2014 FORWARD LOOKING LOSS FACTOR METHODOLOGY REVIEW

DRAFT REPORT AND DETERMINATION

Published: 22 SEPTEMBER 2014

AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

NOTICE OF SECOND STAGE CONSULTATION

NATIONAL ELECTRICITY RULES – RULE 8.9

REVIEW OF THE METHODOLOGY FOR CALCULATING FORWARD LOOKING TRANSMISSION LOSS FACTORS

Date of Notice: 22 September 2014

This notice informs all Registered Participants and interested parties (Consulted Persons) that AEMO is commencing the second stage of its consultation on potential changes to the Methodology for Calculating Forward Looking Transmission Loss Factors.

This consultation is being conducted under clauses 3.6.1(c) and 3.6.2(d) of the National Electricity Rules (NER), in accordance with the Rules consultation requirements detailed in rule 8.9 of the NER.

Invitation to make Submissions

AEMO invites written submissions on this Draft Report and Determination (Draft Report).

Please identify any parts of your submission that you wish to remain confidential, and explain why. AEMO may still publish that information if it does not consider it to be confidential, but will consult with you before doing so.

Consulted Persons should note that material identified as confidential may be given less weight in the decision-making process than material that is published.

Closing Date and Time

Submissions in response to this Notice of Second Stage of Rules Consultation should be sent by email to peter.biddle@aemo.com.au, to reach AEMO by 5.00pm (Melbourne time) on 10 October 2014.

All submissions must be forwarded in electronic format (both pdf and Word). Please send any queries about this consultation to the same email address.

Submissions received after the closing date and time will not be valid, and AEMO is not obliged to consider them. Any late submissions should explain the reason for lateness and the detriment to you if AEMO does not consider your submission.

Publication

All submissions will be published on AEMO's website, other than confidential content.

EXECUTIVE SUMMARY

The publication of this Draft Report and Determination (Draft Report) commences the second stage of the Rules consultation process conducted by AEMO to consider proposed changes to the Methodology for Calculating Forward Looking Transmission Loss Factors (Methodology) under the National Electricity Rules (NER).

AEMO's Issues Paper identified what AEMO considered were the four main issues with the Methodology and proposed corresponding amendments to,

- provide Generators a better opportunity to advise AEMO of unrepresentative generation profiles
- allow AEMO to adjust historical flows on MNSP networks to reflect any proposed change in generation profiles
- correct how AEMO currently manages generating unit capacity reductions
- re-write the Methodology to separate the Methodology from the associated commentary.

While all submissions supported the proposed changes three key issues were identified by the Consulted Persons.

Publication of revised generation profiles.

AEMO proposed that revised generation profiles would be published along with its reasoning for using an adjusted generation profile. The issues paper did not detail of the level of information to be published.

Consulteed Persons were concerned that commercially sensitive information not be published. AEMO agrees and has proposed that it will only publish revised generation profiles in a non commercially sensitive manner.

Use of more recent historical data

AEMO currently uses historical data from the previous financial year as the basis for its assessment of MLFs for the next year. The potential to use more recent historical data was raised in one submission The submission indicated that the use of more recent data would minimise the extrapolation required and would mitigate the impacts of changes due to changes in market conditions.

AEMO considered the use of the most recent calendar year data, however a number of issues were identified. This matter was discussed at length at the Industry Forum where there was general agreement that the costs of such an approach outweighed the value to be gained in moving the data year by six months only. Consulted Persons indicated a preference for AEMO to concentrate on producing results as accurately as possible without rushing the process by using a compressed timeframe.

AEMO will continue to use the most recent financial year data but will use the most recent data available when considering whether to accept revised generation profiles.

Use of revised generation profiles not based on changes to physical circumstances

The Methodology currently allows for the provision of revised generation profiles on the basis of physical circumstances only, such as drought conditions or fuel supply problems. AEMO proposed to clarify the Methodology to make it clear that changes based on market or commercial circumstances would not be accepted.

One submission suggested that using only physical circumstances would not allow the correction of step changes in the market such as the introduction of a carbon tax but did not propose any change, only that AEMO should consider if further improvements could be made outside the scope of this review.

