HOUSTONKEMP
Economists

Do jurisdictional schemes change the need for the Reliability Panel's proposed market price settings?

A report for the Australian Energy Market Commission

24 August 2023

Report authors

Adrian Kemp

Sam Pfeiffer

Michael Calvert

Contact Us

Sydney
Level 40
161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800

Disclaimer

Contents

Executive summary i

1. Introduction 1

2. The reliability framework in the NEM 2

2.1 The market price settings are the mechanism by which market price signals support new reliability-related investment 2

2.2 AEMO identifies and reports on reliability shortfalls to help achieve the reliability standard 3

3. Interaction between jurisdictional schemes and the reliability standard 5

3.1 Jurisdictional schemes are intended to support NEM reliability outcomes 5

3.2 Jurisdictional schemes are not intended to operate without market price settings 7

3.3 Interaction between jurisdictional schemes and market prices 9

4. Considerations for assessing the proposed market price settings in light of jurisdictional schemes 11

4.1 Achieving the reliability standard 11

4.2 Outcomes for consumers and principles of market efficiency 12

4.3 Good regulatory practice 13

4.4 Emissions reductions 14

A1. Appendix 1: Further details of relevant jurisdictional schemes 15

Executive summary

Key findings:

- The Australian Energy Market Commission is considering how jurisdictional schemes that promote generation investment affect the need for increases to the market price settings in the National Electricity Market (NEM) as proposed by the Reliability Panel.
- We find that the investment incentives created by jurisdictional schemes complement rather than replace those provided by wholesale electricity market prices, which are capped by the market price settings. To the extent that uncertainty regarding future wholesale market prices affects the timing or quantum of generation investment to satisfy the reliability requirement, jurisdictional schemes provide a helpful additional incentive to support reliability.
- This finding is consistent with the role of jurisdictional schemes in the current market circumstances. Specifically, the schemes support generation investment that might otherwise be inappropriately delayed by wholesale market price uncertainty as a consequence of the energy transition.
- Over the medium to long term the administrative nature of these schemes and the need for regulatory certainty means that market price signals should continue to be the principal mechanism for delivering the investment needed to support reliability in the NEM.
- In our opinion, jurisdictional schemes do not change the need for market price settings that are set at a level to achieve the reliability standard.

The NEM reliability framework exists to support the reliable supply of electricity to consumers at least cost. The reliability framework consists of the reliability standard, an ex-ante requirement to meet 99.998 per cent of total energy demand in a region, and the market price settings, which affect the market-based price signals for reliability-related generation and storage capacity. In addition to the market price settings, the Australian Energy Market Operator (AEMO) may initiate the reliability and emergency reserve trader (RERT) mechanism as a last resort to address reliability concerns during the dispatch process.

The transition of the electricity market towards renewable generation and the retirement of thermal generation warrants a consideration of the sufficiency of NEM reliability arrangements given changing patterns of generation and reliability risks. Given uncertainty about the reliability risks, the government, on behalf of consumers, has adopted a higher reliability standard and introduced jurisdictional schemes to manage these risks. Within this context, the Australian Energy Market Commission (the Commission) is considering a rule change proposal made by the Reliability Panel to amend the current market price settings to provide improved price signals for reliability-related generation investment.

This report examines whether the presence of jurisdictional schemes to incentivise generation investment in the NEM impacts the need for, or the effectiveness of, the Reliability Panel's proposed increase in the market price settings in delivering reliability. Our focus has been on the jurisdictional schemes in New South Wales, Victoria and Queensland, and the Commonwealth Capacity Investment Scheme (CIS).

Jurisdictional schemes assist generation project proponents in managing wholesale market price risks given current uncertainties to support reliability

Rather than replacing market price signals, jurisdictional schemes are a mechanism by which wholesale market price risks can be better managed by proponents to help address any disincentives for investment given future market price uncertainties.

This function stems from the jurisdictional schemes having been designed, to varying degrees, to help deliver generation investment of an appropriate scale and scope to support reliability in a NEM region, amongst other objectives. Jurisdictional schemes in New South Wales, Victoria and Queensland achieve this by shifting the risks associated with planning and coordinating investment in generation and storage capacity from the private sector onto the government and, in some instances, consumers. In so doing, the schemes provide strong incentives for investment to support the reliability standard.

The revenue support mechanisms within the schemes are designed to protect new generation projects from the downside risk of low future wholesale electricity prices given market price uncertainties under the energy transition and within the prevailing market price settings. It follows that the schemes reduce the risk that the frequency or duration of future high market price periods will not be sufficient to support a reliability enhancing generation investment. This is distinct to the risk that the market price settings themselves will prevent wholesale market prices rising to a sufficiently high level to support reliability.

Jurisdictional schemes support reliability by complementing the generation investment incentives provided by market price signals

In our opinion, market-based price signals are likely to be more effective in the long-run for ensuring sufficient investment in capacity to meet the NEM reliability standard. That said, jurisdictional schemes play an important role to provide incentives for capacity investment in the current circumstances where price signals alone may not be sufficient to ensure that the reliability standard is met as the market transitions to renewable generation and storage.

It follows that the investment incentives created by jurisdictional schemes complement rather than replace those provided by wholesale market prices, which are capped by the market price settings. To the extent that uncertainty about future wholesale market prices affects the timing or quantum of generation investments to satisfy the reliability requirement, jurisdictional schemes provide a helpful additional incentive to support reliability.

