

## Submission form

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](mailto: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

# Central-West Orana Renewable Energy Zone Access Scheme Issues Paper



Planning,  
Industry &  
Environment

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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 <a href="#">Click or tap here to enter text.</a>
Approving author name	Dev Tayal
Organisation	Tesla
Approving author title	Energy Policy
Phone	██████████
Email	██████████
Stakeholder group	<input type="checkbox"/> Energy generation <input checked="" type="checkbox"/> Energy storage <input 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) <a href="#">Click or tap here to enter text.</a>

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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
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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><b>Question 1:</b> 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>As the consultation paper articulates, the proposed benefits must clearly outweigh the costs and risks of locating within the REZ area.</p> <p>Even ahead of modifying the open access regime, there should be a clear value proposition for projects to locate within a REZ relative to the shared network. This could include more efficient connection processes, greater levels of transparency and information sharing in the connection application process, and sharing the benefits of economies of scale and coordinated network planning.</p> <p>For storage, there may need to be additional consideration on their inclusion to access rights schemes – given they are not technically a generator (or a load) – and provide a suite of network support services that unlock REZ capacity.</p>
<p><b>Question 2:</b> What, if any, additional benefits should the CWO REZ Access Scheme deliver to provide value to connecting generation and storage projects?</p>	<p>The CWO REZ should provide an accelerated network investment schedule – so generation projects can be confident of market participation within the REZ as well as to the major load centres and transmission corridors across NSW.</p> <p>As above, benefits should clearly outweigh the costs – with only minor adaptations to the existing open access scheme - including faster, more streamlined connection (with requisite network planning and investment), more transparency in the ability to share in network assets providing shared services (e.g. system strength, inertia and voltage stability), and more clarity and guidance on the probability and impact of future investments in the region.</p> <p>Additional benefits and services from storage should be included in the upfront planning process, including assessment of centralised battery storage assets that can provide system and network services, alongside partitioned energy capacity for REZ projects. This could be led by a combination of the NSW Energy Corp, TransGrid and AEMO.</p>

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	<p>Careful consideration also needs to be given to adding access costs to individual storage projects – as these direct costs or indirect restrictions on the flexibility of operations may deter investment or drive locational preferences to outside of REZs.</p>
<p><b>Question 3:</b> Do you agree with the proposed evaluation criteria? What, if any, additional criteria should be considered?</p>	<p>An overarching climate criteria would be useful to include – e.g. the extent to which the REZ and access model enables NSW to meet its net-zero targets at least cost</p> <p>Specific criteria could also be created to assess the value of services / assets – e.g. impact on total consumer costs from wholesale prices (including firming costs); and specific for storage, the broader value stack of services, and value for money benefits from single assets providing a suite of essential system services beyond simply time-shifting energy (e.g. system strength, voltage support, inertia, virtual capacity, and ability to enable and accelerate additional generators to connect with the REZ).</p> <p>If a project is deemed to provide multiple benefits that may not directly show up in wholesale price reductions – these should still be recognised and captured (e.g. battery storage providing system strength more cost effectively than synchronous condensers)</p>

