ERM Power Limited
Level 3, 90 Collins Street
Melbourne VIC 3000

ABN 28 122 259 223

+61 3 9214 9333
ermpower.com.au

Friday, 8 November 2019

Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

RE: Coordination of Generation and Transmission Investment Proposed Access Model – Discussion Paper

ERM Power Limited (ERM Power) welcomes the opportunity to respond to the Australian Energy Market Commission (Commission)'s proposed access model discussion paper, which provides the basis for consultation on the Coordination of Generation and Transmission Investment (COGATI) Review.

About ERM Power

ERM Power is an Australian energy business for business. ERM Power provides large businesses with end to end energy management, from electricity retailing to integrated solutions that improve energy productivity. Market-leading customer satisfaction has fuelled ERM Power's growth, and today the Company is the second largest electricity provider to commercial businesses and industrials in Australia by load[1]. ERM Power also operates 662 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland, supporting the industry's transition to renewables.
https://ermpower.com.au/

General comments

Adequate transmission network capacity is key to supplying consumers with safe, reliable energy at low cost. It is well-known that the National Electricity Market (NEM) is changing from a system dominated by few, conventional generators to a system of variable, renewable generators located at distributed regions across the network. This shift is placing stress on the transmission network, with increasingly limited locations to connect and reduced network capacity for uncongested dispatch.

There is a clear need to address the transitional issues which are arising regarding generator network access and potential dispatch congestion. It is obvious that new transmission infrastructure must be built when it is determined to be cost-effective and improving costs for consumers. Reducing costs for consumers must be the primary goal driving transmission investment decisions to align with the shifting trends in generation investment.

The Commission's proposed access model does not meet this objective. The Commission is seeking to implement significant market reforms to achieve proposed benefits which appear to be subjective, opaque, disproportionate to the scale of the reform and importantly, do not achieve coordination between generation and transmission investment.

There is little supporting data or analysis to warrant the implementation of these reforms. The Commission does not provide an appropriate approach to undertaking a cost benefit analysis in support of their proposal. We are concerned regarding the Commission's current direction, which appears to be to implement untested reforms as a matter of urgency, rather than to establish considered and evidence-based reforms to achieve the market objective of lowering consumer costs.

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

We believe the reforms proposed in the Directions Paper do not adequately safeguard market participants and consumers against inefficient investment costs and unnecessary risk allocation.

In summary, ERM Power does not support the implementation of the Commission's proposed access model, as:

- The proposed reforms are significant in scale, disproportionate to the proposed issues and unclear in scope
- The materiality of the market issues presented has not been established
- The likely impacts on financial contract liquidity from implementation of the proposed access model have been largely misunderstood, with negative impacts on contract liquidity
- The proposed access model exposes market participants to new and additional risk which flows through to contracting behaviour
- Evidence from international markets with similar market structures has not been adequately analysed
- It is inappropriate to propose implementation of reforms prior to undertaking analysis of the costs and benefits

It is unclear what problem is attempting to be solved

The proposed access model represents high-risk market reform. The scale of the reforms proposed is significant, unparalleled in the sector since the NEM was designed. Considering this scale, it is expected that the reforms should be targeting large, complex problems to be solved in the NEM. However, it is our view that the extensive changes recommended are not seeking to address the priority issues currently experienced in the market. The Commission's proposed benefits are disparate and disproportionate to the scale of the reforms proposed.

The Commission is seeking to address several market issues. The Commission's view is that these market issues include: a lack of sufficient locational price signals for generators seeking connections to the transmission network; the need for greater certainty of potential uncongested connection location and dispatch for prospective generators and storage; signalling of adverse operational incentives to generators and storage such as network congestion and high marginal loss factors, and overall, to prevent a less reliable, more costly power system. The Commission is also seeking to achieve the optimal marginal dispatch efficiency outcome by addressing the behaviour of 'disorderly bidding', despite the minimal impact of this behaviour on the market. These market issues, although current, are disconnected issues, with no clear linkage between them. In our view, it is unclear what driving market problem the Commission is seeking to solve.