However, there are risks associated with relying on administrative schemes alone to deliver reliability outcomes, particularly over the longer term. These risks arise from:

- the alignment of investment signals with objectives of the jurisdictional scheme, eg, through eligibility criteria that may differ from the market price settings, which provides the same price signals irrespective of the type of technology that investors may consider is needed to support reliability;
- the reliance on administrative decision making to determine the quantum and timing of capacity needed to meet reliability requirements compared to market mechanisms, which are focused on providing revenue earning opportunities to incentivise investment;
- the likely higher costs of meeting reliability standards over the long term as administrative decision makers do not bear the financial costs of over investment in capacity; and
- the potential for jurisdictional schemes to be modified to meet objectives other than reliability, thereby affecting the incentives provided to meet reliability outcomes.

Market price settings should be set to support the reliability standard

Given the complementary nature of the market price signals and jurisdictional schemes, the market price settings should be set at a level that is sufficient to provide market price settings for generation investment that satisfies the reliability standard.

We present a summary of our evaluation against the Commission's assessment framework criteria in Table E1. For simplicity, the 'outcomes for consumers' and 'principles of market efficiency' criteria are grouped together.

Table E1: Comparison of scenarios against the assessment framework criteria

Assessment criteria	Preferred scenario	Description
Achieving the reliability standard	Market price settings amended	There are risks associated with relying on administrative schemes alone to deliver reliability outcomes, particularly over the longer term. This risk arises from the reliance on administrative decision making to determine the quantum and timing of capacity needed to meet reliability requirements compared to market mechanisms, which are focused on providing revenue earning opportunities to incentivise investment. Using a market mechanism that is supported in the short term with an administrative scheme to address current market price uncertainties is therefore a preferrable outcome.
Outcomes for consumers	Market price settings amended	Amending the market price signals is expected to increase the likelihood that the reliability standard will be met at least cost. Relying on administrative schemes rather than market signals, particularly when the administrative scheme is supported by government funding, creates a risk of overbuilding capacity. This is likely a more significant risk in the counterfactual scenario where the market price settings are not amended.
Principles of market efficiency		Increasing the market price settings is unlikely to result in end-use consumers paying more for investment to satisfy the reliability standard relative to the scenario where the market price settings are not increased. Where jurisdictional schemes award support through competitive tender processes, revenue required from the jurisdictional scheme would be replaced by market-based revenue when the market price settings are amended.
Principles of good regulatory practice	Market price settings amended	The factual scenario maintains the alignment between the National Electricity Rules and the reliability standard. This provides greater stability and certainty for market participants than relying purely on jurisdictional policies.
Emissions reduction	-	Emissions may be higher in the short term in the factual scenario as gas plants are encouraged to enter outside of the zero emissions criteria of many jurisdictional schemes. However, the counterfactual scenario may cause delayed exit of existing thermal plants which would increase emissions relative to the factual scenario.

1. Introduction

The Australian Energy Market Commission (the Commission), on the recommendation of the Reliability Panel, periodically updates the market price settings applicable to the National Electricity Market (NEM). These settings include the market price cap, market floor price, cumulative price threshold and administered price cap.

The Commission is currently considering a rule change request submitted by the Reliability Panel recommending amendments to the market price settings between 1 July 2025 and 30 June 2028.[1] The Reliability Panel contends that the market price settings are insufficient to support the level of investment required to achieve the reliability standard over the long term.[2]

Within this context, the Commission has asked HoustonKemp to consider whether the market price settings need adjustment considering the incentives for investment created through the current and expected jurisdictional schemes that are being put in place to address concerns about reliability. These schemes involve various market interventions to address concerns that investment incentives within the current market framework given market uncertainties are insufficient to maintain reliability.

Our approach has involved:

- undertaking a comprehensive review of the jurisdictional schemes in place (or proposed to apply) in New South Wales (NSW), Victoria and Queensland. We have also considered the Capacity Investment Scheme (CIS), proposed to be implemented by the Commonwealth;
- describing how the investment incentives created by the jurisdictional schemes interact with the incentives resulting from the wholesale electricity market, including interactions with the market price settings; and
- evaluating the incentives created for meeting the reliability standard in the NEM, under the two future-state scenarios reflecting the options available to the Commission as it considers the proposed changes to the market price settings.

The remainder of this report sets out the conclusions from our analysis in detail. It is structured as follows:

- section 2 provides a brief introduction to the reliability framework in the NEM and the role of the market price settings;
- section 3 explains the role of jurisdictional schemes to support the reliability standard and how the incentives created through the schemes interact with prevailing market incentives; and
- section 4 sets out our evaluation of the incentives created under the future-state scenarios available to the Commission, with further discussion of a number of additional considerations for the Commission.

Appendix A1 provides a detailed summary of each of the jurisdictional schemes we have considered.

[1] AEMC, *National electricity amendment (amendment of the market price cap, cumulative price threshold and administered price cap) rule | Consultation paper*, 11 May 2023, p B, paras 4 and 5.

[2] AEMC, *National electricity amendment (amendment of the market price cap, cumulative price threshold and administered price cap) rule | Consultation paper*, 11 May 2023, p B, para 6.

2. The reliability framework in the NEM

In this section, we briefly describe the reliability framework in the NEM and how it creates incentives for investment in generation capacity to meet the reliability standard requirements.

