21 December 2022

Ms Anna Collyer
Chair
Energy Security Board
Lodged by email to: info@esb.org.au

Re: **Response to Transmission access reform Directions Paper November 2022**

Dear Ms Collyer:

Tilt Renewables welcomes the opportunity to make a submission to the above Directions Paper ("Paper") as part of our continuing engagement with Energy Departments and the Energy Security Board ("ESB").

Tilt Renewables is committed to continue playing a lead role in accelerating Australia's transition to clean energy. Tilt is the largest owner and operator of wind and solar generation in Australia, with 1.3 GW of renewable generation capacity across nine wind and solar farms operating or in the final stages of commissioning, and another 396MW wind farm (Rye Park in NSW) under construction. In addition, Tilt Renewables has a development pipeline of over 3.5GW including the 1.5GW Liverpool Wind Farm development project in NSW's CWO REZ.

As an overarching principle, our view is that any access reform needs to be no-regrets, low risk, with minimal disruption to the market and demonstrate benefits that clearly outweigh the costs (and risks). An Executive Summary of our view of the four core elements of the ESB's proposed hybrid model is provided below, followed by a more detailed discussion of the four core elements and other issues to be considered.

Executive Summary

Operational Timeframes

- **Tilt Renewables considers that Edify's version of the Congestion Relief Market (CRM) warrants further consideration as it is an optional mechanism that could provide market benefits.**

  We do not support the ESB's proposal to corrupt the CRM with Locational Marginal Pricing (LMP).

- **Tilt Renewables considers that all work on the Congestion Management Model/Locational Marginal Pricing should cease.** A decision to proceed with LMPs would cause significant disruption and uncertainty in the market deterring, or at least deferring, new investment in generation and storage. **The result would inevitably be higher prices for electricity customers caused by a policy that, by the ESB's own admission, does not even address the fundamental problem to be solved.**

- **Tilt Renewables supports modelling of the ESB's Design Choice Option of rounding constraint coefficients.** Modelling may show this option to be impractical, but if the modelling demonstrated this option was effective, then it represents a simple way to successfully mitigate the 'winner takes all' problem.

Investment Timeframes

- **Tilt Renewables considers that Enhanced Information should proceed immediately and, if implemented correctly, would be more effective than the ESB considers.** One option to expedite this work would be to reassign people currently working on CMM/LMP to implement this reform ASAP.
- **Tilt Renewables does not support Priority Access as currently defined in the Paper.** There needs to be a better balance between protecting current investments and enabling new developments to avoid slowing down investment in new generation and storage.
- **Tilt Renewables does not support the Connection Fees model. Accurately determining fair and equitable fees up front will be all but impossible resulting in very undesirable outcomes.**

Cost/Benefit Modelling

- **With the exception of Enhanced Information**, as it is a no regrets and widely supported outcome, **all other proposals should undergo a comprehensive cost/benefit analysis** in close collaboration with industry before preferred model(s) are selected. Cost benefit analysis should inform the selection of the preferred models---not be undertaken after the selection is made.

Tilt Renewables provides more detailed commentary on the four elements and other issues below.

Congestion Relief Market

As stated in our previous submission to the Consultation Paper in June 2022, the CRM is a fresh and attractive concept that deserves more analysis---particularly compared to the 4-year-old COGATI/LMP proposal. It is a mechanism whereby batteries, and other storage, are paid to reduce curtailment in the market thereby maximising use of the existing network. Furthermore, the mechanism is optional; this is a huge advantage over LMPs which disrupts the NEM and cannot be avoided.

However, as the ESB notes on page 29 of the Paper there are potential risks with CRM:

> *"There is a risk that we will uncover policy and/or implementation issues that are difficult to resolve. For instance, we expect the model to have complex impacts on bidding in the energy market, which could become detached from dispatch outcomes. More work is required to develop the detailed design and ensure that the reform does not give rise to unintended consequences."*

Tilt Renewables shares the ESB's concern in this regard. However, it is unfortunate that there appears to have been little work undertaken in this regard since the Consultation Paper in May. Instead, the ESB appears to have focussed their efforts on how to force LMPs into the Congestion Relief Market. The resulting CRM/LMP quagmire bears little resemblance to Edify's original proposal and should not be pursued.