A further submission requested changes to accommodate hydroelectric generation better, which AEMO agrees to implement.

AEMO will continue to explore potential changes for the future to account for market changes, such as the use of market simulations as discussed in the Issues Paper.

Other Issues

A number of submissions raised issues considered to be outside the scope of this review

- Treatment of losses associated with flows on interconnectors
- Use of marginal losses instead of actual losses and the potential for over-recovery of losses
- How any over-recovery of losses is returned to customers

Addressing these issues would require changes to the market design principles and associated changes to the Rules. AEMO intends to bring these items to the attention of the NEM Wholesale Consultative Forum.

AEMO's proposes to amend the Methodology for Calculating Forward Looking Loss Factors in the form published with this Draft Report.

Contents

1 Stakeholder Consultation Process

As required by clauses 3.6.1(c) and 3.6.2(d) of the NER, AEMO is consulting on proposed changes to the Methodology for Calculating Forward Looking Transmission Loss Factors in accordance with the Rules consultation procedures in rule 8.9.

AEMO's indicative timeline for this consultation is outlined below. Future dates may be adjusted depending on the number and complexity of issues raised in submissions.

DELIVERABLE	INDICATIVE DATE
Notice of first stage consultation **[**and Issues Paper**]** published	17 July 2014
First stage submissions closed	22 August 2014
Draft Report & Notice of second stage consultation published	22 September 2014
Submissions due on Draft Report	10 October 2014
Final Report published	30 October 2014

The publication of this Draft Report marks the commencement of the second stage of consultation.

2 Background

2.1 NER requirements

The NER requires AEMO to calculate, each year, inter-regional loss equations and intra-regional loss factors, and to publish the results by 1 April. The NER further requires AEMO[1] to determine, publish and maintain in accordance with NER consultation procedures, a methodology to determine the inter-regional and intra-regional loss factors to apply for a financial year for each transmission network connection point. This methodology was developed after consultation with the market in 2002 and has remained largely unchanged since then.

2.2 Context for this consultation

This consultation is to consider proposed changes to the Methodology developed by AEMO in accordance with NER clause 3.6.1(c) and 3.6.2(d). Hence any issues raised by Consulted Persons that would require changes to the NER are outside the scope of this review.

2.3 First stage consultation

AEMO issued a Notice of First Stage Consultation on 17 July 2014, together with an Issues Paper outlining a number issues and proposed amendments to the Methodology and inviting comments from Consulted Persons.

AEMO identified what it believes are the four main issues with the Methodology;

1. Historical generation profiles.
2. Historical MNSP flows.
3. Generating unit capacity reductions.
4. The Methodology document is difficult to read due to the inclusion of commentary in the same document.

[1] NER Clauses 3.6.1(c) and 3.6.2(d)

The issues paper proposed the following amendments to the Methodology to deal with these issues;

1. Provide Generators a better opportunity to advise AEMO of incorrect generation profiles.
2. Allow AEMO to adjust historical flows on MNSP networks to reflect any proposed change in generation profiles.
3. Correct how AEMO currently manages generating unit capacity reductions.
4. Re-write the Methodology to separate the Methodology from the associated commentary.

AEMO received six written submissions.

Copies of all written submissions, have been published on AEMO's website[2]

3 Summary of Material Issues

The key material issues arising from the proposal and raised by Consulted Persons are summarised in the following table:

NO.	ISSUE	RAISED BY
1.	Publication of revised generation profiles	**Hydro Tasmania**
2.	Use of more 'recent' historical data	**Major Energy Users Inc**
3.	Use of revised generation profiles not based on changes to physical circumstances	**Origin Energy & Hydro Tasmania**

A detailed summary of issues raised by Consulted Persons in submissions, together with AEMO's responses, is contained in Appendix A.

4 Evaluation of Material Issues

This section addresses each of the material issues raised.

4.1 Publication of revised generation profiles

4.1.1 Issue summary and submissions

AEMO proposed that revised generation profiles would be published along with its reasoning for using an adjusted generation profile. The issues paper did not detail the level of information to be published.

Hydro Tasmania said that due to issues of commercial confidentiality only aggregates or load duration curves for generators summed on a regional basis at a monthly or quarterly resolution should be published.

