Clean Energy Investor Group

50 Camberwell Road Hawthorn East VIC 3123

20 December 2021

Ms Leanne Caelers
Director REZs
Queensland Department of Energy and Public Works
Lodged on QLD Government website

Dear Ms Caelers,

Response to *Consultation on the model for QREZ design and access*

The Clean Energy Investor Group (CEIG) welcomes the opportunity to provide feedback on the Queensland (QLD) Government's *Consultation paper on the model for QREZ design and access* (the QREZ paper) published on 16 November 2021.

CEIG represents domestic and global renewable energy developers and investors, with more than 11GW of installed renewable energy capacity across more than 70 power stations and a combined portfolio value of around $24 billion. CEIG members' project pipeline is estimated to be more than 18GW. CEIG strongly advocates for an efficient transition to a clean energy system from the perspective of the stakeholders who will provide the low-cost capital needed to achieve it.

KEY POINTS

- CEIG welcomes the release of guidance from the QLD Government on the model for Queensland Renewable Energy Zones (QREZ) design and access.
- CEIG encourages the QLD Government to outline a long-term schedule of QREZ development, beyond the proposed first stage (3.3GW):
  - This will give industry the necessary visibility to progress a strong pipeline of projects in QLD;
  - It can help to ensure the QLD program remains competitive (particularly against its NSW neighbour) by demonstrating QLD's ambition for the development of clean energy assets in the State.
- CEIG supports the proposal to coordinate project connection applications and system strength requirements in each REZ.
  - The QLD Government could also streamline processes by coordinating planning and environmental approvals processes for REZ participants.
- CEIG supports the appointment of a new independent entity as REZ coordinator/ designated planning body (rather than appointing Powerlink).

- While CEIG values design simplicity, the QLD Government should provide more details and further consult on its QREZ design to maximise the attractiveness of the QREZ program.

- CEIG does not support the proposal to allocate REZ access rights based on an EOI process, and to then determine connection and access fees based on a negotiation with the designated planning body.
  - The proposed process is not transparent. Instead, CEIG supports the use of competitive auctions to select REZ participants, with clear eligibility and evaluation criteria.
  - The QLD Government should clarify how it expects the publicly owned generators to participate in the process to ensure it is fair and transparent, including by virtue of their ability to draw from the $2 billion *Renewable Energy and Hydrogen Jobs Fund*.

- CEIG does not support the proposed timing for setting the REZ access fee (i.e. after being successful at EOI); it is not competitive and the uncertainty around pricing could severely affect projects' ability to complete Financial Investment Decision.

- Setting maximum hosting capacity limits within REZs, particularly as loads are encouraged to locate within REZs, will help to improve revenue certainty for investors.
  - However, this will have limited benefits in the absence of a firm REZ access regime and while the open access regime continues to apply outside REZs.

- CEIG supports the proposal for physical access rights but suggests providing firm and more granular access rights.
  - This would improve revenue certainty and help to maximise transmission network utilisation respectively.
  - These granular access rights should aim to achieve an appropriate balance of wind and solar generation capacity.

- CEIG seeks further clarification on whether shared REZ assets would be funded by customers and/ or a combination of Government and generators (and the rationale for each proportion).
  - Transparency will be particularly important if the QLD government's decisions differ for each QREZ stage and/ or each QREZ transmission project.
  - Overall, CEIG supports in-principle the costs of investments in the transmission network being shared between generators, consumers and other REZ proponents (e.g. governments or commercial REZ proponents), with each party only paying for the costs that are demonstrated to deliver net market benefits to them.
  - Investors are unlikely to place much value on an access regime that does not provide firm access.

SUPPORT FOR DEVELOPMENT OF QREZ MODEL

Support for the development of QREZs

CEIG welcomes the release of guidance from the Queensland (QLD) Government on the model for Queensland Renewable Energy Zones (QREZ) design and access.

By providing a recommendation for how to develop the system at least cost to consumers, the Australian Energy Market Operator (AEMO)'s Integrated System Plans (ISPs) and the associated REZs effectively provide generators and investors with underlying economic information that will drive siting choices for new generation capacity. By leveraging the findings of the ISPs, the development of a QREZ model will provide an effective long-term locational signal for clean energy investors in QLD.