## 2. Access scheme models

<p><b>Question 4:</b> 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>In attempting to manage forecast congestion in REZs (and more broadly), NSW should consider the simplest option: support accelerated network investment only minimally adapting existing open access (e.g through bid bonds or temporal access rights), alongside with enhanced information sharing, coordination and connection processes.</p> <p>REZs could also streamline the connections process by delivering system strength, inertia, and other services in a coordinated way (e.g. from shared grid-forming battery storage) and by allowing TransGrid to progress necessary grid connection studies in advance of</p>
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	<p>connection – this will further incentivise projects to locate within REZs.</p> <p>We recommend excluding storage from any paid access rights requirements as it does not make sense to treat the temporary storage of energy in the same way as generation. If they are progressed, access rights for storage, in principle, need to incentivise optimal dispatch (and charging) to reduce congestion and increase network efficiency.</p> <p>Both Physical and Financial Access Options have benefits and challenges for all generation types. Specific to storage – some key issues to manage:</p> <p>Option 1 – Physical:</p> <ul style="list-style-type: none"> <li>(a) Setting optimal capacity thresholds will be challenging. If storage capacity is capped too low, it may limit (/increase costs of) provision of essential system services;</li> <li>(b) Co-located storage opportunities could be hampered since individual wind/solar projects will have access rights guaranteed despite being 'non-firm', especially if hybrid system's aggregated capacities are included towards their cap;</li> <li>(c) Hard to introduce additional mechanisms (e.g. charging discounts) to incentivise storage to charge during times of congestion without broader financial regime</li> </ul> <p>Option 2 – Financial:</p> <ul style="list-style-type: none"> <li>(a) Requiring stand-alone storage to purchase access rights can undermine the entire business case for battery storage – will need large benefits to incentivise REZ location;</li> <li>(b) Commercial return for storage at risk if penalised from participating during peak price periods (noting a few intervals drive large proportion of annual revenue);</li> <li>(c) If storage access rights are allocated in defined blocks – this can limit flexibility of storage to optimise and provide most valuable services when required;</li> <li>(d) Enhanced (time-variant) rights may remove impetus to co-locate storage – since solar projects would have midday access rights sized at nameplate capacity</li> </ul> <p>Without additional detail on the application of rights and potential operational consequences, it is hard to assess the specific impacts of the access models being explored.</p>
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<p><b>Question 5:</b> 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?</p>	<p>As above, NSW Government should consider the simplest option: support accelerated network investment whilst introducing only a minor access scheme, alongside with enhanced information sharing, coordination and connection processes.</p> <p>REZs could also streamline the connections process by delivering system strength, inertia, and other services in a coordinated way (e.g. from shared storage) and by allowing TransGrid to progress necessary grid connection studies in advance of connection – this will further incentivise projects to locate within REZs.</p>
<p><b>Question 6:</b> 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?</p>	<p>Our preference is for storage to be exempt from the allocation of access rights. But if progressed, exploring the next level of detail on the operational impacts of generation and storage projects will be critical to informing all stakeholders on the relative effectiveness of each access scheme.</p> <p>For all options, there are still major barriers to address to ensure appropriate locational and operational incentives for storage – for example, as designed for Option 1:</p> <ul style="list-style-type: none"> <li>- Individual wind/solar projects will have less incentive to install co-located storage to firm their generation – as access rights are guaranteed within the REZ there will be no need to time-shift to non-peak periods</li> <li>- Further, if co-located storage is counted as part of the wind/solar cap, it will make it harder or even prevent access for generators seeking to retro-fit storage (which would remove some benefits from the wider grid)</li> </ul> <p>And for Option 2:</p> <ul style="list-style-type: none"> <li>- Requiring stand-alone storage to purchase access rights can significantly undermine the business case for battery storage</li> <li>- Investors will not finance storage if it is at risk of receiving no revenue during high price periods. Note that outcomes are asymmetric – there is low value in providing lower storage charge costs e.g. at \$0/MWh (or less), but preventing access to \$15,000/MWh price spikes can completely destroy a business case</li> </ul>
<p><b>Question 7:</b> 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</p>	<p>Storage is unique as a technology that prefers more granular and dynamic environments even if complex – since the operation of storage is always the opportunity cost of using</p>



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<p>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?</p>	<p>that charge for another service, in that interval or the next.</p> <p>However, for REZ design, introducing additional complexity where developers and investors have to grapple with new requirements and financial constructs, and take on more risk due to the uncertainty of scheme operations and competitor behaviour – can also impact the uptake of storage, as many proponents may perceive a negative cost to benefit ratio of storage projects until further certainty can be gained.</p> <p>As noted above, more granular access rights (e.g. matching the shape of rights to the solar profile) could also remove existing incentives to install co-located storage – further undermining the opportunity for REZs to create clean and firmed power, and reducing the ability for time-shifting of solar and wind to help avoid constraints.</p>
<p><b>Question 8:</b> 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>	<p>Nameplate capacity for stand-alone systems seems sensible and simple. However, a more nuanced approach will be needed for hybrid (co-located storage and renewable) systems</p>
<p><b>Question 9:</b> 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?</p>	<p>For co-located storage (i.e. hybrid solar/wind and storage systems), there is a strong argument for not aggregating the nameplate capacity of both storage and the renewable generation into an access right threshold – as this is a clear disincentive for generators to install storage.</p> <p>In terms of shape, length and proportional allocation, providing flexibility will be key – as no one model fits all, and different technologies and different projects will each have individual drivers for sizing storage relative to generation – suggesting outcomes where some projects have fully firmed profiles, some have minimal firming, and others somewhere in between.</p> <p>Noting storage already faces strong price signals to respond to peak demand or low/negative price events (i.e. to discharge and charge when there is likely to be network availability) the simplest design of the REZ framework would avoid imposing additional constraints on storage, and instead focus on ensuring appropriate incentives exist (both for</p>



