and the need for the accurate calculation and apportion of losses in electricity supply. This change also provides for the balancing of key stakeholder objectives, namely the need for investment certainty, efficient locational signalling, calculation simplicity and ease of implementation.

AEMC Draft Determination

ESCO Pacific has reviewed the Draft Rule Determination NATIONAL ELECTRICITY AMENDMENT (TRANSMISSION LOSS FACTORS) RULE 2020 ("Draft Determination//) published by the AEMC on Thursday 14 November 2019. ESCO Pacific is concerned that the AEMCs analysis and subsequent draft ruling has not adequately considered and applied the National Electricity Objective.

The assessment of the relative merits of the ALF and MLF framework needs to consider the trade-off between:

- Efficient investment;
- Operational efficiency; and
- Risk allocation.

In the Draft Determination the AEMC has made a number of statements in relation to the assessment criteria, but have provided little or no analysis (quantitative or otherwise) or evidence to support these conclusions. There are several shortcomings in the Draft Determination published by the AEMC including, but not limited to:

Efficient Investment

In assessing the impact of the ALF framework on the locational signal, the AEMC made the following statement:

> *"It may also lead to more generation investment in inefficient locations, increasing physical transmission losses further. This would, in the long-run, be likely to lead to higher electricity costs for consumers.//*

The AEMCs assessment of the relative locational signal of the ALF and MLF frameworks should consider the following points:

- The ALF framework includes a locational signal, and whilst it may be dampened compared to the MLF framework it maintains the same relative ranking of sites as the MLF framework.
- The AEMCs assessment fails to acknowledge that loss factors are only one consideration when determining the efficient location for generation investment. The reliance on an increasingly volatile single year MLF ignores the equal or higher importance factors of the availability of land, development approvals and resource intensity in determining the optimal location for new investment.
- The disproportionate weighting given to the MLF as a locational signal is inconsistent with the principles of AEMUs Integrated System Plan ("ISP//) and the Renewable Energy Zone ("REZ") framework which has identified the locations for future generation investment.

In addition to the points listed above, the robustness of the AEMC's conclusion is severely limited by the absence of any analysis to support or quantify what is otherwise an arbitrary statement with no regard to the NEM and the energy transition objective.

Operational Efficiency

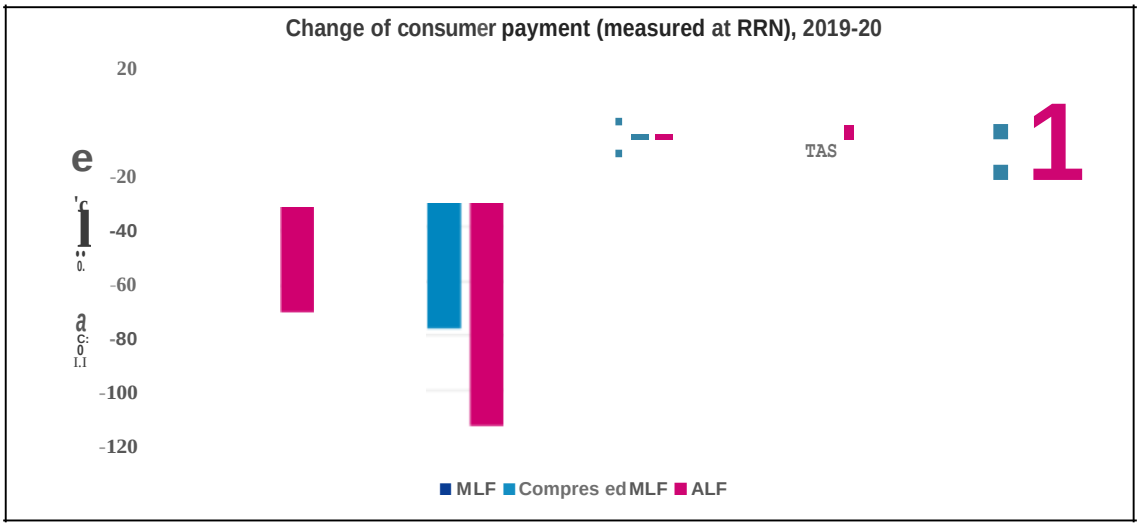
In assessing the impact of the ALF framework on the operational efficiency the AEMC made the following statement:

> *"The use of an average loss factor may change the merit order to dispatch generators, resulting in less efficient use of the generation fleet and reducing the efficient operation of the NEM in real time. This may have the effect of wholesale electricity prices being higher than they would using MLFs."*

The AEMC's assessment of the relative operational efficiency of the ALF and MLF frameworks should consider the following points:

- The current MLF framework is not completely consistent with the marginal pricing approach of the NEM. This is because it applies forecast volume-weighted values that do not correspond to the five-minute marginal price from which electricity is dispatched.
- Modelling by Baringa Partners found that the ALF framework resulted in a reduction in wholesale electricity prices and consumer payments across all five NEM regions as illustrated in Chart 1 below .[1]

Chari 1: Projected changes in total consumer payments in each re gion[2]



The AEMC has dismissed the conclusions of the detailed modelling undertaken by Baringa Partners instead relying on a chart reflecting a stylised example.

