APPENDIX 1: RULE CHANGE PROPOSAL – EM 2010/001

1 Summary

The Rule change proposal seeks to amend clause 3.6.2(b)(2) of the National Electricity Rules (NER). The change would allow AEMO to apply two static intra-regional loss factors, also known as intra-regional marginal loss factors (MLFs), to certain transmission network connection points ("connection point") that have both energy generation and consumption and where one MLF does not satisfactorily represent losses for those connection points.

One MLF becomes inappropriate where the difference between the annual energy generation and consumption is within 30% of the annual energy generated ("the 30% net energy balance condition").[1] Where this condition is met, AEMO considers that two MLFs should be applied to the connection point. This would more accurately account for the network energy losses between these connection points and the regional reference node (RRN), and better reflect the marginal price of producing electricity supplied to consumers. This will reduce inefficiencies in the dispatch of generation and the impact on the calculation of intra-regional residue (IRR).

2 Background

2.1 What are MLFs?

MLFs represent electrical energy losses from a transmission network (called transmission losses) that occur due to flows on the transmission network between a RRN and the relevant connection point in the same region. They notionally describe marginal intra-regional losses and are used to recover the cost of transmission losses from the relevant Registered Participant by applying the MLF as a price multiplier to the regional reference price to determine a local spot price for each relevant connection point. MLFs are also used to refer generation and load offers to the RRN by dividing a Generator or Market Customer's bid or offer price by the MLF so that it can be compared to the bids and offers of other participants.

Transmission losses contribute to the cost of supplying electricity to consumers and must be taken into account if an optimal dispatch is to be achieved. In order to achieve economic efficiency and

[1] For example, if within a financial year, a Market Generator's energy generation was 100 MW and its energy consumption was 80 MW. This would be calculated as follows: (100 MW – 80 MW) / 100 MW = .20
Thus, the Market Generator meets the 30% net energy balance condition and AEMO would apply two MLFs.

the most efficient dispatch outcome, it is necessary for electricity prices to reflect the marginal cost of producing and delivering the electricity to consumers. The loss factors are marginal and tend to over-recover for transmission losses, creating a surplus that is returned to customers via the relevant transmission network service provider (TNSP).

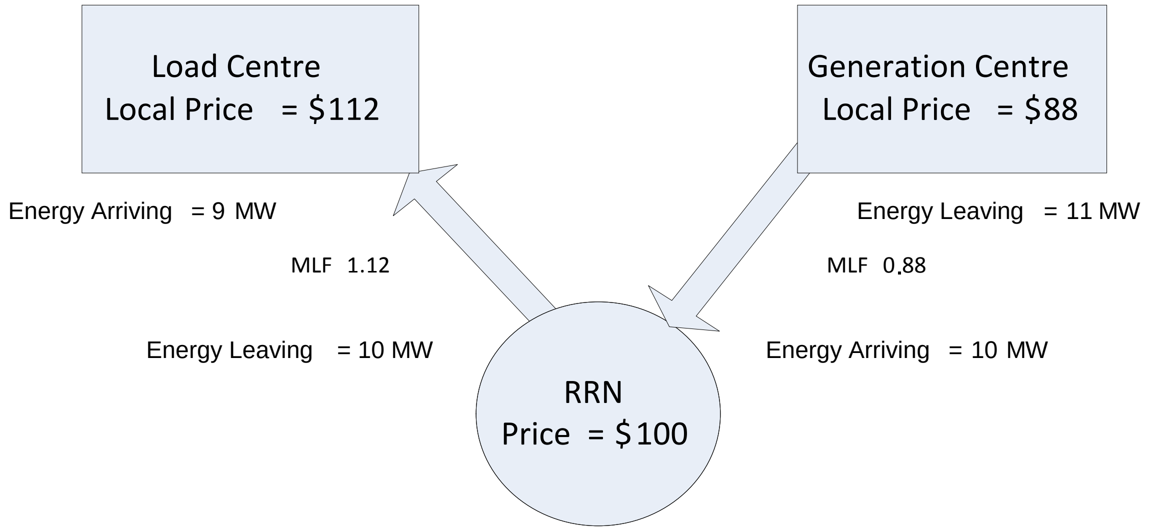
2.2 The Relationship between MLFs and the Spot Price

As described in section 2.1, MLFs are used to refer generation and load offers to the RRN to determine the local spot price at each connection point and this price is used to settle the NEM.