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	REZ location, and to strengthen charging during REZ congestion events).
<b>Question 10:</b> Is there a minimum term (in years) for which access rights would need to apply to benefit project finance?	If pursued, initial rights protection could apply in 5 or 10 year tranches to ensure there is adequate balance between providing access certainty and avoiding inefficient utilisation of the network / technology lock-in over the long-term.

## Option 1: Limited physical connection model

<b>Question 11:</b> 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>NSW Government has outlined suitable principles in optimising network utilisation. However it will be incredibly challenging to forecast appropriate levels of generation and storage capacity.</p> <p>If too low – potential investment is locked out and network is wasted, if too high, constraints will bind and frustrate proponents who may have paid for an access right they do not receive in practice.</p> <p>Storage in particular, is an asset that would not introduce risk from overbuild, but there could be major downsides to its underbuild – including additional costs for the network, lack of reliability, increased congestion, increased system security risks, and ongoing stability issues.</p> <p>For these reasons, the first CWO REZ may benefit from accelerating investment in network infrastructure such as a centralised battery storage asset, but without imposing a strictly closed access regime on it (or other storage assets being proposed within the REZ).</p>
<b>Question 12:</b> 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?	If storage is still included in the access regime and required to have rights, network capacity should be allocated on a technology neutral basis. There are two basic approaches to explore – Approach A could set out a pre-defined profile for solar, wind and storage. Approach B could allocate flat blocks of access based on time (e.g. daytime and night-time or both) – where solar could access daytime and co-locate with storage to still access night-time blocks; whilst wind and storage could explore both.

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### Option 2A and 2B: Financial compensation models

<p><b>Question 13:</b> 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>This is a critical element of the scheme and one that highly influences the uptake of storage if it remains to be included in an access scheme. Ultimately it will come down to the price of rights, versus the cost of curtailed energy. Both these variables can be influenced by design choices of the scheme – in allocated rights and incentivising a certain volume of projects to locate within the REZ.</p> <p>There is much greater risk of disincentivising the build of enough storage than there is in any potential impacts of having ‘too much’.</p> <p>Further information and modelling detail would be helpful to explore potential outcomes with industry ahead of final scheme selection.</p>
<p><b>Question 14:</b> 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>n/a</p>
<p><b>Question 15:</b> With reference to Appendix B, to what extent should curtailment (and therefore the compensation mechanism) take bid price or 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?</p>	<p>The limitation seems sensible to ensure Tier 1 holders do not artificially bid up the price and receive more than fair levels of compensation.</p>
<p><b>Question 16:</b> 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>	<p>If storage is a Tier 2 access right holder only, and assesses the risk of having to pay compensation to Tier 1 holders, the additional outcomes will be included in the optimisation and could lead to an outcome where storage charges during forecast congestion intervals. It is hard to assess the flow-on impact of this on the energy market – if it unlocks additional generation from the REZ through the shared network to the major demand centres – it would have a dampening effect on prices. If it removes essential storage services from the REZ / wider market – it may remove competition from ancillary or system services and lead to higher prices in the market.</p> <p>Additional detail and modelling would be valuable to help stakeholders assess all the different outcomes.</p>

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	<p>This is another example of how the complexity of access rights applied to storage may actually have distortionary effects on the optimisation of storage dispatch – but it is hard to assess this ex-ante.</p>
<p><b>Question 17:</b> 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?</p>	<p>If storage is a Tier 1 access right holder, and participates in multiple markets and services in parallel, there could also be lost revenue opportunities from ancillary and system services – both market based and contracted (e.g. FCAS, FFR, SIPS, inertia, voltage support etc) – that are no longer provided due to the constraints imposed by Tier 2 generators.</p> <p>As this risk is incredibly difficult to model and forecast accurately, it remains a higher risk in the access right regime than the current open access regime where generator profiles and bidding behaviour can be forecast with some level of accuracy – as there is the additional cost of holding the Tier 1 rights, even when full benefits can not be realised. This reinforces our position to exempt storage from having to pay for access rights entirely.</p>
<p><b>Question 18:</b> 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?</p>	n/a
<p><b>Question 19:</b> 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?</p>	n/a

