

2023-2024 MLFs: Historical comparison insights

December 2024



Introduction

Overview

The purpose of the Historical Comparison and Insights report is to provide an assessment of the accuracy of the Marginal Loss Factor (MLF) calculation process. Insights from the report can be used as inputs to future reviews of the MLF calculation methodology and/or the MLF framework within the National Electricity Rules.

Introduction

Methodology for historical comparison

In this review the 2023/24 MLFs are compared to a set using actual load and generation from 2023/24. While the comparison run more closely actual MLFs, they will differ from ‘true’ actual MLFs due a number of modelling simplifications, including:

- A single system normal network model is implemented.
- DC interconnectors in parallel with AC interconnectors operate on a relationship derived from historical outcomes however will not result in exact alignment.
- Historic network outages are not captured in the model.

Drivers of variation

Generator return to service delays of QLD Thermal Generation

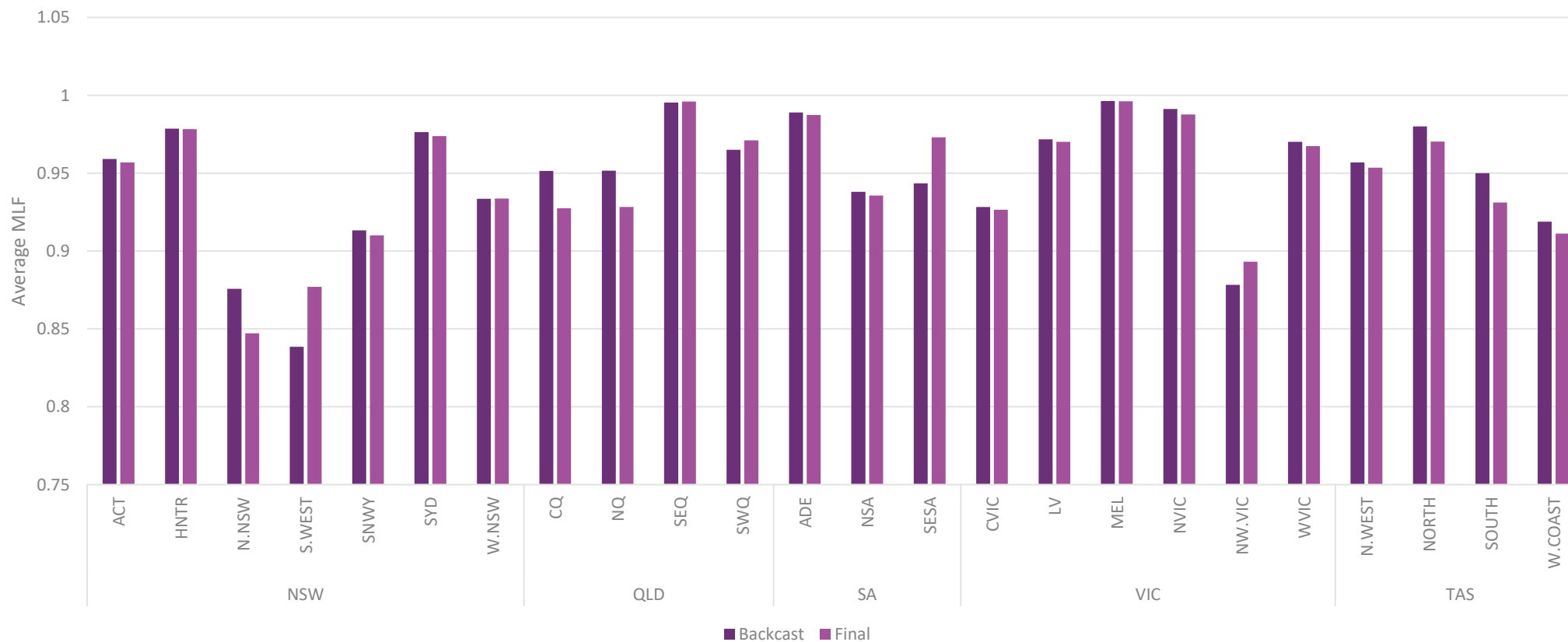
- The actual return to service date of both units a QLD thermal power station power station was much later than the reported date provided at the time of MLF calculation, which was based on best information available at the time.