Generators tend to have MLFs less than one, while loads tend to have MLFs greater than one. As such, typically the price paid for generation at the generation centre is reduced and the price paid by the load is increased.

Generation located further away from load centres and consequently subject to higher transmission losses will have MLFs with lower values and appear to be more expensive at the RRN, reflecting their higher losses. Conversely, generation that is located within load centres will have relatively higher MLFs and be less expensive at the RRN, reflecting lower losses. They will tend to be dispatched ahead of other generation for the same offer price. The same would apply, in reverse, for loads.

Figure 1: Regional and Local Prices for a Generation and Load Centre



In Figure 1, a notional flow of 10 MW arrives at the RRN from a generation centre and the same flow leaves the RRN for a load centre. However, the effect of network losses means that more energy must be dispatched at the generation centre than the energy that is actually consumed at the load centre. In the NEM, AEMO includes the effect of network losses in the demand forecast so that the total dispatched generation (approximately 11 MW) balances the total load (approximately 9 MW) plus losses (approximately 2 MW). The total amount recovered from the load centre is $1,008 (9 MW x $112/MWh = $1,008) and total amount paid to generation centre is (11 MW x $88/MWh = $968), leaving an IRR of $40.

2.3 Settlements Residue due to Network Losses

The accuracy of MLFs is also important because they impact AEMO's settlement of billing and payment amounts for energy transactions under Chapter 3 of the NER. Since generation in the NEM is dispatched optimally based on marginal costing, marginal network losses rather than average losses are charged for the transmission of power. Generally, charging customers at marginal costs yields excess revenues, as marginal costs typically exceed average costs. This excess revenue is referred to as settlements residue and is retained by AEMO when a trading interval’s settlement is complete. AEMO notes that settlements residue is an inherent feature of the NEM’s market design because it is based on marginal pricing principles.

Settlements residue comprises intra-regional and inter-regional settlements residue. AEMO allocates, distributes or recovers intra-regional and inter-regional settlements residues in accordance with clauses 3.6.5(a) and 3.18 of the NER. With respect to the portion of settlements residue attributed to MLFs, this amount only relates to settlement transactions in a region and positive and negative amounts are distributed to, or recovered from the TNSP in that region.[2]

2.4 Current Arrangements

2.4.1 The NER requirements

Clause 3.6.2 of the NER requires AEMO to assign one MLF to a connection point for a financial year in accordance with a methodology developed by AEMO through consultation.

In determining the loss factor methodology, clause 3.6.2(e)(2A) of the NER requires AEMO to define MLFs in such a way as to minimise their impact on the central dispatch of generation and scheduled load compared to that which would result if dynamic loss factors were applied at each connection point in the national electricity market (NEM). Further, the NER requires that MLFs are determined using a volume weighted average of the MLFs for each trading interval during a financial year.[3] Consistent with this methodology, MLFs are weighted using the energy consumed or generated at the connection point.

[2] For further information on the methodology AEMO uses for the allocation and distribution of settlements residue see: http://www.aemo.com.au/electricityops/550-0187.html.

[3] Refer to clause 3.6.2(e)(5) of the NER.

AEMO determines the volume weighted average MLF as follows:

$$MLF = \frac{(MLF_1 * E_1 + MLF_2 * E_2 + \ldots + MLF_i * E_i + \ldots. + MLF_{17520} * E_{17520})}{(E_1 + E_2 + \ldots + E_i + \ldots. + E_{17520})}$$

Where MLF_i is the MLF calculated for trading interval i and E_i is the net energy generated or consumed at the connection point in trading interval i (there are 17,520 trading intervals in a non-leap year). E is positive for generation and negative for consumption.

