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Friday, 30th April 2021

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

Marble Energy feedback on Central-West Orana Renewable Energy Zone Access Scheme

Marble Energy Pty Ltd (Marble) is an Australian large-scale renewable energy developer. Previously Marble Solar, the company has been developing renewable energy projects across Australia since 2018 and has established a diversified portfolio of wind, solar and storage projects. Marble currently has a portfolio in excess of 500MW of renewable energy projects and intends to achieve a portfolio size of over 1 gigawatt (GW) by the end of 2021.

The company has commenced the development of a large-scale solar farm with battery in the Central West Orana Region. The company is intending to export the energy from this project by utilising the REZ transmission infrastructure.

Marble is pleased to be given an opportunity to provide its feedback on access arrangements for the Central West Orana transmission infrastructure and looks forward to continuing to provide its feedback where requested.

Please find enclosed Marble Energy's feedback on the Issues Paper on the Central-West Orana Renewable Energy Zone Access Scheme.

Should you have any questions with regards to this submission, please contact me via email at [REDACTED] or by phone at [REDACTED]

Best Regards,

Gordon Ou
Director
Marble Energy

Marble Energy
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Access Schemes are a key part of the NSW Government's work to coordinate and encourage investment in Renewable Energy Zones (REZ) and realise the objectives of the Electricity Infrastructure Roadmap and enabling legislation. The Central-West Orana REZ Access Scheme will be the first of its kind in the National Electricity Market.

The Department has published the Central-West Orana Renewable Energy Zone Issues Paper (the Issues Paper) to facilitate consultation on the access scheme models being considered for the Central-West Orana REZ. This form is for use by stakeholders who wish to make a submission on the Issues Paper to provide feedback to the Department. This form is not required to have your say on the Issues Paper - the Department also welcomes free form submissions.

Submission response options

We encourage stakeholders to use this form to respond to the specific questions raised in the Issues Paper. This will help us interpret and incorporate your responses into our decision making process.

We also welcome free form submissions and responses instead of, or in addition to, this submission form.

Please email your submission form and/or free form response to: rez@planning.nsw.gov.au with 'CWO REZ Access Scheme Issues Paper' in the subject line. Please identify if you would like your submission to be confidential or anonymous.

Disclaimer

The Department encourages publication of submissions to build transparency in the decision-making process and ensure that a variety of views are understood by the public and relevant stakeholders.

Providing submissions is voluntary, is not assessable, and will not impact an entity's participation in, or be used in the assessment of, any future procurement or competitive process regarding the Central-West Orana REZ or other NSW Government programs.

All submissions will be made publicly available on the Department's website unless a submission author indicates a preference below for confidential treatment. In the absence of an explicit declaration to the contrary, the Department will assume that all information can be made public.

The Department may disclose appropriate confidential information provided by stakeholders to:

- the NSW Minister for Energy and Environment or Minister's office
- the NSW Ombudsman, Audit Office of NSW or as may be otherwise required for auditing purposes or Parliamentary accountability
- directly relevant Department staff, consultants, professional service providers and advisers
- other parties where authorised or required by law to be disclosed.

Participants should also be aware that provisions of the *Government Information (Public Access) Act 2009 (NSW)* may apply to any documents submitted (and information should be submitted on that basis) and to any summary report compiling key information and feedback.

Submissions may also be shared with the Australian Energy Market Operator, Australian Energy Market Commission, Australian Energy Regulator, the Energy Security Board, TransGrid, the Clean Energy Finance Corporation, Australian Renewable Energy Agency, Essential Energy, Endeavour Energy and AusGrid to better understand and respond to issues raised. Please make

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clear in your form response below or otherwise in your submission if you do not want your submission to be shared with the above parties.

Submission type and contact details

Submission type	<input type="checkbox"/> Individual <input checked="" type="checkbox"/> Organisation <input type="checkbox"/> Other Click or tap here to enter text.
Approving author name	Gordon Ou
Organisation	Marb e Energy
Approving author title	D rector
Phone	
Email	
Stakeholder group	<input checked="" type="checkbox"/> Energy generation <input type="checkbox"/> Energy storage <input checked="" type="checkbox"/> Ancillary services <input type="checkbox"/> Electricity distribution provider <input type="checkbox"/> Transmission provider <input type="checkbox"/> Energy industry/market body <input type="checkbox"/> Financial institution of financial services <input type="checkbox"/> Consumer advocacy <input type="checkbox"/> Government <input type="checkbox"/> Individual <input type="checkbox"/> Other (please specify) Click or tap here to enter text.