4.1.2 AEMO's assessment

This issue was discussed at the Industry Forum on 3 September 2014 where a number of potential options were raised, including publication of data on a monthly or quarterly basis by power station or region or subregion.

AEMO agrees that a generator should not be disadvantaged by the publication of commercially sensitive information.

[2] http://www.aemo.com.au/Consultations/National-Electricity-Market/Review-of-Methodology-for-calculating-Forward-Looking-Transmission-Loss-Factors

4.1.3 AEMO's conclusion

AEMO will provide details of revised generation profiles on the basis of the aggregated change in quarterly energy generated. AEMO will also indicate in which region or sub-region[3] the affected power stations are located. This information will be included in the annual List of NEM Regions and Marginal Loss Factors report.

4.2 Use of more recent historical generation data

4.2.1 Issue summary and submissions

AEMO currently uses historical generation data from the previous financial year. That is for the 2015/16 financial year, AEMO used data from the 2013/14 year.

The potential to use more recent historical data was raised in its submission by the Major Energy Users Inc (MEU). The issue was also discussed at the Industry Forum on 3 September 2014where it was indicated that the use of more recent historical data would minimise the level of extrapolation required and would mitigate the impacts of changes in market conditions.

4.2.2 AEMO's assessment

AEMO agrees that the most recent data should be used where practicable. AEMO has considered the use of the most recent calendar year data instead of the most recent financial year data. Use of this data presents a number of issues;

- The data will not be available until the end of the first week in January.
- There will be some disconnect in the data in the sense that data for the first 6 months of the current financial year will come from the last half of the previous calendar year while the data for the last 6 months of the current financial year will come from the first half of the last calendar year.
- There is a requirement to use both generation and load data – they have to match. Load data then has to be converted into forecast load curves on a trading interval basis. This can take up to two weeks per region and would not be completed until early February.
- The provision of indicative generation input data would not be available until early February with probably only one week for comment.
- This leaves only 5-6 weeks for AEMO to run the MLF process, analyse and document the results prior to the 1 April publication date – this would leave no time for a draft report or comment from participants.
- During this time AEMO also has to manage verification and benchmarking studies with a consultant.

This was discussed at length at the Industry Forum on 3 September where there was agreement that the costs of such an exercise outweighed the value to be gained in moving the data year by six months only. Participants preferred to see AEMO concentrate on producing results as accurately as possible without rushing the process. AEMO generally agrees with the suggestion that the most recent data available should be used when AEMO conducts due diligence on any revised generation profiles provided by generators.

4.2.3 AEMO's conclusion

AEMO will continue to use historical generation data from the most recently completed financial year.

[3] Such as north or south Tasmania.

AEMO will use the most recent available data when carrying out due diligence on any revised generation profile provided by Generators.

4.3 Use of revised generation profiles not based on changes to physical circumstances.

4.3.1 Issue summary and submissions

The current Methodology states that AEMO will consider revised generation profiles on the basis of changed physical circumstances only. AEMO proposed that this limitation should remain with ammended wording to clarify that market related changes and those related to a generators financial position would not be considered. AEMO also proposed changing the cut-off date for the provision of revised profiles be extended to 15 November.

Origin Energy stated that using physical circumstances only would not allow for correction of step changes in the market such as the introduction/repeal of a carbon tax and that AEMO should consider if further improvements could be made which could be outside the scope of this current review.

While supporting the concept of physical circumstances, Hydro Tasmania requested a change in the proposed wording of clause 5.5.6 of the Methodology to extend drought conditions to include storage levels or rainfall variability in relation to hydroelectric generators.

4.3.2 AEMO's assessment

In the Issues Paper AEMO stated that it has commenced research into the potential to use market simulations.The submissions strongly supported the principle of minimal extrapolation and stated that the use of market simulations would not be in line with this principle.

AEMO is continuing to research the use of market simulations to assist in determining future generation profiles and will consult further before considering any use of market simulations in the MLF process.

In relation to extending the concept of drought AEMO agrees that hydroelectric generation is impacted by rainfall patterns and resulting storage levels and agrees with the change to the wording of clause 5.5.6 of the methodology proposed by Hydro Tasmania.