Clause 3.6.2(e)(2) of the NER also requires that these MLFs must, as far as reasonably practicable, describe the average of the marginal electrical losses between a connection point and the RRN.

2.4.2 NEMMCO's consultation on the loss factor methodology

In February 2009, NEMMCO (now AEMO) completed a consultation on the loss factor methodology[4] in accordance with rule 8.9 of the NER which, among other things, sought to address the issue of unacceptably high MLFs for connection points with both active energy generation and consumption and where one MLF does not satisfactorily represent losses. This issue was identified because of the comparably higher volume weighted average MLF for the Lower Tumut Power Station for 2008-09 financial year as compared to the MLF calculated for the 2007−08 financial year. The main cause of this change was attributed to a change in the generation and consumption patterns of this power station due to drought conditions.

A number of options were considered to address this issue, including:

- Creating separate metering points for energy generation and consumption. This option was not considered an appropriate solution because separate connection points would be required to be established and this would necessitate amendments to the current connection agreements.
- Applying time weighted averaging to calculate one MLF for the connection point where the 30% net energy balance condition is met.

NEMMCO determined to calculate Lower Tumut Power Station's MLF by using time weighted averaging and submit a Rule change proposal to allow two volume weighted loss factors to be applied in these circumstances.[5] In determining this, NEMMCO was motivated by the need to satisfy the principles set out in clauses 3.6.2(e)(2) and (2A) with respect to that connection point.

[4] The methodology referred to in clause 3.6.2(d) of the NER.

[5] For the affected participants' response to this issue refer to: Snowy Hydro Limited, *Submission to Changes to Forward Looking Loss Factor Methodology Consultation*, 1 December 2008.

NEMMCO's solution was constrained by the requirement to apply only one MLF to a connection point under clause 3.6.2(b)(2). In this circumstance, NEMMCO considered that calculating the MLF using volume weighted averaging would have failed to deliver the principles set out in clauses 3.6.2(e)(2) and (2A).

This consultation also considered the conditions where one volume weighted MLF is not appropriate for a connection point with energy generation and consumption. NEMMCO considered that one MLF being applied to these connection points only becomes an issue where the 30% net energy balance condition is met. This approach was adopted in the final methodology and has been used to determine a time weighted average MLF for the Lower Tumut Power Station connection point for the 2009−10 and 2010−11 financial years.

For more information about NEMMCO's consultation see Attachment A and AEMO's website at: http://www.aemo.com.au/electricityops/178-0099.html

3 Statement of Issues

3.1 The Issue with the Current Requirements

AEMO has found that the current arrangements, where AEMO may only apply one MLF, can be problematic at connection points where energy is both generated and consumed. At these connection points applying volume weighted averaging to calculate one MLF can result in suboptimal outcomes because the MLF does not adequately represent the electrical energy losses where the 30% net energy balance condition is met. In these circumstances, there can be significant changes to an MLF between years as the net annual energy swings from generation to consumption from one year to the next, and the MLF can become unrealistically high or low as the net annual energy approaches zero. This can result in MLFs that significantly misrepresent the losses at the connection point when applied to flow conditions that are different to those for which the MLF was originally calculated.

As discussed in section 2.4.2, AEMO currently applies time weighted averaging to Lower Tumut Power Station's connection point to achieve a more reasonable and representative MLF. However, this approach is not in keeping with the principle set out in clause 3.6.2(e)(5) of the NER which requires that MLFs are calculated using volume weighted averaging.[6] Additionally, in comparison to time weighted averaging, it is considered that calculating two volume weighted

[6] Although the time-weighted average MLF is not consistent with the principle in clause 3.6.2(e)(5) of the NER, AEMO considers that applying one time weighted average intra-regional MLF for Lower Tumut Power Station's connection point is consistent with the principle set out in clause 3.6.2(e)(2) of the NER.

average MLFs for these connection points would minimise the impact on the central dispatch process.

