Submission to the South West REZ Access Scheme Position Paper

15 May 2023

About the Public Interest Advocacy Centre

The Public Interest Advocacy Centre (PIAC) is leading social justice law and policy centre. Established in 1982, we are an independent, non-profit organisation that works with people and communities who are marginalised and facing disadvantage.

PIAC builds a fairer, stronger society by helping to change laws, policies and practices that cause injustice and inequality. Our work combines:

- legal advice and representation, specialising in test cases and strategic casework;
- research, analysis and policy development; and
- advocacy for systems change and public interest outcomes.

Energy and Water Consumers' Advocacy Program

The Energy and Water Consumers' Advocacy Program works for better regulatory and policy outcomes so people's needs are met by clean, resilient and efficient energy and water systems. We ensure consumer protections and assistance limit disadvantage, and people can make meaningful choices in effective markets without experiencing detriment if they cannot participate. PIAC receives input from a community-based reference group whose members include:

- Affiliated Residential Park Residents Association NSW;
- Anglicare;
- Combined Pensioners and Superannuants Association of NSW;
- Energy and Water Ombudsman NSW;
- Ethnic Communities Council NSW;
- Financial Counsellors Association of NSW;
- NSW Council of Social Service;
- Physical Disability Council of NSW;
- St Vincent de Paul Society of NSW;
- Salvation Army;
- Tenants Union NSW; and
- The Sydney Alliance.

Contact

Michael Lynch
Public Interest Advocacy Centre
Level 5, 175 Liverpool St
Sydney NSW 2000

E: mlynch@piac.asn.au

Website: www.piac.asn.au

Public Interest Advocacy Centre

@PIACnews

The Public Interest Advocacy Centre office is located on the land of the Gadigal of the Eora Nation.

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1. Introduction

PIAC welcomes the opportunity to respond to the NSW Office of Energy and Climate Change's (OECC) South West Renewable Energy Zone (REZ) Access Scheme position paper (the position paper).

PIAC supports the proposal to apply an access regime to the South West REZ but recommends an increase in generator contributions to transmission infrastructure build and operation costs.

This change will more efficiently allocate risks and costs between generators, transmission providers, and consumers. Our recommendation is founded on two principles: a primary 'beneficiary pays' principle and a secondary 'causer pays' principle. These are also the basis of the PIAC model for efficient risk- and cost-sharing, which we provide in attachment 1 of this submission.

PIAC also recommends an increase in the Target Transmission Curtailment Level (TTCL). Failure to raise the TTCL will result in 'gold-plating', meaning higher costs for consumers. It will also reduce the incentives for diversifying the generation mix and investing in batteries in the REZ, which again may result in lost value for consumers.

2. Context

REZs are an important tool to coordinate and co-optimise investment in variable renewable energy (VRE) generation and energy storage to accelerate the take-up of renewable energy. In the long term this is in the interest of consumers. In the short term, however, it is possible for consumer interest to be diminished by inefficiently overbuilding transmission infrastructure (gold-plating).

A key function of a REZ is to overcome the 'catch 22' faced by generation and transmission investors: generation investors require assurance of transmission capacity to commit to projects, while shared transmission projects without a pipeline of committed generation pose unacceptable risk to investors, consumers, or both.

Generation investment still occurs in the absence of a REZ but it faces greater risks under the prevailing "open access" arrangements. The primary risk is lost revenue from unexpected (and hard to predict) curtailment and loss factors.

Transmission infrastructure in a REZ is built primarily in the interests of generation investors.

In this sense, transmission infrastructure built in REZs is materially different to transmission infrastructure built in the rest of the NEM. It aims to solve a problem faced by investors, not consumers. It increases the rights of generators, relative to their rights in the NEM generally, and reduces the risks and costs faced by generators. There is no commensurate increase in the rights of consumers, or reduction of the costs or risks born by consumers. Unlike transmission and generation investors, consumers have no means to manage any of the risks associated with REZ transmission.

