

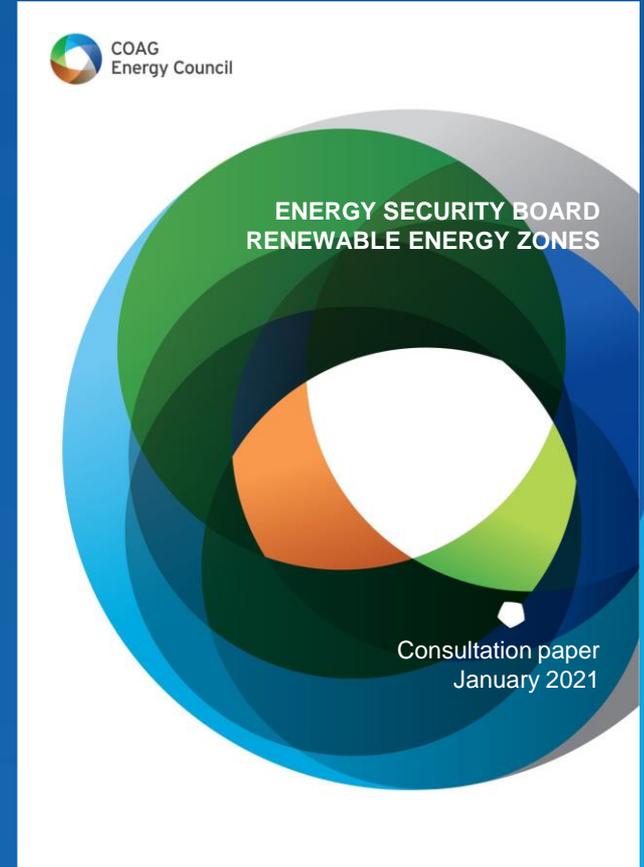
RENEWABLE ENERGY ZONES
CONSULTATION PAPER

FEBRUARY 2021



PURPOSE OF SESSION

- To inform stakeholders about ESB's consultation on Renewable Energy Zones
- Understand key areas of stakeholder interest and initial views
- Identify related matters that may need to be addressed.



WEBINAR LOGISTICS

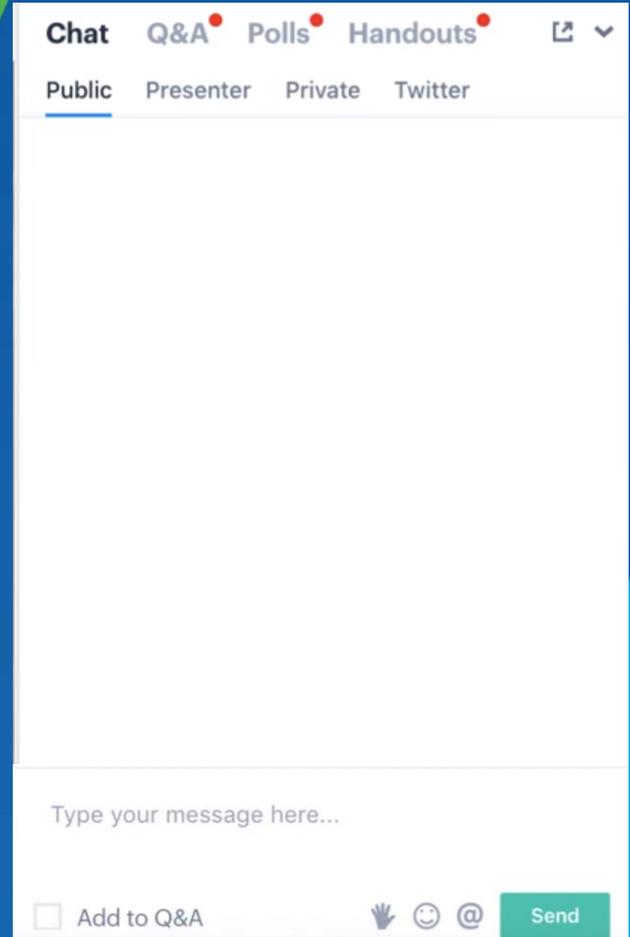
All participants are currently in listen-only mode

We will pause at the end of each page where you see this symbol to answer questions.



Please:

- Type your questions under the Q&A tab as we proceed through the content.
- Use the “upvote” button if you would like us to answer a question submitted by someone else.
- Please use the “raise hand” button to signal that you would like to speak to your issue.