## Other models considered but not progressed

<p><b>Question 20:</b> 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 for integration into the models that have been shortlisted?</p>	n/a
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### 3. Access scheme design issues

<p><b>Question 21:</b> How valuable is the ability to trade access rights, and in what circumstances would this be useful?</p>	<p>Storage projects may have shorter project lifetimes than other asset types (generators, network infrastructure) and also could involve multiple parties procuring different services from the same storage asset. This will inevitably lead to situations where access rights may need to be cancelled, updated, or traded between parties.</p>
<p><b>Question 22:</b> 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?</p>	<p>Fungibility and transparency of access rights and their characteristics (length, shape, price history) would all be beneficial components of an effective access regime, and allow some of the additional complexity to be managed.</p>
<p><b>Question 23:</b> 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?</p>	<p>Ideally the access regime will maintain consistency across different REZs and between jurisdictions. If this is the desired outcome, then a central platform would help streamline and provide visibility of the access rights, and a central, trusted NEM-wide authority would be best placed to act as the responsible entity to oversee the platform (e.g. AEMO or CER equivalent) and ensure the market understands the rules and requirements.</p>
<p><b>Question 24:</b> 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?</p>	<p>The focus should be in incentivising storage to locate within or serve the REZs – given the benefits that would be provided (essential system services including system strength to enable more generation connection, anti-correlated dispatch, and freeing up congestion). In this context, there is little downside to excess storage capacity, and more risk from insufficient storage reaching financial close. As such, care must be taken to overcome the investment barriers outlined above, and consideration given to how the benefits of connecting within the REZ outweigh any potential costs (from access rights or operating restrictions) – otherwise storage projects will simply locate elsewhere in the shared network (with much greater deployment flexibility).</p> <p>There is limited risk of storage competing with generation dispatch during normal operations – as renewables would have effectively zero marginal cost of generation. However, during contingency events or other services requiring fast-response discharge from storage, this may limit the ability for other generation to dispatch</p>

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	<p>for short intervals. The important thing to note under these circumstances, is the priority order of dispatch – if storage is providing essential system services, or maintaining frequency, then that is in the wider benefit of all generators in the REZ and NEM (for some services) and should therefore not be prevented or discouraged from providing these services.</p>
<p><b>Question 25:</b> 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?</p>	<p>To accurately answer – proponents need to estimate the cost/price of access rights, and the value of benefits provided by being located in the REZ and providing services (relative to the counterfactual of locating in the shared network without firm access).</p> <p>In principle, firm access would protect storage from missing out on the super peak intervals where a large proportion of energy arbitrage revenue is made. However, the likelihood of these intervals occurring during a congestion event needs to be calculated to assess the true value that firm access provides. (many peak price events are caused by unexpected contingency or extreme weather events – which have no direct correlation with midday solar or times of maximum wind generation). In addition, the storage value stack is comprised not just of energy revenues, but FCAS, and soon to be FFR and other essential services (pending markets/contracting options to be recommended as part of the ESB 2025 work program).</p> <p>We welcome further detail from NSW Government on these aspects and are open to workshoping potential outcomes and scenarios specific to storage.</p>
<p><b>Question 26:</b> 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 storage to consume electricity when the REZ Shared Network is congested?</p>	<p>Yes – we believe the optimisation of storage is aligned with providing the most valued service when it is most needed. Unless there are contingency or extreme weather events, storage will always be incentivised to charge when electricity price is low, and discharge when it is high.</p> <p>However, the REZ may need to provide additional incentive to ensure individual storage projects have a reason to locate within the REZ (noting its deployment flexibility and relatively smooth connection process compared to wind and solar in low system strength areas). For example, to really send a signal to charge during</p>

