17 May 2018

Mr John Pierce
Chairman
Australian Energy Markets Commission
PO Box A2449
Sydney South NSW 1235

Dear Mr Pierce

RE: EPR0052 Co-ordination of generation and transmission investment Stage 2 Discussion Paper

ERM Power Limited (ERM Power) welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC) – Co-ordination of generation and transmission investment stage 2 discussion paper.

About ERM Power Limited

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 load[1] 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. ERM Power also sells electricity in several markets in the United States. The Company operates 497 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland.
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General comments

The National Electricity Market (NEM) is transitioning from what was historically a relatively small number of high output capacity power stations often clustered around fuel sources and connected by high capacity transmission connections to deliver reliable energy to consumers. This power generation model is being replaced by a larger number of smaller output capacity generation sources whose output may be intermittent in nature due to their fuel sources. Whilst the intermittent nature of these power generation sources can be improved by the co-location of storage resources, which would improve the efficiency of transmission investment for consumers, to date this has not generally been the case in the NEM.

These new power generation sources can be planned, constructed and commissioned within a relatively short timeframe and whilst most are not located in the general vicinity of the existing power station infrastructure, where this has occurred increased network congestion for the existing and new generators has often been the result. Whilst some of these new generation resources have been able to connect into the transmission network originally developed to supply energy to consumers, the capability of these existing transmission resources to facilitate this efficient type of generation connection is less than the volume of new generation seeking connection. Also, large amounts of this new generation investment will potentially be located remote from the existing transmission grid, as such, the power system will need significant investment in new transmission infrastructure to deliver these new sources of energy generation to consumers and meet the power system security challenges of increasing levels of inverter connected asynchronous generation.

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

It is in this environment that questions have been raised concerning the most economically efficient way to plan and facilitate the connection of this new generation, who should pay for this (consumers, generators or on a shared basis) and who should bear the risk that transmission infrastructure is built to service proposed generation connections that do not eventuate. In the Paper the Commission has proposed six options, the first four of which if implemented will result in significant changes to the design and complexity of the current NEM, impact the supporting financial markets, and is likely to have a high probability of flow on impacts to consumers in areas of both pricing and reliability. ERM Power does not support the introduction of any of these four options due to their complexity and potential impact at this time and believes better options, as set out below, exist to facilitate the efficient co-ordination of generation and transmission investment. ERM Power does support the further considerations of Option 5 – Renewable Energy Zones and Option 6 – Cluster Planning and considers that the Commission's focus would be best directed in these areas.

ERM Power believes the provision of accurate, timely and transparent information is the key issue that must be addressed by this current review. Without an improvement in the accuracy and transparency of information it is probable that inefficient investment in transmission and generation infrastructure will occur.

Provision of information

Congestion Headroom and Congestion Ratio Information

ERM Power believes there is currently insufficient provision of relevant and accurate information and a lack of transparency to the market regarding the connection capability and the impacts on network congestion for new and existing generators for new generation connecting at a particular location or within a network zone. Whilst Network Service Providers (NSP) are starting to publish connection capability information in the Annual Planning Reports (APR), this data fails to include critical information such as uncongested headroom and congestion ratios. Lack of this data in the APR's is resulting in a general misunderstanding by potential connection applicants who are then ill-advised as to the true capability of the existing network. The resulting increase in congestion experienced from the connection impacts the new generation facility, existing generators and ultimately the future of reliable supply to consumers. We believe that NSP's should be required to contain the following critical information in their APR's.

Locational Congestion Headroom Value– the available transmission capacity at a network connection point calculated with all existing generation at that connection point operating at maximum registered capacity before network congestion will occur based on the most restrictive rating of system normal network capacity.

Zonal Area Congestion Headroom Value – the available transmission capacity from a network zonal area calculated with all existing generation located within or connected to that zonal area operating at maximum registered capacity before network congestion will occur based on the most restrictive rating of system normal network capacity.

Locational Congestion Ratio – the amount that one additional MW of generation above the Locational Congestion Headroom Value will contribute to congestion on the network from that location.

Zonal Area Congestion Ratio – the amount that one additional MW of generation above the Zonal Area Congestion Headroom Value will contribute to congestion on the network from that location.

Central co-ordination of generator network connection

Currently there is little central co-ordination and transparency of generator network connection. A new prospective generator or an existing generator seeking to increase its output lodges a connection enquiry with the relevant Network Service Provider. Only the relevant NSP is aware of the potential connection at that stage and each connection enquiry appears to be dealt with individually as opposed to a co-ordinated basis. Alarmingly, where this additional connection may impact the access of existing generation the existing generator is not informed. Our own experience suggests that NSPs will not discuss potential congestion impacts with existing and proposed generators even when all these parties request joint discussions with the NSP.

