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Victoria Mollard
Director
Australian Energy Market Commission
Level 6
201 Elizabeth St
Sydney NSW 2000

Lodged online via www.aemc.gov.au

Re Coordination of generation and transmission investment – Discussion Paper

Dear Victoria,

Neoen welcomes the opportunity to respond to the AEMC's discussion paper regarding access (COGATI, 14 Oct 2019).

Neoen is one of the world's leading independent producers of renewable energy. Neoen is a responsible company with a long-term vision that translates into a strategy seeking strong, sustainable growth. We have over 2 GW of projects globally in operation and under construction, including in the NEM: Hornsdale Wind Farm (309 MW in SA); Parkes, Griffith, Dubbo, and Coleambally Solar Farms (combined 255 MW in NSW); Bulgana Green Power Hub (hybrid wind/battery system) and Numurkah Solar Farm (combined 314 MW in VIC); and the Degrussa Hybrid Power System (10.6 MW in WA). Neoen is also the owner of Hornsdale Power Reserve (100 MW/129 MWh battery system) in SA.

Summary

It appears that the Commission wants to impose locational marginal pricing on the NEM for the purpose of improving dispatch efficiency. It is understandable that the AEMC and AEMO are in favour of LMP for dispatch, as it should be theoretically better than the more straightforward solutions we have now. However, dispatch efficiency is good enough at the moment, and there is value in a simple and transparent market. Dispatch efficiency is not a pressing issue.
The problem at hand is transmission investment and access.

Spending time and considerable funding implementing a complicated dispatch system will delay important investment in transmission and generation that the NEM needs. In addition, benefits from dispatch efficiency improvement are uncertain and are simply not worth the costs and complexity. Investors and financiers cannot afford to risk capital on rushed reforms with no sign of long-term stability, and with no demonstrated benefits. Additional uncertainty is not the solution to uncertainty.

The AEMC should defer to the ESB's post 2025 market design process and focus on more important short-term measures with immediate proven benefits such as transmission loss factors.

Neoen believes LMP for dispatch should be postponed until after critical infrastructure upgrades are complete.

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Concerns with the Proposal

1. The AEMC has repeatedly stated that stakeholders are in favour of the reforms. They are not. Neoen has not found any stakeholders with skin in the game who are in favour of the reforms.
2. The fact that other markets have LMP does not indicate that LMP has delivered adequate and efficient transmission investment. Typically, these markets have layers of other regulatory mechanisms to actually drive transmission. These other tools are what we should be investigating.
   Centralised planning delivering an excess of transmission capacity is shown to reduce customer bills.
3. 'Race to the floor' bidding does not affect customer prices as proven by the AEMC. There is no long term impact to consumers from zero marginal cost generators competing amongst themselves. This benefit should be removed from the AEMC's estimates.
4. LMP does not change AEMO's need for intervention. This is not a benefit delivered by LMP and must be removed from the estimated benefits. Intervention commonly occurs for economic reasons unrelated to network congestion.
5. LMP does not improve locational signals, in fact it makes them worse. LMP only provides notice of congestion once the congestion appears, not beforehand. Generators cannot know the likelihood of congestion without grid modelling. Lagging indicators do not support new investment.
6. LMP increases the complexity and reduces the confidence of grid modelling. This has been confirmed to Neoen by multiple modelling consultants. Whoever is taking the financial risk of this modelling will need to account for this uncertainty through higher margins, or capital buffers. This increases the cost of supply.
7. The ongoing cost of modelling will become substantial for participants. A supercomputer will need to be used to rerun models every quarter for every generator node. This represents tens of millions of dollars per year.
8. Pushing transmission costs onto generators necessarily increases the cost to customers. Generators have a higher cost of capital and amortise over a much shorter time period.
9. Calculating a fair value for generators to pay in a meshed network is impossible. As demonstrated by the AEMC at their workshop.
10. The complexity of LMP, and interaction between the transmission hedges and energy contracts creates new opportunities for transient market power and gaming. A dominant player in a micro-market may be able to bankrupt competitors or offtakers.
    The AEMC only considers increasing bids as a form of market power. Neoen previously provided the AEMC with multiple potential examples of gaming which have not been addressed.
    Collusion between neighbouring players would be encouraged under LMP.
11. If FTRs no longer determine transmission investment there is no coordination between generators and transmission. The reform package no longer delivers transmission – the problem is not being solved.
12. The horizon for FTR purchasing is too short for the financing of a new generator. If a new generator is built next to an existing one, they can compete for the FTRs through auction increasing the cost or decreasing the revenue to the existing generator.