To demonstrate the differences between these MLFs, Table 1 compares the volume weighted and time weighted average MLFs for Lower Tumut Power Station for the 2008−09, 2009−10 and 2010−11 financial years. At this connection point there is significant hydro generation which generates at peak times and pumps that operate at off-peak times to move water into storage, this does not occur concurrently.

Table 1 – Comparison of MLFs for Lower Tumut 2008−09 to 2010−11 using different methodologies

	2008−09	2009−10	2010−11
Single volume weighted average MLF for both energy generation and consumption	5.8319	1.5660	2.4874
Single time weighted average MLF for both energy generation and consumption	1.0197	1.0151	1.0092
Separate volume weighted average MLF for energy generation	0.9762	0.9850	0.9774
Separate volume weighted average MLF for energy consumption	1.0428	1.0373	1.0242
Energy Balance (% of energy generated)[7]	3	10	3

AEMO notes that the time weighted average MLF that is currently applied for the Lower Tumut Power Station would more accurately account for electrical energy losses for a range of power system conditions, compared with a single volume weighted average MLF at this connection point.[8] Nonetheless, the time weighted average MLF does not adequately represent the transmission losses that are incurred when energy is both generated and consumed at that connection point, as illustrated by the examples in Attachment B.

For the reasons above, AEMO considers that it is more appropriate to have separate volume weighted MLFs for a connection point that has both energy generation and consumption because it would more accurately represent the MLFs. However, the requirement in clause 3.6.2(b)(2) of the

[7] The energy balance is determined by taking the difference between the total energy generated (GWh) and the total energy consumed (GWh) and this is then expressed as the percentage of total energy generated during the relevant financial year.

[8] AEMO determined to apply a time weighted average MLF to the Lower Tumut Power Station in its consultation on the loss factor methodology.

NER for MLFs to be one value for each connection point prevents AEMO from applying two loss factors to one connection point that has both energy generation and consumption. This prevents AEMO from satisfying the principle set out in clause 3.6.2(e)(2A) of the NER and could result in:

- Inefficiencies in the central dispatch process, that is, more expensive generation with higher MLFs being dispatched ahead of cheaper generation and impacting the central dispatch of generation and load in contravention of the principle set out in clause 3.6.2(e)(2A) of the NER.
- A larger payment calculated for the generation of energy and a smaller cost for the consumption of energy when pumping, or vice versa, than should ideally apply, leading to the under or over recovery of settlements residue.

AEMO has assessed the impact of applying two volume weighted MLFs to Lower Tumut Power Station's connection point on the intra-regional residue for NSW for the 2009−10 financial year by differencing the actual IRR and the estimated IRR for this financial year intra-regional. The outcome is shown in Table 2, which indicates that the IRR payable to TransGrid (the NSW TNSP) would have been a positive value rather than a negative value.

Table 2: Comparison of Actual IRR and Estimated IRR for NSW During Financial Year 2009-10

ACTUAL IRR	ESTIMATED IRR	DIFFERENCE
-$5.3 M	$1.5 M	$6.8 M

3.2 Proposed Solution

AEMO proposes to apply two separate volume weighted MLFs to connection points that have both active energy generation and consumption (each MLF would be applied for each direction of energy flow) where one MLF is unable to satisfactorily represent losses for that connection point. In calculating whether to apply two MLFs to these connection points for the next financial year, AEMO would review the available historic data for the previous full financial year to determine whether the 30% net energy balance condition is met for a connection point. If it is, AEMO will apply two MLFs to that connection point.

As discussed in section 2.4.2, AEMO's loss factor methodology specifies the conditions where one volume weighted MLF is not appropriate for a connection point with energy generation and consumption. AEMO considers that these conditions should be used to determine when two volume weighted MLFs are applied to a connection point. Further, this approach should continue to be specified in the loss factor methodology, as this document specifies all the relevant details of the MLF calculation process.

