

22 July 2019

Mr John Pierce AO
Chair
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Electronic Submission – ERC0251

Consultation Paper – Transmission Loss Factors

Dear Mr Pierce

Energy Networks Australia appreciates the opportunity to respond to the Australian Energy Market Commission (**AEMC**) Consultation Paper – Transmission Loss Factors.

Energy Networks Australia is the national industry body representing businesses operating Australia's electricity transmission and distribution and gas distribution networks, with member companies providing more than 16 million electricity and gas connections to almost every home and business across Australia.

The Consultation paper covers two rule change proposals submitted by Adani Renewables:

- » Seeking to redistribute the allocation of the intra-regional settlements residues (**IRSR**) so it applies equally between generators and network users who are subject to non-locational prescribed Transmission Use of System (**TUOS**) charges: and
- » Seeking to change the marginal loss factor (**MLF**) calculation methodology to an average loss factor methodology.

Any changes adopted need to ensure that the methodology and processes remain 'fit for purpose' – that is, account for energy losses, provide locational signals to generators (and load customers), and ensure that TUOS charges accurately reflect customer's use of the transmission system.

In summary Energy Networks Australia makes the following recommendations:

- » As far as reasonably practical MLFs should reflect actual electrical losses on the transmission network and send efficient locational price signals particularly for new generator connections;
- » Supports using a forward-looking methodology given the level of change;

- » MLF forecasts may benefit from the Australian Energy Council (AEC) proposed rule change where new generator projects have obligations to provide Australian Energy Market Operator (AEMO) with timely and accurate information on their projects;
- » Any change to reallocate positive intra-regional residues to a different party should also be symmetrical i.e. both positive and negative residues are allocated;
- » Support consideration of alternative arrangements for the distribution of intra-regional and inter-regional settlements residues which allow for more stable transmission network charges whilst preserving the benefits of MLF locational signals but minimizing distortions;
- » Supports further consideration of a move to dynamic loss factors either with the move to five-minute settlement or as part of any move to dynamic regional pricing as part of the Coordination of Generation and Transmission Investment (COGATI) Review;
- » Any move away from marginal loss factors to average losses would be an inefficient price signal and redistribute the cost of losses from those responsible to others in the system. That is, it will reward generation located in the far reaches of the network and disadvantage generation in more load rich locations;
- » Increased averaging or grandfathering of MLFs is likely to lead to more frequent occurrences of under-collections in settlements residues (i.e. instances where the available settlement funds do not cover generator payments);
- » Increased averaging or grandfathering of MLFs are not consistent with the move to dynamic marginal pricing being considered by the AEMC in the COGATI Review; and
- » AEMC should make a preferable rule which provides AEMO with discretion to amend MLFs to cater for a revised outlook of generator availability, republish and provide a short notification period before the new MLF values take effect where the impacts are expected to be material.

Our detailed response to the Consultation Paper is in the Attachment.

Energy Networks Australia looks forward to further consultation on the development of transmission loss factors with both the AEMC and AEMO.

Should you have any queries on this response please feel free to contact Verity Watson, vwatson@energynetworks.com.au.

Yours sincerely,



Andrew Dillon

Chief Executive Officer

Attachment

Energy Networks Australia supports a framework that encourages efficient investment and location decisions by generators (or loads), including potential reforms of the current arrangements which improve the accuracy and predictability of marginal loss factors (MLFs). Consideration of the underlying purpose and intention of MLF calculations and the redistribution of settlements residues is important. The AEMC should ensure that the methodology and processes remain ‘fit for purpose’ – that is, account for energy losses, provide appropriate locational signals to generator (and load customers), and ensure that TUOS charges accurately reflect customer’s use of the transmission system.

As far as reasonably practical MLFs should reflect actual technical losses on the transmission network and send efficient locational price signals for potential new transmission connections.

Ideally MLFs should be forecast as accurately as practicable so that generator investors can act on those locational price signals. Energy Networks Australia supports the Transparency of New Projects rule change proposals and the Australian Energy Council (AEC) rule change that generators should be responsible for updating Australian Energy Market Operator (AEMO) on projects to assist with maintaining the accuracy and timeliness of generator details on their new projects, including commencement date.

However, policies that undermine the predictability and stability of investment are likely to increase creditors’ perception of risk and potentially lead to higher costs for energy consumers over the longer term. As such, reform options will need to consider the trade-off between certainty and accuracy and provide a balance between the two elements.

