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Australian Energy Market Commission
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Transmission loss factors Consultation paper

Snowy Hydro Limited welcomes the opportunity to comment on matters raised in the Consultation Paper from the Australian Energy Market Commission (the Commission) on the Transmission loss factors.

Snowy Hydro Limited is a producer, supplier, trader and retailer of energy in the National Electricity Market ('NEM') and a leading provider of risk management financial hedge contracts. We are an integrated energy company with more than 5,500 megawatts (MW) of generating capacity. We are one of Australia's largest renewable generators, the third largest generator by capacity and the fourth largest retailer in the NEM through our award-winning retail energy companies - Red Energy and Lumo Energy.

Snowy Hydro understand that new generators are emerging in different parts of the NEM connecting at the remote edges of the national grid which has resulted in these generators also being a significant distance from demand centres resulting in greater losses of electricity en route. Losses in the transmission network however have been a natural aspect of the NEM over the past 20 years making generator investment decisions important. It is for this reason Snowy Hydro believe there is no clear basis to say that changing from a marginal loss factor framework (intra-regional) to an average loss factor framework will assist parties affected by adverse MLFs or improve the majority of market participants circumstances. Further to this we have the following comments with the rule changes:

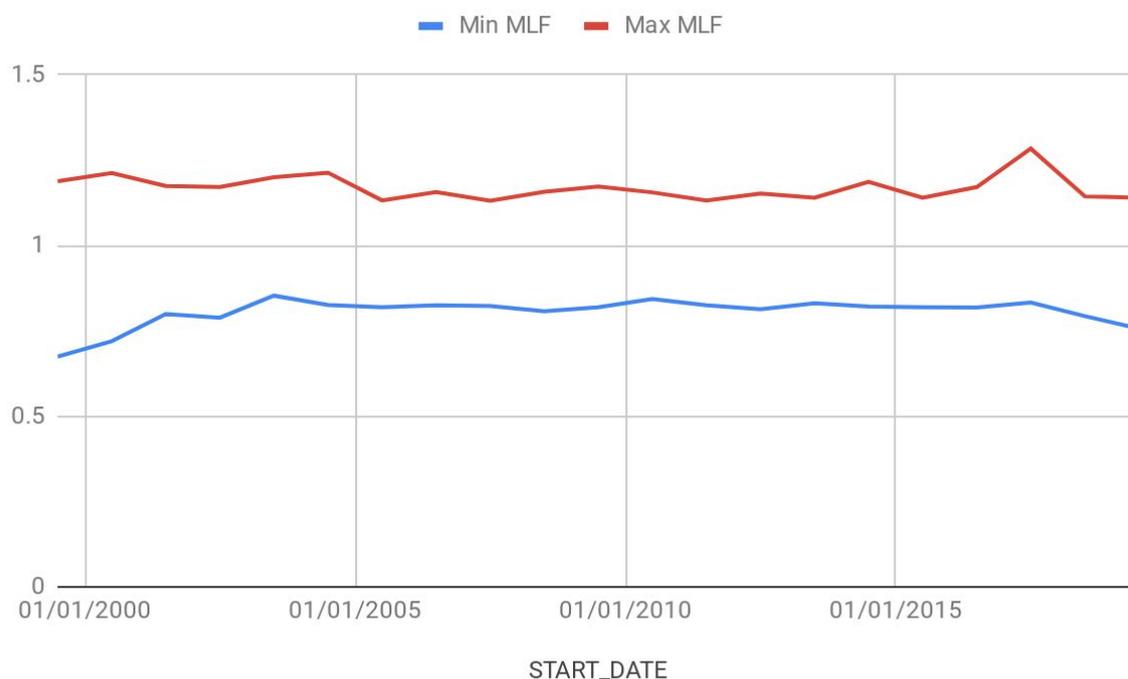
- The regional market design, combined with static yearly loss factors is the result of an initial simplification decision that, as a trade-off, introduced some inaccuracy.
- AEMO recently engaged with market participants on possible changes to MLF calculations intended to make them more transparent and reduce volatility for investors. AEMO has now recalculated the 2019-20 MLFs.
- A number of unintended consequences can occur from changing the MLF methodology.
- Transmission augmentations will deliver significant value for the NEM as a whole and ultimately consumers allowing the shared network support of new projects, in particular the new renewable energy zones across the transmission lines. This will address concerns with new generators connecting at the remote edges of the national grid.

