To: Energy Security Board

Lodged via email: info@esb.org.au

Re Interim REZ Framework Stage 2 Consultation

Neoen welcomes the opportunity to respond to the ESB's consultation paper regarding transmission access reform.

About Neoen

Neoen is the leading French, and 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 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 (150 MW battery system) in SA.

Flawed Consultation

The ESB and energy ministers are not in touch with commercial drivers within the electricity sector and should not be proposing solutions before the problem has been quantified and consulted on.

It is unreasonable of COAG to expect that a high level requirement to produce a REZ framework can be formed into a meaningful, and valuable reform agenda in such a short amount of time. In any case the goal of a REZ framework does not appear to be appropriate.

In our opinion the ESB should seek to manage expectations at COAG and

a) divert the industry's limited human resources towards a small number of critical reforms [security, operations, settlement],

b) spend time on problem definition before proposing any solutions.

2025 is not a drop dead date for the radical reform of the electricity sector.

LMP by stealth

The repeated and rather obvious ideological push for Locational Marginal Pricing (LMP) is not welcome. LMP has been firmly rejected by generators and consumer groups and should no longer be considered.

While LMP has some miniscule dispatch efficiency benefits, Financial Transmission Rights (FTRs) have no theoretical or practical demonstration that they can be properly designed. There is no consensus even amongst the rare LMP supporters on how FTRs can be effectively designed to balance risk and reduce risk/reward asymmetries.

Furthermore, LMPs have even less value within a REZ as all the generators have the same marginal costs.

The ESB should not commit misfeasance as the AEMC did and ignore:

1. Strategic bidding undermines dispatch efficiency.
2. Gaming of constraints.
3. The fact that LMP reduces modelling certainty.
4. System strength constraints are not modellable.
5. Shock constraints rapidly deplete FTR reserves.
6. Restricted access explicitly reduces transmission utilisation below efficient levels.
7. FTR speculators receive rents that undermine FTR firmness.
8. Increased risk for generators increases cost of capital, leading to higher power prices.

These issues individually, and in concert worsen outcomes for consumers and investors.

Misidentified problem

Open access is not the problem. Arguably it is the ideal access arrangement for the NEM given our unique circumstances. Australia will have to endure higher levels of congestion on a long and stringy grid. Open access means that generators have to balance the amount of congestion between themselves and future rational investors. If a new generator is unlikely to significantly increase congestion one will have to expect they build at some time.

Any attempt to restrict access is likely to result in transmission underutilisation if we wish to minimise compensation from customers to generators. All the restricted access options require central decision making to block inefficient generators from building – if this is the goal why not make it clear?

The ESB highlights two problems:

- unpredictable grid connection process and associated delays in commissioning.
- increased risk and constraints placed on operational projects.

Neither of these is due to open access. Both are related to AEMO's processes and procedures. The most impactful constraints causing alarm to investors are system strength constraints. These are not modellable by proponents and access reform in no way improves the situation.
LMP is not a leading indicator of congestion and does not solve any of the problems raised.

The signal to locate efficiently

Proponents already model curtailment and losses.

LMP reduces modelling certainty as the results become dependent upon the contract position of each generator everywhere at once, and price outcomes are more stepwise. LMP modelling results become highly sensitive to the frequency of step changes in price due to constraints binding, which is more challenging to accurately calculate than the volumes of congested energy.

Regarding the ISP, the new transmission is enough signal to invest by itself. Proponents can model new lines and the resulting change in flows.

None of the international examples cited relied on generators to fund transmission, and none of them used transmission investment as an excuse to reform access arrangements. Each of them was a reset of the economic benefits tests that had previously not been working, just as the NEM needs.

Substantial funding from generators for transmission will necessarily increase costs to consumers. Generators have a higher cost of capital than TNSPs and a shorter investment timeframe.

The equilibrium price that generators will need to be able to build is higher if they must bear transmission costs. This directly means that wholesale prices will go up until such generators are able to build. No jurisdiction in the world substantially funds transmission from generators.

The benefit of new supply to consumers impacts the whole regional demand and spot price. It may be beneficial for customers to pay $3/MWh in transmission for the energy sent out of a REZ, if the new supply can reduce regional wholesale prices by $0.1/MWh (on energy consumed i.e. a much larger volume).

What are the problems?

Irrational exuberance

A small number of poor investments impacted already committed generators. There is no direct cost to consumers though. This may no longer be an issue given that some players have exited the market.