4.3.3 AEMO's conclusion

AEMO will consider revised generation profiles on the basis of changed physical circumstances only.

AEMO will change the proposed wording of clause 5.5.6 of the methodology to include low storage levels or rainfall variability for hydroelectric generation.

5 Draft Determination

Having considered the matters raised in submissions and at forums, AEMO proposes to amend the Methodology for Calculating Forward Looking Transmission Loss Factors in the form of Attachment 1, in accordance with clauses 3.6.1(c) and 3.6.2(d) of the NER.

Consulted Persons will note that as a result of the re-drafting, some sections have been renumbered and an introductory section has been added to provide some background to the process and outline the principles used. The version of the Methodology provided in Attachment 1 is a work in progress, but rather than delay the release of this Report until it is in better shape, it is being released now for comment, noting that AEMO will address issues of style and readability in time for the final determination.

6 Other matters

6.1 Development of connection point forecasts

AEMO has identified that section 5.2 of the Methodology that relates to connection point load forecasting does not align with the current process. Rather than relying on the TNSPs to provide connection point forecasts, AEMO now develops connection point forcasts for all regions except Queensland internally[4]. AEMO also expects to be able to develop connection point forecasts for Queensland by the end of 2015.

Section 5.2 of the Methodology has been revised to permit AEMO to use connection point forecasts developed either by AEMO or the TNSPs.

6.2 Issues outside the scope of this consultation

As noted in Appendix A, a number of issues were raised that are outside the scope of this consultation in that to implement these changes would require changes to the market design principles and the associated NER.These issues relate to;

- Treatment of losses associated with flows on interconnectors
- Use of marginal losses instead of actual losses and the potential for over-recovery of losses
- How any over-recovery of losses is returned to customers

AEMO will bring these issues to the attention of the National Electricity Market Wholesale Consultative Forum (NEMW-CF).

Attachment 1 – Methodology for Calculating Forward Looking Transmission Loss Factors.

Published as a separate document on AEMO's website with this report. Two versions of this document have been provided. A change marked version of the existing document and a clean copy.

[4] http://www.aemo.com.au/Electricity/Planning/Forecasting

Appendix A - Summary of Submissions and AEMO Responses

NO.	CONSULTED PERSON	ISSUE	AEMO RESPONSE
1.	GDF Suez	Any significant deviations between a Generator's proposed changes and the outturn results should be published, and AEMO should historically review any Generator changes and compare those to actual results.	AEMO will publish limited details of revised generation profiles provided to AEMO and used in the MLF calculation process. AEMO will also historically review the proposed and actual generation profile and report on any major differences. The Methodology has been updated accordingly.
2.	GDF Suez	In reviewing any ESOO capacity reductions, AEMO should adopt a similar framework for assessment as described in Section 5.5.6 of the Methodology	AEMO will consult with individual generators to determine if a capacity reduction is related to maintenance.
3.	Central Irrigation Trust	CIT believes that it is not appropriate or fair that those customers on the transmission lines supplying the interconnectors should be accountable for the losses incurred by sending extra power from South Australia to Victoria.	Any changes to the calculation of loss factors in this respect would require changes to the market design principles and the NER. While this is outside the scope of the current review AEMO will bring this to the attention of the NEMW-CF
4.	Hydro Tasmania	Hydro Tasmania supports the intention of and the proposed wording for clause 5.5.6 but requests the underlined change • Drought conditions or low storage levels or rainfall variability for hydroelectric generators	See section 4.3
5.	Hydro Tasmania	Hydro Tasmania proposes that AEMO publishes aggregates or load duration curves for generators summed on a regional basis at a monthly or quarterly resolution rather than explicit machine outputs for those generators supplying revised generation profiles.	See section 4.1
6.	Origin Energy	Origin suggests the process of providing indicative generation inputs and the associated timeframe be explicitly written into the Methodology as it is an important improvement to the MLF establishment process.	AEMO agrees with this proposal, and has updated the Methodology accordingly
7.	Origin Energy	The revised drafting of clause 5.5.6 explains that the provision of revised generation profiles is based on physical rather than market related or as the result of the financial position of generators. Origin appreciates this is intended to ensure revised profiles are easily verifiable but considers this may not always produce the most accurate profile. To address such issues and improve accuracy of the MLF calculations, Origin suggests AEMO continue to consider whether there are any further improvements to the process for establishing MLFs outside the scope of this review.	See section 4.3

