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Thursday, 14 February 2019

Mr Gerard Reiter
Executive Manager
Network Planning and Operations
TransGrid
180 Thomas Street
Sydney NSW 2000

Dear Mr Reiter

RE: Expanding Victoria to New South Wales Transmission Transfer Capacity Consultation - Regulatory Investment Test – Transmission - Project Specification Consultation Report

ERM Power Limited (ERM Power) welcomes the opportunity to respond to the joint TransGrid and the Australian Energy Market Operator (AEMO) Project Specification Consultation Report which reviews options for the expansion of the transmission network transfer capability from Victoria to New South Wales (NSW).

About ERM Power

ERM Power is an Australian energy company operating electricity sales, generation and energy solutions businesses. The Company has grown to become the second largest electricity provider to commercial businesses and industrials in Australia by load¹, with operations in every state and the Australian Capital Territory. A growing range of energy solutions products and services are being delivered, including lighting and energy efficiency software and data analytics, to the Company's existing and new customer base. The Company operates 662 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland.

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General comments

ERM Power supports this timely review of options to increase transmission network transfer capacity, in particular between New South Wales and Victoria. The National Electricity Market (NEM) is in the process of change with the announced and forecast future retirements of large blocks of dispatchable generation output primarily with generation with intermittent output characteristics. To ensure that any potential impacts on secure operation of the power system are minimised and to ensure the ongoing supply of reliable energy to consumers, we believe that increased network transfer capability between NEM regions needs to be considered and implemented when it is demonstrated to be economically efficient to do so via a transparent Regulatory Investment Test -Transmission (RIT-T) process. This Project Specification Consultation Report (PSCR) forms Stage 1 of a RIT-T process.

Whilst the current focus of this PSCR is to increase transfer capacity from Victoria to NSW, we question if the intended focus of this PSCR will in fact deliver real benefits to consumers and the NEM. In assessing options to increase transfer capability between regions, we believe it is critical that options which increase transfer capability in both directions should receive priority for assessment over options which increase transfer capacity in one direction only.

¹ Based on ERM Power analysis of latest published financial information.



Scenarios proposed for modelling

Whilst the PSCR does not contain specific details of the scenarios proposed to be included in the modelling, the PSCR does refer to scenarios included in AEMO's 2018 Integrated System Plan (ISP). ERM Power is generally supportive of the proposed scenarios; however, we are concerned that use of AEMO's 2018 Electricity Statement of Opportunities (ESOO) demand forecasts may overstate future demand outcomes for a number of regions. Work undertaken by the Australian Energy Market Commission (AEMC) to compare AEMO's medium term forecasts, which use AEMO ESOO forecasts in the initial years, to actual outcomes as part of the Reliability Frameworks Review Final Report found that in general, AEMO's forecasts were conservative in nature and tended to over forecast when compared to actual demand outcomes.

Supporting this, actual demand outcomes in some regions this summer have yet again failed to meet forecast benchmarks in the presence of long-term record breaking temperature outcomes, even when demand is adjusted for exercise of the Reliability and Emergency Reserve Trader (RERT) contracts and the impact of involuntary load shedding. Based on this we believe that prior to commencing modelling, the proponents should work with AEMO's medium to long term demand forecasting planning group to consider and implement updates to AEMO's 2018 ESOO forecasts prior to commencement of any modelling work.

In addition, we are skeptical of the proposed use of the 2018 ESOO strong demand forecasts in the *Fast change 'state-of-the-world' scenario* and the impact this may have on the calculation of longer term market benefits. We believe that as a minimum sensitivity testing using updated 2018 ESOO neutral demand forecasts should be undertaken.

Identified Need

The PSCR sets out a number of identified needs for the transmission augmentation as follows;

- Thermal capacity of the 500/330 kilovolt (kV) transformer at South Morang.
- Thermal capacity of the 330 kV transmission circuits between South Morang and Dederang.
- A transient stability limitation on transfers to provide for the potential loss of a Hazelwood to South Morang line.

All are based on the requirement to upgrade network capacity in the direction from Victoria to NSW only.

When considering the first item, ERM Power is concerned that this identified need appears to be inconsistent with information as contained within AEMO's Annual Constraint Reports. This report indicates the following data for constraints associated with the thermal capacity of the 500/330 kilovolt (kV) transformer at South Morang.