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Confidentiality and submission publication preferences

Submissions may be published in whole or in part on the Department's website. Authors may elect for some or all of their submission to be confidential.

Would you like your submission to be confidential?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Some confidential submissions may be shared with the Australian Energy Market Operator, Australian Energy Market Commission, Australian Energy Regulator, the Energy Security Board, TransGrid, the Clean Energy Finance Corporation, Australian Renewable Energy Agency, Essential Energy, Endeavour Energy and/or AusGrid to better understand and respond to issues raised. Would you like your submission to be kept confidential from these parties?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If published, would you like your submission to be anonymous and personal details redacted?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

If you do not want your personal details or any part of your submission published, please state this clearly in your submission. We may be required to release the information in your submission in some circumstances, such as under the *Government Information (Public Access) Act 2009*.

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Questions

The fillable fields for answers to these questions will expand to accommodate the length of your response.

1. Objectives and evaluation

<p>Question 1: If the CWO REZ Access Scheme delivers on the proposed objectives and benefits, how would connecting projects value connecting under this Scheme rather than elsewhere under current NEM network access arrangements? Should proposed benefits be given weightings, and if so, what should these be?</p>	<p>Developing large-scale renewable energy projects across the NEM is tenuous and fraught with issues relating to available electricity network capacity, declining MLFs, and new developments curtailing current generators.</p> <p>Participation in the CWO REZ offers generators more certainty with their energy export, MLFs, and community support.</p> <p>Notwithstanding the greater certainty on MLF due to the finite capacity allocated in the REZ line, the proposed number of projects utilising this network will likely result in a diminished MLF.</p>
<p>Question 2: What, if any, additional benefits should the CWO REZ Access Scheme deliver to provide value to connecting generation and storage projects?</p>	<p>Marble considers three additional benefits to the CWO REZ Access Scheme which have not been outlined in Table 1 of the Issues Paper:</p> <ol style="list-style-type: none"> 1. Cost-sharing of system support between different projects 2. coordinate approaches to community engagement with State Government and other developments 3. Access to sites which are more environmentally suitable to develop large-scale renewable energy projects than in other parts across the State
<p>Question 3: Do you agree with the proposed evaluation criteria? What, if any, additional criteria should be considered?</p>	<p>Yes, the stated evaluation criteria is appropriate.</p>

2. Access scheme models

<p>Question 4: Which of the shortlisted models presented is preferred? Which best balances the need to deliver value to investors with the need to maximise utilisation of the REZ, and together achieve the access scheme's objectives?</p> <p>In particular, does the 'non-firm' connection right, under Option 1 provide sufficient certainty to investors to be of value? If it does not, is this outweighed by the increased utilisation of the REZ that would result under such non-firm connection rights?</p>	<p>A tiered structure with interval-based access rights is Marble's preference. In comparison to the other access schemes, the amount of generation permitted on the network is maximised.</p> <p>Option 1's attractiveness is difficult to assess without understanding the generation mix of the assets utilising the network and therefore the curtailment risks, however it will result in an underutilisation of the REZ network.</p>
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Question 5: Are there other access models that you consider would be superior to the shortlisted models in this paper? If so, what are these models, and what are their strengths in comparison to the shortlisted models?	The traditional open-access arrangement has merit in considering further as it does result in the electricity network being utilised at a high rate.
Question 6: How could the characteristics of either Option 1, 2A or 2B be adjusted to improve them in a manner that achieves the access scheme's objectives?	Option 2A could apply to a portfolio of projects owned by the same proponent rather than an individual project. This portfolio of projects might not necessarily share a point of connection into the electricity network.
Question 7: Characteristics such as more granular access rights (for example, rights defined in five-minute intervals) and tradeable rights can provide flexibility to access right holders, but also make the access scheme more complex. How should the trade-off between flexibility for access right holders and simplicity of the access scheme be assessed? Which better achieves the access scheme's objectives?	The scheme does become much more complex if proponents are expected to bid for access rights to export their energy. It would also be more challenging to model financially when trying to achieve financial close for the construction of the project, given pricing per each five-minute interval will vary depending on market conditions.
Question 8: If not nameplate capacity, what is the appropriate level of capacity that should be used to determine requirements for access rights coverage that would better achieve the scheme's objectives? If a Probability of Exceedance (POE) value is used, what process should be used to verify this?	<p>Marble has assumed nameplate to mean the maximum AC export as defined in the project's Generator Technical Performance Standards.</p> <p>Nameplate is appropriate. If access is only permitted for a value less than a project's nameplate, this would mean frequent curtailment, which would need to be assessed in the project's financial model and may lead to an uneconomical project.</p>
Question 9: How should the allocation of access rights to hybrid (storage plus generation) assets be approached? What 'shape' of access rights would suit a hybrid asset? How could projects which use some of their maximum capacity 'behind the meter' be accounted for in determining the appropriate level of capacity for access rights coverage?	Click or tap here to enter your answer to question 9.