The allocation of risks and costs to consumers rather than generators and TNSPs also incentivises inefficient provision and underutilisation of transmission infrastructure.

3. Principles for risk and cost allocation

Risks are most efficiently allocated to parties who are able to manage them.

It is not appropriate for consumers to bear the risks associated with new transmission investments to enable a REZ, alleviate physical constraints for generators, or to underwrite financial compensation for curtailed generators.

Recovery of costs is distinct from the allocation of risks. While costs and risks are generally related, they are not necessarily the same. PIAC's principles for cost recovery are that:

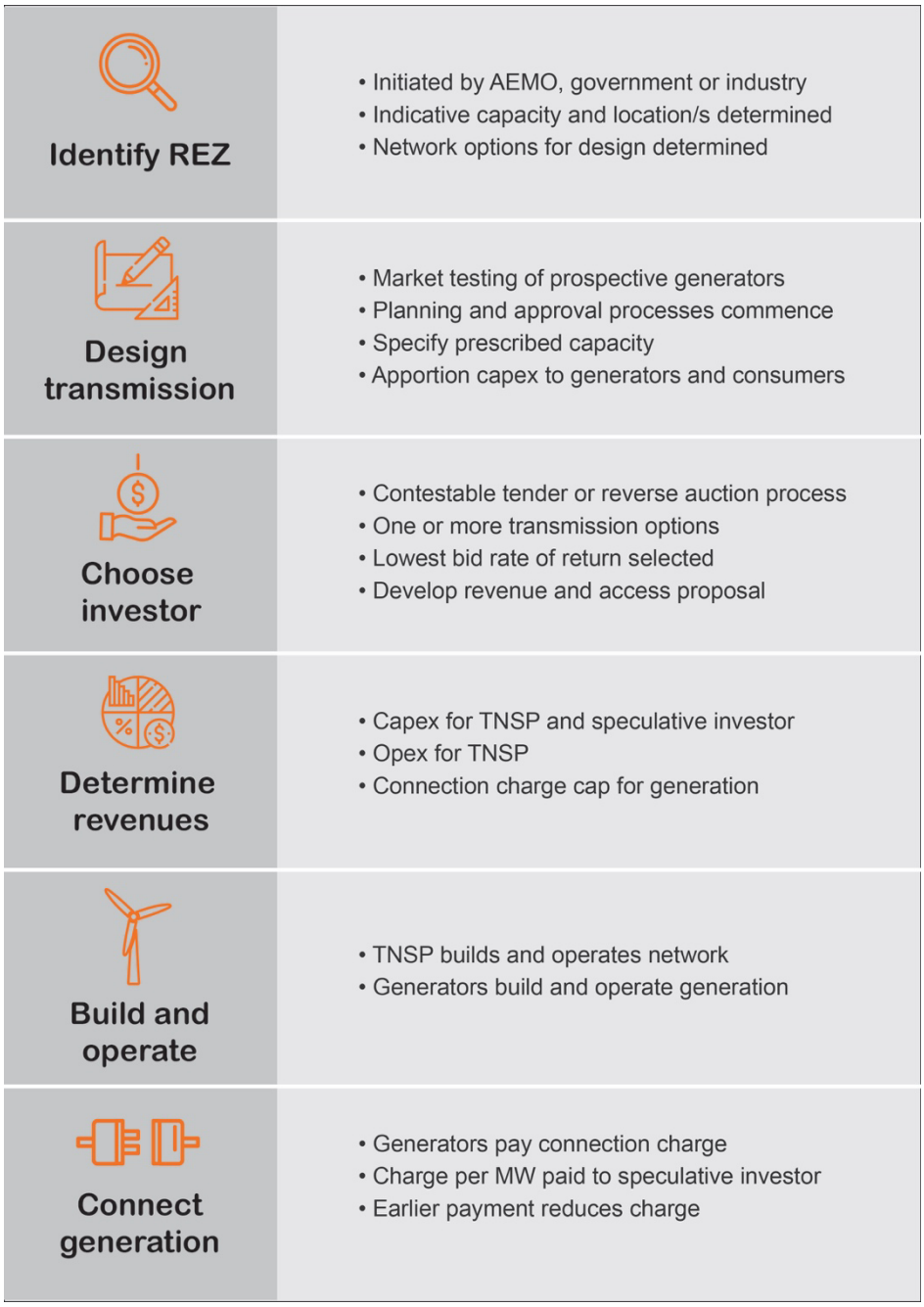
- Costs are recovered on a beneficiary-pays basis, such that the primary beneficiaries of a given investment or mechanism should pay for that investment.
- Where there are multiple beneficiaries, the costs should be recovered proportionally to their share of the benefits.
- Where it is not practical and transparent to identify the beneficiaries, a causer-pays principle should be used.
- Cost recovery should also include the risk, to the extent it exists, of the underutilisation of assets and asset stranding. For example, it is appropriate that costs associated with other parties taking on more transmission investment are ultimately passed through to consumers as slightly higher wholesale costs.
- Cross-subsidies should only be permitted where they are immaterially small or widely accepted by the payers of the cross subsidy.

