

Jess Boddington
Project Leader

Australian Energy Market Commission

Coordination of Generation and Transmission Investment – Access Reform, Directions Paper

5 August 2019

Dear Ms Boddington,

Aurizon Network Pty Ltd (**Aurizon**) welcomes the opportunity to respond to the Australian Energy Market Commission (**AEMC**) Directions Paper about Coordination of Generation and Transmission Investment – Access Reform (**Directions Paper**).

1. Background

Aurizon has previously responded to the AEMC's Coordination of Generation and Transmission Investment (**COGATI**) review. It also appreciates the opportunity to participate in the Technical Working Group.

Aurizon owns and operates the regulated open-access Central Queensland Coal Network (**CQCN**). Approximately 2,000 kilometres of the CQCN is electrified allowing trains to use electricity or diesel fuel as their source of traction power. The electric traction network represents a significant proportion of Queensland's regional and total energy demand and provides a critical supply chain link for Queensland coal exports. Aurizon supplies electricity to rail infrastructure and rollingstock owned by a range of rail operators.

2. COGATI Reforms

Scope

The policy reforms represent a significant change to existing market frameworks. Aurizon understands that the reforms are intended to address two perceived market failures. Firstly, the geographical location and characteristics of new generators that locate in regions with limited local load, a weak transmission network, have aligned generation times, or cause issues for system security and reliability. Secondly, the disconnect between the size and type of new generation and the size and cost of transmission investment required to connect new generation.

The Directions Paper proposes three changes to the existing framework to address these issues:

1. Settling generation and some load at a "dynamic regional price" (**DRP**).
2. Introducing mechanisms for generators to manage their financial risk of participating in the market, particularly congestion and marginal loss factors

3. Ensuring access to the transmission network through transmission hedges.

The AEMC considers that the reforms should facilitate better transmission and generation planning, operations and investment making it easier for the NEM to transition towards a lower emissions' environment.¹

The proposed reforms will impact every stakeholder in the energy market and occur in a time of unprecedented change. Aurizon supports reforms that promote efficient investment in, and operation and use of electricity services for the long-term interests of consumers (consistent with the National Electricity Objective). However, we caution that the scope and impact of the COGATI reforms should be considered in a holistic way together with other market reforms.

Issues

The Directions Paper provides significant detail about the conceptual approach and justification for the proposed reforms. However, Aurizon remains concerned about the potential impact on directly connected industrial energy consumers given the lack of quantitative analysis and limited consideration of consumer outcomes.

Aurizon supports, in principle, the AEMC's recommendation to exclude non-scheduled load from DRP and for load customers to continue to be subject to pricing based on the Regional Reference Price. For large load customers electricity is an input cost and decisions around the geographical location and the technical configuration of facilities are unlikely to be immediately responsive to marginal cost price fluctuations. The economic policy objectives of applying DRP to generators are not comparable to the broader energy efficiency objectives, energy preferences and consumption patterns for load. The application of DRP to large load customers, as a substitute for Regional Reference Price (**RRP**) with Marginal Loss Factors (**MLFs**), may also undermine longer term location and efficiency drivers and expose load customers to increased costs of managing excessive price volatility.

The challenge for industrial load customers is that their location is defined by factors unrelated to the availability of electricity supply. For example, Aurizon's rail network is located proximate to mines to facilitate the domestic use and export of Queensland coal. The fact that energy is a critical input, but not the business output, does not mean the impacts are less significant. It can mean that the ability to respond to changing market frameworks are more limited or costly.

The Directions Paper does not rule out DRP applying to non-scheduled load. If further consideration is being given to DRP and price risk management instruments applying to large load customers, the relevant economic objectives, costs, benefits and risks of doing so must be explained and consulted on. This may also require grandfathering and other complex arrangements which have unintended consequences and result in other inefficiencies or have distributional impacts. If DRP applied to all load, the AEMC would also be required to consider the interaction of locational pricing with the existing price signals in the TUOS locational component which prices load customers based on their electrical distance to generation.

Noting the Directions Paper proposed exclusion of non-scheduled load from the reforms, Aurizon's concerns are discussed below.

¹ AEMC, Coordination of Generation and Transmission Investment - Access reform, Directions paper, 27 June 2019. P.11

Application of the reforms to load customers

The costs of becoming a semi-scheduled load are significant. It is therefore likely most load customers will continue to be settled at the regional reference price. Understanding the net cost impact to consumers, particularly on directly connected loads like Aurizon is a critical step in enabling stakeholders to meaningfully engage with the AEMC about the proposed reforms.

Quantitative impact on directly connected load customers

The Directions Papers provides no quantitative analysis of the impacts on load customers resulting from these reforms. Aurizon remains concerned about dynamic regional pricing in the absence of a quantitative cost benefit analysis and understanding of how those costs and benefits are distributed. Dynamic pricing could add costs or introduce volatility that imposes additional costs that will ultimately be borne by consumers.

The AEMC also identified potential distributional equity issues² associated with applying dynamic regional pricing to loads. For example, Queensland and Tasmania were identified as different to other jurisdictions due to their regional load. The significance of this difference should be explained as part of the quantitative analysis. It also highlights the potential for the concentration of market power in regional generation and the increased costs of risk management that would be disproportionately borne by regional load customers. There may also be distributional equity issues between regional load customers and customers in South East Queensland where DRP applies only to scheduled load. The AEMC should also clearly outline and transparently evaluate the distributional impacts that might arise from:

- the application of DRP to non-scheduled load if demand responsive loads were to become a material proportion of total load (i.e. the distributional impacts between flexible scheduled load and inflexible unscheduled load); and
- the application of DRP to all load customers (if this option is to be further considered).

