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Ms Meredith Mayes | Director
Mr Andrew Splatt | Adviser
Australian Energy Market Commission
Level 6, 201 Elizabeth Street
SYDNEY NSW 2000

Submitted via AEMC website

Sydney, 18 July 2019

Dear Ms Mayes and Mr Splatt,

RE: National Electricity Amendment (Transmission Loss Factors) Rule Consultation Paper–ERC0251

Thank you for the opportunity to comment and provide our insights on the Transmission Loss Factors Rule Consultation Paper.

The proposed rule change request proposes to provide:

- an equal split of Intra-Regional Settlements Residue (IRSRs) between generators and network users,
- a change of the calculation methodology of loss factors (shifting towards an average approach).

In principle, Enel Green Power Australia supports updating the allocation mechanism of IRSRs to include Generators as proposed in this rule change. We look forward to further examining this issue as part of this rule change process.

Enel Green Power also supports updating the method for calculating transmission loss factors.

In the next stage of consultation, we encourage the AEMC to develop, analyse and compare possible calculation methods. When performing this analysis, we recommend that the AEMC:

- considers international approaches as possible alternative methods
- works to understand how developers calculate investment risk in practice
- calculate and examine on how each proposed method might:
 - change investment behaviour (and impact wholesale prices)
 - differently affect incumbents and new entrants, and differently affect different types of generation.

International approaches to calculating losses

Enel Green Power Australia operates the Bungala Solar Farm in South Australia, and is currently developing the Cohuna and Girgarre solar farms in Victoria. As such, we understand the challenges the current marginal loss factor method presents to investors in the National Energy Market.

Internationally, Enel Green Power develops and manages over 1200 renewable energy projects across 5 continents, with a combined capacity of over 43 GW. Calculating losses and properly assigning their costs to minimise prices is an issue that many international jurisdictions have previously dealt with. The NEM could benefit from adopting approaches that have proven to work successfully overseas.

We provide an overview of the European regulation for losses in HV networks with a deeper focus on the Italian market, which faced in the past ten years a rapid renewables penetration, similarly to what is currently occurring in the NEM. In Italy losses expenses are borne by final customers, so that Italian Regulator is able to keep such expenses under its strict control. Indeed, increasing Generators' charges normally causes a contingent shift of these costs towards final users; thus in most European jurisdictions Generators are not charged with additional and unpredictable costs, in order to keep electricity cheap starting from the very first step of its supply chain. Raising costs for generators might alter their behaviour into the Wholesale Market causing unnatural prices increases of the price and/or distorting merit order definition. Moreover, by putting in place an incentive scheme for Distribution companies that prove to be good performers, Italian Authorities achieved a spontaneous and continuous upgrade of grid conditions.

We recommend the AEMC reviews these alternative approaches and considers them as part of this rule change consultation. In general, we suggest that the uncertainty associated with these changing MLFs is a significant impediment to new investment. This is a significant risk given the need to replace the majority of thermal generation in the NEM within the next decade.

We also invite the AEMC to ask Enel Green Power for advice for all current discussions affecting the NEM. We believe that the extensive experience of the Enel Group in Europe and Latin America represents undoubtable value. Therefore we are willing to provide our support in any way you consider appropriate.

Please contact Tyson Vaughan, Regulatory Affairs Manager for Enel Green Power Australia at tyson.vaughan@enel.com if you require any further information.

Yours faithfully,



Javier Blanco Fernandez
Country Manager
Enel Green Power Australia

1. INTRODUCTION

Losses in transmission and distribution grids represent a considerable amount in any electricity system. High losses are typical of countries with low income and high corruption. On the other hand, high developed countries that run well established power system, record lower losses.