An essential objective of any REZ framework must be that connecting parties should contribute to covering shared REZ transmission costs in return for more guaranteed access. To do otherwise would breach the beneficiary-pays principle and send inefficient price signals. Rather than increase the cost for connecting generators, the economies of scale possible through a REZ means that connecting parties typically pay less to connect within a REZ, while enjoying improved access and revenue, compared to connecting elsewhere in the NEM under the current open access arrangements.

4. The PIAC model for sharing risk and cost for REZ investments

PIAC has developed a model for how the cost and risk of investment in new and existing transmission for REZs could be shared between consumers, generators, transmission network service providers, and other investors, potentially including government underwriting. The model is summarised below, and the process is illustrated in **Error! Reference source not found.**. It is described in more detail in Attachment 1: 'PIAC model of risk- and cost-sharing for REZ investments'.

Figure 1 Summary of the PIAC risk sharing mode for Renewable Energy Zones



Under PIAC's REZ model, risks and costs are shared between multiple parties based on the principles that beneficiaries should pay and risks should be allocated to those best placed to manage them.

The PIAC model separates the transmission investment into two portions:

- one, consistent with current cost recovery, is rolled into the Regulated Asset Base (RAB) of the incumbent TNSP and is recovered through regulated revenue.

- a second contestable portion, funded by a private contestable investor or Government, is recovered through generator access charges.

The connection charge would be pre-determined at fixed rate (such as $/MVA) indexed according to the rate of return (ROR) of the contestable investor so it increases with time commensurate to the underutilisation risk the speculative investor bears. This is transparent to all parties and incentivises early connection.

4.1 Cost sharing

The revenue from this investment, up to the prescribed 'efficient' capacity, is shared initially between:

- The incumbent transmission network service provider. This portion of the cost of investment would be recovered from consumers in a manner similar to how transmission network service providers currently recover shared network costs.
- The contestable transmission investor. This portion would be recovered from generators who pay a connection charge, which is proportional to the generator's capacity and how early they connected to connect to the REZ. At any given point in time, the cost for generators to connect to the shared transmission assets in the REZ is fixed in terms of $/MVA. The rate paid by generators would increase with time according to the Rate of Return bid by the chosen contestable investor. Any costs recovered from generators in the first instance will only be passed on to consumers (via wholesale prices) if the investments proves to be efficient and prudent. This reduces the timing and scale risk consumers would otherwise bear, and aligns costs recovered from consumers with the level of efficient utilisation of the REZ.

The amount apportioned to generators is funded, contestably, by a contestable investor. This amount could be determined by the regulator or by government, and be based on a combination of:

- The value of access to the REZ for connecting generators, taking into account the relative costs and risks incurred with equivalent investments being made under the current access arrangements at the time;
- The market benefits to consumers of the REZ being built;
- Where the REZ is part of an interconnector or other major transmission investment, the portion attributable to new generator connections; and
- Other policy objectives.