2.1 The market price settings are the mechanism by which market price signals support new reliability-related investment

The core objective of the reliability framework in the NEM is to deliver reliability outcomes cost efficiently through the use of market mechanisms to the greatest extent possible.[3] These market mechanisms are intended to provide strong financial incentives to generators, retailers, aggregators and customers to make investment, retirement and operational decisions that support reliability.[4] The reliability framework comprises two key components, ie, the reliability standard and the market price settings.[5]

The NEM reliability standard is an ex-ante standard that signals the required level of supply to meet demand on a regional basis to the market. It is set at a maximum expected unserved energy (USE) of 0.002 per cent of the total energy demand in a region for a given financial year.[6]

The reliability settings, ie, the market price settings, are:[7]

> …market mechanisms designed to incentivise investment in sufficient generation capacity and demand-side response to deliver the reliability standard. The settings also provide limits that protect market participants from periods of very high or very low prices, both temporarily and on a sustained basis.

The market price settings comprise four components:

- the market price cap, which places an upper limit on dispatch prices in the wholesale market;[8]
- the cumulative price threshold, which represents the limit of aggregate dispatch prices over a period of seven days (2,016 trading intervals) that, when surpassed, triggers an administered price period;[9]
- the market floor price, which places a lower limit on dispatch prices in the wholesale market;[10] and
- the administered price cap, which is the prevailing dispatch price that applies during an administered price period after a set of sustained high dispatch prices exceed the cumulative price threshold.[11]

[3] Reliability Panel, *Rule change request | Amending the National Electricity Market reliability settings*, 16 November 2022, p 4.
[4] Reliability Panel, *Rule change request | Amending the National Electricity Market reliability settings*, 16 November 2022, p 4.
[5] Reliability Panel, *Rule change request | Amending the National Electricity Market reliability settings*, 16 November 2022, p 4.
[6] Clause 3.9.3C(a) of the National Electricity Rules (the Rules).
[7] Reliability Panel, *Rule change request | Amending the National Electricity Market reliability settings*, 16 November 2022, p 4.
[8] Clause 3.9.4 of the Rules.
[9] Clause 3.14.1 of the Rules.
[10] Clause 3.14.1 of the Rules.
[11] Clause 3.14.1 of the Rules.

While the market price settings are intended to manage efficiency and systemic risk by avoiding prolonged periods of excessively high electricity prices, they need to be set at a level sufficient to encourage private investment in generation and firming capacity to ensure reliability.[12] Construction of generation and firming infrastructure requires significant capital investment. To commit to this capital outlay, market participants require an expectation that the initial costs, along with a return on investment, will be recovered over the life of the asset.

In a competitive market, such as the wholesale electricity market in the NEM, profit maximising behaviour is to bid at marginal cost. There is little to no incentive to bid below marginal cost, as this will incur a loss if instructed to dispatch. When there is sufficient supply to meet demand there is little to no incentive to bid above marginal cost as the risk of being displaced in the dispatch merit order by a competitor with almost no ability for this higher bid to increase the market clearing price. The exception is when supply is constrained, in which case bid prices will rise to the level needed to equate demand and supply, generating revenues in excess of the direct fuel and operating costs of generation.

The excess revenue that is generated above the direct fuel and operating costs is how investors recover the costs of a generation investment. Essentially, during periods of high demand, market dispatch prices rise towards the market price cap. When the expected excess returns exceed the investment costs of a new generation plant, it will signal the need for new investment. Competition for new entry will ensure that returns are 'normal' over time.

However, the market price cap has the practical effect of constraining the expected excess revenue. Where the cost of new entry rises, it can lead to insufficient expectations of excess revenue to justify new entry, even when the reliability standard might be breached.

Additionally, investors' willingness to invest relies on their ability to accurately predict expected revenue. As price uncertainty rises, the risk that an investor will earn insufficient excess returns increases, decreasing the likelihood of new entry. In an electricity market in the middle of an unprecedented transition to renewables, price uncertainty is a very real threat.

2.2 AEMO identifies and reports on reliability shortfalls to help achieve the reliability standard

The Australian Energy Market Operator (AEMO) produces a number of publications to inform decision making and ensure consistent approaches to planning and forecasting across different electricity market participants. This includes:[13]

- the 'Electricity Statement of Opportunities' (ESOO) – which provides a 10-year outlook of the NEM, with particular focus on the reliability of supply in the electricity market, and which is published at least annually; and
- the 'Integrated System Plan' (ISP) – which is a whole-of-system plan that provides a transparent, dynamic roadmap of the evolving infrastructure requirements to support the energy transition of the next 30-years, with a particular focus on the long term interests of consumers and which is published at least every two years, with the most recent publication in June 2022.

[12] Reliability Panel, *2022 review of the reliability standards and settings | Final report*, 1 September 2022, p 63; and Reliability Panel, *Review of the reliability standard and settings guidelines | Final report*, 1 July 2021, p 29.

[13] AEMO, *2021 inputs, assumptions and scenarios report*, July 2021, p 9.

