



Transmission loss factors final determination

The AEMC has made a more preferable final rule to provide the Australian Energy Market Operator (AEMO) with greater flexibility in how it calculates marginal loss factors.

This final rule, in combination with the *Transparency of new projects* final rule (October 2019) and AEMO's continued work on the loss factor methodology, is expected to improve transparency and predictability of marginal loss factors. The changes should enable better informed decision-making by prospective investors, developers and owners of generators. The final rule will keep the existing marginal loss factor methodology framework so important signals are retained as to the best place to build, and consumer are not shouldered with any additional cost or risk.

Final rule

The final rule enables AEMO more flexibility to consult with stakeholders on a greater range of scenarios when calculating the marginal loss factor's methodology.

The AEMC has not adopted the changes sought by the proponent, Adani Renewables.

Reasons for the final rule

The more preferable final rule retains the existing marginal approach to determining transmission loss factors, whilst providing AEMO additional flexibility to refine and improve its current methodology for calculating marginal loss factors. The Commission is satisfied that the more preferable rule will, or is likely to, contribute to the achievement of the national electricity objective (NEO).

Calculating transmission loss factors

Adani Renewables proposed that transmission loss factors be calculated by changing to an average loss factor methodology rather than the current marginal loss factor methodology. The Commission has concluded that the use of average loss factors would be unlikely to better contribute to the achievement of the NEO than the final rule (which retains the current marginal loss factor methodology). The Commission undertook additional quantitative analysis to further evaluate the effects of moving from a marginal loss factor methodology to an average loss factor methodology. The key results of this additional quantitative analysis found that:

- marginal loss factors provide and maintain the most efficient locational and dispatch signals to the market
- the modelling showed that aggregate customer payments would likely be higher under an average loss factor methodology
- the order of dispatch can change under an average loss factor framework and although in aggregate the effect of changing to average loss factors on generator receipts is small, the change can have a significant effect on the revenue of individual generators.

There are a number of reasons for this conclusion:

- The current marginal loss factor methodology provides important locational signals for prospective investors and owners of new generation assets which are needed to enable efficient decision-making about investment in the generation sector. This is particularly important in the current transformation of the electricity market.
- While an average loss factor method to determining transmission loss factors may result in a reduction in the volatility of loss factor values, it would also dampen locational signals for

new efficient generation investment needed for the future. This is undesirable in the current climate where it is important that a variety of type and size of generation assets are introduced across various locations in the market. Using an average loss factor methodology may also lead to more generation investment in inefficient locations, increasing physical transmission losses further. This would in turn require a greater amount of electricity to be generated which, in the long-run, would be likely to lead to higher electricity costs for consumers.

- The use of average loss factors to address concerns from some investors about recent revenue volatility and increases in their cost of capital does not outweigh the likely reduction in efficient investment signals and dispatch decisions that would occur across the NEM or the impact on the affordability of electricity for consumers.
- Continuing to use a marginal loss factor methodology is consistent with the marginal approach currently used in the NEM for dispatch decision-making and pricing, supporting efficient market operations.
- 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 otherwise be using marginal loss factors.

Allocating intra-regional settlement residue (IRSR)

Adani Renewables suggested that redistributing the IRSR would result in lower electricity prices to customers. However, it is unlikely that any such reductions would fully offset the increased transmission use of system (TUOS) charges that would also occur under this approach. The current arrangements directly pass on the benefits of the IRSR to consumers. As consumers pay for transmission infrastructure, it is appropriate that their transmission costs are reduced.

For these reasons, the Commission is not satisfied that the proposed change to reallocate half the IRSR to generators would, or would be likely to, contribute to the achievement of the NEO.

Need for market reform

The recent volatility of loss factors experienced by some stakeholders arises from the market-wide transition that is currently underway. Traditional thermal plants are closing, and more renewable and asynchronous generators are connecting to the market — often in locations remote from load centres that may be serviced by relatively weak transmission lines.

Enabling this market transition to occur smoothly will require significant reforms to the market design of the national electricity market (NEM) to make long term, robust improvements to the way operational decisions are made and investment is carried out for the long term benefit of consumers. Such changes are being considered through a range of work programs, including:

- the Commission's Coordination of generation and transmission investment (COGATI) review, which includes consideration of the appropriate long-term approach to losses
- the Energy Security Board's work to action the Integrated System Plan, which will govern future transmission planning and investment processes
- the Energy Security Board's development of a post-2025 market design for the NEM.

Background

Adani Renewables submitted a rule change request to the Commission on 27 November 2018 seeking to reallocate the IRSR to generators and market customers evenly.

On 5 February 2019, Adani Renewables submitted a second rule change request, seeking to change the marginal loss factor calculation methodology to an average loss factor methodology.

The rule change requests were consolidated and a consultation paper published on 6 June 2019. A stakeholder workshop was held in Brisbane on 4 July 2019 with submissions to the consultation paper closing on 18 July 2019.

The draft rule determination was published on 14 November 2019.

The AEMC received two requests to hold a pre-final rule determination hearing in relation to its draft rule determination to the Transmission loss factor rule change request. This was held on Wednesday 4 December 2019 in Sydney.

Submissions to the draft rule determination and draft rule determination closed on 16 January 2020.

The final rule determination was published on 27 February 2020.

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