4.2 Risk sharing

Under the PIAC model, contestable transmission investors voluntarily take on underutilisation risk for their portion of investment costs and receive an uplift in their rate of return for doing so.

The incumbent TNSP is protected from the risk of asset stranding and their costs are recovered from consumers under normal arrangements. Therefore, they are not forced to take on any new or further risks beyond what they already accept delivering regulated transmission investments. If they wish to, the TNSP (or their shareholders) are still able to bid for the contestable investment.

Generators are also protected from the risk of REZ underutilisation and timing misalignment between different generation projects. In lieu of bearing these risks, generators effectively pay a time-based premium and are incentivised to reduce this risk by connecting, or at least committing to connect, earlier. At the same time, they are not forced to connect earlier than they are prepared to.

The PIAC model also reflects that consumers have little or no ability to manage the risk of underutilisation or asset stranding in REZs and are not direct beneficiaries of generator connection assets. Consumer exposure to underutilisation risk is capped at a fixed, limited portion of the investment value, potentially linked to the modelled market benefits of the REZ transmission. The contestable investment still represents value for consumers because it prevents inefficient transmission investment and a less competitive wholesale market from being fully socialised to consumers.

5. The Access Scheme for the South West REZ

PIAC supports the proposal to apply an access regime to the South West REZ, but based on the principles outlined in the last two sections, we recommend changes to the design of the access scheme to ensure consumers are not assuming more cost and risk than is reasonable.

Generators should contribute to the costs of transmission infrastructure construction and operation. Failure to do this would breach the beneficiary-pays principle and send inefficient price signals.

A mechanism for generator contribution already exists in the access scheme design in the access fees. These fees should be increased and the requirements that the monies raised in them be tied to community investment and employment services to the exclusion of all else should be relaxed.

The level of generator contribution should be set to reflect the portion of shared transmission investment that is attributable to each generator's needs, both in terms of costs of construction and system security.

Generators should also pay for shallow (dedicated) assets. Shallow (dedicated) assets should include all assets that only serve one generator. (This is in contradistinction to the CWO REZ, where such assets have been treated as shared.)

A 'no harms' principle should be introduced such that no generator is allowed to make a decision that impacts others in terms of constraints, marginal loss factors (MLF) or system security, without compensating the affected stakeholder. As constraints develop, applying the causer-pays principle means the impacting generator can either accept the limitation as it stands or pay for the transmission upgrade that would alleviate the constraint.

6. Raising the TTCL

PIAC proposes that the TTCL for the South West REZ is raised in line with the CWO REZ. Failure to do this will result in lost value to consumers.

The proposed TTCL of 0.54% is very low in comparison to the Central West Orana REZ.

The reasons provided are:

- The low capacity factors for wind energy resources in the south west currently used in AEMO's ISP modelling assumptions, when compared to CWO and New England REZs.
- Proportionally lower solar generation, compared to wind, planted in the model by the year that the TTCL is calculated (2037/38).
- The role of PEC (and later, VNI West) as interconnectors to adjacent jurisdictions.[1]

PIAC considers the reasoning underpinning these low settings questionable.

AEMO's ISP analysis of capacity factors in locations with lower wind resource is not reliable, owing to their use of one class of wind turbine for all wind regimes. In reality, wind investors on the SW REZ will use a class of wind turbine better suited to the local wind regime, which, in the SW REZ, will have a higher capacity factor. In any case, capacity factor should not be used to determine TTCL in place of a reasonably rigorous estimate of coincident generation.

Second, if there is proportionally lower solar generation compared to wind in the South West REZ,[2] this should imply a *higher* efficient TTCL, not a lower one. In general, solar projects in a given area have a higher level of coincident generation than wind projects in a given area. That is, where one solar generator is producing at or near capacity, it is likely that other solar generators nearby are also at or close to capacity. Wind projects have a lower level of coincident generation in output due to the nature of weather systems moving through a given area. If the South West REZ has proportionally lower solar generation to wind generation compared to other REZs, it should have a higher TTCL than them, all other things being equal.