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	<p>congestion events, storage could be provided the market price floor (-\$1,000) – i.e. paid to charge – with the cost allocated evenly MW-proportional amongst REZ generators and consumers who would have the benefit of additional discharge.</p> <p>Alternatively/in addition, a centralised big REZ battery could be coordinated by NSW Energy Corp / TransGrid to serve most of the REZ storage services (e.g. network and ancillary service), as well as provide a virtual storage contract with interested wind/solar projects.</p>
<p><b>Question 27:</b> If an incentive mechanism for storage is implemented how should the costs of this arrangement be recovered?</p>	<p>Cost recovery for any additional incentives for charging storage (or load) during congestion can be based on the beneficiary pays principle – which suggests it is worth exploring fair allocation across both generators (increased export) and consumers (lower prices). However, we note this would add costs to REZ generators – and would see less economies of scale than a centralised big REZ battery.</p>
<p><b>Question 28:</b> How should the treatment of storage under the CWO REZ Access Scheme account for differences between long-duration storage and fast-firming technologies?</p>	<p>Storage consideration should be undertaken on a technology neutral basis – seeking required services rather than specific technology types or conservative assumptions on duration requirements. As is currently the case for participating in energy and ancillary services – there should be no difference in treatment between long and short duration assets – owners and operators themselves will simply need to manage bids and charge levels accordingly.</p>
<p><b>Question 29:</b> 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?</p>	<p>As above – the charging of load (e.g. demand response) could be incentivised to act when congestion occurs – given the benefits it would provide to REZ generators and the wider NSW electricity market.</p>
<p><b>Question 30:</b> 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?</p>	<p>As above, additional incentives may not be needed to dictate existing commercial drivers, however incentives may be needed to drive location preferences towards REZ sitings.</p>
<p><b>Question 31:</b> If an incentive mechanism for load is implemented how should the costs of this arrangement be recovered?</p>	<p>As above – beneficiary pays principle could be explored.</p>



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<p><b>Question 32:</b> 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?</p>	<p>We recognise the additional complexity this may entail. However, if there are large forecast levels of distribution level load and generation that may have an influence at a REZ wide level – these should be taken into account to inform REZ hosting capacities to ensure efficient use of the network infrastructure.</p> <p>We are increasingly seeing distribution level battery storage play an important role in addressing system service issues or unlocking additional thermal capacity across the network – it would make sense to layer on the transmission level assets to complement this underlying dynamic.</p>
<p><b>Question 33:</b> 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?</p>	<p>n/a</p>
<p><b>Question 34:</b> If 'use it or lose it' provisions were introduced, how should the utilisation requirements be set/measured? What exemptions or concessions should be considered?</p>	<p>n/a</p>
<p><b>Question 35:</b> 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>n/a</p>
<p><b>Question 36:</b> 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>MLFs may provide a mechanism to provide additional incentive to locate within the REZ – e.g. an underlying contract could guarantee entry MLF values for 'x' years to provide proponents with additional reason to locate inside the REZ boundary.</p>
<p><b>Question 37:</b> 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>n/a</p>



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### 4. Other coordination initiatives

<b>Question 38:</b> Would a process to coordinate connection assets for multiple projects be of interest? If so, what coordination initiatives would be of interest?	Yes – coordinated connection could have significant value. For example exploring the benefits of a centrally located shared storage asset – that provides multiple parties storage allocations, alongside system services to benefit all – would de-risk the entire REZ scheme, ensure essential system services are provided in sufficient quantity, and act as a network efficiency complement ahead of the longer term network infrastructure upgrades.
<b>Question 39:</b> 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?	See answers above. Transparency, visibility, and opportunities to purchase shared system/network services at lower cost that individual co-located storage could be one approach.
<b>Question 40:</b> What opportunities exist for the NSW Government to improve connection processes in the CWO REZ? What improvements would deliver greatest value?	See above.
<b>Question 41:</b> What, if any, additional connection challenges could be created under the CWO REZ Access Scheme? How could these be mitigated?	n/a
<b>Question 42:</b> 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?	n/a

### 5. Open comment

<b>Question 43:</b> Are there any other matters you wish to raise relevant to this issues paper?	n/a
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# Central-West Orana Renewable Energy Zone Access Scheme Issues Paper

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