If the proposed Rule is made, the loss factor methodology would require amendments to clarify the conditions where two MLFs would be applied to a connection point which would normally require AEMO to undertake a consultation in accordance with rule 8.9.[9] Given the 30% net energy balance condition has already been subject to consultation and the AEMC's consultation on this Rule change proposal will further clarify what these conditions are, AEMO considers that further consultation on this methodology following the AEMC's determination on this Rule would result in unnecessary consultation costs and delays to implementation with no benefit. Hence, AEMO has proposed a transitional provision that directs AEMO to amend the loss factor methodology to specify this detail.

3.3 Proposed Implementation

To implement the proposed Rule, AEMO plans to split the relevant metered connection point in the market management system (MMS) to allow different MLFs to be assigned for energy generated and consumed at that connection point. This change would:

- Minimise costs to affected Market Participants because the change is only required to the MMS.
- Allow AEMO to retain the knowledge of the metering data split if the connection point is transferred between metering data providers (MDPs).

Experience has shown AEMO that the knowledge of the metering data split is often lost when a connection point is transferred between MDPs. This occurs because MDPs are only required to provide AEMO with the standard aggregate net value of generation in compliance with the NER and relevant AEMO procedures. To rectify past issues, settlements calculations have had to be re-run over lengthy periods, and the proposed implementation would ensure these unnecessary costs are avoided.

The implementation date of the proposed Rule will depend on the timeframes of the Rule change process and AEMO's project commitments. AEMO will be able to indicate an implementation date for the proposed Rule when the AEMC publishes its draft determination.

3.4 Alternative Options Identified

3.4.1 New connection point and metering

AEMO notes that consultation on the loss factor methodology considered another option to resolve the issue identified in section 3.1 and that was to require a relevant Registered Participant to establish another connection point and install the necessary metering. In comparison to the

[9] See clause 3.6.2(d) of the NER.

proposed approach, this alternative would be more expensive to implement and physical problems could arise where, for example, installing an additional metering facility is not physically possible. AEMO notes that this approach would also require amendments to the NER since AEMO does not have a power to require a Registered Participant to establish an additional connection point and would necessitate amendments to current connection agreements.

3.4.2 Use of time weighted loss factors

As discussed, AEMO currently applies time weighted averaging to Lower Tumut Power Station's connection point. This was determined based on exceptional circumstances and is inconsistent with the requirements under clause 3.6.2(e)(5) of the NER.

An alternative solution is for the AEMC to include a derogation in the NER allowing AEMO to apply time weighted averaging to these connection points. AEMO has not suggested this because it is likely to deliver a less efficient price outcome than the solution proposed by AEMO.

3.4.3 Dynamic loss factor

The application of dynamic MLFs to connection points may also resolve the issues identified by AEMO because it would result in the application of accurate MLFs across the full range of power system conditions. However, calculating MLF equations dynamically would be more complicated and would represent a significant shift in the NEM design that would have implications for dispatch, pricing and settlement. AEMO's view is that implementation costs for applying dynamic MLFs would likely outweigh the benefits of this approach, and that the issue identified in section 3.1 can be addressed more cost-effectively by the proposed approach of applying two volume weighted MLFs.

Alternatively, dynamic MLFs could be applied on a case-by-case basis, but this would imply that a similar threshold to the one suggested needs to be considered. This solution is unlikely to satisfy the market design principle in clause 3.1.4(a)(4) which requires "consistency between central dispatch and pricing" because it promotes an inconsistent approach. Implementation changes would also be necessary to amend the dispatch algorithm. These changes are likely to incur costs similar to applying dynamic MLFs to all connection points.

3.4.4 Variations on two MLFs

AEMO has considered other variations for prescribing the application of multiple MLFs, but does not consider these to be appropriate. For example, since the approach of applying one MLF most commonly becomes an issue with pumped storage schemes, the NER could require AEMO to apply two MLFs to all pumped storage schemes. However, AEMO considers this approach would be overly prescriptive and would not capture other closely balanced load and generation centres, where two MLFs might appropriately be applied. Alternatively, two volume weighted MLFs could be applied for all connection points where there is both energy generation and consumption, irrespective of the energy balance. This option would impact a large number of connection points. AEMO considers that this option would impose significant implementation costs on AEMO and the market with little market benefit.