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<p>Question 10: Is there a minimum term (in years) for which access rights would need to apply to benefit project finance?</p>	<p>Click or tap here to enter your answer to question 10.</p>
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Option 1: Limited physical connection model

<p>Question 11: Under Option 1, connected generation capacity could be capped above the capacity of the REZ Shared Network. How should generation and storage capacity be set or capped to optimise REZ Shared Network utilisation without introducing too much constraint risk?</p>	<p>Click or tap here to enter your answer to question 11.</p>
<p>Question 12: How could network capacity be allocated between different generation types? Should it, for example, be based on a particular, pre-defined generation profile ("shape") for different types of generation technologies?</p>	<p>For the purposes of determining the generation mix, assuming typical generation profiles is acceptable. However, each project will have a slightly different profile due to local environmental factors (i.e. solar farm with a ridge line causing shading). As a result, the generator should be able to nominate a profile prior to entering into an access contract with the NSW Government. After each generator has nominated its project's specific generation profile, there may be additional capacity available for another proponent who would have otherwise not been granted access rights.</p>

Option 2A and 2B: Financial compensation models

<p>Question 13: How would 24-hour access rights impact the value and efficiency of a financial compensation model? If access rights were defined as flat, 24-hour, access rights, would access right holders be incentivised to firm up their generation to make efficient use of the access rights (either technically, or commercially with sharing arrangements)? If not, what adjustments would need to be made to the access scheme design to incentivise this?</p>	<p>It would be uneconomical for each project participating in the REZ access scheme to offer an energy storage solution to support a block energy export. The NEM load profile does not demand a block generation profile.</p> <p>To support the implementation of energy storage along the REZ network, Marble suggests that the NSW Government enter into a supply contract for an appropriate capacity of storage.</p>
<p>Question 14: Would currently available information, including solar and wind forecasts for corresponding Tier 1 generators, be sufficient for Tier 2 access right holders to make a reasonable assessment of the risk of being constrained off? Or would additional data need to be available to achieve this?</p>	<p>Data from Tier 2 projects would also be required. Although Tier 2 has non-firm access, it will be competing with other Tier 2 generators and may evoke a thermal limit constraint if all Tier 1 and Tier 2 generators are exporting energy.</p>
<p>Question 15: With reference to Appendix B, to what extent should curtailment (and therefore the compensation mechanism) take bid price or</p>	<p>Bid pricing should be factored in when considering whether a Tier 1 generator should be compensated for curtailed revenue filled in by Tier 2 generators. Marble does not currently</p>