Marginal Loss Factors (MLFs)

Directly connected load customers directly face MLFs. MLFs have historically changed overtime. Aurizon considers that MLFs are a well understood element of the existing market frameworks, and the variation in MLFs resulting from new generation is a foreseeable consequence that should have been considered by generators when making their investment decisions.

The Directions Paper discusses MLFs in the context of their impact on generators. However, there is no discussion of their impact on load. Where MLFs have declined due to the introduction of new generation, loads benefit. The change in MLF demonstrates that locational price signals are working. In the event a region has surplus generation then the continuation of load, or the addition of load in that region will avoid increased transmission congestion in the transfer of that generation to regions in competition with generators in other regions. Therefore, MLFs play an important role in pricing regional supply and demand imbalances.

The reforms propose to incorporate losses into the DRP. It is not clear how the AEMC proposes to treat MLFs for directly connected (or any) loads settled at the Regional Reference Price. Further, to the extent there is residue in the MLFs that would traditionally have been used to offset TUOS charges paid by consumers, this benefit would now be provided to generators.

² AEMC, Coordination of Generation and Transmission Investment - Access reform, Directions paper, 27 June 2019, p. 56

Where load customers pay the RRP and the DRP for generators is otherwise capped to the RRP then by default settlement residues will only ever have a positive or zero balance. Aurizon does not support the distribution of settlement residues to generators who have not acquired transmission hedges. If a generator elects not to acquire transmission hedges, then they have explicitly accepted the price risk from the DRP and they will benefit from the distribution of revenue paid for consumers at the RRP. Aurizon considers that the AEMC should evaluate whether settlement residues should be returned to consumers through TUOS discounts as the parties funding the residues. Aurizon also questions whether the proposal for excess residues to firm transmission hedges is appropriate. Consideration should be given to whether the issue of basis risk is more efficiently addressed through other mechanisms such as defined reliability and availability standards compensated through the prescribed transmission services.

If MLFs are incorporated into the DRP for generators, there is potential for a significant value transfer from loads to generators without compensation. Such an outcome would be inefficient. It is critical that the AEMC acknowledges that MLFs also impact directly connected load customers, and any reform to MLFs that benefit generators, will inevitably come at the expense of load in the same region. Aurizon would like to understand the quantitative analysis that shows how loads will be better off in this scenario.

Transmission hedges

Under a transmission hedge, a portion of transmission costs would no longer be recovered from consumers in return for generators being granted firm dispatch rights. Generators will seek to recover hedge costs through the wholesale price of energy. This could make retail contracting more complex by introducing lumpiness and a shadow capacity price for generators that have dispatch rights, but that do not dispatch.

The theoretical framework is appealing. However, there may be scenarios that mean consumers would not be better off. Further, consumers would be required to pay any shortfall. The AEMC considers that transmission hedges will lower prices for consumers through lower TUOS charges although have not quantified whether the reduction in TUOS will be offset by higher wholesale market prices. Aurizon seeks clarification (and quantified analysis) from the AEMC about how transmission hedges will result in a net reduction in the total cost of electricity for consumers, particularly given that generators are likely to have a higher cost of capital.

The Directions Paper notes³ that it expects the pricing methodology for transmission should reflect that:

- generators locating remotely from the reference node; and
- generators locating where there is limited spare transmission capacity,

would pay a higher price for transmission hedges than those generators closer to major demand centres.

In the context of the Queensland market this would raise the costs of regionally located generation. Aurizon requests that the AEMC provide analysis showing that regionally located load customers would not face higher wholesale electricity costs arising from the introduction of DRP and transmission hedges where the driver of those costs is non-regional demand.

³ AEMC, Coordination of Generation and Transmission Investment - Access reform, Directions paper, 27 June 2019, p. 78

Renewable Energy Zones

Aurizon has previously made submissions regarding Renewable Energy Zones in response to the COGATI review. We reiterate our prior positions. The need for renewable energy zones appears to be justified by the lack of coordination between generation and transmission investment. It is unclear why Renewable Energy Zones remain the focus of additional policy development given that dynamic regional pricing and transmission hedges are intended to address that lack of coordination. Aurizon questions whether it is better to delay further consideration of enabling policy until the outcome of the broader COGATI reforms are determined and implemented.

Clarification required

Aurizon considers that before implementing any reforms, it is important that the AEMC clarify the following questions:

- How will the AEMC define 'region' for the purpose of dynamic regional pricing?
- What (if any) differences will arise in consumer outcomes from DRP being applied in Queensland or Tasmania vs. other jurisdictions with metropolitan based loads?
- How will the AEMC manage MLFs for directly connected loads settled at the RRP? What mechanism is proposed to compensate directly connected load customers for any value transfer to generators?
- What are the results of simulation on bidding behaviour, and does it benefit consumers?
- Can the AEMC quantify how consumers will be better off under the proposed reforms, the quantum and distribution of benefits between consumers, between regions, and between generators and consumers?
- Does breaking the NEM into smaller regions increase the likelihood of market power issues?

3. Conclusion

Developing and adapting frameworks to address evolving energy market is complex. The COGATI reforms are significant and would represent a substantial change to the National Electricity Market. There is a risk that the proposed changes could result in unintended negative outcomes for consumers that could materially impact the competitiveness of electric traction. Aurizon welcomes the opportunity to further engage in these reforms and welcomes the AEMC's willingness to consult with stakeholders. Aurizon believes that the scope and consequences of any reform should be carefully considered.

If you wish to discuss further, please do not hesitate to contact myself, or Liam Byrnes (liam.byrnes@aurizon.com.au / 07 3019 1231).

Yours sincerely



Rebecca Landon
Acting Head of Network Customers