Third, it is not clear why reliance on Project Energy Connect (PEC) requires a very low TTCL. The reasoning provided on this claim is as follows:

> *The application of an access scheme with a TTCL at this level is designed to prevent excessive planting of new generation along PEC that would increase curtailment in the region and displace imports from existing, lower cost, South Australian renewables. This is in the long-term interest of consumers as it prevents overcapitalisation and unnecessary curtailment.*[3]

NSW consumers are paying for the NSW side of PEC. It is not reasonable that NSW consumers should have to pay a premium in the interests of SA generators.

It is also not clear why established renewable generation in South Australia should have lower costs than the new renewable projects being created in the South West REZ. The marginal costs of each will be approaching zero in any case.

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[1] South West Renewable Energy Zone Access Scheme *Position Paper*, March 2023, 37.

[2] This will be dependent on the land use in the area – if the land is predominantly used for grazing rather than cropping, it is possible that solar rather than wind may dominate. In any case, as there is high irradiation in the zone, the assumption that wind will be higher is not a strong one.

[3] *Ibid*.

It is not plausible that generation investors in South Australia who made decisions based on the forthcoming PEC, and the ability to export energy to NSW assumed that TTCL levels relevant to PEC would be set substantially below 'normal' rates.

Setting the TTCL too low has two important implications for NSW consumers.

Gold-plating

Setting the TTCL at a low level implies the need for more transmission infrastructure than would be the case if a higher level of curtailment was accepted.

While part of the point of a REZ is to provide dispatchers lower levels of curtailment, this should not be zero. A positive level of curtailment is still efficient. Accepting no curtailment would require an extremely high provision of transmission capacity. Over-provision of transmission capacity is often referred to as 'gold-plating'.

As consumers ultimately pay for all transmission infrastructure, gold-plating comes at the expense of consumers. The aim in selecting an appropriate level of transmission infrastructure is to minimise the cost of energy to consumers by balancing the costs of transmission capacity provision with the costs of curtailment.

Importantly, from the perspective of consumers, the value of curtailed generation is lower than the level of curtailment. Curtailment tends to occur at times when supply is high and the relevant spot prices are below their weighted averages. In simple terms, at a level of curtailment at 5%, lost value for the consumer may lag behind by as much as 2-3%.

Reducing incentives for battery investment

The second effect of a very low TTCL is a fall in the attractiveness of batteries for investors, including matching generation projects with on-site batteries as an insurance tool.

In general, batteries are paid for by private investors and transmission infrastructure is paid for by consumers. Any increase in transmission capacity that 'replaces' a service that could have been provided more cheaply by batteries is to the detriment of consumers' interests.

The roll-out of batteries across the NEM is vital to a swift and affordable transition to a renewable energy-based system. Regulators should aim to incentivise investment in batteries and innovation in battery design and use.

7. Continued engagement

We welcome the opportunity to meet with the AEMC and other stakeholders to discuss these issues in more depth. Please contact Michael Lynch at mlynch@piac.asn.au regarding any further follow up.

8. ATTACHMENT 1: PIAC model of risk- and cost-sharing for REZ investments

PIAC proposes that the TTCL for the South West REZ is raised in line with the CWO REZ. Failure to do this will result in lost value for consumers. This description of the PIAC model of risk- and cost-sharing for REZ investments is adapted from material developed for the AEMC's Coordination of Generation and Transmission Investment (COGATI) review[4] and the ESB's Post-2025 reform process.[5]

Overview of concept

PIAC has developed a framework that helps address the issues facing REZ delivery. The model provides a transparent, principled and predictable framework for how the cost and risk of REZ transmission investments could be shared between consumers, generators, transmission network service providers, and other investors, potentially including government underwriting. It has been developed and refined over three years of engagement with a wide range of key stakeholders including market institutions, consumer advocates, incumbent and prospective generators, network service providers, investors and governments.