It appears the Commission is seeking to address segmented issues in the market with broad-sweeping market reform. The Commission continues to identify specific issues that the proposed access model may address, namely disorderly bidding behaviour; generators bidding 'unavailable' when constrained on below marginal costs; general 'inefficiencies' in dispatch and transmission network operation; volatility in calculation of annual loss factors and a lack of transparency for generator locational decisions. It is unclear what common drivers these issues have and their level of detrimental impact on overall market efficiency to warrant their inclusion within this reform. This broad, untested approach to segmented market issues significantly risks unintended consequences and outcomes for other segments of the market.

The Commission has clearly stated that the purpose of the proposed access model is to improve the coordination of generation and transmission investment. However, the proposed access model does not achieve this coordination of investment. Coordination requires a form of collaboration between the Transmission Network Services Providers (TNSPs) and generators when making their respective investment decisions to achieve optimal system and market outcomes. Under the proposed access model, transmission planning has been explicitly excluded in preference of transmission planning via the Integrated System Plan (ISP). Transmission investment decisions will continue to be made by the Australian Energy Market Operator (AEMO) and TNSPs through the ISP.

This investment decision-making does not involve consultation or collaboration with prospective generators seeking to make investment decisions. The proposed access reform provides no commitment to generators that transmission investment will occur in their preferred location. Therefore, we are unclear how the proposed access model achieves coordination of generation and transmission investment.

We propose that the scale of the reforms proposed are significant with the potential to introduce unforeseen and unintended consequences. It is unclear what material, driving market issue the Commission is seeking to solve. We also assert that the proposed access model does not deliver the primary objective of achieving coordination of generation and transmission investment.

Materiality of the issues

The proposed access model is seeking to address several disconnected issues. ERM Power believe that some issues being considered are either currently immaterial or have potential to be immaterial in the future, due to market reforms already currently underway.

The Commission appears to identify disorderly bidding as a primary issue to be solved. As acknowledged by the Commission, this is not currently a material issue. Although the Commission believes this issue may increase in materiality in the future, in the absence of market analysis, it is not able to predict the magnitude of increase in materiality which could be expected. The Commission also seeks to highlight those areas where congestion is an issue across the grid and asserts the need for increased market transparency to alleviate congestion risk. However, information and data (e.g. AEMO Congestion Information Resource) is already publicly and transparently available to any interested parties. This suggests that the Commission's goal to increase transparency to alleviate congestion is redundant.

Additionally, the reforms are seeking solutions to issues that may be redundant prior to the implementation of the reforms. Observed changes to the overall understanding of marginal loss factors (MLF) have already occurred and reduced the need for the Commission's proposed solutions to transmission loss factors. It is also unclear whether the proposed solution to MLFs is appropriate. There is a risk that the proposed solution shifts the costs of MLFs from generators to consumers. Similarly, the Commission has recently made a final rule to increase transparency for prospective generators at the stage of seeking to locate and connect to the transmission network through the Transparency of New Projects rule change. Both these developments are working to provide improved locational signals to new generators, raising further scepticism around the need for these proposed access model reforms with unknown costs.

There is information currently available to participants to manage risk and additional market reforms are currently undergoing implementation. In this context, we recommend the Commission reconsider whether additional access reforms are required, as redundant market reform risks increasing costs to the market for no added benefit.

The proposed reforms are out of scope of the original intention of the review

In an environment of shifting investment trends and major regulatory changes, clearly identified objectives for reform are essential. Without a clear scope for defining regulatory intentions, there is risk that the complexity which arises from a rapidly transforming market creates regulatory activity with diffuse and poorly considered objectives. This could result in inconsequential or unnecessary impacts.

The COGATI process has a lengthy history, developing from a COAG Energy Council directive to identify the drivers that could impact future transmission and generation investment. Although the COGATI process originated from an earlier process (i.e. 2010–2013 Transmission Frameworks Review), the reforms remain accountable to the work program defined by the COAG Energy Council's Terms of Reference (ToR).

The proposed access reforms are seeking to achieve objectives which are out of scope from the COAG Energy Council's original Terms of Reference. The ToR sought to identify whether technological and locational investment

uncertainty existed for transmission and generation assets. It was also intended to identify whether the implementation of the proposed Optional Firm Access would meet the National Electricity Objective.