Consistent with the National Electricity Rules (the Rules), AEMO is required to publish an update to the ESOO as soon as practicable when new information becomes available that will materially change the findings or analysis of the ESOO.[14] AEMO updated the ESOO in February 2023 due to significant market developments since the release of the initial 2022 ESOO in August 2022. This was primarily concerned with changing retirement date for some existing thermal plants, delayed commissioning of some committed projects and a number of newly committed projects.[15]

The modelling and analysis in the updated ESOO indicates that while all jurisdictions in the NEM will deliver USE below the interim reliability measure (IRM) up to and including 2024-25 – at which point the IRM concludes[16] – the reliability standard is expected to be exceeded in all jurisdictions excluding Tasmania within the next ten years.[17] These breaches of the reliability standard occur in:[18]

- 2027-28 and beyond in New South Wales;
- 2028-29 and beyond in Victoria;
- 2029-30 and beyond in Queensland; and
- 2030-31 and beyond in South Australia.

AEMO has identified several future market developments that may reduce the projected reliability risks across each jurisdiction. These market developments include ongoing work to meet jurisdictional targets set by the New South Wales, Victorian and Queensland governments and a significant volume of anticipated, but not yet confirmed or commissioned, battery projects.[19]

As part of operating the NEM in a safe, secure and reliable manner AEMO is responsible for, amongst other things, publishing forecasted and actual lack of reserves notices with the aim of seeking a market response to address the supply-demand imbalance.[20]

In providing forecasts for lack of reserves, AEMO aims to avoid an actual lack of reserve. However, if the market response is insufficient before the latest time to intervene in events where forecast reserve levels fall below the forecast uncertainty measure or the largest credible risk in the region, then AEMO may initiate the reliability and emergency reserve trader (RERT) mechanism which enables AEMO to contract for out-of-market generation and demand response.[21]

The RERT mechanism is a last resort option for AEMO in ensuring reliability, with the market price settings the primary investment signal for reliability related capacity.

[14] Clause 3.13.3A(b) of the Rules.

[15] AEMO, *Update to 2022 Electricity Statement of Opportunities*, February 2023, p 3.

[16] The IRM is set to a USE level of 0.0006 per cent and is the relevant standard until 30 June 2025 for the purposes of the Retailer Reliability Obligation (RRO). See: AEMO, *Update to 2022 Electricity Statement of Opportunities*, February 2023, p 8.

[17] AEMO, *Update to 2022 Electricity Statement of Opportunities*, February 2023, p 11.

[18] AEMO, *Update to 2022 Electricity Statement of Opportunities*, February 2023, pp 11-13.

[19] AEMO, *Update to 2022 Electricity Statement of Opportunities*, February 2023, pp 11-14.

[20] AEMC, *National electricity amendment (enhancement to the reliability and emergency reserve trader) rule 2019 | Rule determination*, 2 May 2019, pp 14-15; and AEMC, *Reserve services in the national electricity market | Directions paper*, 5 January 2021, pp 15-16.

[21] AEMC, *Reliability and emergency reserve trader guidelines | Final guidelines*, 21 August 2020, p 6.

3. Interaction between jurisdictional schemes and the reliability standard

In this section, we discuss the relationship between jurisdictional schemes and the reliability standard for the NEM. We discuss how the jurisdictional schemes are intended to support and complement, not replace, the existing market-based reliability settings.

3.1 Jurisdictional schemes are intended to support NEM reliability outcomes

The considerable capacity of expected thermal generation retirement has created the risk of reliability shortfalls across the NEM by the end of the 2020s.[22] The changing generation mix as thermal generation capacity is replaced by renewable generation capacity and storage capacity will impact the level and volatility of wholesale electricity prices, which will interact with the investment signals the market prices provide for new generation investment.

As noted by the Energy Security Board (ESB) in its advice to Energy Ministers in 2021, governments seem less tolerant to reliability gaps, high prices and outages than the private sector.[23] This has led to increased intervention in the electricity market by jurisdictional authorities to manage these reliability risks for end-use consumers.[24]

The central objective of jurisdictional schemes aligns with the reliability objectives within each jurisdiction, ie, to reduce reliability shortfalls for end-use consumers located within that jurisdiction. The jurisdictional schemes also contain region-specific objectives, eg, renewable energy targets and jobs growth.

In this section, we describe how the jurisdictional schemes have been designed to support investment in infrastructure that delivers NEM reliability objectives. In particular, we demonstrate how these jurisdictional schemes:

- shift some of the risk associated with new-entrant investment onto jurisdictional authorities;
- target new investment at the scale necessary to support currently identified reliability needs; and
- have eligibility criteria that will procure capacity that is consistent with NEM reliability needs.

3.1.1 Planning and coordination risk is being taken on by jurisdictional authorities

Jurisdictional authorities are taking greater control of the planning and coordination of the energy transition within specific regions of the NEM. In doing so, this shares the risks associated with new-entrant investment with consumers and/or government to lessen the burden on the private sector and enable the investment required to support the reliability standard.

By way of example, the New South Wales, Victorian and Queensland governments have taken on investment planning and coordination risks by setting targets for new generation and storage capacity and identifying the location and timing of these investments, typically aligning with renewable energy zones (REZs) specified by AEMO. The removal of this risk provides a strong incentive for capacity that can provide services supporting reliability to enter the market, given the assurance that the jurisdictional schemes provide regarding connection agreements and supporting infrastructure.

[22] AEMO, *2022 Electricity Statement of Opportunities*, August 2022, pp 11-12; and AEMO, *Update to 2022 Electricity Statement of Opportunities*, February 2023, pp 3-4.

[23] ESB, *Post-2025 market design final advice to Energy Ministers part A*, 27 July 2021, p 23.

[24] ESB, *Post-2025 market design final advice to Energy Ministers part A*, 27 July 2021, p 23.