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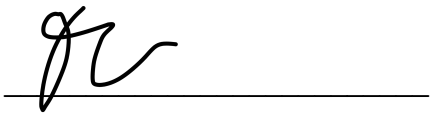
13. Transmission rights that give generators certainty can be done without wholesale market reform. This is common in other markets.
14. The “efficiency” of dispatch with LMP and dynamic loss factors will rarely affect price setter behaviour providing minimal benefits to consumers.
15. The AEMC state that liquidity will be increased because FTRs will be able to be settled across regions. The settlement residues between the LMP and RRP are not proportional to interregional settlement. If exotic or irrational FTRs are sold – especially if they are cheap due to low demand, the payout to FTRs becomes larger than the settlement residue.
16. Any mismatch in FTR value undermines the entire point of the hedge as FTR payments are scaled when settlement residues are inadequate, and the settlement fund is exhausted. The purchase of an undervalued FTR and subsequent manipulation of the LMP will siphon settlements away from deserving participants.
17. The AEMC have identified that system strength constraints could quickly destroy the firmness of FTRs.
18. The AEMC does not consider FCAS constraints and FCAS recovery.
19. The commission is right to include losses in the FTR as LMP will never be the same at the nodes except when price is zero.
20. The proposed quantitative modelling is welcome but too little too late. This should have been done before deciding on a solution.

Neoen welcomes further discussions at the AEMC’s behest.

Should you have any questions or seek to follow up this submission at any time, please feel free to contact Tom Geiser via email at tom.geiser@neoen.com.

We look forward to engaging with the AEMC and stakeholders further on this and future reviews.

Kind regards,



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A Perspective on Efficiency and Transmission Investment

While improved dispatch efficiency is fascinating it is not the most important step towards laying new conductors.
We should be focusing on simple, and rapid options to deliver transmission projects.

Australia undervalues transmission

The RIT-T process uses marginal fuel cost assumptions to determine how much fuel saving will occur if a transmission project were to go ahead.
This undervalues transmission because actual spot price is far more volatile and stepped. In the current market price separation between states costs consumers billions of dollar per year, yet getting new interconnectors approved is extremely difficult.
Australia is an anomaly in this regard – the NEM is the most volatile market in the world, yet we frame transmission investment as an unusual burden. Transmission is the cheapest segment of any electricity bill, and the backbone of the NEM.
The cost of underinvestment is higher than the cost of inefficient investment. Inefficient investment scales linearly and dormant capacity may be used at a later time. Congestion causes non-linear increases to spot price, and the total cost of wholesale energy is far greater and more sensitive than transmission costs.
It's clear we are at the underinvestment end of the scale because other grids to not have the same level of congestion and price separation.
Some other benefits not properly valued include; reliability, security, competition, and intermarket liquidity.

Step Zero

The first thing we need to do is measure the cost of congestion to customers. The AEMC mentioned that the UK runs a digital twin of an unconstrained, perfectly conductive grid to determine the costs of congestion relative to a perfect grid.
This is the ideal first step to take towards reform of transmission investment processes.
With the cost of congestion in terms of the customer we can quickly identify and implement high value augmentations. Congestion that does not greatly impact consumers can be ignored.

Reduce the Hurdle Height

TNSPs must spend a significant amount of time and resources to get transmission investment approved. Coupled with the undervaluation of transmission this creates an incentive to only propose the very biggest and best projects.
Framing augmentations with the knowledge of the cost to consumers would allow TNSPs to quickly target the best value investments, but they need to be able to action those plans quickly.
Simplifying the regulatory process would allow for market benefits to be delivered earlier, increasing the project's market benefits NPV.
For example; if the annual cost of the augmentation is less than half the modelled cost saving the TNSP is compelled to invest.

Strategic Investments

Measuring congestion costs can identify problems today, but it doesn't provide a strategy for the grid of the future.
Strategic investment in new connections has historically been undertaken by state electricity bodies. Adapting this to a central body responsible for the NEM will allow the investment in strategic assets such as REZs or pan-state interconnection.

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The work undertaken by AEMO and the ESB for the ISP is an excellent first step and should be formalised into a permanent and ongoing process. As a part of this funding should be allocated to support strategic investment where customer benefits are uncertain or will be delayed. Equally important is the need to separate the centralised strategic investments from political processes as these have different drivers and timelines.

Dispatch Efficiency in Context

The AEMC and AEMO's eagerness for LMP is understandable, but we should put it in context. Dynamic loss factors would likely make little difference to actual spot prices, as the main price setters around the NEM have stable loss factors.

The opportunity for LMP to deliver savings is relatively uncommon, and also relatively minor; the difference in dynamic loss factor changes means price may only change half a percent. Without solving congestion LMP can only hope to improve the accuracy of information fed into NEMDE. Compare this to the benefits of resolved congestion – although they are also uncommon, they represent a step change in price, a change in price setter. This can allow for significant changes to spot price and the overall potential for savings is much higher than LMP.

Example1: SA's system strength constraint regularly curtails wind to 1300 MW. If demand is strong in both VIC and SA and spot prices are $80, the potential step change in price for alleviating congestion is between $70 and $120.

Example2: North-South interconnector congestion is a daily occurrence causing price separation between $10 and $100. Having a third of demand separated on price is extremely expensive for the Australian economy.