- In the NEM approximately 98% of the time the marginal generator is either a coal, gas or hydro power station [3] noting that variable renewable energy generators typically bid at zero or negative prices depending on their contract position. Indicative analysis

[1] Baringa Partners "TRANSMISSION LOSS FACTORS INPUT TO CEC RESPONSE TO AEMC CONSULTATION ON TRANSMISSION LOSS FACTORS (ERC-251)" August 2019
[2] Baringa analysis based on 2019-20 annual average baseload prices under the current MLF approach, compressed MLFs and ALFs, and projected load volumes.
[3] AEMO Quarterly Dynamics Report Q3 2019 and CEIG analysis.

> of the 2019-20 MLF values shows that a change to the ALF framework would on average only change the loss factor of these marginal generators by less than 2%[4] .

Given the relatively modest impact of a change to ALF of the marginal generator and the results of the detailed Baringa Partners analysis, it is unlikely that a shift to an ALF framework would have a material and detrimental impact on the operational efficiency of the NEM. The AEMCs approach and level of analysis is not commensurate with the importance of the issue under consideration and ESCO Pacific recommends undertaking further analysis including detailed quantitative analysis to assess the relative impact of the ALF and MLF on operational efficiency.

Risk Allocation (Investor Uncertainty):

The AEMC was provided extensive evidence and quantitative analysis throughout the consultation process and stakeholder submissions on the impact of the current MLF framework on investor uncertainty and implications for long term customer electricity costs. These issues are now evident in the market as noted by the approximately 95% year-on-year reduction in new projects considered by the Australian Energy Market Operator (AEMO) in its recent publication of Indicative 2020-21 MLF values. There is also increasing anecdotal evidence of higher power purchase agreement ("PPN) prices in recent months, reversing a 5-year trend of PPA price reductions given the material amount of new generation capacity commitment to the sector.

In the Draft Determination the AEMC made the following statement:

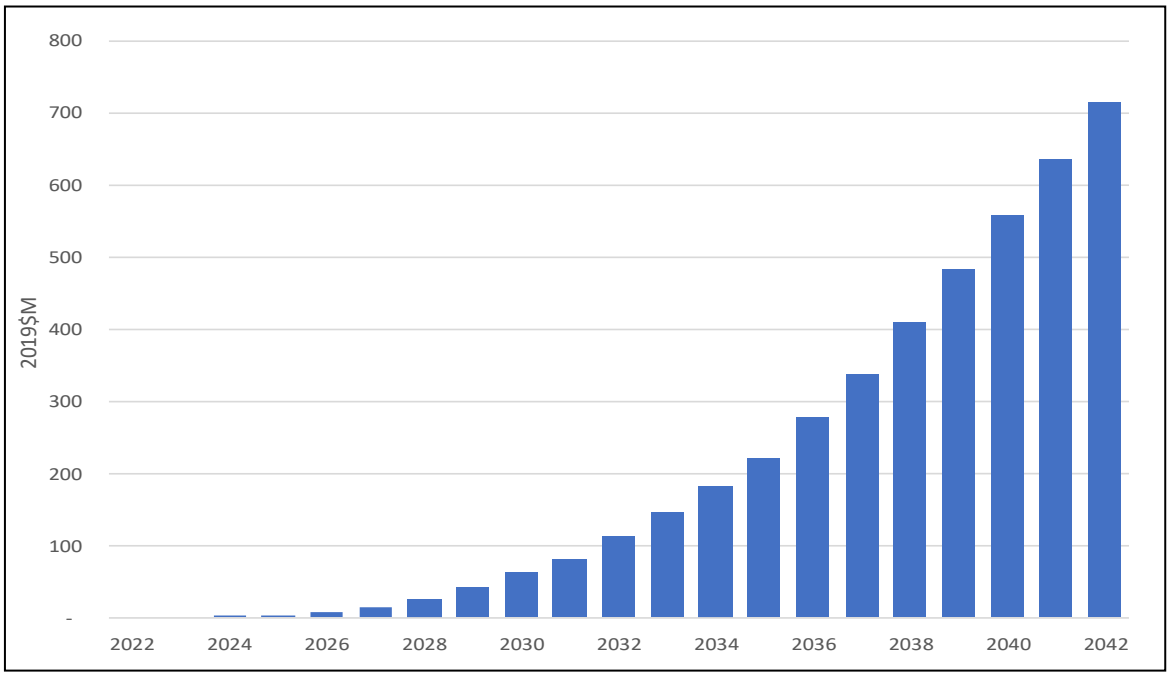
> *"a reduction in the gearing level (so that there is more equity funds invested compared to debt) will increase the cost of capital but overa"1 the cost of capital for renewable generation investments seems to be relatively low compared to the market*

This statement incorrectly compares the higher cost of capital due to MLF uncertainty to the "mar kef [1] cost of capital rather than what the cost of capital would be without the MLF uncertainty. ESCO Pacific recommends that the AEMC correct the error in their cost of capital analysis and update the assessment of the relative merits of the ALF and MLF frameworks to reflect the adverse customer pricing impact as a result of the uncertainty associated with retaining the existing MLF framework.