The QREZ model will also provide an effective way to prioritise and coordinate where generation investment should occur and will allow to focus on the build out of all required infrastructure in a planned and considered manner. As the sizing of transmission network investment will consider both potential generation and industrial demand in an area at once, this should enable the delivery of associated economies of scale.

The success of the QREZ model will however depend on the careful design of regulatory processes (e.g. improved connections process) and market incentives (e.g. allocation of access rights; design of the REZ access regime). CEIG makes suggestions in the remainder of this submission for ways to maximise the attractiveness of the QREZ program.

Support for the REZ model attributes outlined in the QREZ paper

CEIG supports the REZ model attributes outlined in the QREZ paper. CEIG finds that the following three attributes will be particularly useful to support a REZ model that delivers greater revenue certainty for investors (which in turn will reduce the cost of capital for REZ projects for the ultimate benefit of consumers):

- *Scale efficient and highly utilised investment;*
- *Adaptable and complementary; and*
- *Improves investment certainty.*

The QLD Government could also consider an additional attribute to recognise the role of the QREZ model in supporting the necessary decarbonisation of the electricity grid to meet Australia's commitments under the Paris Agreement.

Need for a long-term view of QREZ development - capacity

CEIG supports the Government's intent to

> *support the growing demand for renewable energy from emerging sectors like hydrogen, as well as support the decarbonisation and electrification of job-creating heavy industry in Queensland*

and understands that the QREZ paper only outlines opportunities for the first stage of QREZ (3.3GW).

Nevertheless, considering the strong response (60GW) received in the 2020 Registration Of Interest (ROI) process, allocating only 3.3GW of capacity spread across 3 regions for the first QREZ stage appears low.

CEIG encourages the QLD Government to consider whether 3.3GW will deliver sufficient grid decarbonisation by 2030 to be consistent with the Paris climate Agreement's target of maintaining warming under 2 degrees and to meet QLD's 2030 renewable energy target.

CEIG notes that 3.3GW is less than some individual renewable developers' current QLD generation pipeline alone. It is important that the QREZ, including in the first stage, aims for more ambitious stretch targets to avoid the need to consistently upgrade the REZ infrastructure in the near-term future.

Need for a long-term view of QREZ development - timing

CEIG encourages the QLD Government to provide a longer-term schedule of QREZ development, beyond the first stage (3.3GW).

This will provide industry with greater visibility to plan for the material investments to be undertaken as the State's thermal capacity retires and is replaced by clean energy. For example, the NSW Roadmap provides an overview of REZ developments and auction schedules over the next 10-20 years in NSW.

Based on the 2020 ROI, QLD has the potential for a strong pipeline of projects. To realise that potential (and avoid most of the investments focusing on the NSW or VIC programs), the QLD Government should aim to match the ambition of its neighbouring States and give industry greater certainty over the future pipeline.

As most QLD thermal assets are publicly owned, the QLD Government should also consider how their retirement schedule will interact with the attractiveness of the QREZ program and how they impact on the competitiveness of the QREZ program (particularly as the NSW Government concurrently and pro-actively drives a large clean energy investment program in a neighbouring State).

QREZ design: simplicity versus complexity

Investors with global pools of capital are considering investments across several booming clean energy markets worldwide. Australia is generally considered a more risky and more expensive market, which makes investing in Australia a more difficult proposition. CEIG agrees that it is therefore useful for the QLD Government to propose a QREZ model that is not overly complicated and is easy to implement.

However, to ensure that QREZs are sufficiently attractive to industry, in the remainder of its response, CEIG makes suggestions for information that the QLD Government should consider including in future iterations of QREZ design and should seek feedback on via formal consultation processes.

DETAILED FEEDBACK ON PROPOSED QREZ MODEL

Appointment of a REZ coordinator/ designated planning body

CEIG supports the appointment of an independent REZ coordinator/ designated planning body to undertake network assessments to identify REZ opportunities and provide recommendations to Government. However, CEIG believes that these functions should be delivered by a new independent entity (rather than appointing Powerlink).