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market settlement price into account? In particular, what would be the downside to limiting compensation to only the bids from Tier 1 access right holders that are below the market settlement price?	consider downsides for the compensation scheme to operate as such.
Question 16: In what ways could the proposed models and compensation mechanism design result in changes to the bidding strategies of Tier 1 and Tier 2 access right holders? Would this be expected to have a material impact on the NSW market?	<p>Under the following scenario, it is easy to envisage NSW electricity prices escalating. Power flow modelling is necessary to understand the extent of this risk.</p> <p>The scenario is as follows:</p> <ol style="list-style-type: none"> 1. Tier 1 generators participating in the REZ are also the marginal price setters 2. Tier 1 generators are bidding above the NSW average spot price as they will be compensated by Tier 2 generators if not dispatched.
Question 17: There could be circumstances in which the revenue earned by Tier 2 access right holders will not equal the revenue lost by the Tier 1 access right holders through subsequent curtailment. This includes instances of intra-REZ constraints, and when MLFs for Tier 2 generators are systematically lower than for Tier 1 generators. What are the other circumstances, if any, in which potential 'compensation inadequacy' may occur? How material is this risk for Tier 1 access right holders in comparison to the open-access regime?	Click or tap here to enter your answer to question 17.
Question 18: Does this Issues Paper identify the key risks associated with the Financial Compensation Models? Can the risks be sufficiently managed through the design features of the models and the proposed compensation mechanism referred to in this Issues Paper?	Marble believes the key risks associated with the Financial Compensation Models to be satisfactory and the proposed compensation mechanism sufficient.
Question 19: How would the implementation of the financial compensation models impact existing contracts, such as PPAs? Could the compensation mechanism be appropriately accounted for in the design of new contract structures?	Click or tap here to enter your answer to question 19.

Other models considered but not progressed

Question 20: The NSW Government is not proposing to progress the Limited NEM Bidding and REZ Locational Marginal Pricing models further at this time. Are there elements unique to these two models which should be considered	Click or tap here to enter your answer to question 20.
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for integration into the models that have been shortlisted?	
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3. Access scheme design issues

Question 21: How valuable is the ability to trade access rights, and in what circumstances would this be useful?	This would be valuable to any proponent who is seeking to discard access rights for a set period. For example, if a wind turbine or array of solar panels is out for servicing and they are normally covered by Tier 1 access rights, these rights could be sold off temporarily to maximise the proponent's revenue.
Question 22: To what extent would flexibility to trade access rights increase the value of access rights for their holders? How flexible and unrestricted would access rights trading need to be to provide value?	There should be sufficient flexibility to trade and utilise acquired coverage of access rights within hours of the agreement between the proponents trading access rights. This would ensure the proponent selling its access rights is able to sufficient react to unplanned plant outages and/or delays to project commissioning.
Question 23: Would the introduction of a central access rights trading platform be of benefit to access right holders? If so, why? If beneficial, then which party would be best placed to design, maintain and operate this trading platform?	Yes, the introduction of a central access rights trading platform would be of benefit. It will ensure there is an administered, liquid platform to trade access rights.
Question 24: For generation projects connecting to the REZ, how important is it that storage is required to purchase access rights (i.e. that total connecting storage capacity is limited)? If storage was not to be required to purchase access rights, how high is the risk of storage competing with (i.e. curtailing) generation dispatch?	Click or tap here to enter your answer to question 24.
Question 25: Would proponents of storage projects value firm access rights? In the financial compensation models, how would storage operations differ under Tier 1 versus Tier 2 access rights? How could an access scheme provide sufficiently flexibility for storage to connect in future as technology costs come down and the market evolves?	Click or tap here to enter your answer to question 25.
Question 26: Would prevailing market signals provide sufficient and appropriate incentive for storage to operate in a manner that is aligned with the needs of the REZ? If not, then what REZ-specific types of incentive mechanisms should be considered to incentivise load and	Click or tap here to enter your answer to question 26.

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storage to consume electricity when the REZ Shared Network is congested?	
Question 27: If an incentive mechanism for storage is implemented how should the costs of this arrangement be recovered?	Click or tap here to enter your answer to question 27.
Question 28: How should the treatment of storage under the CWO REZ Access Scheme account for differences between long-duration storage and fast-firming technologies?	Click or tap here to enter your answer to question 28.
Question 29: How should load be integrated into REZs and what types of incentives (if any) would be needed to attract load to connect to the REZ Shared Network?	Click or tap here to enter your answer to question 29.
Question 30: Would additional incentives be necessary, beyond market-based commercial incentives, to encourage storage/load to increase their electricity use during periods of REZ network congestion?	Click or tap here to enter your answer to question 30.
Question 31: If an incentive mechanism for load is implemented how should the costs of this arrangement be recovered?	Click or tap here to enter your answer to question 31.
Question 32: How should the potential impact of changes in distribution load and embedded generation on the CWO REZ hosting/export capacity be incorporated into the REZ Access Scheme design and implementation?	Marble considers the extent of distribution load and embedded generation as have no to negligible effect to the overall generation capacity of the CWO REZ. There is unlikely to be load along a new transmission line provided the new substations are not distribution substations (i.e. 66kV) and are only intended to connect high-voltage projects into the high voltage network (i.e. 330/500kV).
Question 33: Should non-scheduled generation and exempt generators be required to hold access rights under the CWO REZ Access Scheme, and/or should the total capacity of non-scheduled generation or generation from exempt generators permitted to connect be capped? Is there an alternative approach to the treatment of non-scheduled generation or generation from exempt generators which should be considered?	Yes non-scheduled and exempt generators should be required to hold access rights as they would be benefiting from the establishment of the new network.
Question 34: If 'use it or lose it' provisions were introduced, how should the utilisation requirements be set/measured? What exemptions or concessions should be considered?	A sunset date should be introduced, which could be the date financial close is reached for the project.