The Commission's approach to introduce an access model and financial transmission right (FTR) product to address issues of market inefficiency are a deviation from their directive from COAG Energy Council. Additionally, the proposed access model does not demonstrate how it will alleviate uncertainty for transmission and generation investment, considering the explicit removal of coordinated transmission planning from their remit and the lack of coordination between transmission and generation investment under the proposed model.

Contract liquidity

A key indication of a well-functioning energy market is liquidity in the contract market. Essential to ensuring market liquidity is present is the creation of a large, common pool of contract supply and trade. Secondary markets are critical to maintaining competitive contract availability.

ERM Power believe that the likely impacts on financial contract liquidity from implementation of the proposed access model have been largely misunderstood. The Commission has stated that the proposed reforms will improve contract market liquidity, as participants' willingness to offer energy contracts will improve because they will be able to better manage the risk of congestion. As FTRs will be made available based on conservative estimates of transmission network capacity, the volume of available FTRs may be lower than the minimum required to maintain the existing level of contract liquidity. We also believe that the Commission's focus on liquidity has been placed exclusively on generators seeking to sell contracts, with the interaction with and impact on retailers largely ignored.

We do not believe that the proposed access model will improve contract liquidity. Traditionally, individual generator groups and the regional portfolio of generators collectively manage volume risk through a portfolio approach, based on the diverse locations of generators in the network. This individual and collective generator portfolio approach allows the aggregation of generation through regional reference node (RRN)-based contracts. Basing contracts on the RRN price creates a common product for market participants to flexibly manage network congestion risk. The introduction of generator settlement prices based on locational marginal prices (LMPs) negatively alters the risk spectrum by introducing both volume and price risk, removing the ability for generators to diversify risk via a portfolio approach.

This is an inefficient outcome which reduces the liquidity of common, like-for-like contract products. This also has impacts for Over-The-Counter (OTC), Exchange of Financial for Physical (EFP) and exchange-traded contracts, as retailers will have less options to manage their contracting and credit risk through secondary market trades. This is because the introduction of LMPs will mean retailers will no longer be able to purchase comparable (common) products from the direct market to trade with secondary markets. As the trading products are no longer comparable, the common pool of contract availability is reduced. This reduces liquidity for the retailer.

Risk allocation

Contrary to the Commission's assumption, the proposed access model exposes generators to new and additional risk which flows through to contracting behaviour. The introduction of LMPs introduces price risk based on the location of generators in the network, which is additional to volume risk currently managed by generators. This increases the risk allocation to generators.

The FTR product is intended to function as a risk management tool to manage generator exposure to volume and price risk (discussed as 'congestion risk'). ERM Power has direct experience in international markets that have implemented FTR products to manage transmission congestion risk.

Firstly, the Commission has assumed that the buyers of FTRs will be generators, exclusively. Based on our experience, we believe it is unlikely that buyers of FTRs will be generators, exclusively. As observed in

international markets, generators demonstrate little appetite to manage their additional volume and price risk through the purchasing of FTRs. ERM Power believe that risk-averse generators will seek to manage their volume and price risk by selling their energy at the generator connection point (local node) rather than the regional reference node. This removes their requirement to manage volume and price risk through purchase of FTRs, shifting the risk of congestion and cost of the FTR to the buyer of the generation output, and related FTR contract. This buyer may not have the expertise to adequately understand and manage this risk. This position will be particularly attractive to generators without market dominance, seeking to remain competitive through cost avoidance. We believe retailers seeking to purchase energy in order to manage both market and regulatory risk will be required to buy at the generator connection point and become the dominant buyers of FTRs to manage the associated transmission risk. This additional and uncertain risk to the retailer will increase cost margins for customers.

We challenge the Commission to reconsider their assumption that generators will seek to manage their risk through the purchasing of FTRs. We strongly assert that transmission risk will be shifted to retailers. This transfer of risk allocation increases the exposure of customers to the increased costs of these reforms.

Secondly, we observe that the majority of international markets where FTRs are used are capacity markets. In comparison to the NEM, the market price cap of capacity markets is significantly lower. This is because supply-side participants only receive compensation for the short run marginal cost of production. As the NEM has a high market price cap, the level of price risk in the NEM is significantly higher. Therefore, the risk associated with the introduction of FTRs in the NEM is greater than experienced by participants in international capacity markets.