In addition to planning and coordination risk, the jurisdictional schemes also share the financial risk associated with future wholesale electricity price uncertainty, which we discuss in section 3.2.2.

3.1.2 The scale of jurisdictional schemes align with identified reliability shortfalls by AEMO

New South Wales, Victoria and Queensland intend to use jurisdictional schemes to deliver a mix of new generation and storage capacity that exceeds the amount needed to address forecast reliability shortfalls in each region to 2033, as shown in table 3.1.

Table 3.1: Adequacy of jurisdictional schemes against forecast reliability shortfalls by AEMO

	New South Wales	Victoria	Queensland
Stated intention of jurisdictional scheme	2 GW of new long-duration (eight-hour) storage by 2030	2 GW of additional new storage capacity by 2030	7 GW of new long-duration storage and 3 GW of new generation capacity for peak demand and backup security in 2035
Forecast reliability shortfall	1.93 GW in 2030	1.91 GW in 2032	1.03 GW in 2032

Source: EII Act 2020, section 44(3); Hon Dan Andrews MP, Australia's biggest renewable energy storage targets, Media release, 27 September 2022; Hon Dan Andrews MP, Victoria launches Australia's first offshore wind targets, Media release, 4 March 2022; Queensland Government, Queensland Energy and Jobs Plan, September 2022, p 6; and AEMO, Update to 2022 Electricity Statement of Opportunities, February 2023, table 2, p 15.

So far, only New South Wales has built in responsiveness of its jurisdictional scheme to changing circumstances and requirements in the market. It follows that we would expect the requirements of the NSW scheme to be adjusted as expectations about future reliability outcomes change.[25]

The arrangements for updating requirements in the Victorian, eg, the State Electricity Commission (SEC) and Victorian offshore wind policy, and Queensland, eg, the Queensland Jobs and Energy Plan, schemes are still being developed and so remain unclear. It follows that these schemes may require improved planning and coordination processes to ensure they remain fit-for-purpose in light of rapidly changing market conditions.

3.1.3 Jurisdictional schemes target a mix of relevant technology types

The eligibility criteria for jurisdictional schemes in New South Wales, Victoria and Queensland are not inconsistent with NEM reliability needs, in that they are intended to provide a technology mix delivering reliability outcomes for each jurisdiction. However, the eligibility criteria are also designed to achieve other jurisdictional objectives, such as renewable energy targets. In balancing the reliability and emissions reduction objectives, the eligibility criteria of these schemes deviate from the market-based reliability investment signals in the NEM, which identify the need for services rather than for technology types.

[25] As stated in appendix A1.1.2, the NSW scheme includes a requirement for a biennial investment planning and objectives document by AEMO Services and the annual Energy Security Target Monitoring Report by AEMO to allow for flexibility of the scheme in response to changing market conditions.

The eligibility criteria for these schemes seek to provide a mix of capacity technologies to provide reliability-related services, ie:

- the NSW scheme has detailed eligibility criteria to distinguish between long-duration storage (reliability focused) and firming services (security related), where firming services include demand-side participation, non-renewable peaking generation and shorter-duration storage;
- the Victorian storage targets include a mix of short-, medium- and long-duration storage;
- the Queensland scheme has distinct targets for long-duration storage capacity and capacity for peaking services to ensure system security; and
- the CIS has been used to expand an upcoming part of the NSW scheme,[26] which was initially motivated by an identified gap in the NSW Energy Security Target in 2025-26,[27] to help address the forecast reliability shortfall from 2028-29 onwards.

3.2 Jurisdictional schemes are not intended to operate without market price settings

The jurisdictional schemes are intended to lower market price risks to help deliver investment to meet the reliability standard, given uncertainty about future wholesale electricity prices. The market price settings are designed to manage efficiency and systemic risk from inappropriately high prices without impeding the market price signals needed to promote investment to satisfy the reliability standard. It follows that the market price settings need to be sufficiently high so that the expected revenue for a new-entrant generator is sufficient to recover its investment and operating costs.

Importantly, the jurisdictional schemes have not been designed to be the only mechanism for ensuring the reliability standard is met. Rather, the schemes operate in tandem with market price signals, which are directly affected by the market price settings.

In this section, we describe the funding mechanisms underpinning the jurisdictional schemes to explain how they provide a risk allocation mechanism to manage future wholesale electricity price uncertainty alongside market price signals.

3.2.1 The funding mechanisms offered through the jurisdictional schemes

The jurisdictional schemes facilitate new generation and storage entry by addressing market uncertainty through two distinct funding mechanisms, ie:

- ongoing, long-term revenue support mechanisms, such as a revenue ceiling and floor or a contract for difference, which is used in New South Wales, Victoria and the CIS; or
- a government ownership model that identifies funding gaps, provides government financial support and seeks a commercial return on this support, which is used in Victoria and Queensland.

[26] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme*, available at https://www.energy.gov.au/government-priorities/energy-supply/capacity-investment-scheme, accessed 17 August 2023.

[27] AEMO, *Energy Security Target Monitor Report | Further report*, May 2022, p 7.

The revenue support offered in New South Wales de-risks investment decisions in new-entrant renewable generation, long-duration storage and firming capacity by providing long-term energy service agreements (LTESAs) to mitigate the risk of low future wholesale electricity prices (for generation capacity) or low future revenue streams (for storage and other firming capacity). LTESAs are long-term contracts[28] where the holder has the option to implement or amend certain components of the LTESA at two-year intervals. This design feature allows for both long-term certainty and short-term flexibility to improve the investment cases of projects that are supported by a LTESA.