The creation of a new entity would provide significant benefits in terms of the independence of its advice to the QLD Government and the lack of conflicts of interest (perceived or real).

The task of determining or evaluating proponents' REZ access fees should also rest with an independent entity rather than a regulated Transmission Network Service Provider whose interests align with maximising those access fees and its own revenue.

Support for sizing QREZs using industry demand

CEIG supports the QLD Government's approach of integrating the size of industry demand as part of its consideration of REZ sizing. This should help to:

- more accurately define the transmission infrastructure requirements;
- provide incentives for loads to participate in the REZ; and
- maximise opportunities for economic development.

The QLD Government should however clarify the relative importance of the QREZ objectives, particularly between objectives to support industrial growth (objectives 1 and 2, p. 3) and the objective to ensure a secure and reliable energy system (objective 3).

Where there is the potential for conflicting recommendations, it would be useful to understand what objectives the QLD Government will prioritise and therefore how future QREZs are likely to be developed. For example, to satisfy industry growth objectives, developing "xGW" of capacity may be sufficient whereas the least-cost QREZ development outlined in the ISP might recommend the development of a greater amount of capacity.

Support for a coordinated connection process for each declared REZ

CEIG supports the proposal to coordinate project connection applications wherever possible to expedite progression through the application process.

Considering the scale of connection and commissioning (C&C) activity that will occur in REZs, CEIG supports the introduction of a REZ connection coordinator role (preferably the newly created independent entity discussed above) to facilitate the coordination of the C&C process.

This has the potential to unlock significant benefits around the timing of connections and economies of scale around the sizing of required connection assets. Since a lot of

generators would likely seek to connect within a short amount of time, appropriate coordination of the C&C process and sufficient resourcing will be required.

CEIG however notes that achieving benefits from a coordinated C&C process is contingent on that process being appropriately designed and implemented by the responsible entity, including giving due consideration to lessons learnt in recent years.

Ideally, a coordinated C&C process should be also supported by an improved modelling capability. This will require investments in improved internal capabilities to better deal with the increased complexities of a power system dominated by inverter-based technologies (e.g. capacity to conduct wide area PSCAD studies to better identify interactions across assets; ensuring Powerlink's internal processes allow the simultaneous processing of multiple connection requests).

Support for coordination of other processes

The QLD Government could streamline processes by coordinating planning and environmental approvals processes for REZ participants.

CEIG also supports in-principle the central coordination of system strength to minimise costs and ensure sufficient investment in system strength before projects connect into REZs.

The AEMC's recent *Investigation into the System Strength Frameworks in the NEM* and subsequent rule change identified the need for a coordinated and centrally planned approach to system strength and this would need to be a key component of REZ infrastructure.

With that in mind, there are several items that need to be considered when developing the QREZ's approach to system strength. Grid forming batteries can provide system strength services and may be a lower cost and more effective alternative to the installation of synchronous condensers as REZ system strength infrastructure. Due to the complexities in assessing the battery value-stack, there needs to be clarity on whether there are financial incentives for batteries providing system strength services to the REZ to allow investors to determine whether to progress with battery projects (which may be independent systems or co-located with wind/solar farms behind their connection point).

If a more onerous generator performance standard is set than what is proposed by the AEMC on generators regarding the lowest short circuit ratio (SCR) at the point of connection, then it is important to recognise that wind farms will naturally have a harder time operating at lower SCRs than solar farms and battery systems due to larger reticulation networks (effectively, the performance standard defined at the POC naturally becomes more onerous for wind farm converters at their terminals). If this is an approach currently considered for QREZs, then the QLD Government should explore technology specific requirements (wind, solar and batteries) to avoid the scenario where wind farms are either excluded from the REZ, are forced to become smaller in size or need to install

unnecessary synchronous condensers to achieve this performance standard. CEIG understands that Energy Corporation of NSW are exploring this route for the NSW REZs.

Synchronous condensers (and other auxiliary plant) are often also installed to meet the performance standard requirements for reactive power capability and reactive current injection into a fault. System strength infrastructure will typically also provide these services, so any REZ-specific access standards for these clauses should be set to avoid larger generators being forced to install redundant plant.