Therefore, we would suggest that Energy Departments/ESB undertake modelling to assess if there are unintended and undesirable interactions with the wholesale energy market and whether there are practical means to mitigate these impacts. Tilt Renewables looks forward to seeing the results of this modelling work.

Congestion Management Mechanism (LMP)

CMM/LMP has been vigorously opposed almost universally by electricity generators and developers for the past 4 years. Literally thousands of hours have been spent by market participants in meetings, writing submissions and advocating that this policy should be

abandoned to no avail. Despite not being a 'preferred' element, the ESB has effectively doubled down on LMP in the Paper by forcing it into the Congestion Relief Market.

If there was ever any doubt of the ESB's steadfast intention to impose LMPs on the market, they were ended on December 6th when during a videoconference, in response to a question about the ESB's obsession with LMPs, the ESB manager stated,

"Well... we always come back to LMPs, because it's the right answer."

This statement raises some difficult questions, including:

- Why is the ESB stating CRM is their preferred solution in the operational timeframe when it is not 'the right answer'?
- What has been the point of the past 4 years of 'consultation' on access reform when the ESB 'knew' LMP was the right answer all along?

It is also telling that despite CMM/LMP not being a preferred core element in the Paper, 'CMM' is mentioned 64 times and 'LMP' is mentioned 151 times---in a paper that is only 149 pages long.

Tilt Renewables explained in considerable detail the shortcomings of CMM/LMP in our response to the previous Consultation Paper and we would refer the reader to that submission as there are no new details supplied with regards to CMM/LMP in the Directions Paper.

However, in summary, the fundamental problem with CMM/LMP is that it will cause significant disruption and uncertainty in the market that will inevitably delay, or deter, near term investment in generation and storage which is the opposite of what the NEM requires (and Governments desire).

Project developers will have to deal with questions such as:

- I can get forecasts of Regional Reference Prices (RRP); where do I get forecasts of LMPs, and can these forecasts be relied upon?
- When, and how often, will I be paid LMPs, rather than RRPs?
- Whenever the rebate formula is determined, what rebates will my project receive?

Financiers generally require long term price certainty, so they will be struggling with the same questions before providing project finance. Banks avoid taking risks, and how LMP would actually function is certainly a risk.

Negotiation of offtake agreements will also be more difficult as neither the offtake party nor the intending generator will want to absorb the losses incurred when LMPs are less than RRPs. Neither side can manage the risk, so neither party will want to accept the risk.

In addition, existing PPAs, still in effect when LMPs are implemented, will have to be renegotiated to substitute LMPs and rebates for RRPs in contract clauses. As neither side wants to accept any decrease in their current economic position, such negotiations will be difficult likely resulting in 'lawyer's picnics'.

The impact of deferring, or at least delaying, investment in generation and storage can only have one impact on electricity bills. Businesses and households will see higher electricity prices as there will be less generation and storage built. Less supply equals higher prices...and increased risk of power outages during times of peak demand.

Of course, one could argue that short term disruption should not, necessarily, stand in the way of very beneficial reforms with demonstrated benefits exceeding the costs. However, this is not the case for CMM/LMPs. Going back to the beginning, the fundamental

congestion problem to be solved is that generators occasionally locate in areas of the network which are already congested---thereby increasing curtailment of existing generators.

However, as the ESB noted in the May Consultation Paper, LMPs do nothing to address this issue:

> ***"This model [LMP] does not provide a signal to locate in places where the generator does not increase congestion."*** *(p. 42)*

So, the ESB is advocating for a policy which disrupts the market, slows investment in new generation & storage resulting in higher prices to customers...and does nothing to address the primary problem to be solved.

Tilt Renewables recognises that the ESB should listen to the concerns of customers and energy users on access reform as well as market participants. For example, the impact on a wind farm of a new solar farm locating next to it are orders of magnitude more than for customers. The wind farm might see its MLF drop 3% resulting in a loss of 3% of its revenue. It might also see an increase in curtailment of 4%---cumulatively reducing the wind farm's revenue by 7%. On the other hand, the impact of the new solar farm on customers would be so negligible it would be hard to measure as both the solar and wind farms have zero marginal costs and bid less than $0/MWh in the wholesale market. How much, and which, zero marginal cost generator is curtailed has no impact on customers, but it certainly has serious economic consequences for the generators themselves.