Holding an LTESA provides certainty over the minimum price that a generator will receive for each unit of generation or a minimum revenue support payment for a storage system, while retaining some scope to earn higher revenue through a benefit sharing mechanism above a pre-determined price or revenue threshold. That is, a key design feature of the LTESA is the dual offering of:

- a minimum price (for generators) or revenue top-up payment (for storage providers) that protects against downside risk; alongside
- a threshold price (for generators) or revenue (for storage providers) above which the holder can retain some benefits, which has the effect of exposing the holder to market price signals.

Additionally, holders of generation LTESAs can specify a portion of the total generation capacity to be covered by the LTESA, which allows for greater exposure to market price signals.

Similarly, the Commonwealth government – through the CIS – assumes the risk of low future wholesale electricity prices by offering a revenue floor to successful participants. The revenue ceiling in the CIS allows for some of the payments made during periods of low market revenue to be recovered during periods of higher market revenue, while also exposing the holder to market signals and incentivising behaviour to realise some upside over the revenue ceiling.

The design of the LTESAs and Commonwealth underwriting agreements are distinct from the contract for difference offered by the Victorian government in the Victorian renewable energy target (VRET) auctions and potentially offered to future offshore wind developments. The Victorian contract for difference is a swap arrangement where the holder receives a payment for prices below the strike price and pays back any prices above the strike price. As such, holders are assured of a certain price for every unit of electricity generated, ie, are not exposed to market price signals. This type of agreement provides the holder with complete protection against low future wholesale market prices and removes all potential to obtain upside from more favourable future market conditions.

Conversely, the Queensland scheme and the SEC in Victoria do not offer ongoing revenue support. Rather these approaches seek to install the required volume of new infrastructure through government owned entities, potentially in partnership with the private sector. The intention of these schemes is for the government to take on the market risk directly by investing in the required capacity, either directly through a government owned entity or in partnership with the private sector. However, there is currently limited information regarding both the Queensland scheme and the SEC in Victoria, therefore creating uncertainty regarding how these arrangements will ultimately be implemented and function.

Importantly, these jurisdictional schemes seek a commercial return on any government investment, meaning that the revenue obtained from the market must be sufficient to recover total investment costs and generate this return. In addition, the private sector will only be willing to co-invest with the government if market-based revenue is expected to be sufficient to cover investment costs and deliver a return on this investment. As such, this style of funding support relies crucially on the market price settings being appropriately set so that both the private and public parties can earn a commercial return on the funds invested.

[28] LTESAs are offered for up to 20 years for renewable generation, 14 years for long-duration chemical batteries and 40 years for pumped hydro.

3.2.2 The role of jurisdictional schemes in allocating risk

The jurisdictional schemes have been implemented to help share the market price risks of new investment with consumers and/or governments given current market uncertainties. This reflects concerns that the market price uncertainties are sufficiently large to discourage enough generation investment to meet the reliability standard, even if the market price settings are considered to be appropriately high.

Investment in NEM-connected generation and storage capacity requires predictability of future revenue and for this expected revenue to be sufficient to recover costs and deliver a commercial return. Future wholesale electricity prices are a significant source of uncertainty when predicting future revenue in the NEM.

In the NEM, the investment risk associated with generation and storage capacity is borne entirely by supply-side investors. These supply-side investments are often long-lived, have a considerable lead time prior to commissioning and require the investment decision to be made by reference to demand risk, ie, the need for the new capacity not arriving, in addition to the price risk identified above.

Relevantly, the market price settings prevent market prices from being inappropriately high, which manages efficiency and systemic risk in the NEM. However, if the market price settings are too low, then expected revenue will not be sufficient to recover the costs of a new-entrant generator, thereby leading to insufficient electricity supply to meet reliability requirements.

It follows that the market price settings have a crucially important function in the NEM market design to ensure that appropriate market price signals are provided to facilitate new investment to meet the reliability standard.

By way of example, the ongoing revenue support mechanisms allocate the financial risk of low future market-based revenue streams onto the jurisdictional agencies, which helps address the disincentive for investment associated with uncertainty over the future state of the market. Conversely, the government ownership and co-investment mechanisms place some or all of the market risk onto the government and, by consequence, allocates the benefits of this ownership to the government. In the case of co-investment, this approach shares those risks between government and private proponents.

Further, there are suggestions that jurisdictional schemes will sufficiently de-risk investment in new-entry generation and storage capacity to facilitate access to competitively priced debt, which would lower the total costs of investment. Feedback from stakeholders indicates that the extent to which this is currently taking place in the NEM is unclear. We understand that this financial consideration for market participants is still under development.

3.3 Interaction between jurisdictional schemes and market prices

In this section, we tease out the specific interaction of the two types of funding mechanisms from the jurisdictional schemes with wholesale electricity prices. We expect that wholesale electricity prices will not be materially impacted under either of these approaches.

3.3.1 Recipients of ongoing revenue support mechanisms seek to maximise profit

The ongoing revenue support mechanisms offered as part of the relevant jurisdictional schemes have mostly maintained the incentive for recipients to undertake profit maximising behaviour in the NEM.