Support for limiting a QREZ's hosting capacity but preference for a firm access regime

Absence of firm access regime and shared network degradation risk

Setting maximum hosting capacity limits within REZs, particularly as loads are encouraged to locate within REZs, will help to improve revenue certainty for investors which is critical for investors to secure the lowest cost of capital that consumers will most benefit from.

However, in the absence of a firm REZ access regime, capping the REZ's capacity will have limited benefits for REZ generators while the open access regime continues to apply outside the REZs as it will not provide sufficient certainty that a REZ output will not be unreasonably congested due to other generators establishing their plants between a REZ and a load outside that REZ. Fully unlocking REZ benefits will therefore be dependent on the level of available transmission network capacity between REZs and loads outside REZs, which may require commensurate investment in transmission infrastructure.

Shared network degradation risk could materialise:

- If a large proportion of new generation locates outside REZs over the next decade, undermining REZ investments; or
- If the open access regime continues once QLD Government's targets are met (foundational REZ projects will still have more than 20 years of operation remaining, leaving those projects subject to the changing open access shared network for most of their life).

If left unaddressed, the uncertainty of the shared network's degradation over time could reduce what generators are prepared to pay for REZ access rights and could affect the projects' ability to complete Financial Investment Decision, in turn delaying REZ capacity allocations.

CEIG notes that a broad review of the existing open access regime is required to protect the expected benefits of REZ policies and to preserve the technical integrity of the network. A modified open access regime outside of REZs should be considered to ensure that the benefits of REZ policy development are not eroded away. This would support the integrity of REZ investments that are about to be undertaken for the ultimate benefit of consumers.

Impacts on marginal loss factors (MLFs)

Limiting the level of connections in a REZ and the upgrades to the transmission network that will accompany the REZ build out will be useful in reducing the risk of volatile MLFs for generators within the REZ (compared to business-as-usual), which should in turn help to improve revenue certainty for investors.

However, because of the MLF methodology currently in place, many generators will continue to suffer from volatile revenue streams due to volatile and uncertain MLFs, particularly in regional areas that are further from regional reference nodes.

The proposed QREZ model and its accompanying upgraded transmission network will not guarantee that MLFs will not be volatile and/or that they will be closer to 1 as MLFs are constantly impacted by:

- the level of generation from neighbouring generators; and
- the flows towards or away from the regional reference node. Those flows can be impacted by elements outside of the generators' control such as changes in the quantum and direction of imports/ exports from a region and the location and quantum of neighbouring generation as new entrants are encouraged by State governments' policies and programs.

Although it is beyond the scope of the QREZ paper, fundamental concerns remain around the risks to investment in clean energy brought on by the current MLF methodology, the volatility of MLFs and the increasing difficulty of forecasting revenue for generators. CEIG believes that MLF reform remains a key issue to enable an efficient energy transition.

Clarifications on limiting a REZ's hosting capacity

CEIG would like to clarify:

- how long the limit on a REZ's hosting capacity would be in place for:
  - CEIG's preference is for long-term REZ access rights (15 years or more) to deliver revenue certainty in the context of the capital-intensive nature of the market transition;
  - The REZ access rights need to be designed in a way that deters short-term opportunistic bidding whereby a proponent who does not intend to operate an asset may offer a low price for short-term access rights and not consider the longer-term access issues that may arise. There is a risk that such projects might struggle to find debt and equity investors, with their access rights having to be reallocated if the project fails.

- what obligations will be placed on Powerlink to maintain the upgraded 'foundation' transmission capacity throughout the life of a REZ:
  - CEIG's preference is for Powerlink to be obliged to maintain the 'foundation' transmission capacity for at least the length of the REZ access rights to maximise revenue certainty for investors.

Support for physical access rights but preference for firm and more granular access rights

CEIG supports the proposal to create physical access rights as the limit on hosting capacity will provide greater certainty around constraint risk (compared to business-as-usual) and they would be simplest to implement.

However, as outlined above, the lack of firm access (whether provided through physical or financial access rights) limits the benefits to revenue certainty and CEIG's preference is for a regime that provides firm access to a REZ.