If the ESB want to prevent this happening again they should create a blocking mechanism directly rather than creating highly complex markets as a façade of efficiency.

Lack of transmission investment

Very few investments have been made under the RIT-T. Globally, electricity sector investment has spent about 15% on transmission –Australia did not. Compared with road, rail, port, and communication infrastructure, transmission has had almost no attention in decades.

Transmission has wide social benefits, meaning they are also diffuse. Because the RIT-T does not capture the full social benefits of transmission only few projects can receive funding.

While we have a plan for *no regret* transmission investment under the ISP, we do not have an adequate funding plan and it is highly likely that further delays will occur as they have with every RIT-T process. The inability to anticipate an early coal closure through the RIT-T magnifies the risk that transmission is delivered late.

No one can handle transmission investment risk

Both generators and customers have shorter horizons than the lifetime of transmission and have narrow optics for the benefits they see. Even in collaboration, their aversion to risk they cannot control makes them non-ideal investors in transmission.
TNSPs are unable to take speculative risk on transmission investments, any regulated returns created to facilitate this simply transfers risk to consumers.

NEOEN

Proposed solutions

A new social benefits test, with government underwriting transmission projects. Capital is recouped only after customer benefits are proven after the fact.

This proposal shares the same philosophy as the NSW and VIC government approaches.

Social Benefits Test

As with other infrastructure projects the full social benefits of transmission should be analysed. This includes things that only governments value such as productivity, tax receipts, increased employment, competitiveness of exports, and balance of trade.

Another interesting benefit for governments is that transmission investment is a kind of hedge against iron ore prices. Steel is a large input cost to transmission, and when iron prices are low the government can both stimulate iron demand and benefit from cheaper transmission capital costs.

The social benefits test should of course heavily focus on the consumer benefits such as cost savings and increased resilience. The consumer benefits alone are generally 10 times larger than the RIT-T market benefits resulting in the success of more transmission projects.

Government Investment Body

A new corporation should be created – the Commonwealth Transmission Company (CTC).

The CTC should be tasked with investing in transmission before it is required, taking temporal risk, and protecting consumers from the cost of overinvestment.

In joint venture with the TNSP, a project is financed with only a small fraction of the cost added to the regulated asset base. The remainder is held as equity by the CTC and incrementally resold to the TNSP once the consumer benefits have already eventuated. Any capital not able to be recouped signifies either an inefficient investment, or a social benefit in excess of the consumer benefit.
The CTC may choose not to resell if it maintains a higher net social benefit.

This model is common in rail networks where the high social benefit justifies a taxpayer loss on the infrastructure in order to maintain high utilisation. Transmission is the highest bang-for-buck of any infrastructure class, so if we can make this model work for roads, rail, and communication it should prove easy for transmission.

Generators can be induced to subscribe to new transmission connection opportunities, where they must place an upfront bond to ensure they have skin in the game. For example, a bond of $1m/100 MW is enough to dissuade non-serious subscribers. This helps indicate the interest levels in a new transmission asset.

Subscriptions that cannot be economically included in the new transmission will have their bond returned. For example: an oversubscription of solar in a particular area that is not worth increasing the transmission investment to capture.

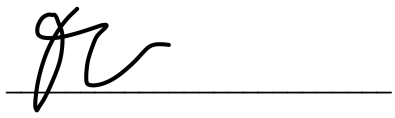
Generators will have to expect a level of losses and curtailment as communicated by the CTC's iterative optimisation process. No compensation for congestion will be available during operation.

For the first 10 years of the transmission asset life, new connections should only be possible by subscribers. After this the asset becomes truly open access. Only the threat of mutual congestion will restrict new generators. This leaves open the possibility that in future, very cheap generation can compete even in highly congested areas.

If a subscriber is unable to connect within the first 5 years, they may pay a second, larger bond to buy more time, or forfeit their first bond to make room for a new entrant.

This model allows an evolution of the economic optimum utilisation over time, increasing the benefits to consumers that come from new supply competition.

Yours sincerely,



Tom Geiser,
Senior Market Manager,
Neoen Australia

Box 1: What makes a good transmission investment?

Some of the major benefits to be captured by transmission investment include new supply opportunities, a more resilient network, increased trade, and access for energy intensive industry.