Calendar Year	Binding Hours	Market Impact
2012	164.0	\$4,983
2013	202.1	\$9,407
2014	844.3	\$48,248
2015	951.3	\$97,998
2016	1,014.5	\$144,342
2017	311.5	\$143,897
2018 *	206.7	Not Yet Available
Jan 2019 *	0.8 (9.4 annualised)	Not Yet Available



* AEMO has yet to issue the Annual Constraint Report for 2018, binding hours data for 2018 and January 2019 has been obtained from NEMSight historical constraint data for these periods.

Following the closure of Hazelwood Power Station the frequency of binding on constraints associated with 500/330 kV transformation at South Morang has reduced significantly due to a reduction in energy input on the Victorian 500 kV system. In addition, even during years where a high number of binding hours occurred, the market impact associated with network congestion may be insufficient of itself justify the proposed \$29 million expenditure on behalf of consumers. Whilst we acknowledge this data is historically based, we contend that the Project Assessment Draft Report (PADR) must indicate a significant change in Market Impact from historical outcomes and contain sufficient detail to explain why such significant change is forecast to occur.

We also believe it is worth considering that binding of this constraint has historically been associated with very low Victoria Regional Reference Price outcomes and low output at higher opportunity cost Victorian hydro generators located in the northern Victoria area. Should actual network augmentation as currently under consideration in AEMO's Western Victoria Renewables Integration RIT-T process result in the augmentation of the Victorian transmission network in the Ballarat – Bendigo – Shepparton flowpath, then this will increase energy flows to the South Morang to Dederang flowpath at Dederang, also alleviating the need for an additional 500/330 kV transformer at South Morang.

Similarly, for Item 3, the transient stability limitation, the Annual Constraints Reports and NEMSight data indicate:

Calendar Year	Binding Hours	Market Impact
2012	419.6	\$21,337
2013	10.6	\$302
2014	317.1	\$23,304
2015	1,090.6	\$117,936
2016	1,954.3	\$238,531
2017	608.9	\$181,973
2018 *	266.6	Not Yet Available
Jan 2019 *	6.7 (78.9 annualised)	Not Yet Available

AEMO's Annual Constraints report only identified negligible hours of northward binding and market impact for Item 2, the South Morang to Dederang transmission lines.

By contrast the Annual Constraints report indicates the following for the major constraint N^W_NIL_1 impacting flows from NSW to Victoria.



Calendar Year	Binding Hours	Market Impact
2012	108.3	\$13,720
2013	104.0	\$28,564
2014	208.8	\$701,455
2015	211.7	\$94,201
2016	81.9	\$42,416
2017	1,808.4	\$736,588
2018 *	1,116.5	Not Yet Available
Jan 2019 *	182.7 (2,151 annualised)	Not Yet Available

This constraint was the primary constraint that prevented flows from NSW to Victoria on 24 and 25 January 2019 during the periods of involuntary load shedding in Victoria. At times, other system normal constraint equations for flows southward along the Murray to Dederang to South Morang flowpath bound, also reducing the potential for flows from NSW to support supply reliability to Victorian consumers.

At the times of these constraints binding, significant undispached generation capacity remained available just across the NSW/Victorian border at Snowy Hydro's Upper and Lower Tumut power stations unable to be dispatched due to the N[^]V_NIL_1 and intra-regional constraints in northern Victoria limiting southward flow from NSW. Had dispatch of this generation been possible this would have removed the need for involuntary load shedding in Victoria on 24 and 25 January.