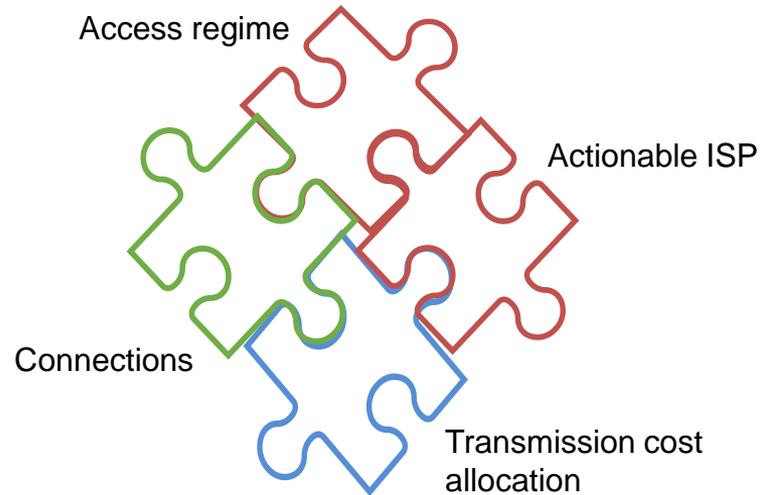


CONTEXT

- Energy Ministers have asked the ESB to prepare recommendations to support the development of REZs.
- The ESB has followed a two-step process:
 - Stage 1 Planning - Rules to enable a detailed and staged development plan for each priority REZ identified in the ISP.

- **Stage 2 Implementation – Policy framework for development of REZs consistent with the plan.**

- REZs are part of broader transmission framework





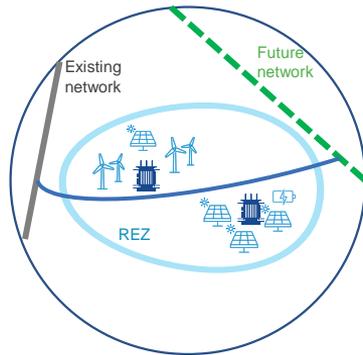
ACTIONABLE ISP AND THE REDEVELOPMENT OF THE NATIONAL GRID

- The ISP outlines the development of the power system to 2040 and is driven by the need:
 - to replace much of the coal generators between now and 2040
 - to support state based policies to deliver given percentages of supply by renewables
- Current transmission network does not have the capacity in the right places to support all new generation and storage required
- The ISP identifies a number of renewable energy zones in the optimal development path to provide for the efficient connection of much of this new generation
 - Number of GW scale REZs now under consideration
- ISP defines major transmission backbone, but a lot of detailed work is required to deliver REZs on the ground
 - At margins, transmission solution should be co-designed with generation to find optimal overall solution

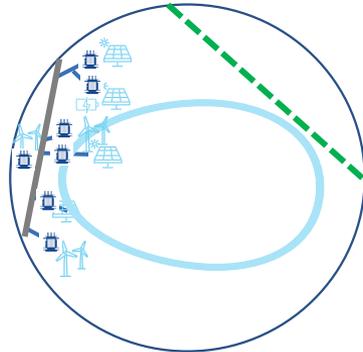


WHAT WOULD HAPPEN IF WE DID NOTHING?

Co-ordinated REZ development



Unfettered REZ development

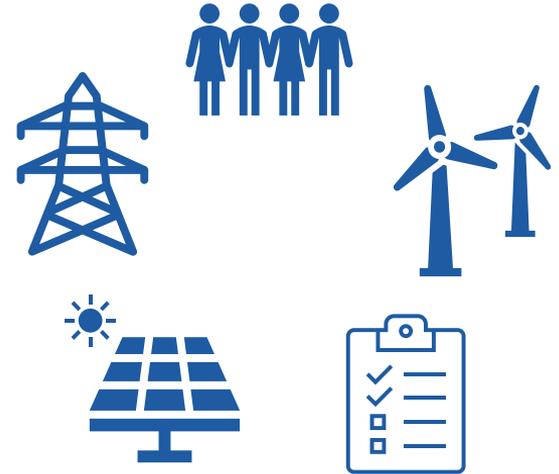


- Actionable ISP framework enables transmission to be built to meet forecast need before the projects are committed
- In the absence of a coordination mechanism on the supply side, there is the risk of haphazard connections:
 - risks for generators if capacity connected exceeds planned hosting capability or if some projects are poorly located.
 - risks for customers that new transmission capacity built via actionable ISP framework may not be used efficiently.
- Generation developers are commercial rivals
 - Limits opportunities for scale efficient connections
 - Systemic higher costs and greater community impacts



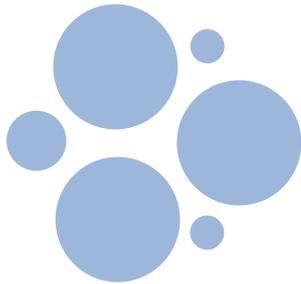
DEVELOPMENT OF A REZ

- To avoid these risks, we need processes to:
 - Undertake detailed planning of the REZ
 - Allocate the hosting capacity made available within REZ
 - Maintain access within the REZ for connecting parties
- Planning arrangements are being implemented – we are now focussing on the implementation and maintenance of REZs
- The arrangements for maintaining access within the REZ need to be able to transition to a long-term, whole of system access solution
- The ESB will consult on these reforms as part of Post 2025 process.