4 Proposed Rule

4.1 Description of the Proposed Rule

The proposed Rule would allow AEMO to apply separate static volume weighted MLFs to a connection point with both energy generation and consumption, where one volume weighted MLF is unable to satisfactorily represent transmission losses for both active energy generation and consumption. These MLFs would apply for a financial year and would be derived in accordance with the methodology determined by AEMO under clause 3.6.2(d) of the NER.

4.2 Proposed Transitional Provision

As discussed in section 3.2, AEMO considers that the proposed Rule should also include a transitional provision that directs AEMO to amend the loss factor methodology to specify that where a connection point has active energy generation and consumption and the 30% net energy balance condition is met, two volume weighted MLFs will be calculated.

4.3 Draft of Proposed Rule

Clause 3.6.2(b)(2)

(b) Intra-regional loss factors:

(1) notionally describe the *marginal electrical energy losses* for electricity transmitted between a *regional reference node* and a *transmission network connection point* in the same *region* for a defined time period and associated set of operating conditions;

(2) ~~will be a single static *intra-regional loss factor* that applies for a *financial year* derived in accordance with the methodology determined by *AEMO* pursuant to clause 3.6.2(d) for each *transmission network connection point*; and~~

will be either:

(i) two *intra-regional loss factors* where one *intra-regional loss factor* does not satisfactorily represent *transmission network* losses for the *active energy generation* and consumption at a *transmission network connection point* as determined by AEMO in accordance with the methodology under clause 3.6.2(d); or

(ii) one static *intra-regional loss factor* in all other circumstances.

(2A) must be derived in accordance with the methodology determined by *AEMO* under clause 3.6.2(d) for each *transmission network connection point;*

(2B) apply for a *financial year;*

(3) may, with the agreement of the *AER*, be averaged over an adjacent group of *transmission network connection points* within a single *region*. If averaging is used, the relevant *transmission network connection points* will be collectively defined as a *virtual transmission node* with a *loss factor* calculated as the volume weighted average of the *transmission loss factors* of the constituent *transmission network connection points*.

Alternatively, AEMO considers that deleting clause 3.6.2(b)(2) of the NER would achieve the same purpose as the suggested drafting.

Transitional provision in Chapter 11

AEMO proposes that the new rule be transitioned by permitting AEMO to amend those parts of the methodology determined under clause 3.6.2(d) that relate to calculating MLFs within nine months of the commencement date of the Amending Rule as follows:

- Two MLFs will be determined for a connection point that has active energy generation and consumption and where one loss factor does not satisfactorily represent the transmission network losses. This connection point must meet the 30% net energy balance condition before two MLFs will be applied. This will be reviewed each year and will be based on the most recently available historical data that can be used to calculate the MLFs from the previous financial year.
- Any relevant action taken by AEMO prior to, and in anticipation of, the commencement date of the Amending Rule should be deemed to have been taken for the purpose of the Amending Rule and continues to have effect for that purpose.

4.4 Power of AEMC to Make the Proposed Rule

The subject matter about which the AEMC may make Rules is set out in section 34 and Schedule 1 of the National Electricity Law (NEL).

AEMO considers that the proposed Rule falls within the subject matters that the AEMC may make Rules about, as it relates to the activities of persons participating in the NEM. Specifically, the proposed Rule is within matters set out in Schedule 1 to the NEL, as it relates to the methodology and formulae to be applied in setting prices for electricity services purchased through the NEM.

5 How the Proposed Rule Contributes to the National Electricity Objective

Before the AEMC can make a Rule change it must apply the rule making test set out in the NEL, which requires it to assess whether the proposed Rule will or is likely to contribute to the National Electricity Objective (NEO). Section 7 of the NEL states the NEO is:

… to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to –

(a) price, quality, reliability and security of supply of electricity; and

(b) the reliability, safety and security of the national electricity system.