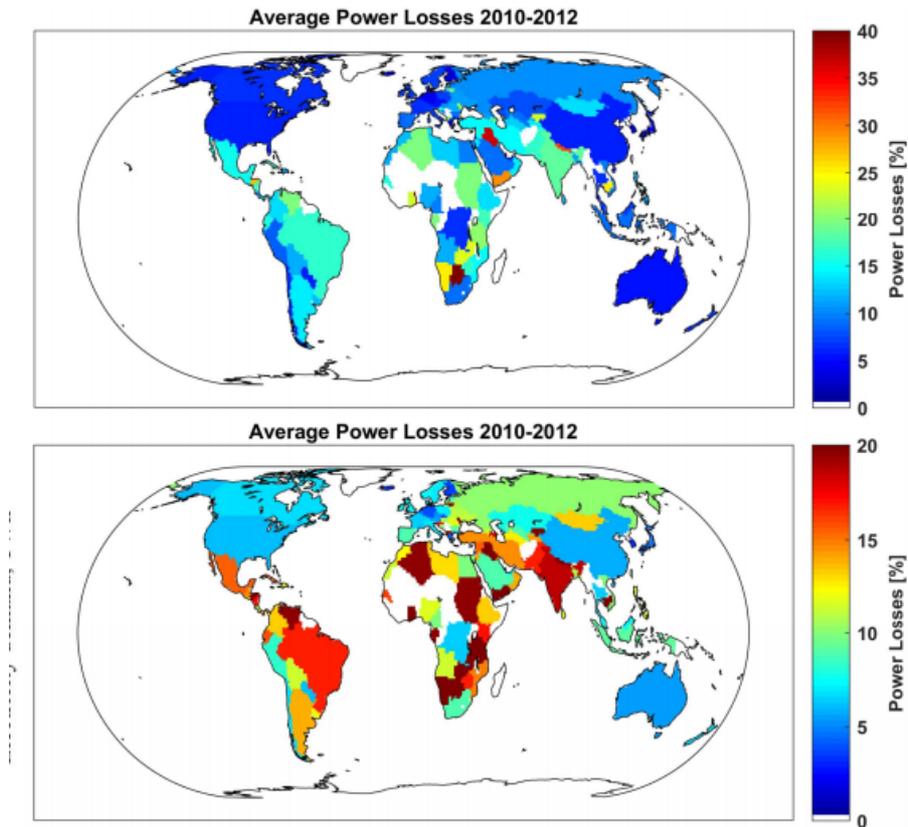
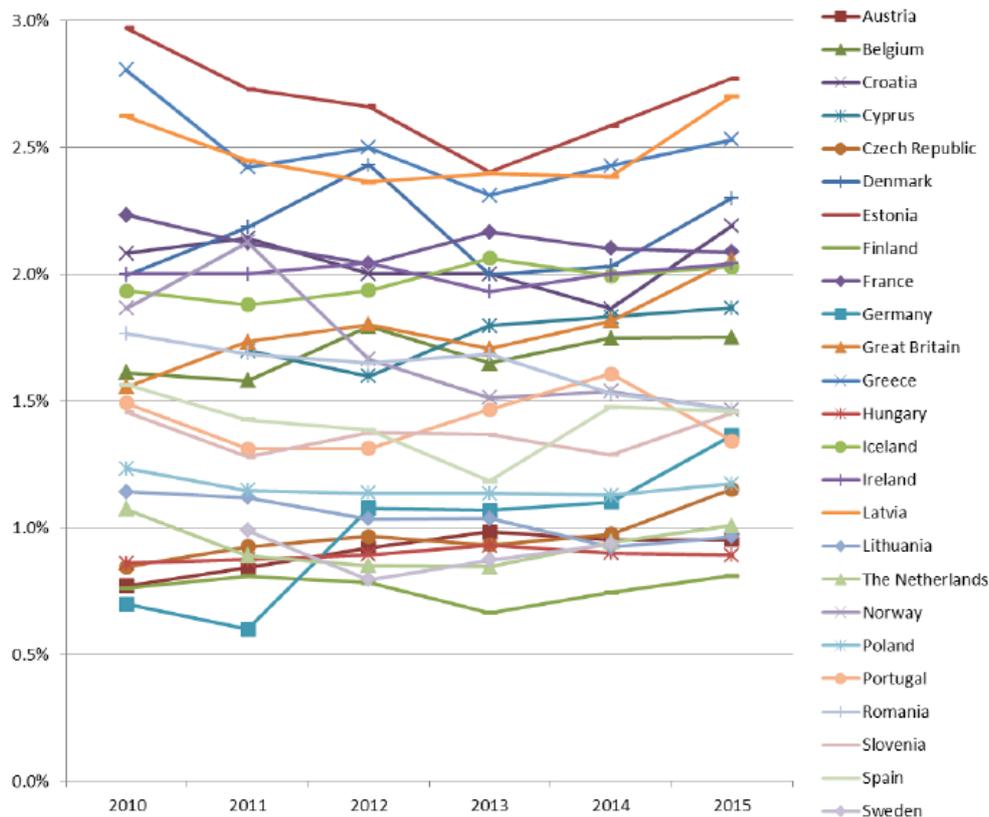