Energy Networks Australia recommends a move to dynamic marginal loss factors be considered alongside either the implementation of five-minute settlement or the development of reforms to access and charging arrangements e.g. locational marginal prices where MLFs are calculated dynamically at each location in real time. Changes to current intra-regional settlements residues and MLFs will also need to be considered in the broader context of current work underway by other industry bodies, including AEMO’s Integrated System Plan (ISP) and Energy Security Board’s Converting the ISP into Action.

Prior to any changes being made, thorough analysis including modelling and testing should be carried out to better understand all the potential implications and implementation costs that will arise across the electricity system. This includes the impact on:

- » The intra-regional settlements residues collected and redistributed by transmission network service providers (TNSPs). Large swings in expected and actual MLFs may result in an ‘under’ or ‘over-collection’ (i.e. positive or negative)

of intra-regional settlements residues, which can have financial implications for TNSPs in the short term and for customers when this flows through to charges.

- » The TUOS charges for network users (load customers). Reduced predictability and stability of TUOS charges will impact the ability for network users to plan their use of the network effectively.

Allocation of positive intra-regional settlements surplus to generators is not supported

Adani suggest that there are errors in the MLF framework, however this difference is consciously embedded in the market design and is one of the many trade-offs.

Electrical losses are a physical part of conveying electricity across networks and cannot be eliminated. The existing shared transmission network is wholly funded by load customers. Any positive residue created from the difference between annual static marginal loss factors compared to actual physical losses is currently returned to TNSPs who in turn, pass this on through lower transmission network charges to customers. Similarly, any negative residue is paid by TNSPs and recovered from load customers.

Generators do not currently pay TUOS and hence it is inappropriate for them to receive the positive residues but not the negative residues. Any change to reallocate the positive residue to a party other than customers through TNSP's should also be symmetrical i.e. both positive and negative residues are allocated.

Passing back any portion of the intra-regional settlements residue to generators on a postage stamp basis would undermine the efficiency of the generator locational signal which could ultimately increase regulated transmission investment which would be paid for by load customers. This approach is not in the long-term interests of consumers.

Allocation of all intra-regional and inter-regional settlements residues

TNSPs currently receive positive and negative intra-regional and inter-regional settlements residues. These residues vary year on year and are an unpredictable component which can lead to greater volatility in load customer's transmission charges. Further, in the case of negative residues, TNSP's may be required to utilise working capital to meet their obligations. Energy Networks Australia supports measures which result in more stable and predictable transmission charging to its customers.

Intra-regional settlements residues are used to adjust the non-locational or the postage stamped element of TUOS charges¹. As a result, two separate loads with the same load characteristics could be connected either at the regional reference node or at the end of the transmission network and both receive the same intra-regional

¹ AEMC, National Electricity Rules – Version 123, Chapter 6A23.3(e)(2)

residue allocation. Effectively the key locational element, which marginal loss factors and subsequent residues can signal, is muted.

With a view to maximising the benefit that settlements residues can signal through optimal distribution arrangements, particularly in conjunction with any changes to market design as part of COGATI. Energy Networks Australia supports consideration of alternatives for residue distribution which retains the nature of residues directly offsetting customers' electricity charges. It may be feasible for this distribution to be integrated as part of the market settlements process currently performed by AEMO, again ensuring that a pass through of residues still occurs. This change could provide more stable transmission network charges as well as preserve and minimise distortion of the locational element that marginal loss factors signal. It is important to note that changes to residue distribution away from transmission businesses will have impacts on the transmission component of overall electricity charges for customers which will need to be carefully managed during any period of transition.

Change to marginal loss factor methodology should remain forward looking and could consider more frequent updates in the interim

Transmission marginal loss factors are calculated and published by AEMO by 1 April each year as required by the NER. These marginal loss factors commence on 1 July and are fixed for the year.

The energy market is undergoing a significant transformation moving to a lower emissions economy. Significant numbers of new generators are being commissioned. These new plants are being built far more rapidly than any required transmission investment can be delivered. Continuing to use a forward-looking methodology to calculate MLFs is appropriate given the level of change.

However, there may be benefit in considering more frequent updates.

Generators providing accurate, timely information into AEMO's generator information page can assist in the forward-looking methodology that AEMO uses to calculate MLFs. The AEC proposed that new generators have a positive obligation to update AEMO as project information changes.