We believe this information asymmetry is leading to inefficient outcomes where potential solutions to alleviate congestion are not considered during the connection planning stage but rather only after the connection of the new generator is announced, and usually when a party other than the NSP determines that a congestion risk issue exists. These solutions are often more costly to implement once the initial design has been approved and construction has commenced.

To remedy this current suboptimal outcome, ERM Power believes all new and changes to existing generator connections should be registered by the NSP at the time the connection enquiry is lodged with the Australian Energy Market Operator (AEMO) as part of AEMO's central planner role. AEMO will be required to maintain a register of all these connection enquiries and publish regular (at least monthly) updates of this information to the market. We believe this increase in transparency is warranted due to the relatively short timeframe that the smaller sized renewable energy generators can be planned, constructed and commissioned and thus the speed with which this can impact network congestion. Given this, there is generally little time for measures to relieve congestion such as constructing generator runback, network control schemes or low cost network augmentations once new generator design has been completed and construction commenced, it is critical that information provision to the market occurs at the earliest possible point for sufficient planning of congestion mitigation.

In addition, AEMO in its central planner role would be required to assess these connection enquiries for potential scale efficient network extensions or augmentations and facilitate and co-ordinate discussions between consenting generators and the relevant NSP. In the first instance, AEMO as part of its central planner role would conduct a preliminary assessment and where potential is identified advise new and existing generators that potential for control schemes or minor network augmentation to alleviate network congestion or scaled efficient network infrastructure exists. AEMO would then facilitate and co-ordinate this outcome and if needed direct NSP input to ensure that these connection efficiencies are realised.

Whilst these may seem to be significant changes to the existing connection framework we are of the opinion that without these increase in accuracy, transparency and co-ordination the connection process will fail to facilitate the efficient connection of the large number of generation assets forecast to connect in the future.

Allocation of Costs

The paper sets out the background to and the strong reasoning for the allocation of the majority of transmission costs to consumers, as transmission investment has primarily occurred to maintain jurisdictional reliability settings for the safe, secure and reliable supply of energy to consumers. The Regulatory Investment Tests (RIT-T and RIT-D) have performed well to ensure that in the main regulated investment in transmission has only occurred when there is a net benefit to consumers based on the assumptions underpinning the RIT process at that time. We see no current reasons to amend or move away from this efficient process.

In determining the allocation of costs for the new transmission infrastructure that will be required, the Paper considers that regulated investment could be paid for primarily by either a) generators, or b) consumers or, if unregulated, by a NSP who may recover the costs of their investment at a later date by applying for the infrastructure to be regulated or passing on these costs to connecting parties. We believe there may be a third option where the costs could be shared between these multiple parties ,where the regulated portion is based on the contribution that the new generation makes towards the reliable supply of energy to consumers at the time that consumers value this the most. This would provide an incentive to generators to ensure that generation output is "firmer" when most needed by consumers. AEMO in its central planner role could align this calculation of a generator's contribution to reliability using the same process as the calculation of a generators contribution to reliability in the Projected Assessment of System Adequacy or Energy Adequacy Assessment Projection. Where subsequent changes were made to "firm up" the output of generation this could be incorporated into future regulatory reset reviews.

We believe the major threshold issue in this area of cost allocation is who should bear the risks for scaled in size transmission infrastructure that has been built to service potential generation connections that do not eventuate. This scaled infrastructure should only be built where there is a clear case for the investment after robust analysis of the validity of the underpinning assumptions and completion of the RIT-T. As noted in the Paper, unnecessary network infrastructure has at times been constructed with costs passed through to consumers where the assumptions used to justify the investment have proved to be inaccurate. Where this is demonstrated to be the case we believe this risk would be best borne by the party responsible for the accuracy of the original assumptions. In this case we believe the Australian Energy Regulator may be best placed to administer this process.

Currently, the paper considers funding for speculative infrastructure could come from NSP or generators. An alternative source of funding could also be facilitated by AEMO in their central planned role by calling for expressions of interest to fund or fund, build, own and operate such unregulated infrastructure where AEMO has identified this would be the most efficient outcome for the market. In this case funding would not be limited to the incumbent NSP and would be open to contestable parties interested in funding this type of investment including government agencies such as the Clean Energy Finance Corporation.

Conclusion

Currently, ERM Power believes the provision of relevant and accurate information in a transparent manner to the market regarding the connection capability, and the impacts on network congestion for new and existing generators for new generation connecting at a particular location or within a network zone is poor. We believe that improvements need to be made in this area as well as improvements in the co-ordination of transmission investment via a central planning co-ordination and facilitation role by AEMO. Without an improvement in the accuracy and transparency of information and central co-ordination it is probable less than efficient investment in transmission and generation infrastructure will occur.

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

Yours sincerely,

[signed]

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