TOTAL EREN AUSTRALIA PTY LTD
ABN 16 617 965 081
Level 1, Tower 1, Collins Square
727 Collins Street, Melbourne VIC 3008
Tel : + 61 3 9112 1503
www.kiamalsolarfarm.com.au

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Ms Chloe Hicks
Director, Energy Infrastructure and Zones
NSW Department of Planning, Industry and Environment

Lodged by email: rez@planning.nsw.gov.au

RE: CENTRAL-WEST ORANA RENEWABLE ENERGY ZONE ACCESS SCHEME – ISSUES PAPER

Dear Ms Hicks,

We welcome the opportunity to provide feedback on the access schemes proposed in the NSW Government's Issue Paper. Founded in 2012 by Pâris Mouratoglou and David Corchia, Total Eren develops, finances, builds and operates renewable energy power plants (solar, wind, hydro) representing a gross capacity of more than 3,300 MW in operation or under construction worldwide. Through partnerships with local developers, Total Eren is currently developing numerous energy projects in countries and regions where renewable energy represents an economically viable response to growing energy demand such as in Europe, in Central and South Asia, in Asia Pacific, in Latin America and in Africa. The objective is to achieve a global gross installed capacity of more than 5 GW by 2022. Since December 2017, Total S.A., the major energy company, has been participating as a shareholder of Total Eren.

Total Eren Australia has developed, managed the finance and construction, and is now operating the 200 MW Kiamal Solar Farm and Synchronous Condenser in North-West Victoria. This area of the grid is located within the West Murray Zone and as such, we are highly attuned to many of the issues which the Issues Paper is trying to address.

This submission is focussed on comparing Option 1 against Option 2A or 2B. We prefer Option 1 as this option provides the clearest path for a successful implementation.

Determining Export Capacity

We feel that the difficulty of determining the export capacity of a REZ has not been given the appropriate attention in the Issues Paper. The export capacity of a REZ is not solely dependent on the network or generation within the REZ.

With regards to Option 2A or 2B, the Issues Paper states that financial compensation is not granted to Tier 1 access holders that are constrained off due to constraints beyond the boundary points of the REZ Shared Network. In some cases, it is not trivial to determine whether a constraint is inside or outside the REZ Shared Network. An example of a constraint without a precisely defined location is a voltage oscillation constraint. These constraints are becoming more prevalent in areas with high wind/solar penetration (e.g. West Murray Zone) and is therefore extremely relevant to the development of REZs where high renewable penetration is the aim.

Constraints such as voltage oscillation constraints are not known prior to generation connecting. Therefore, predicting the export capacity ahead of time will be extremely challenging and it should be expected that the export capacity is a dynamic value.

Our experience in the West Murray Zone has shown us clearly that constraints continue to emerge as the power system, or the power system analysis, develops. When considering which of the Options 1, 2A or 2B would suffer the most from an incorrect determination of export capacity, given the financial compensation mechanisms related to Options 2A or 2B, we believe these options carry the greatest risk. Option 1 does not claim to provide firm access and is therefore preferred in this sense.

Firm Access

Firm access to the grid for generation has been a heavily debated topic for the NEM over the years. Option 1 is the only option that acknowledges access will be non-firm. We feel that if firm access is to be implemented then it should not be limited to a particular location (i.e. REZ) within a particular Region (i.e. NSW), it should instead be NEM wide. Therefore, we suggest the ESB Post-2025 Project is a better platform to attempt to introduce firm access.

Financial Compensation and Trading Access Rights

Compensation being based on market revenue may not be an appropriate metric to determine the amount of financial detriment caused by being constrained off. The PPA price and any LGC payments would need to be known to have an accurate value of the foregone revenue. As seen today in regions with high renewable penetration, such as SA, the market price is often negative and this correlates with times of high renewable generation and also correlates with times of high numbers of binding constraints. It would certainly be a perverse outcome if a Tier 1 project had to pay a Tier 2 project in the event of large negative prices. NSW is yet to experience heavily negative prices influenced by high renewable penetration. However, data and price forecasts for SA and Vic should be carefully examined.

The Issues Paper also states financial compensation is due if a Tier 1 project was constrained off due to a Tier 2 project being dispatched instead. However, quantifying the amount that the Tier 1 project is due would need to cater for all the details below:

- There appears to be an assumption that the amount of extra generation dispatched from the Tier 2 project would be equal to the amount that the Tier 1 project is constrained by. That is, that each project contributes to the constraint on a 1:1 ratio. This would only be true if both projects have the identical participation factor (i.e. LHS coefficient in the constraint equation) for the constraint. A further complication is whether the constraint equation in question has the standard format of LHS < RHS. For example, voltage oscillation constraints are not applied in this format and also are not merely a MW restriction but can also include a limitation on the number of inverters/turbines that can be connected at a point in time.
- Multiple constraints can bind at the same time.
- Differences in market offers which cause the Tier 1 project to not be dispatched.

More detailed worked examples would be necessary covering all these items to demonstrate that the proposed solution is workable.

Timely implementation and achieving the desired outcomes

We welcome the drive by the NSW Government to develop a scheme which could deliver transmission in a timely manner. However, the additional roles of the REZ Administrator and the time to develop payment systems would almost certainly delay the implementation for Options 2A or 2B which would therefore delay the implementation of a REZ.

The Issues Paper claims that the financial compensation models in Options 2A and 2B provide greater certainty to investors. However, without all the necessary details being addressed then these models do not provide additional certainty.

We would like to see this initiative of the NSW government result in successful outcomes for the renewable energy industry. Thank you again for the opportunity to provide feedback and please feel free to reach out to Trevor Lim on [redacted] or at [redacted] with any questions on this submission.

Yours sincerely,

Michael Vawser
Regional Director
Total Eren Australia