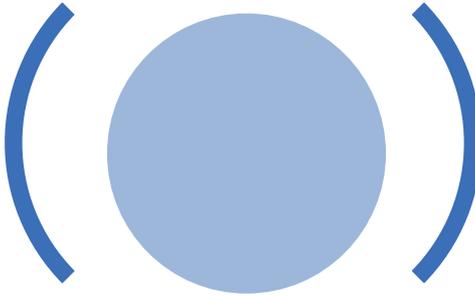
ESB'S ACCESS REFORM STRATEGY



Interim REZ

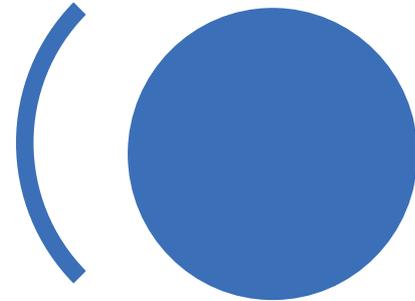
- Localised solution
- Generators incentivised to locate within REZ
- Does not manage congestion outside REZ

Subject of consultation paper



Access transition

- NEM-wide solution
- Addresses congestion whilst avoiding investor detriment
- Progressive introduction with time for parties to adjust their commercial position



Full access reform

- NEM-wide solution
- LMP/FTRs provide market based signals
- Occurs after parties have had time to adjust





Planning the REZ

- Occurs via actionable ISP framework, as supplemented by REZ Planning Rules

Addressed in other processes

Funding the REZ

- Shared transmission assets that pass RIT-T funded by customers.
- Public policy, including government funding contributions, may be taken into account in ISP
- Generators fund connection assets, may fund radial assets as dedicated connection assets.

Allocating REZ hosting capacity

- Generators participate in a tender process to compete for an access right and specialised connections process
- REZ coordinator nominated by government would manage the tender process
- Net auction revenues used to offset costs borne by customers

Maintaining the REZ

- Developers that successfully participate in a REZ process would receive access rights that protect against the risk of subsequent entry within the REZ.



ALLOCATING REZ HOSTING CAPACITY

- Generators participate in a tender process in order to compete for an access right and specialised connections process.
- The capacity made available would be capped at a level that reflects the capacity of the REZ (given resource mix)
- Other generators would be able to connect to the REZ after the initial tender process, however they would need to do so in accordance with the REZ access regime.
- A REZ coordinator, nominated by government, would oversee the tender process.

Role of REZ coordinator

Specify minimum requirements for parties participating in the REZ process

Select successful tenderers based on criteria that reflect the National Electricity Objective

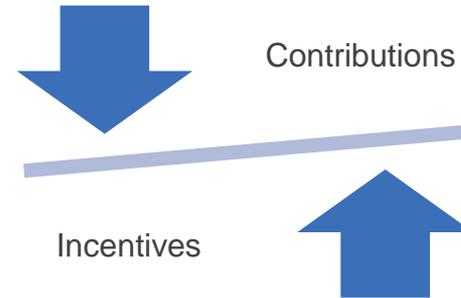
Return surplus auction revenue to customers

Provide information to help transmission planners assess whether future REZ stages should proceed.



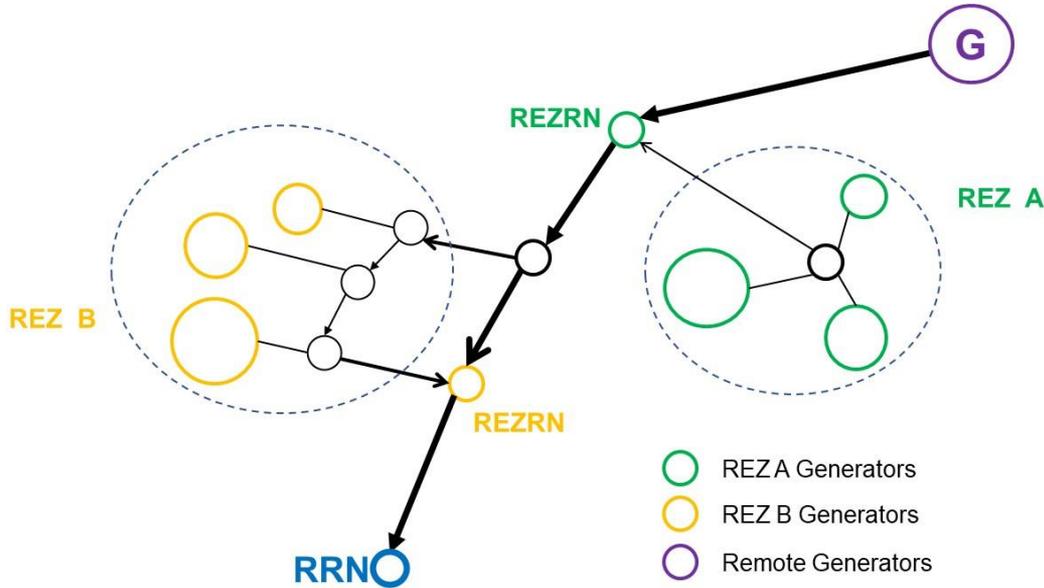
WHAT ARE GENERATORS PAYING FOR?