The design of the access rights will also be important, and the QLD Government should consider creating more granular access rights to avoid the risk of leaving the REZ severely underutilised.

More specifically, regard must be had to the generation profile makeup of the participants in a REZ. A REZ that is disproportionately subscribed by solar generators will be underutilised during the night. To avoid an underutilised REZ the appropriate variable generator balance between wind and solar generators must be established. The REZ capacity additions from the draft 2022 ISP should be used to guide the optimal balance between wind and solar generation capacity.

24-hour flat access rights may suffer from a lesser ability to maximise network utilisation whereas more granular access rights - where generators can access the REZ over shorter intervals within a 24-hour period – could be better aligned to forecast generation or dispatch schedules. An example of granular access rights is provided by Option 2B of the NSW Government in the *Central-West Orana (CWO) Renewable Energy Zone (REZ) Access Scheme* paper (published in March 2021).

Support for maximising the use of the REZ network

CEIG supports the use of nameplate capacity as a consistent way to measure the potential generation of each plant across various technologies.

CEIG agrees with the proposal to have

> *some level of flexibility to fully utilise the "operational" hosting capacity of the REZ*

and that

> *the RMP may consider the need for reserving certain amounts of the total declared REZ hosting capacity for certain generation profiles.*

To maximise the use of the REZ transmission network, the QLD Government should also consider oversubscribing the access rights in the REZ, provided that the level of oversubscription:

- is set at a reasonable level that seeks to maximise utilisation of network infrastructure and based on independent scientific assessments;
- is known upfront; and

- is designed to remain constant over time (with any new REZ entrants having to ensure they do not erode the value of existing access rights).

Support for the competitive allocation of access rights

CEIG does not support the QLD Government's proposal to allocate REZ access rights based on an EOI process and to then determine connection and access fees based on a negotiation with the planning body.

The proposed process is not transparent and CEIG believes that it is unlikely to deliver value-for-money for the QLD Government and for consumers.

Instead, CEIG supports the use of competitive auctions to select REZ participants. When well-designed and communicated effectively (preferably by outlining consistent rules, being based on regular schedules and being transparent about assessment criteria), auctions help to maximise competitive tension and lower costs.

An auction – by seeking bids from participants for the REZ access fee they are willing to pay to participate in the REZ - would also enable an efficient price discovery process for REZ access rights.

In its REZ access allocation process, the QLD Government should be clear around its eligibility and evaluation criteria, and how it expects that QLD's publicly owned generators would participate in the process. These elements are critical for industry to be confident that the REZ allocation process will be fair and transparent.

Eligibility criteria

CEIG supports the introduction of eligibility criteria for the allocation of REZ access rights.

The eligibility criteria should ensure participation from projects that can demonstrate that they are sufficiently advanced, and the allocation process should be designed to avoid speculative hoarding practices.

For example, the QLD Government could consider applying eligibility criteria that demonstrate that:

- sufficient levels of financing pre-commitments are prepared to be made available to the project (such as the provision of letters of intent for debt or equity finance);
- the project is sufficiently advanced along the development approval pathway; and
- the project is sufficiently advanced in securing access to land.

Evaluation criteria

CEIG supports a broad range of evaluation criteria being in place, beyond value-for-money, in recognition that the transformation of the energy system needs to achieve several broad economic, social and environmental objectives such as:

- promotion of social licence and effective engagement with local communities and Traditional Owners;
- promotion of benefit sharing programs with relevant local communities; and
- promotion of projects with strong technical and financial capabilities.

Participation from QLD's publicly owned generators

Finally, the QLD Government should clarify:

- in what capacity QLD's publicly owned generators would participate in the process to allocate REZ access rights (e.g. as equity partners, as project proponents and/or as offtakers); and
- how it would ensure that they are treated at arms-length and do not receive preferential treatment during the allocation process, or by virtue of their ability to draw from the $2 billion *Renewable Energy and Hydrogen Jobs Fund*.