AEMO submits that the proposed Rule would allow AEMO to account for the network energy losses associated with connection point flows more accurately where energy is both generated and consumed and this would better reflect the marginal price of electricity supplied to consumers. The proposed Rule is likely to achieve this because:

- facilities operating as scheduled generation would be dispatched at a price that better reflects the price of producing an additional unit of electricity at that connection point, thus distortions in the efficient dispatch of generation would be reduced and this would result in a central dispatch outcome that is closer to being fully optimised.
- facilities operating as scheduled load would be dispatched at a price that better reflects the price of consuming an additional unit of electricity at that connection point, thus distortions in the efficient dispatch of load would be reduced and this would result in a central dispatch outcome that is closer to being fully optimised
- it would reduce distortions in the recovery of IRR, however, it is important to note that although the loss factors are marginal and tend to over-recover for transmission losses, the proposed Rule would not eliminate IRR, which is characteristic of the present market design. It would, however, reduce the likelihood of negative IRR occurring.

Given this, AEMO considers that the proposed Rule is likely to promote the NEO because it is likely to result in market outcomes that more accurately reflect the price of producing electricity at the RRN and this would lead to dispatching the most economically efficient generating units. Hence, the proposed Rule would result in more efficient pricing of electricity and better locational price signals for generation and load which is likely to lead to more efficient investment and operation of electricity services, which in turn would bring long term benefits to consumers with respect to more efficient prices.

6 Expected Benefits and Costs of the Proposed Rule

The proposed Rule would benefit electricity customers in the long term because it is likely to reduce prices by producing:

- Price outcomes that more accurately reflect the cost of producing electricity at the RRN and this would lead to dispatching the most economically efficient generating units.
- A more accurate determination of IRR.

AEMO expects that Generators and Market Customers that are currently benefitting from the higher MLFs would be negatively affected by the proposed Rule, but participants who are disadvantaged by the current arrangements would balance this.

Currently three Registered Participants have connection points with both active energy generation and consumption. The MLFs that will apply to Registered Participants in future financial years will only be affected where AEMO has confirmed that the 30% net energy balance condition is met and this will be based on the historic data for the previous financial year. Table 3 on the following page provides details of the Registered Participants that have these connection points, the current arrangements, and AEMO's conclusion as to whether they will be affected by the proposed Rule.

AEMO estimates its cost of implementing the proposed Rule (described in section 3.2) would be approximately $114,000 and these costs are associated with making changes in the MMS. After discussing the proposed Rule with Registered Participants that have a connection point where energy is both generated and consumed, no further implementation costs have been identified.

Table 3: Participants Affected by the Proposed Rule

PARTICIPANT	FACILITY	CURRENT NUMBER OF MLFS	POST PROPOSED RULE ARRANGEMENTS	EXPECTED REVENUE IMPACT
Eraring Energy	Shoalhaven	One	Unlikely to be affected because, historically, 30% net energy balance condition has not been met – one MLF is likely to be determined and applied.	None
Snowy Hydro Ltd.	Lower Tumut	One	Likely to apply because, historically, 30% net energy balance condition has been met – two MLFs are likely to be determined and applied. It is also likely there will be a negative financial impact.	Negative
Tarong Energy Corporation Ltd.	Wivenhoe	Two[10]	Likely to be affected because, historically, 30% net energy balance condition has not been met – one MLF is likely to be determined and applied.	Positive

[10] This is a legacy of jurisdictional derogations that applied at the start of the NEM.

Glossary

TERM OR ABBREVIATION	EXPLANATION
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
Connection point	Transmission network connection point as defined in the Chapter 10 of the NER
IRR	Intra-regional residue
MDP	Metering data provider
Methodology	NEMMCO's document titled: Methodology for Calculating Forward Looking Transmission Loss Factors, Final Methodology
MLF	Intra-regional marginal loss factor
MMS	Market Management Systems
NEM	National Electricity Market
NEMDE	National Electricity Market dispatch engine
NEL	National Electricity Law
NEO	The national electricity objective as stated in section 7 of the NEL
NER	National Electricity Rules
RRN	Regional reference node
TNSP	Transmission network service provider