MLF's in the NEM

Snowy Hydro believes that MLFs are a key locational signal in the NEM that provide investors with an incentive to connect new generation close to the Regional Reference Node (RRN) and leverage efficiencies in the transport of energy across the system. It is for this reason AEMO notes that *"investors should carefully consider the impact of MLFs when assessing the financial viability of a project, including exposure to future MLF changes over time"*.

The range of maximum and minimum MLF's over the past 20 years in the NEM is not a recent development and has not occurred only in the current climate as shown in Figure 1. Market participants have consistently incorporated MLF's as part of decision making since the start of the NEM. Generators have been rewarded for locating where there has been a relative scarcity of generation options while at other times have essentially been penalised for locating where there is (especially after their entry) an over-abundance of generation compared to the local size of consumption.

Figure 1: Marginal Loss Factors in the NEM over the past 20 years¹



Extreme changes to traditional MLFs have not been uncommon in the NEM. In the last 4 years Mt Stuart and Snuggery both at stages experienced large yearly percentage changes of 11 to 14 per cent in MLFs². The main objective of the marginal loss design is to achieve an efficient dispatch and pricing of generation and demand which has been the case for the past 20 years.

Changing the MLF Methodology

The Consultation Paper notes the inaccuracy in forecasting MLF. Snowy Hydro however believes there is no evidence that if there was greater accuracy it will assist those parties affected by adverse MLFs. The regional market design, combined with static yearly loss factors is the result of an initial simplification decision that, as a trade-off, introduced some inaccuracy³. It would be more appropriate to re-assess whether, given the changes in the power system, the trade-off continues to represent the correct balance rather than proposing a change to the methodology which would not entirely solve the problem it set out to solve.

¹ SnowyHydro Analysis

² https://www.aemo.com.au/-/media/Files/Electricity/NEM/Security_and_Reliability/Loss_Factors_and_Regional_Boundaries/2017/2017-18-MLF-Applicable-from-01-July-2017-to-30-June-2018.xlsx

³ Australian Energy Council, 2019, "Marginal Loss Factors: Will someone please repeal the laws of physics?"

Recently AEMO completed a full review of how generation is modelled in the MLF calculation so that the calculation conforms with the Forward-Looking Transmission Loss Factors (FLLF) methodology⁴. AEMO engaged with market participants on possible changes to MLF calculations intended to make them more transparent and reduce volatility for investors. AEMO has now recalculated the 2019-20 MLFs. A rule change is therefore not required as there has been a significant amount of work undertaken on MLF's in the recent period.

The solution to address concerns with the current forwardlooking MLF methodology to an average loss factor methodology will not bring NEM wide benefits and improvements to market participants circumstances. The consultation paper has not properly assessed the number of unintended consequences that can occur from changing the MLF methodology. Market Participants should instead contemplate the loss factor risks carefully, as it is not uncommon, before investing in generation across the NEM. It is important that a developer should favour locations with low resistance between the connection point and large load centres.

Marginal loss factors in a transforming NEM

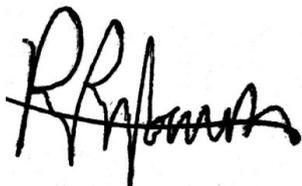
AEMO recently noted that *“the large year-on-year changes in MLFs demonstrate the ongoing need for comprehensive planning of both generation and transmission to minimise costs to consumers. All-of-system planning documents, such as the 2018 Integrated System Plan (ISP), are critical in the provision of information to participants regarding the needs and changes to the power system.”*⁵

Snowy Hydro believes that the delivery of these transmission augmentations will deliver significant value for the NEM as a whole and ultimately consumers and allow the shared network support of new projects, in particular the new renewable energy zones across the transmission lines. This will address concerns with new generators connecting at the remote edges of the national grid.

MLFs can be influenced by numerous factors and therefore there should be comprehensive studies undertaken to quantify the benefits of network developments on MLFs as certain network developments are expected to materially change interconnector flow directions and volumes⁶.

Snowy Hydro appreciates the opportunity to respond to the Consultation Paper and any questions about this submission should be addressed to me by e-mail to panos.priftakis@snowyhydro.com.au.

Yours sincerely,



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Snowy Hydro

⁴ AEMO, 2019, “Updated Regions and Marginal Loss Factors: FY 2019-20”

⁵ AEMO, 2019, “Updated Regions and Marginal Loss Factors: FY 2019-20”, pp3

⁶ AEMO, 2019, “Building power system resilience with pumped hydro energy storage”,

<<https://www.aemo.com.au/-/media/Files/Electricity/NEM/Planning_and_Forecasting/ISP/2019/ISP-Insights---Building-power-systm-resilience-with-pumped-hydro-energy-storage.pdf >>