In terms of new supply, wind resource is the most important factor to consider. Solar resource is relatively good all over Australia, and transmission only targeting solar will have a low utilisation. A new transmission asset mainly filled with wind and a little solar can have very high utilisation.

Resilience is increased by creating redundant links between critical nodes. Where the new line is geographically separate from the existing one the impacts of bushfire or lightning can be reduced. These links are also likely to be associated with removing bottlenecks between regions and allowing for greater trade.

Where transmission is close to ports, rail, and road infrastructure it can help the energy intensive industries that are the export opportunities of the Australia's future.

Combining as many of these components as possible leads to a maximisation of value. An ideal transmission investment would debottleneck trade between regions, be geographically separate from existing lines, pass through a windy area, and adjoin other infrastructure types.

Questions for consultation

1. Are REZs an appropriate interim solution to the challenges associated with open access?

No.

2. What are the likely consequences of a framework that addresses these challenges on a localised rather than a system wide basis?

The problems have not been properly identified.

3. Do stakeholders agree with the proposed objectives for a regulated REZ development model?

Objective 2 & 3 are good. Objective 1 needs proper identification of the problem.

NEOEN

4. Are there alternative, preferable options for deciding which generators become part of the REZ?

Maintain open access except for connections to the new equipment.

5. Which party is best placed to perform the role of REZ coordinator where the REZ is being developed in accordance with the regulatory framework? Should the decision regarding the identity of the REZ coordinator lie with the State government?

Form a new Commonwealth entity responsible for transmission investment.

6. Are the functions to be undertaken by the REZ coordinator in the regulated model appropriate?

It should include assessment of the wider social benefits, and absorption of costs above the value for consumers.

7. What, if any, qualification criteria should the REZ coordinator apply to prospective REZ participants?

Development experience and ability to finance the generation.

8. What objective or objectives should the REZ coordinator should seek to achieve when selecting successful tenderer?

Maximisation of social benefits, while adhering to a reasonable amount of expected congestion as communicated to participants.

9. Should the Rules establish a framework to ensure that the REZ delivers an optimal supply mix?

We are unclear on what that would entail.

10. Should regulated REZ developments be subject to a requirement that they may only proceed if a certain proportion of the planned capacity of the preceding REZ stage is subscribed?

Yes, but the subscription needs to be done early to avoid wasted development efforts by generators.

11. Should the REZ coordinator return any surplus auction proceeds to customers in the form of a reduction in TUOS charges?

There will never be surplus proceeds. If generators could fund new transmission and remain competitive, they would already do so.

12. Should the ESB consider REZ models that allow for speculative investment that departs from the ISP, in order to reallocate risk away from customers, such as the one put forward by the Public Interest Advocacy Centre (PIAC)?

Yes, but under the Commonwealth transmission entity.

13. How should pre-existing developments be treated within a REZ framework? At what stage of development should a project be considered a pre-existing development?

If they develop expecting to connect to new assets they should have to go through the proper channel.

14. Should the REZ framework contemplate brownfields developments? If so, should developers have the ability to influence the location and configuration of the REZ transmission assets within a brownfields REZ?

Yes, and yes.

15. Are the evaluation criteria set out in the introduction to Chapter 5 appropriate?

The one on storage should be deemphasised. Storage is not cost effective in comparison to uprating the REZ transmission. For less capital cost you can get a permanent increase in flows.

16. Which option for access within a REZ is preferable?

Option 2 is the least-worst, open access should be considered too.

The equalisation of Russian Roulette constraints (inverse of winner takes all) in option 2 is worth further investigation though.

17. Are there alternative options that the ESB should consider?

Open access (status quo), perhaps with financial equalisation contracts.

18. Are there potential improvements to the options that the ESB should consider?

No response.

19. If the ESB were to adopt one of the access options outlined in this chapter, would it be necessary to restrict connections outside of REZs?

The access of REZ participants could certainly be undermined by generators on the neighbouring network.

20. If the ESB were to adopt the financial access protection model, should it also adopt measures to avoid winner takes all outcomes?

Yes.

21. If the ESB were to adopt the financial access protection model, should subsequent connecting generators be required to provide compensation that reflects the regional reference price?

Yes, but with further study of the potential bidding and dispatch outcomes.

22. If the ESB were to adopt the financial access protection model, how should financial compensation be allocated between REZ generators? Is generator availability an appropriate metric?

Generator availability is fine for a REZ containing only wind and solar, which is most likely.