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National Electricity Amendment (Transmission Loss Factors) Draft Determination ERC0251

The Australian Energy Council (AEC) welcomes the opportunity to make a submission to the Transmission Loss Factors Rule Change Draft Determination.

The AEC is the industry body representing 23 electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. These businesses collectively generate the overwhelming majority of electricity in Australia and sell gas and electricity to over 10 million homes and businesses.

Introduction

The AEC supports the draft determination's conclusion to retain the existing loss arrangements where parties are settled according to their marginal impact on the power system. Most importantly, the retention of marginal loss pricing will maintain the NEM's existing levels of dispatch efficiency and locational incentives. A move to the proposed alternative forms of loss pricing would be a backward step.

Whilst the AEC supports marginal loss pricing, it recognises that the current representation involves a trade-off between accuracy and simplicity. The AEC believes it is possible to quantify the level of inaccuracy resulting from this trade-off. Whilst the AEC supports fundamental design questions being referred to the Co-ordination of Generation and Transmission Investment (CoGATI) review, it considers a re-assessment of this trade-off could be performed within ERC0251.

The AEC also supports the draft's minor rule changes, which, along with recent rule changes to support connection transparency and initiatives underway at AEMO to improve loss factor predictability, should help future investors avoid the negative surprises that spurred this rule change proposal.

Ultimately however investors must remain exposed to the consequences of their siting decisions in proportion to their marginal impact on the power system.

Retention of Marginal loss pricing

As stated in our submission, a tenet of the NEM, enshrined in Rule 3.9.2 (d), is that the price of electricity at a regional reference node should reflect its marginal value. Although annualised static loss factors do not achieve this perfectly accurately, the error is due to a pragmatic simplification rather than an intentional departure from marginal pricing. Indeed simulated average losses (e.g. the square root approach) or collars seem legally impossible whilst Rule 3.9.2 (d) exists.

Marginal loss pricing remains an essential part of:

- dispatch efficiency as two competing generators at extreme ends of the NEM can have a marginal loss equivalent factor between them as high as 2:1; and

- locational efficiency – as generators should be encouraged to site close to load. This is particularly the case where the two main new-generation fuel sources, sun and wind, are ubiquitous but vary geographically in intensity. Since developers are exposed to the intensity signal, it is critical that they are also exposed to the marginal loss signal. Externalising one side of the trade-off would be seriously distortionary.

Whilst annualised static loss factors create dispatch inefficiencies, they tend to be quite efficient with respect to locational investment incentives. This is because the volume weighting used to determine static annual loss factors means they have a similar revenue impact upon generators over a year as would happen with dynamic losses.

If, as it appeared to have been proposed, inter-regional losses remained marginally priced whilst intra-regional losses used another approach, this would also have created an uneven playing field between intra and inter-state trade.

Investment Certainty

A key argument presented by those advocating change is the lower risk for investments that would arise from a blunting of the marginal pricing signal. Other things being equal, lowering the cost of capital is consistent with the market objective and should be pursued with respect to non-physical matters, such as the perceived risk of intervention. However parabolic losses are a reflection of the physical power system and cannot be eliminated. Financial exposure to them can be moved downstream as proposed in the Rule, with upstream risk commensurately lessened, but the total risk across the industry would actually increase as it has simply been moved on to parties uninvolved in its causation.

Ad absurdum this cost of capital argument suggests investors should never be exposed to market signals as risk-free capital is always cheapest.

Marginal loss pricing has been a feature of the NEM since its inception. A sudden change to the arrangements would substantially shift the competitive deckchairs, with those who have invested with greatest attention to losses disadvantaged. The NEM's reputation regarding stability of rules would be harmed, in fact increasing investment risk in exactly the opposite way intended.

Scope of the Rule Change and COGATI

The AEC acknowledges that the parallel COGATI activity is researching loss concepts, including mechanisms by which loss factor variation could be hedged without losing locational and dispatch efficiencies. The draft determination is right to refer exotic concepts away from this rule change towards COGATI.

However COGATI is an extremely ambitious reform with considerable uncertainty as to whether, and when, it may be introduced. This leaves a question of whether an opportunity has been lost for considering incremental improvements in the NEM's marginal loss pricing arrangements, such as shift in the trade-off between simplicity and accuracy resulting from annual static loss factors.

As suggested in our July submission, it is possible to empirically determine the actual historical inefficiency created by the existing simplifications. It would then be possible to model the improvements of other approaches, which could then be discussed with participants regarding the cost of the complexity of the alternative approaches. However this has not been done for the draft determination.

Transparency matters

The AEC sponsored one of three rule changes made in October 2019[1] to improve transparency in relation to new connecting generators. AEC members' interest in this matter was very much affected by experienced surprises in loss factor changes. Our objective was not to blunt the existing marginal loss factor signal, but to

[1] https://www.aemc.gov.au/rule-changes/transparency-new-projects

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enhance its intended locational incentives by giving affected parties as much notice about potential generation pattern changes as is possible.

In a similar vein, the proposals in chapter 6, 7.1 and 7.5 are supported.

Conclusion

The AEC supports the draft determination’s to retain marginal loss pricing that is a fundamental feature of the NEM’s design, being necessary for dispatch and locational efficiency and the equality of inter and intra-state trade. A change to another approach would have impacted the competitive position of investments made in good faith within a regime that has applied for over two decades.

The AEC recognises that the parallel COGATI process will investigate more exotic options to provide investor stability whilst retaining and possibly enhancing dispatch efficiency.

Annualised static loss factors simulate marginal loss pricing with a simplification that reduces accuracy. It is possible to quantify this inaccuracy and it would be beneficial for this to be performed within the rule change in order to inform whether the representation achieves an optimal trade-off between simplicity and accuracy.

The AEC notes several contemporary improvements in the rules and in AEMO practices which should improve the predictability of loss factors for investors. The AEC also supports the incremental transparency proposals recommended in the draft determination. These should in future reduce the investor surprises that precipitated this rule change proposal. Ultimately however investors should remain exposed to the marginal impact on the power system of their investments.

Any questions about our submission should be addressed to me by email to ben.skinner@energycouncil.com.au or by telephone on (03) 9205 3116.

Yours sincerely,

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