For renewable generators, the New South Wales LTESAs and Victorian contracts for difference are two-way mechanisms locking in the price of generation provided by the holder, potentially leaving the holder indifferent to the outturn market price (depending on the level of exposure to market prices specified in the terms of the contract). However, as these mechanisms are settled on the basis of actual sent-out generation, holders face an incentive to maximise availability, and therefore generation. In addition, payments to the holder are restricted to a minimum price of $0/MWh resulting in a strict preference for non-negative prices by the holder.

This leads to an incentive for holders to bid at $0/MWh as this maximises the likelihood of dispatch, ie, is as low as possible, while also avoids the risk of incurring additional costs, ie, is non-negative. Given that these contracts are offered to renewable generators only, this bidding behaviour aligns very closely to marginal cost bidding, which is close to $0/MWh. As such, the existence of renewable generators with ongoing revenue support through these jurisdictional schemes is not expected to materially influence the bidding behaviour, and hence the price outcomes, in the wholesale electricity market.

Market participants in NSW that are distinct from renewable generators are eligible to hold either a storage LTESA (long-duration batteries and pumped hydro) or a firming LTESA (short-duration batteries, demand-side participation and non-renewable generation). These LTESAs differ from the renewable generation LTESA by providing an ongoing revenue payment rather than an agreed minimum price. For holders of storage LTESAs in NSW, there is assurance of:[29]

- receiving, at the very least, the annual payment, or revenue top-up, each year;
- keeping 25 per cent of revenue earned above the revenue ceiling when total net revenue including the top-up payment through the LTESA exceeds the revenue ceiling; and
- keeping 50 per cent of revenue earned above the revenue ceiling when total net revenue excluding the top-up payment through the LTESA exceeds the revenue ceiling.

This encourages holders of a storage LTESA or a firming LTESA, eg, non-renewable generators, to maximise net revenue as there is scope to keep some of the benefit from obtaining high net revenue above their minimum revenue top-up payment.

It follows that holders of storage or firming LTESAs will interact with the market in the same way as similar participants in the market that do no hold LTESAs, ie, to maximise net revenue. The incentive for these holders to undertake profit maximising behaviour will result in storage capacity providing load at low prices and generating at high prices and for firming capacity to deliver capacity into the market at times of highest value, ie, during periods of scarcity prices. As such, wholesale electricity pricing outcomes are not expected to be materially impacted through the provision of LTESAs for storage or firming capacity.

3.3.2 Government ownership and co-investment models rely on appropriate market price signals

There are strict financial arrangements in place to allow for fair participation by government owned entities in competitive markets such as the NEM. In particular, government owned entities are subject to tax and debt arrangements that emulate the corresponding conditions for private sector entities. The Victorian and Queensland governments are also seeking a commercial return on the investment in government owned entities, which will likely be in line with the return expected by the owners of competing private sector participants.

As such, the debt financing costs, project capital costs and operating costs for investment by government owned entities will be similar to those incurred by proponents in the private sector. This is also true for co-investment and partnerships between the government and the private sector. It follows that the bidding behaviour into the wholesale electricity market, with regards to the direct operational costs of production and the quantum of fixed costs to be recovered, will not be materially different between a government owned entity and a privately owned market participant.

While this investment will be funded by taxpayers, the government – and these government owned entities – will rely on market prices to obtain a suitable return on this investment.

[29] Holders of a firming LTESA receive ongoing revenue support of a similar style to the storage LTESA, ie, a revenue assurance. See: appendix A1.1.5.

4. Considerations for assessing the proposed market price settings in light of jurisdictional schemes

In this section, we consider the Reliability Panel's proposal to increase the market price settings against a counterfactual where the reliability settings are not amended, to provide insights on how the jurisdictional schemes may contribute to the achievement of the reliability standard.

We present a summary of our evaluation against the Commission's assessment framework criteria in table 4.1. For simplicity, the 'outcomes for consumers' and 'principles of market efficiency' criteria are grouped together.

Table 4.1: Comparison of scenarios against the assessment framework criteria

Assessment criteria	Preferred scenario	Description
Achieving the reliability standard	Market price settings amended	There are risks associated with relying on administrative schemes alone to deliver reliability outcomes, particularly over the longer term. This risk arises from the reliance on administrative decision making to determine the quantum and timing of capacity needed to meet reliability requirements compared to market mechanisms, which are focused on providing revenue earning opportunities to incentivise investment. Using a market mechanism that is supported in the short term with an administrative scheme to address current market price uncertainties is therefore a preferrable outcome.
Outcomes for consumers	Market price settings amended	Amending the market price signals is expected to increase the likelihood that the reliability standard will be met at least cost. Relying on administrative schemes rather than market signals, particularly when the administrative scheme is supported by government funding, creates a risk of overbuilding capacity. This is likely a more significant risk in the counterfactual scenario where the market price settings are not amended.
Principles of market efficiency		Increasing the market price settings is unlikely to result in end-use consumers paying more for investment to satisfy the reliability standard relative to the scenario where the market price settings are not increased. Where jurisdictional schemes award support through competitive tender processes, revenue required from the jurisdictional scheme would be replaced by market-based revenue when the market price settings are amended.
Principles of good regulatory practice	Market price settings amended	The factual scenario maintains the alignment between the National Electricity Rules and the reliability standard. This provides greater stability and certainty for market participants than relying purely on jurisdictional policies.
Emissions reduction	-	Emissions may be higher in the short term in the factual scenario as gas plants are encouraged to enter outside of the zero emissions criteria of many jurisdictional schemes. However, the counterfactual scenario may cause delayed exit of existing thermal plants which would increase emissions relative to the factual scenario.