PIAC's framework is based on the following cost recovery principles

- Costs are recovered on a beneficiary-pays basis, such that the primary beneficiaries of a given investment or mechanism should pay for that investment.
- Where there are multiple beneficiaries, the costs should be recovered proportionally to their share of the benefits.
- Where it is not practical and transparent to identify the beneficiaries, a causer-pays principle should be used.
- Cost recovery should also include the risk, to the extent it exists, of the underutilisation of assets and hence asset stranding. For example, it is appropriate that costs associated with other parties taking on more transmission investment are ultimately passed through to consumers as slightly higher wholesale costs.
- Cross-subsidies should only be permitted where they are immaterially small or widely accepted by the payers of the cross subsidy.

Risk is most efficiently borne by those parties best placed to manage it. Therefore, it is not appropriate for consumers to bear the risk of REZ underutilisation. Other parties should carry this risk through measures such as funding additional transmission investment to alleviate physical constraints or by underwriting financial instruments to cover the financial impacts of curtailment.

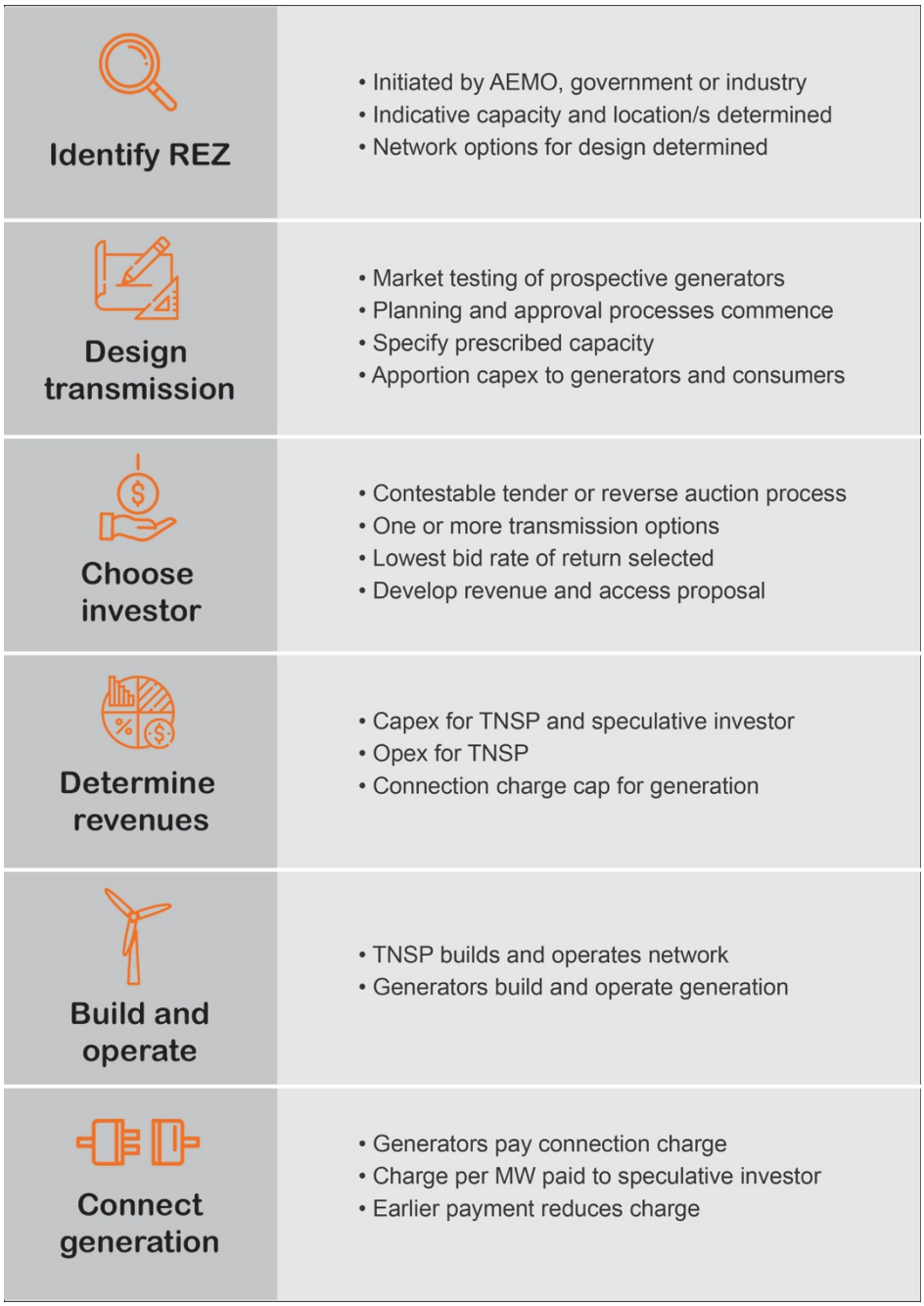
A fundamental aspect of the PIAC model is that REZ transmission capex is recovered from both generators and consumers, rather than just consumers. This is achieved by separating transmission investment into two portions: one, consistent with current cost recovery, is rolled into the RAB of the incumbent TNSP and is recovered through regulated revenue; and a contestable portion, funded by a contestable investor or Government, and is recovered through generator access charges. The connection charge would be pre-determined at fixed rate (such as $/MVA) that increases with time commensurate to the underutilisation risk the speculative investor bears – this is both transparent to all parties and incentivises early connection.