Need for clarification on the framework to recover the costs of shared REZ assets

Timing and process for setting access fees

The QREZ model proposes that

> *The connection and access fees charged to participating generators to connect to a declared REZ asset will be determined in negotiation with the designated planning body (...)*

In addition to the concerns expressed by CEIG around the lack of transparency from an EOI process (rather than a competitive auction), CEIG does not support the proposed process for setting REZ access fees:

- the process is not competitive.
  - If Powerlink was the designated planning body, this could create a conflict of interest whereby Powerlink would be incentivised to maximise the value of its regulatory asset base.
- the timing for setting the access fee (i.e. after being successful at EOI) could create uncertainty for investors and severely affect projects' ability to complete Financial Investment Decision (e.g. if a proponent was offered a REZ connection through the EOI, but at an unknown access cost).

Cost recovery framework for shared REZ assets

The QREZ model proposes that

> *In cases where assets would pass the Regulatory Investment Test for Transmission (RIT-T) these* [shared REZ assets] *would be funded by customers under the actionable ISP framework.*

but also that

> *The first stages of QREZ development are focused on strategic network investments by Government and commercial solutions with generator contributions, however longer-term development of REZ might consider whether the current test for investment is sufficient.*

CEIG seeks further clarification from the QLD Government on whether shared REZ assets in the first QREZ stage would be funded by customers and/ or a combination of Government and generators (and the rationale for each proportion).

It would be useful for the Government to clearly outline its framework for making decisions around funding and cost recovery pathways and to make those decisions public as soon as possible to enable a more fulsome discussion of the proposed QREZ model. This is particularly important as the QLD government's decisions may differ for each QREZ stage and/ or each QREZ transmission project.

Overall, CEIG supports in principle the costs of investments in the transmission network being shared between generators, consumers and other REZ proponents (e.g. governments or commercial REZ proponents, as required), with each party only paying for the costs that are demonstrated to deliver net market benefits to them.

In particular, CEIG supports generators paying for part of the cost of network investments when this can provide special access rights to that network since in this case, generators benefit from an improved ability to send out their plants' generation in the grid.

Suggestions for additional information to be provided

CEIG makes some final suggestions for additional information that could be provided in future iterations of the QREZ model to maximise the attractiveness of the program.

The QLD Government should consider:

- whether the QREZ model outlined in this paper will also apply to future REZ developments or whether each REZ access regime will be bespoke to account for REZ-specific factors;
- whether the QREZ model will incorporate any requirement or incentive for QREZ generators to secure an offtake for their output (both electricity and LGCs);
- whether the QREZ model will provide an offtake for the output of QREZ generators (both electricity and LGCs);
    - if yes, which entities may become eligible offtakers (including clarifying whether publicly owned QLD generators may become offtakers);
- clarifying which entity will be the counterparty to the contract for QREZ access rights;
- consulting with industry on key contractual clauses that can significantly impact the bankability of a contract (e.g. bonding requirements; change of law; termination clauses; conditions precedent etc.);
- whether the REZ access rights would be able to be traded and if yes, under what circumstances; and
- clarifying the treatment of storage assets (both long-term duration assets such as pumped hydro and fast charging assets such as battery storage) with regards to REZ access rights (e.g. any different rights, access conditions or obligations?).

QREZ model and related market reform

The QREZ paper notes the work underway through the *Post-2025 Market Design* project and the Energy Ministers' recent endorsement for further design work to develop a congestion management model (CMM) to complement REZs.

Since the current CMM design proposes to introduce Locational Marginal Prices (LMPs), CEIG wishes to reiterate that LMPs do not provide an appropriate locational signal and provide too much uncertainty for future investment.

An LMP provides a signal for where to locate in that specific five-minute interval. The pattern of historical LMPs is not sufficient to provide a robust long term locational signal as it does not incorporate sufficient high quality long-term information and does not allow for effective predictions of future LMPs.

CEIG's preference is that options for long-term access reform remain broad. Since LMPs were first discussed as part of the COGATI Proposal, the National Electricity Market has changed considerably, and it is not clear that market designs based on LMPs are the optimal solution.

CEIG thanks the Queensland Government for the opportunity to provide feedback on its consultation paper and looks forward to continued engagement on those issues. Our Policy Director Ms. Marilyne Crestias can be contacted at marilyne.crestias@ceig.org.au if you would like to further discuss any elements of this submission.

Yours sincerely,

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