Finally, there are differences between key international markets and the NEM that must be appropriately analysed. The Commission has previously been provided with international evidence on the impacts of generator nodal pricing through the Congestion Management Review (AEMC 2007 – 2008). This evidence emphasises:

"*The other key point of difference with the northeast US markets is the capping of energy prices and the role of installed capacity markets. Under this model, energy markets are intended to only remunerate generators for their variable costs and a portion of their fixed costs. Ensuring adequate net revenue to meet the remainder of total costs is left to participant capacity obligations and related market arrangements. It should be noted that experience in the longest-lived LMP market (PJM) is consistent with the notion that the locational signals from the energy market are not in themselves determinative of generation investment patterns*"[2].

ERM Power believe that greater consideration must be given to the increased magnitude of price risk attributed to the implementation of LMPs and FTRs.

International experience has not been adequately considered

Appropriate evidence and analysis in support of the proposed access model has not been provided. The Commission has noted the establishment of similar access models and hedging products in international markets as an indication of the merits of their reforms. However, the Commission has not undertaken analysis on these international markets. It has not been assessed whether the introduction of models overseas has been beneficial, compared to the markets prior to the introduction.

ERM Power has experience and knowledge in international markets with established transmission hedging products available. In the PJM market, it has been found that the establishment of FTRs has disadvantaged non-vertically integrated retailers. In order to remain competitive, non-vertically integrated retailers have been required to either purchase FTRs at the maximum price and sell them at a discount to win commercial and industrial (C&I) contracts or hold open unhedged transmission exposure in their supply contracts. This is a high-risk retailing model, which is ultimately unsustainable for non-vertically integrated players. In the ERCOT market, it has been observed that retailers are unable to efficiently hedge at the 'hub', taking additional basis risk due to a lack of

[2] Page 6 - Frontier Economics - Generator Nodal Pricing – a review of theory and practical application April 2008

liquidity in the Congestion Revenue Right (CRR) market. It was found that participants which held CRRs did not on-sell them, leaving other market participants unhedged. In our experience, we have found that only participants with market dominance are able to hold unhedged positions, which has negative implications for competition in the market. In smaller markets such as New Zealand (NZ), it has been observed that a localised vertically integrated provider model has developed, as transmission risks cannot be efficiently hedged and a lack of retail competition is available for customers. This has resulted in inefficient transmission investment models in NZ.

Retailers are also impacted by the timing of FTR auctions. As FTRs are auctioned based on a level of future risk, retailers seeking to purchase at auction must take a view on their future load at the auction date based on speculative locational load projections. Forcing a retailer to speculate increases their risk exposure, which flows through the additional margins for customers.

This experience has been observed in the United States (US) market, with some evidence that contracting seasons are emerging. If auctions are held intermittently, such as quarterly, and there is no effective secondary market, retailers will either be required to speculate on load prior to winning customers or required not to buy at auction and suspend retailing activities. In the US, this has resulted in retailers only selling during FTR auction windows. This places short-term buying pressure on the energy market, creating short-term risks to retailers which increases customer prices. We strongly recommend that the Commission further investigate international evidence prior to implementation of their proposed reforms. We do not agree that the existence of hedging products in international markets automatically means the market models have merit. Analysis is always required.

Similarly, the Commission have argued that the proposed reform will improve locational signals for prospective generators. However, evidence has not been provided in support of this assumption. During the Congestion Management Review, the Commission engaged Frontier Economics to review markets which employed LMPs and FTRs. In reviewing the impact of the proposed LMPs, Frontier Economics found:

"*On the whole, the regional pricing structure in the NEM has led to generation investment in those regions that have experienced the highest prices – namely, South Australia and Queensland. Victoria has also experienced investment in peaking plant as a result of the region's increasingly "peaky" load profile.*

A more granular pricing structure, such as GNP, would provide even more refined locational signals to investors in new generation. Other things being equal, one would expect electricity investors to make more locationally efficient decisions when faced with these more refined signals. By the same token, it is clear that investors do not make locational decisions solely or even principally on the basis of wholesale spot prices. Indeed, the Commission itself highlighted the importance of other locational factors in its Draft Report on the CMR, such as availability of fuel and water sources, environmental restrictions, carbon risk and portfolio risk.