Operational limits

- Revisions to existing limits impacted on both generation and inter-regional transfers.
 - Improvements continue to be made in this space, however it remains challenging to forecast the impact of limits up to 15 months in advance.
 - The use of historical data can limit the pace at which congestion relief is reflected in MLF outcomes. In particular, this is an issue where the underlying relief does not result from network augmentation.

Regional average MLFs for Generators

2023-24 Backcast Generation Comparison



Regional average MLFs for Generators

Queensland

- Central and north Queensland MLFs higher than published, mainly attributed to the significant delay in the return to service of a QLD thermal power station.
 - The latest available information, published in March 2023, regarding the return to service was incorporated in the final run published on 1 April 2023.

New South Wales

- North New South Wales MLFs higher than published, primarily due to reduced southerly flows from Queensland in part led by the delay of the RTS of a QLD thermal power station.
- South-west New South Wales MLFs lower than published, primarily due to increased local generation arising from reduced congestion within the area.

South Australia

- South-east South Australia MLFs lower than published. This is due to a large variation in the Heywood interconnector where the net flow reversed resulting in net import into South Australia.

Victoria

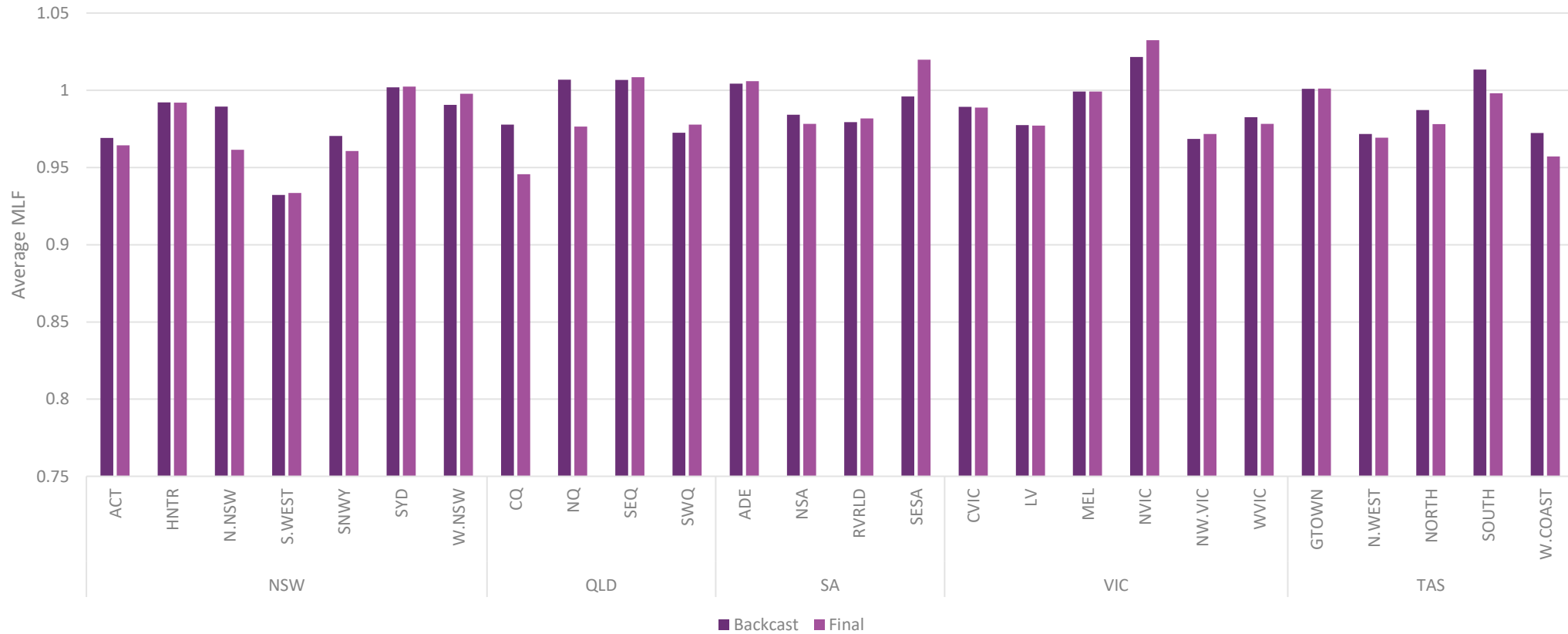
- North-west Victoria MLFs lower than published, primarily due to increased local generation arising from reduced congestion within south-west New South Wales.