Modelling and information sharing arrangements between AEMO and external consultants that forecast MLF values is likely to help reduce some of the current issues in the immediate term. This arrangement would require the appropriate non-disclosure arrangements to protect confidential and commercially sensitive information. Progressing this type of an arrangement could lead to more accurate forecasts for generators and may need to be subject to competition/regulation of price by the selected consultants.

A possible improvement for consideration in the shorter term could be for AEMO to calculate MLFs and publish for each quarter or each 6 months to allow a more accurate forward looking MLF calculation. Consideration could also be given to reducing the notice period from 3 months to 1 or 2 months to enable the most recent information to be used.

Granularity in MLF values may also help to increase the accuracy in MLF forecasts. However, whilst day and night MLF's and seasonal MLFs could be calculated, any market and participant IT systems change requirements should be minimized as this would likely be an interim step only. Given the AEMO system workload in delivering five-minute settlement, the benefits of adopting greater granularity in MLF values as an interim step is likely to be limited in light of a possible move to locational marginal pricing. As such, the time and resource cost associated with more granular MLF forecast values will need to be considered prior to adoption.

Prefer a move to more accurate dynamic marginal loss factors

Five-minute dynamic loss factors would be more accurate than the annual MLFs although may still have some variance and create forecasting issues for generators.

Energy Networks Australia recommends that the AEMC discuss with AEMO the opportunity to move to dynamic loss factors as part of the five-minute settlement project. This may be an efficient, least cost implementation given the change to settlement processes could be combined with the system changes required for five-minute settlement. Functionality testing could be coordinated across the relevant market participants if the changes were aligned.

AEMC currently expect this rule change to be completed by the end of 2019. This would provide around 18-24 months for AEMO to align implementation with the systems changes for the five-minute settlement project currently targeted for 1 July 2021 (move to five-minute settlement) and 6 February 2022 (for the global settlement component). Energy Networks Australia is aware that adding more into the scope of the five-minute settlement project may also pose more delivery risk requiring a longer duration, staged approach.

Energy Networks Australia also observes that the timeframes identified for COGATI appear to conflict with those required for implementation of any change to MLF calculation procedures.

Alternative approaches that increase levels of averaging are not supported

A number of alternative approaches to provide a more stable averaged marginal loss factor were proposed for the benefit of generators, however this stability would result in increased distortion in the loss factors which is ultimately paid for by another party. AEMO noted at the recent AEMC forum² there could also be instances in the use of average loss factors where the available funds do not cover the generators payments. Average MLFs will likely increase the occurrence of under collections which create greater risks/costs for market participants to manage.

Marginal loss factors are consistent with the fundamental design of the NEM- wholesale market prices which are set on a marginal basis. Grandfathering and collar and cap mechanisms do not meet market objectives in that they do not accurately reflect the operational loss of electricity from a generator to the regional reference

² AEMC workshop 4 July 2019

node and could lead to inefficient investment decisions for generators. Also, they will likely lead to greater variation in intra-regional settlements residues and cash flow impacts on TNSPs.

Grandfathering and collar and cap mechanisms may also undermine crucial investment in the NEM given that it provides a poor locational signal.

Losses that are not accounted for in these types of mechanisms will still need to be recovered. This creates a redistribution effect, whereby the cost of losses is distributed away from the causer and applied to newly connecting generators. This creates inefficient barriers to entry and reduces the ability of prospective generators to invest and connect to the network.

Over the longer term, higher risks and costs for generation investment will likely result in a contraction of available electricity supply and reduced competition in the NEM – ultimately resulting in higher costs to consumers.

A move to averaging or grandfathering of MLF's is not consistent with a move to dynamic marginal pricing being considered by the AEMC in the COGATI Review. This would impose artificial constraints into the MLF methodology which must be accounted for by adjustments at the expense of other generators.

More preferable rule should be made

AEMO raised at the public forum³ that they are not able to readily change the published annual MLF's. A gas fired generator had a unit failure in the previous week and around the time AEMO published the 2019/2020 MLF's Loy Yang announced that they would have some units off for a period of 8 months. In AEMO's calculations of annual MLF's all of these units were assumed to be operating. This will no longer be the case for a fair portion of the year. Whether these type of unit failures occur just prior to the 1 April publication date, just prior to 1 July or sometime during the year, AEMO should be afforded discretion to amend MLF's to cater for its revised outlook, republish and provide a short notification period before the new MLF values take effect where the impacts are expected to be material.

Energy Networks Australia suggest a preferred rule that allows AEMO to amend the MLFs to better reflect material changes occurring during the financial year.

³ AEMC workshop 4 July 2019