A recent report by Synapse Energy Economics for the American Public Power Association in the context of the northeast United Stated nodal markets highlighted similar factors, citing the availability of suitable sites, the availability and cost of land, access to fuel and transmission lines, requirements for cooling water and local opposition.

Therefore, while highly localised prices may influence locational decisions on the margin, whether and to what extent this translates to altered locational decisions in practice is – like the dispatch efficiency implications of GNP – a matter that cannot be determined analytically. It may be possible to model the impact of GNP on locational decisions, but any such modelling would need to take account of these other important decision variables."[3]

FTR product is unsuitable for efficient transmission risk management

A critical issue facing the market, and identified through several reviews, is the lack of adequate transmission network capacity for new generators entering the NEM. The introduction of an FTR product will not solve this issue

[3] Page 27 - Frontier Economics - Generator Nodal Pricing – a review of theory and practical application April 2008

through new transmission investment. It is well-established that regulatory investment models, such as the regulated investment test for transmission (RIT-T), are appropriate for ensuring cost-effective transmission investment. International markets have not demonstrated that FTRs drive transmission investment. Therefore, it must be questioned whether FTRs are a suitable product to be introduced in the NEM.

As stated in our previous submission, there are currently options available within different types of access models that provide similar outcomes to the proposed reforms, which negates the requirement for introduction of FTRs. It is unclear why the Commission has continued to exclusively consider an open access regime model, when a constrained access model achieves similar outcomes, without the need for introduction of an FTR product and increased consumer costs.

Table 1. Comparison between congestion access regime and the Commission's proposed open access regime

Congestion access regime	Proposed GNP/FTR open access regime
Generator applies for access to the grid	Generator applies for transmission hedge
Generator signs up for network construction contract	Generator signs up for network construction contract
Generation assets can commission but risks congestion payment to existing generators or being constrained off until network augmentation is commissioned	Generation assets can commission but risks only being paid GNP with no allocation of FTR payments for GNP to RRP risk management until network augmentation is commissioned
Network assets commission, generator now receives unconstrained access to the system	Network assets commission, generator now receives transmission hedge (FTR) payments

Additionally, the concept of FTRs appear to be out-dated. We believe FTR products are more suitable to the traditional model of a market dominated by dispatchable, baseload assets rather than renewable and firming assets. For instance, peaking generators may only generate for a small percentage of the year and are unlikely to require long-term financial hedges. Under the proposed model, peaking generators will be required to decide whether to remain unhedged or contract their energy at the connection point. Under this model, the purchasing of FTRs to manage risk which exists for a small percentage of the year is unlikely to occur. As such, we believe that FTRs do not provide an attractive risk management tool for peaking, variable and firming assets.

Proposing recommendations without analysis is ill-considered

It is essential that appropriate cost-benefit analysis and in-depth analysis of international market comparisons be undertaken prior to making recommendations for implementation. It is inappropriate to propose implementation of reforms prior to undertaking analysis, as this implies that the reforms are intended for introduction, irrespective of the outcome of any benefit analysis.

ERM Power are concerned that the costs imposed through implementation of the proposed reforms are significant. Frontier Economics' 2008 review was conducted prior to the change to the Texas and Californian markets, which shifted these markets to nodal designs. Following the implementation of this change to these US markets to nodal designs, Frontier Economics recommended reviewing the subsequent costs of this change. This subsequent review was intended to be used to provide an indication of the potential costs for such a change in the NEM prior to deciding to implement nodal pricing in the NEM. Frontier Economics observed:

"It is also clear that transitioning to nodal markets involves high costs. Therefore, any change to the NEM's market design requires a consideration of both the advantages and disadvantages of any such change."[5]

We suggest that the Commission reconsider their approach to conduct posthumous analysis on whether their proposed reforms have merit, as this is contradictory to the purpose of the analysis.

Conclusion

ERM Power does not support the implementation of the Commission's proposed access model. We believe the scale of the reforms are disproportionate to the intended benefits and represent untested risks to market participants and customers. Introduction of these reforms will likely be detrimental to other regulatory processes it is seeking to support.

We would welcome the opportunity to discuss this submission with you further. Please contact Emma White, Policy Adviser 03 9214 9347.

Yours sincerely

Jon Stretch

Manager Director & CEO

[5] Page 60 - Frontier Economics - Generator Nodal Pricing – a review of theory and practical application April 2008