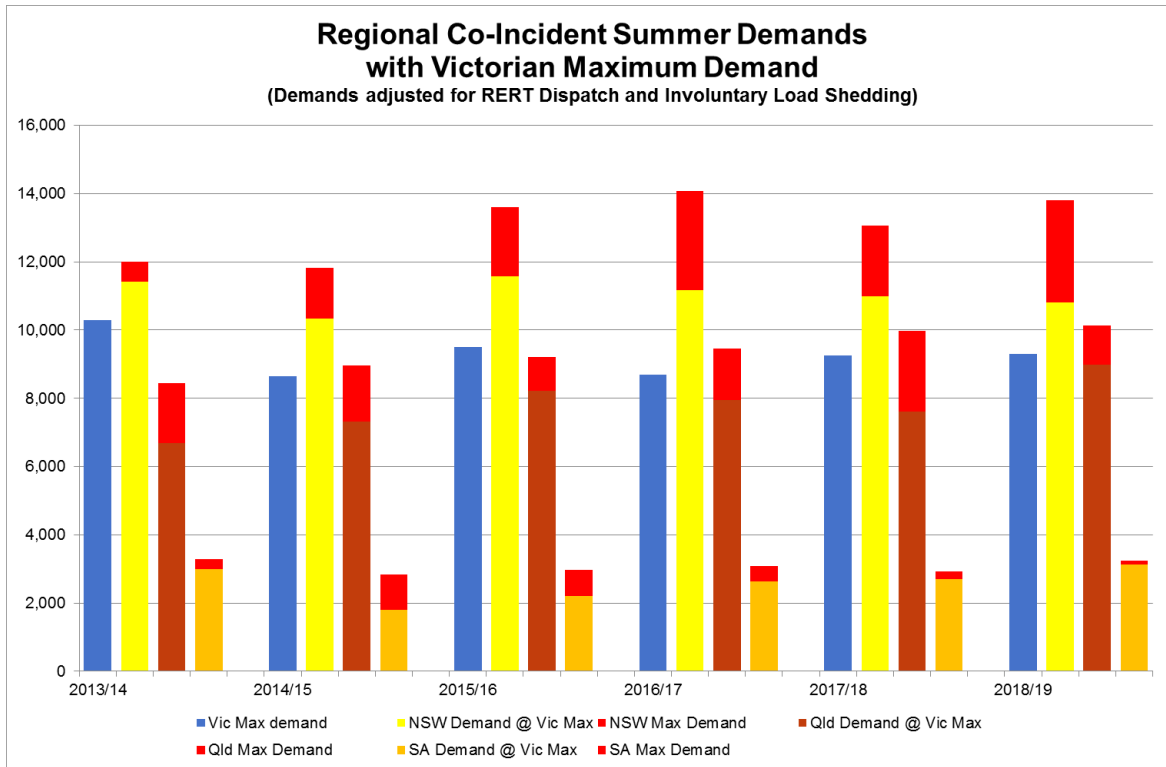
Potential Credible Options

Whilst ERM Power does not fundamentally disagree with the Options chosen by the proponents for consideration, we believe the potential credible options need to be expanded to examine options that increase the network capability for flows from NSW to Victoria. We submit that actual dispatch outcomes should prioritise the review of potential credible options to reduce the impact of the system normal constraint N[^]V_NIL_1 and increase the capability for flows southward from NSW to Victoria.

Further, options should also consider constraints in the Murray to Dederang to South Morang flowpath for southward flows which will increasingly materialise during periods of high Victorian demand once options are commissioned to reduce the impact of the N[^]V_NIL_1 constraint. Whilst there has been considerable focus on what network augmentations will be required following the commissioning of the proposed Snowy 2.0 – Tumut 4 power station, in our view it appears network augmentation options to deliver the full benefits of the existing Snowy 1.0 assets, to both Victoria and NSW have, to a large extent, been overlooked.

We recommend that the proponents reconsider the list of credible options to include options that will also support increased network transfer capability from NSW to Victoria and re-issue an amended PSCR with a revised list of credible options as soon as possible. In our view this will require, by necessity, strengthening of the network between Murray and Dederang in Victoria. This is currently not included in any of the potential credible options.

In support of this request, comparison of historical regional demand outcomes co-incident with the maximum Victoria summer demand indicates a significant gap exists between the Queensland and NSW demand outcomes at the time of Victoria maximum demand and the respective regional maximum demand for these regions. This indicates that significant energy support capability exists from these regions at the time of maximum Victoria demand.



We recommend that this amended list of credible options must indicate the nominal improvements in both NSW to Victoria and Victoria to NSW transfer capability and details of the extent of required network augmentation for the potential credible options be issued in the same format as that published by TransGrid and Powerlink for the Expanding New South Wales - Queensland Transmission Transfer Capacity Consultation - RIT-T - PSCR pages 27-42. Estimated costs for these amended credible options should also be included.

In looking further ahead to the Stage 2 Project Assessment Draft Report (PADR), we recommend the proponents include the following information:

- the expected range of transfer capability for each of the Options over a range of operational conditions;
- the factors in each case which are expected to limit the transfer capability; and
- how this transfer capability may change for the addition of blocks of generation output in Renewable Energy Zones (REZs) in both northern Victoria and southern NSW.

It is also recommended that independent verification of potential transfer capability and limit factors as set out in the PADR is contained as an appendix.

Please contact me if you would like to discuss this submission further.

Yours sincerely,

[signed]

David Guiver

Executive General Manager - Trading

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