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<p>Question 35: If an access right holder was required to return some or all of its access rights under the 'use it or lose it' provisions, how should these provisions be structured?</p>	<p>Click or tap here to enter your answer to question 35.</p>
<p>Question 36: What impact do you consider capping of connection in a REZ, and the proposed access scheme models, will have on reducing the risk of volatile MLFs? Are additional measures warranted? If so, what measures?</p>	<p>Capping the amount of connections in the REZ is not only important to limit combined curtailment, it will also ensure the MLF is somewhat stable. The MLF will still be subject to volatility resulting from generation located just outside of the REZ network.</p> <p>An underwritten guarantee from the State Government of the minimum MLF will be of high value to proponents.</p>
<p>Question 37: What are your views on the appropriateness of the principles for managing the interface between the CWO REZ Access Scheme and common DCAs/DNAs? How could consistency between the CWO REZ Access Scheme and access policies on DCAs and DNAs best be achieved?</p>	<p>Click or tap here to enter your answer to question 37.</p>

4. Other coordination initiatives

<p>Question 38: Would a process to coordinate connection assets for multiple projects be of interest? If so, what coordination initiatives would be of interest?</p>	<p>Yes, coordinating the connection of projects is important. This would prevent extensive reassessment of projects' GPSs. The other benefit is potentially cost sharing of network system strengthening.</p>
<p>Question 39: Given the unique nature of connecting to coordinated REZs, such as the CWO REZ, the barriers to coordination of connection assets may be reduced. What further barriers to coordination will still need to be overcome, and how could this be achieved?</p>	<p>The coordination of workforce employed on different REZ renewable energy developments will be a key challenge. The challenge includes attracting sufficient employees from the local towns and regions, and not 'crowding out' the local towns which may not have the facilities or resources to support a large workforce.</p> <p>To overcome this challenge, Marble suggests the award of access to the REZ network to be staged, which would mean coincident construction will be limited.</p> <p>Engagement with community and a community benefit fund will also require coordination between the different proponents operating in this region.</p>

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Question 40: What opportunities exist for the NSW Government to improve connection processes in the CWO REZ? What improvements would deliver greatest value?	Marble suggests the Government should advocate for all Generator Performance Standards being completed by one elected consultant for all projects with REZ access rights. Typically, in the shared access network if one generator obtains connection before another generator, the second generator would then be asked to remodel and consider the impact of the first generator. This is time consuming, expensive, and unnecessary. If a coordinated approach to grid modelling were adopted, this process would be efficient and yield better outcomes to AEMO, TransGrid, and all proponents.
Question 41: What, if any, additional connection challenges could be created under the CWO REZ Access Scheme? How could these be mitigated?	A connection challenge which has the potential to limit the number of projects able to participate in the REZ scheme relates to how projects can electrically connect into the REZ infrastructure. Marble advocates for private project switching stations to connect into the REZ network. Conversely, if all proponents were expected to connect only at the terminal substations the Government is establishing, this will limit the geographic dispersity and the number of projects able to participate in the CWO REZ.
Question 42: What value could be delivered to generation and storage projects through centralised approaches to connection and system services, and what are the trade-offs? For example, would projects be willing to forego optionality around aspects of their project through requirements like minimum equipment standards, to reduce costs and the risk of potential delays to commissioning?	Click or tap here to enter your answer to question 42.

5. Open comment

Question 43: Are there any other matters you wish to raise relevant to this issues paper?	Click or tap here to enter your answer to question 43.
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