Chart 2 below illustrates the indicative annual cost of a 2% WACC premium on new renewable energy generation investment. Based on the AEMO 2020 Draft ISP Central Case capex requirements a 2% WACC premium will result in an additional c$715m p.a. cost to customers by 2042.

[4] Draft 2020 ISP Input Assumptions and CEIG analysis.

Chart 2: Incremental Annual Cost to NEM customers from of 2% MLF WACC Premium [5]



Additionally, the AEMC stated that some investment risk mentioned by stakeholders in submissions can be "diversified away" by holding a diversified portfolio of assets. By making this assertion, the AEMC has ignored the fact that for the diversification to be effective the portfolio would need to include projects that have negative correlation in MLF movements. As the transmission loss factor attributable to each project is a function of its electricity flow towards the respective Regional Reference Node, negative correlation is unlikely to be achieved and thereby limits the ability to hedge the risk through diversification. Similarly, there is no recent market precedent for managing the loss factor risk by entering into long term power purchase arrangements.

The AEMC's focus on risk allocation as a zero-sum game limited to transfers between investors and customers is flawed. The AEMC has the ability to reduce and remove unnecessary risks emerging from the market design that creates a more stable and competitive investment environment and improves long-term customer outcomes.

Coordination of Generation and Transmission Investment (COGATI):
In the Draft Determination the AEMC noted that:

> *"the COGATI review represents the most appropriate forum to engage in assessing potential reforms that may be able to provide a long-term solution to stakeholders [1] concerns regarding the transmission loss factor framework1'*

Deferring the required reform of the loss factor framework to the incomplete and highly uncertain COGATI process is an unnecessary risk given the "no regrets" nature of the proposed ALF framework for the following reasons:

- In deferring the MLF issue to the COGATI Market Review, AEMC fails to acknowledge the fundamental issues identified in the stakeholder feedback on the October 2019 COGATI discussion papers including the following feedback from AEMO:

[5] AEMO Draft 2020 ISP data and CEIG analysis.

> *"Initial indications from independent consultants highlight implementation of FNPIFTR could cost hundreds of millions. This would be a substantial amount of expenditure and divert resources away from addressing other necessary reforms. AEMO and the Energy Security Board has also identified more pressing priorities such as ensuring the market has the range of services available for system security and consideration of ahead markets to provide the ability to manage variability in generation unit commitment to ensure the right resources are available at the right time. For these reasons AEMO considers it inappropriate to commit to this significant reform prior to addressing more pressing priorities in the NEM* [116]

- On 19 December 2019 the AEMC published a COGATI Update Paper. In response to the submissions received on the October 2019 Discussion Papers the AEMC has proposed that the COGATI market review would be implemented 4 years after the rule change. Based on this revised timetable the current MLF framework would remain in place for at least 5 more years. A lack of immediate reform to the loss factor calculation methodology will have a detrimental impact on the continued investment in renewable projects and consumer prices when significant further investment is required to replace an ageing thermal fleet and secure Australids future renewable energy supply, with AEMO estimating c.30-S0GW of new grid-scale renewables capacity being required by 2040[7].

An ALF methodology will assist in addressing these investment concerns.

ESCO Pacific believes that the current Transmission Loss Factor rule change process is the most appropriate forum to address this important issue in a timely manner. Rather than deferring the MLF issue for another 5-plus years, ESCO Pacific recommends changing to an ALF framework now as the only "no-regrets" short term solution to reduce loss factor volatility, improve investment certainty and restore investor confidence - all of which will keep consumer prices lower than under the existing MLF framework, while the broader COGATI reform program progresses.

The AEMCs decision not to undertake the analysis required to support its conclusions in the Draft Determination while at the same time ignoring or discounting evidence and analysis presented by stakeholders on the merits of a change to an ALF framework raises questions about the robustness and credibility of the consultation process and draft determination.

ESCO Pacific and other stakeholders who have invested the time and cost of proper analysis recommend to AEMC in the strongest possible terms that appropriate and transparent quantitative assessment of the relative merits of the ALF and MLF methodologies be included in the final determination. Without such, neither consumers nor investors can be confident that the NEO is being properly considered by the AEMC.

Please do not hesitate to contact me should you have any queries.

Yours sincerely,

Catriona McLeod
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ESCO Pacific

[6] AEMO submission on Coordination of Generation and Transmission Investment - Proposed Access Model Consultation Paper 2019, 8 November 2019
[7] AEMO 2019 Draft 2020 Integrated System Plan

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