8.	Origin Energy	In relation to the double counting of capacity reductions Origin support both proposals but for the latter proposal the Methodology needs to provide a clear definition for a maintenance outage.	See section 4.3
9.	Major Energy Users	AEMO is required under the National Electricity Law, that what it does has to be '.. in the long term interests of consumers..” but nowhere in the issues paper does AEMO highlight where its proposed changes reflect these long term interests	AEMO has proposed changes to the Methodology on the basis of improving the accuracy of the MLF values calculated each year. This is in the long term interest of all participants.
10	Major Energy Users	Consumers are very concerned that the current approach to setting the MLFs results in year on year movements of the MLFs and as direct connected and sub transmission connected users are very large users of electricity, this yearly variation in the MLFs can lead to very significant cost variations.	The current MLF process reflects changes in the market, albeit with up to a two year lag in some of the input data. AEMO believes it is the changes in the market environment that are responsible for variations in MLFs. Any methodology determined in accordance with the NER to calculate MLFs should capture these variations. The changes proposed by AEMO are to improve the accuracy of the MLFs by improving some of the input data, especially in the area of historical generation inputs. While this will not necessarily lessen the yearly variations it will assist in making the process inputs more reflective of the year for which the MLFs are calculated.
11	Major Energy Users	MLFs do not reflect the locational impact of losses that are actually incurred. By their very nature being set at the margin, MLFs over-recover the cost of losses and the redistribution of this over-recovery is then carried out in a way which does not reallocate this over-recovery to those that paid the excess amount.	The Methodology has been developed in accordance with the NER. Any changes to address this issue would require changes to the market design principles and the NER. While this is outside the scope of the current review AEMO will bring this to the attention of the NEMW-CF
12	Major Energy Users	With reference to issue 12, for consumers this over-recovery is returned through transmission charges. The MEU considers that levying an excessive charge and then returning the unneeded amount at a later time is not in the long term interest of consumers. The MEU considers that the MLFs should be calculated in the way proposed and then discounted to reflect the forecast losses actually anticipated for the year.	The Methodology has been developed in accordance with the NER. Any changes to address this issue would require changes to the market design principles and the NER. While this is outside the scope of the current review AEMO will bring this to the attention of the NEMW-CF
13	Major Energy Users	The MEU suggests that this review should address consumers' interests as it does those of the supply side	AEMO has considered all views that are within the scope of this review. As noted in the issues paper AEMO is looking to make changes to the Methodology that can be implemented for the 2015/16 MLF calculation. This precludes any changes to market design or the NER.
14	Major Energy Users	AEMO should use the most recent generation input data available and not use outdated data that might be more convenient	See section 4.2

15	Major Energy Users	To address the known changes in demand, the MEU suggests AEMO, just as it does for setting Victorian transmission charges, should seek advice from large electricity users.	AEMO agrees and confirms this is already being included as part of the process for developing connection point forecasts. These connection point forecasts are then used in the MLF process.
16	Major Energy Users	The MEU notes that AEMO intends to trial the indicative extrapolation of generation profiles with market participants. The MEU agrees with this approach but considers that it should be expanded to include large users in this process as well.	The generation profiles are based on the use of historical data and then adjusted on the basis of minimal extrapolation which is based on a set of simple rules. On the contrary, demands are based on the development of connection point forecasts. This is a sophisticated statistical analysis of historical data combined with known trends in demand and consultation with major customers. Therefore AEMO consideres that the existing process already takes into account large and small loads in detail.
17	Hydro Tasmania[5]	On the basis that the ESOO considers outages for only the defined sumer and winter periods how would the MLF process be informed of capacity reductions outside of these periods	Any planned outages not captured by the ESOO should be advised to AEMO under clause 5.5.6 of the Methodology. AEMO will then make an assessment as to whether to include the outage in the MLF process. This assessment would be on the basis of • Confirming the outafge is based on a physical circumstance • Sufficient duration to be considered not a routine outage

[5] Email to AEMO on 3 September 2014.