In response to the May Consultation paper, the Energy Users Association of Australia (EUAA) appeared to agree as they wrote in their submission,

> ***"At the end of the day, congestion is an issue for equity to solve, not consumers."***

Tilt Renewables concurs with the EUAA that Access Reform is an issue where generators and developers should take the lead with Energy Departments and the ESB to arrive at the best policies.

In conclusion, once again, Tilt Renewables respectfully requests Energy Departments and the ESB to remove CMM/LMP from consideration and focus their resources on Enhanced Information and other potential access reforms in close collaboration with industry.

Enhanced Information

Tilt Renewables fully supports the Enhanced Information option and respectfully suggests that work begins on this option as soon as practical. This element is strongly supported by many varied and different stakeholders and there is no reason to wait until mid-2023, or later, to start work on this option. If resources are short, then individuals currently working on LMP could be reassigned to this workstream.

There are basically two causes of the fundamental problem of intending generators locating in already congested areas of the network.

1. The generator does not appreciate, or is not aware of, the significant curtailment their project will suffer once it is built.
2. An intending generator is aware of the impending curtailment but decides to proceed anyway. This could be caused by several factors, including
    a. The developer believes they can successfully sell the project to an investor who does not appreciate the curtailment risk.

b. The developer has some other imperative that causes them to proceed with the project
c. The developer is confident that they will encounter significantly less congestion than surrounding existing projects.

Enhanced Information should significantly reduce cause 1 and 2a as the developer and investor will have access to data, forecasts and updated information documenting the current, and future, curtailment to be expected. Therefore, Tilt Renewables considers Enhanced Information should have a significant impact in reducing inappropriate generation location decisions---if implemented effectively.

In response to question 24, Tilt Renewables considers that an indicative capacity figure based on not breaching line and transformer ratings will not provide the information intending generators require. Less than half of constraints involve exceeding thermal limits. Voltage stability, pre-contingent and system strength curtailment are all significant and must be included in Enhanced Information to provide intending generators with the complete picture they need to make efficient locational decisions.

We also suggest that both committed and expected capacity information be supplied. Committed capacity would be the capacity left after all existing and committed projects are operating and would represent the 'current' situation. Proponents can try to do this now with varying levels of success. In addition, we suggest AEMO, working with NSPs, could take a view on the likelihood of other projects in the network connection process proceeding thereby arriving at an Expected available capacity in 2-3 years' time. To avoid confidentiality issues, the expected projects to proceed would not need to be named, but they would be included in the modelling. This sort of forecast available capacity is not available today. We concur with the statement in Section 6.4.3, that both historical (i.e. current) and forecast constraints should be provided for each location/zone.

In addition, we consider that 2-4 different scenarios should be modelled rather than just one (i.e. summer peak demand) to reduce the risk of significant curtailment being missed by just choosing one scenario for the year recognising that this will result in more modelling work to be undertaken.

The current Congestion Information Resource is published every 3 years limiting its effectiveness; less than one year after publication, it is out of date. As a minimum, the Enhanced Information modelling should be published annually. After the modelling process becomes more routine, semi-annual updates would be desirable, if practical.

Most importantly, Tilt Renewables would like to see work on this start as soon as practical, and we would be pleased to assist in working with the Energy Departments and the ESB to get the first modelling underway quickly.

Congestion Fees

Tilt Renewables remains opposed to the Connection Fee model for a number of reasons including that it will be virtually impossible to determine the fees in a simple, predictable and accurate fashion. The ESB appears to often consider congestion and constraints as thermal limits when in fact, that is just one type of constraint as previously discussed. Estimating the lifetime curtailment a new plant causes due to thermal limits, voltage stability, pre-contingent and system strength curtailment---before the plant is built is nearly impossible. Arriving at an economic cost of the curtailment adds a whole other level of complexity and inaccuracy.