Tasmania

- Tasmania MLFs higher than published, primarily due to reduced local generation and increased import from the mainland.

Regional average MLFs for Loads

2023-24 Backcast Load Comparison



Regional average MLFs for Loads

Queensland

- North New South Wales MLFs higher than published, primarily due to reduced southerly flows from Queensland in part led by the delay of the RTS of a QLD thermal power station.

New South Wales

- North New South Wales MLFs higher than published, primarily due to reduced southerly flows from Queensland in part led by the delay of the RTS of a QLD thermal power station.

South Australia

- South east South Australia MLFs lower than published, primary due to reduced demand as well as large variation in the Heywood interconnector with more imports into South Australia.

Tasmania

- Tasmania MLFs higher than published, primarily due to reduced local generation and increased import from the mainland.

Primary Issue Identified 1

QLD thermal power station RTS

Despite revised consideration of the return of a QLD thermal power station in March 2023 the actual RTS occurred, this resulted in an overestimation of generation in Queensland.

This impacted MLF outcomes in northern and central Queensland and northern New South Wales, resulting in application of MLFs that were lower than those presented in these backcast results.

Unit	February 2023 (Draft)	March 2023 (Final)	Actual
Unit 1	Staged return to service from June 2023	30 Sept 2023 – 300 MW 31 Dec 2023 – 466 MW	1 April 2024
Unit 2	Staged return to service from May 2023	31 Oct 2023 – 300 MW 30 Nov 2023 – 350 MW 31 Jan 2024 – 466MW	30 August 2024

Of note is that AEMO currently has no capability under the National Electricity Rules (NER) to perform intra-year revisions to the global MLF determinations in events like this.

Primary Issue Identified 2

Intra-regional limits

Intra-regional limits and the associated congestion has been challenging to accurately forecast up to 15 months ahead.

Forward looking forecasting of congestion increases has been improved, and we anticipate the use of new tooling to determine MLFs to further improve this.

- These backcast results, indicate an overestimation of curtailment for the 2023-24 financial year predominately in south west New South Wales.
- This overestimation has led to MLF outcomes that were preferable for generation within this area, when compared to the historical analysis.

Of note, is that the reductions between the 2023-24 and 2024-25 MLF determinations within impacted areas were driven by this variation so these changes are reflected in the current MLF outcomes.

AEMO Methodology/Regulatory Reviews

Methodology

AEMO recently made a final determination on the methodology associated with MLF determinations, predominately seeking to identify and action improvements associated with the replacement of the MLF tooling.

The revised tooling, and in turn methodology is anticipated to result in improved accuracy in future MLF determinations.

Further information on this determination can be found [here](#).

MLF Discussion Forum - Regulatory

AEMO noted several issues raised through the formal consultation process on the methodology that may require NER revisions to resolve.

AEMO has established a parallel discussion forum to engage with stakeholder on these issues. Further workshops are anticipated.

Further information on the regulatory MLF discussion forum can be found [here](#).



For more information visit

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