Figure 1 – Power loss distribution around the world ¹

When it comes to Europe, the transmission losses in the surveyed² countries range between 0.5 and 3%, if expressed as a percentage of total injected energy.

¹ K. Sadovskaia, D. Bogdanov, S. Honkapuro, Christian Breyer, *Power transmission and distribution losses – A model based on available empirical data and future trends for all countries globally*, International Journal of Electrical Power & Energy Systems, Volume 107, 2019.

² Council of European Energy Regulators, *CEER Report on Power Losses*, Ref: C17-EQS-80-03, 2017



Such a result should be always approached with caution because the way losses are dealt with is different between one Member Country to another. Currently there have been no attempts to harmonize the treatment and definition of network losses at European level. Also the definition of voltage level ranges are not standardized, making comparison furtherly difficult.

2. REGULATORY TREATMENT OF LOSSES

In most of European countries, network operators (TSOs/DSOs) are responsible for the procurement of losses, but in some cases it is a specific duty of suppliers (Retailers). In both options, all imbalances caused by losses are recovered from the market, regardless of their cause.

- OPTION A: TSOs are responsible for losses procurement

In this case the TSO is the sole responsible for buying the extra-power necessary to cover total losses. Power can be procured:

- on power exchanges with proper contracts;
- bilaterally;
- by auctions/tenders where generators or traders submit their offers.

This option is the one chosen by most of the Member Countries (Italy, Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, France, Finland, Germany, Hungary, Iceland, Latvia, Lithuania, Malta, the Netherlands, Norway, Poland, Romania, Slovenia and Sweden).

It requires an ex-ante estimation of losses in order to properly address total cost that will be later reflected into final tariffs.

- OPTION B: Suppliers are responsible for losses procurement

The amount of electricity needed to cover power losses is provided by suppliers who buy extra power that will be injected to compensate losses caused by their own clients.

In this framework ex-ante Transmission Loss Factors (TLFs) are used. The estimated transmission losses are priced as normal load.

This option is currently in place in Belgium, Great Britain, Ireland, Portugal and Spain.

3. CASE STUDY: ITALY

Current Italian regulation of HV networks' losses has been in place for long time now, and proved to be effective in a context of rapid and sensitive renewable energy penetration in the country.

The main principle is that end-users of electricity or their Retailers should bear the full cost for losses, while the TSO (TERNA) buys the extra-energy needed to front the losses.

The main rules in place at the moment (Rules 377/2015/R/eel) contain provisions for 'ex ante' Transmission Loss Factor (TLFs) to be periodically updated by the Italian Regulation Authority (ARERA). ARERA generally asks for the consultancy of highly skilled independent institutes for extensive studies of the network status. The main outcome of these consultancies is the definition of losses factors that depend just on the voltage band of the connection points (see table below).

Voltage level	Transmission Loss Factors
LV	10.4 – 5.2%
MV	2.3 – 3.8%
HV	0.7 – 1.8 %

The difference between the estimated losses and the actual ones is paid by the TSO at the balancing price in real time and later passed through all network users. The distribution companies which prove to be more effective in term of losses receive proper compensation. A liability is periodically computed as the difference of actual and estimated costs. This liability is owed to or by each distribution companies according to the real performance monitored by TERNA.

This general framework properly address losses and incentivize distribution companies to run their facilities (and in case upgrade them) the best way possible.

Moreover, being producers excluded from losses costs, they are made able to provide cheaper electricity to the market and, as a consequence, to final users. Energy Generators who accept to deliver their output into LV or MV grid also receive proper incentive for the avoided cost of HV losses. This mechanism also offers a leverage to shape the connection requests to the desired voltage band (avoiding congestions and undesired additional losses).

Below is a simplified flowchart of the current financial flow.