- Uncoordinated approach leaves value on the table
- By participating in a REZ, generators are getting:
 - Cheaper connections due to scale economies
 - Simpler connection and approvals process
 - Greater certainty due to access protections
- Tender process offsets costs to customers by placing a market value on these attributes.
- Generator willingness to pay subject to an upper limit that reflects the alternative opportunities available outside the REZ.





OPTIONS FOR MAINTAINING ACCESS WITHIN A REZ



- Access options protect the access of REZ generators between their connection point and the REZ reference node.
- They do not resolve issues arising between the REZ reference node and the regional reference node.
- As such, REZs provide only a partial solution to the problems associated with an open access regime.



OPTIONS FOR MAINTAINING ACCESS WITHIN A REZ

1. Connection access protection model

- New connection requirements apply to subsequent connecting generators to maintain a defined level of power transfer capability for generators that participate in a REZ.

2. Financial access protection model

- REZ generators are financially compensated for not being dispatched during periods of congestion by non-REZ generators who subsequently connect within the zone and were dispatched.

3. REZ as a region

- The REZ is established as a separate NEM region, either using the status quo access and pricing arrangements, or with locational marginal pricing and financial transmission rights.

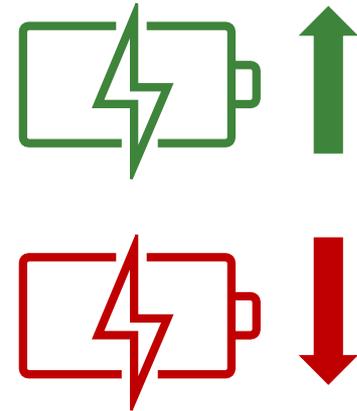
4. Early allocation of financial transmission rights

- A congestion hedging mechanism would be made available exclusively to REZ generators. This model is dependent on the introduction of LMPs and FTRs at a known point in the future.



IMPORTANCE OF EFFICIENT INCENTIVES FOR STORAGE

- ISP forecasts suggest increased role for storage in managing the intermittency of variable renewable energy.
- Storage is able to be flexibly located and it can either relieve or worsen congestion, depending on how it is used.
- REZ frameworks need to be designed in a way that rewards storage for contributing to efficient overall outcomes.

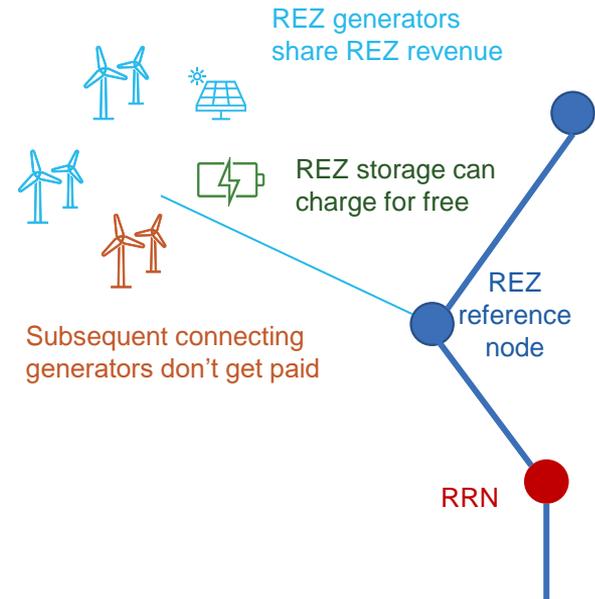




FINANCIAL ACCESS PROTECTION MODEL

- When there is no congestion, everyone within the REZ would be settled at the regional reference price as per status quo.
- In the presence of congestion:
 - Generators within the REZ with access rights would receive their share of the total revenue received, even if they were not dispatched
 - Generators within the REZ without access rights that were dispatched would receive zero for any generation
 - Storage within the REZ may charge for free.
- Generators and storage outside of the REZ would be unaffected.

REZ outcomes during congestion





NEXT STEPS