4 AEMC, *Renewable Energy Zones discussion paper*, October 2019, 46-49.
5 PIAC, *Submission to the Post-2025 Market Design Consultation Paper*, October 2020, 24-36.

Both the portions have elements that are approved by the regulator or some other administrative body and based on a range of factors.

The process for planning, delivering and connecting a REZ is summarised in Figure 2 below as well as in the AEMC's REZ discussion paper.[6]

Figure 2 Summary of the PIAC risk sharing mode for Renewable Energy Zones



6 AEMC, *Renewable Energy Zones Discussion Paper*, Oct 2019, 46-51.

Value proposition of the model for different parties

For connecting generators

Under the PIAC model, generators are protected from the risk of REZ underutilisation and timing misalignment between different generation projects. In lieu of bearing these risks, generators pay a time-based premium to the contestable investor, who bears the timing risk. Generators are incentivised to reduce this risk by connecting, or at least committing to connect, earlier. At the same time, they are not forced to connect earlier than they are prepared to. Hence it provides a framework for generators to connect over time as they are ready while fairly and transparently recovering costs from them.

The model provides a mechanism for sharing investment in transmission infrastructure between different projects and enabling multiple generators to access wholesale market revenue. This will often be at lower overall cost than current arrangements where either no transmission investment is built or the network is only built in a piecemeal fashion and economies of scale and scope are missed.

For contestable investors

Contestable transmission investors voluntarily take on underutilisation risk for their portion of investment costs, and receive a commensurate uplift in their rate of return for doing so.

The PIAC model also offers an opportunity for investors seeking to help meet climate change and decarbonisation portfolio targets to invest. A survey of Australian investors by the Investor Group on Climate Change found that two of the most significant perceived barriers to green investment in Australia are the lack of opportunities to invest with an appropriate rate of return and policy/regulatory uncertainty.[7]

Implementing the PIAC model allows contestable investors to accelerate the uptake of renewable generation and decarbonise the Australian economy whilst earning a return commensurate to the risk they incur. The PIAC model also provides certainty for both contestable investors and generators through its transparent process to understand the levels and types of risks they would incur and greater certainty of their return for it.

For the incumbent TNSP

The incumbent TNSP is protected from the risk of asset stranding as their costs are recovered from consumers under normal arrangements. Operational, maintenance and future asset replacement costs are recovered by the TNSP in the manner they do today. They are therefore not forced to take on any new or additional risks beyond what they already accept delivering regulated transmission investments.