Even if this was somehow possible, how does one account for cases where a project pays a huge connection fee and a few years later is not causing any curtailment? For example, a hydrogen electrolyser locating next to a wind farm 5 years after it starts operation could drastically reduce, or eliminate, the curtailment caused by the wind farm. Under the Connection Fees model, the wind farm would have paid for congestion that is not occurring. When asked, the ESB stated they did not want connection fees to be adjusted to provide investor certainty which would then necessarily lead to obviously unfair outcomes for cases like this.

In Section 5.4.1, the ESB proposes that new generation consistent with the ISP would not have to pay a congestion fee. Initially, this appears to be an attractive idea; however, there are several issues with this including whether the ISP is granular enough to show that each project is definitely 'in', or 'out', of the ISP. More importantly, it is quite possible, even likely, that new projects judged to be 'in' the ISP could still cause thermal, voltage stability, pre-contingent and/or system strength curtailment thereby increasing curtailment of other generators without incurring a connection fee. This would obviously be a perverse outcome.

Several places in the Paper, the ESB makes statements about trade-offs such as,

> *"A trade off will be required between accuracy and simplicity/timeliness"* and
>
> *"A balance therefore needs to be struck between providing realistic signals while not over-stretching the modelling task."*

Tilt Renewables considers an equitable trade off or balance for these, and other, issues will be nearly impossible to achieve and considers the Connection Fee model should not be pursued.

Priority Access

As the ESB correctly stated in the Consultation Paper (p. 7), the fundamental challenge for access reform is that

> *"…a model may enable investors to manage their risk, but in a way that creates barriers to new entry. This is a key trade-off when designing the models – that is, the appropriate balance between investors' ability to manage risk and promoting effective wholesale competition over the long-term…"*

Today, we have Open Access, and the pendulum is swung all the way towards facilitating new entrants. The Transmission Queue model, as originally proposed, has the pendulum swung pretty much all the way in the other direction, protecting existing investments, minimising their risk of increased curtailment, while making it much more difficult for new entrants. Again, we make the point that that this is not just for thermal curtailment, but also voltage stability, pre-contingent and system strength curtailment all of which are more complicated and difficult to accurately forecast.

As Tilt Renewables is an active developer of renewable projects, as well as a very significant owner of renewable generation, we appreciate the necessity of trying to achieve a reasonable balance which will be very challenging.

Tilt Renewables does not support the Priority Access as currently proposed as we consider it will inhibit new generation at the exact time we need new generation and storage installed as soon as practical as coal fired generators become increasingly less reliable---before they exit the market all together. We do not underestimate the difficulty at arriving

at a simple, predictable and equitable method of balancing reducing curtailment risk for current (and new) investment while not making new generation and storage investment too difficult. Therefore, we do not oppose Energy Departments and the ESB looking for ways to 'soften' the Priority Access model so as not to add excessive obstacles to new investment in generation and storage.

We would state that the proposed option of limiting a generator's zero transmission queue position, to say 10 years, is not a great option to soften the impact on new generation. While this would facilitate new generation investment in 8-10 years' time, it would do very little to help intending generators in the next 8 years or so thereby stifling investment in the short term which is not good for the market. Governments have also made it clear they do not want to slow down investment in new generation and storage.

Conclusion

Wholesale electricity prices are volatile and at historically high levels. The focus of the ESB (and Energy Departments) should be to avoid any rule change or policy that has the potential of causing wholesale electricity prices to increase. For this reason alone, Energy Departments and the ESB should cease work on CMM/LMP as implementing this policy will almost certainly cause electricity prices to rise as investment in new generation and storage stalls.

Tilt Renewables considers that there is room for improvement in regard to transmission access policy. However, reforms must not disrupt the market and should be no-regret policies with benefits clearly outweighing potential costs and risks. Therefore, we consider that work should proceed on Enhanced Information as soon as practical while other potential access reforms continue to be evaluated.

Thank you for the opportunity to comment on the Paper, and we look forward to continuing to further discussions with Energy Departments and the ESB. Please feel free to contact jonathan.upson@tiltrenewables.com should you have any questions or to discuss any aspect of this submission.

Yours Sincerely,

Jonathan Upson

Head of Policy & Regulatory Affairs

Tilt Renewables