The incumbent TNSP (or their shareholders) are still free to bid for the contestable investment if they choose to.

For consumers

Central to the PIAC model is that consumers have little or no ability to manage the risk of underutilisation or asset stranding in REZs and are not direct beneficiaries of generator

[7] Investor Group on Climate Change, *Scaling Up: Investing for low carbon solutions*, August 2018, 14.

connection assets. The contestable investment represents value for consumers because it prevents inefficient transmission investment and less prudent generation costs being socialised to consumers.

Consumer exposure to the risk of underutilisation is capped at a fixed, limited portion of the investment value. This reduces their liability (relative to current arrangements) under the 'worst case' where REZ utilisation is low.

If the generation and transmission investments that are enabled though the contestable investment prove to be efficient and prudent, then consumers will benefit and accordingly these costs will be passed through to them through the wholesale market.

Identifying and planning a REZ

Under PIAC's model feasible prospective renewable energy zones, including transmission network options, are identified through the existing ISP process by AEMO, industry or government.

A detailed design stage, incorporating a RIT-T or equivalent process, determines the optimal attributes for a given REZ, and selects one or more network design options that is best suited to support efficient investment and market outcomes. This stage would include market testing with prospective generators, investigating planning approvals, and estimating capex for different network options. A variety of sources of information should be considered to minimise the risk associated with the contestable investment.

A key attribute determined in the detailed design stage is a prescribed 'efficient' capacity level, expressed as the firm or maximum physical capacity of new generation supported by the REZ. It will reflect a number of factors, including:

- The level and certainty of current generation market interest in and near the proposed REZ, as well as the current state of the generation investment market more broadly.
- The potential future investor interest in and around the REZ, considering the nature of the energy resource, planning opportunities and constraints, government energy and planning policy, and anticipated energy market conditions.

Investment and return

A contestable process, such as a tender or reverse auction, would be conducted to choose an investor to fund the contestable portion of the capital spend associated with the REZ. The successful bidder will be chosen on the basis of the lowest rate of return offered. This portion is ultimately recovered from connecting generators via connection charges. The remaining capex, and all opex is rolled into the RAB of the incumbent TNSP and recovered from consumers as with normal regulated revenue such as TOUS charges.

The AER would approve all revenue up to the 'efficient' capacity, including the cap on generator connection charges, before the REZ is built.

The TNSP builds and operates the new and augmented transmission network assets required for the REZ. Assets may be built in stages to limit costs and finance.

New generators that connect to the REZ pay a connection charge to the contestable investor which includes a time-based premium. This can be paid at any time between when the REZ revenue is determined and the generator is connected. Committing to connect earlier reduces the timing risk borne by the contestable investor and hence reduces the connection charge the generator must pay.

For feasibility and ease of implementation, the model should use current arrangements as far as practicable. These include:

- the generator connection process and charge structure;
- mechanisms to allocate some TUOS charges to consumers; and
- some extant regulatory processes and governance measures.

If a contestable transmission investor considers that interest in a REZ may be more than the prescribed 'efficient' capacity level determined, then the investor may fund this additional capacity and negotiate with generators to connect using this capacity as unregulated revenue. They could apply higher returns for this portion to compensate for the additional risk of investing in capacity without guaranteed cost-recovery.

Apportioning costs between generators and consumers

The amount to be recovered from generators is funded by a contestable investor. This apportioning could be determined by the regulator or by government, and be based on some combination of:

- The value of access to the REZ for connecting generators, compared to the costs and risks incurred with the same investments under the access arrangements for connecting outside the REZ at the time;
- The difference between the capital cost of the REZ transmission and the predicted market benefits to consumers of the REZ being built,
- Where the REZ is part of an interconnector or other transmission investment, the portion attributable to direct generator benefits (rather than direct consumer benefits). If there is a clear primary purpose for the investment, any portion of the investment with dual benefit could be attributed to that purpose; and
- Other policy objectives.