4.1 Achieving the reliability standard

In principle, the reliability standard will likely be achieved in the short-term under both scenarios, ie, irrespective of accepting the Reliability Panel's proposal to increase the market price settings.

That said, we believe that there are risks associated with relying on administrative schemes alone to deliver reliability outcomes, particularly over the longer term. This risk arises from the reliance on administrative decision making to determine the quantum and timing of capacity needed to meet reliability requirements compared to market mechanisms, which are focused on providing revenue earning opportunities to incentivise investment.

In our opinion, market-based price signals are likely to be more effective in the long-run for ensuring sufficient investment in capacity to meet the NEM reliability standard. That said, jurisdictional schemes play an important role to provide incentives for capacity investment in the current circumstances where price signals along may be not sufficient to ensure that the reliability standard is met as the market transitions to renewable generation.

As such, we believe that amending the market price settings will make achieving the reliability standard over the long term more likely relative to a scenario where the market price settings are not amended.

4.2 Outcomes for consumers and principles of market efficiency

In our opinion, increasing the market price settings to the level needed to support the reliability standard will likely improve outcomes for consumers and result in a more efficient operation of the market.

The market price settings in the Reliability Panel's proposal:

- will maximise the likelihood that the market-based investment signals will be effective for delivering investment to meet the reliability standard (as explained in section 4.1);
- promotes the achievement of the reliability standard at least cost, given that the jurisdictional schemes aim to achieve multiple objectives;
- reduces the risk of overbuilding reliability-related capacity as there is less reliance on administrative decision making to deliver investment; and
- will likely reduce the magnitude of the successful bids for revenue support awarded through competitive auctions within the jurisdictional schemes as the amended market price settings provide additional market-based revenue that substitutes for the revenue that would otherwise have been required through the jurisdictional scheme.

As a result, we believe that amending the market price settings will promote the achievement of the reliability standard at lower total system costs than the counterfactual scenario, leading to better outcomes for consumers. We explain each of these reasons in greater detail below.

4.2.1 Amending the market price settings increases the likelihood that the reliability standard will be met at least cost

The Reliability Panel has indicated that the market price settings need to be amended to ensure that the market price signals are sufficient to promote investment to satisfy the reliability standard. Absent this change, there is greater pressure on the jurisdictional schemes to meet reliability requirements.

The jurisdictional schemes may not deliver the reliability requirements at least cost, due to the reliance on administrative decision making (as explained in section 4.1) and the multiple objectives that the schemes are seeking to achieve (eg, to achieve a renewable energy target). In addition, the schemes rely on administrative processes to provide flexibility and adaptability as circumstances change.

It follows that amending the market price signals is expected to increase the likelihood that the reliability standard will be met at least cost. This ensures that amending the market price settings should remain the main mechanism for ensuring that there are appropriate signals for investment to meet the reliability standard.

4.2.2 The risk of overbuilding capacity through jurisdictional schemes is higher in the counterfactual scenario

Relying on administrative schemes rather than market signals, particularly when the administrative scheme is supported by government funding, creates a risk of overbuilding capacity. Where government authorities are highly sensitive to reliability shortfalls, there is significant risk that government funds will be used to overbuild capacity and minimise the risk of outages and unserved energy within a jurisdiction at the expense of the government.

While this is a risk in both scenarios, it is likely a more significant risk in the counterfactual scenario, in which there are no complementary market-based investment signals to the jurisdictional schemes.

4.2.3 There is minimal risk of consumers paying for reliability twice when amending the market price settings

In our opinion, increasing in the market price settings is unlikely to result in end-use consumers paying more for investment to satisfy the reliability standard relative to the scenario where the market price settings are not increased.

Jurisdictional schemes award revenue support through competitive tender processes. Bidders into these auctions are seeking to address a separate and distinct risk to the uncertainty addressed through the market price settings. The higher market price settings in the factual scenario will allow for greater opportunity for investors to obtain market-based revenue, reducing the revenue support required from the jurisdictional scheme. This will result in lower revenue top-up requirements and strike prices from the winning bids in these auctions.

This relies on effective competition in these auctions to ensure that there is no incentive to bid above the level of support required for risk of not winning the auction. In this sense, the market price settings and ongoing revenue support mechanisms are complements, with prospective new entrants identifying a total revenue requirement for entry and then seeking support through the jurisdictional scheme for any revenue certainty not provided through the market price settings.

Where the government is investing in new capacity, taxpayers fund the initial costs to enter the market with the remaining investment costs recovered from electricity consumers through retail tariffs over time. This means consumers do not pay twice for this capacity as the total investment costs recovered is unchanged. Rather, costs are recovered through two distinct components – from taxpayers, with the remainder through retail electricity tariffs. Moreover, the higher the market price settings the less reliance there is on the jurisdictional schemes to de-risk prospective new-entrant investment, ie, higher market price settings increase potential private sector co-investment and reduces the immediate financial burden on the government.

4.3 Good regulatory practice

Relying on jurisdictional schemes to provide incentives to meet the reliability standard creates a separation of the signals to achieve the reliability standard from the regulatory frameworks that dictate the operation of, and participation in, the NEM.

This is because jurisdictional schemes are not embedded within the National Electricity Rules, and so does not benefit from the certainty created for investors through the decision making processes involved with changes to these rules. It follows that there are likely to be higher risks for investors relying on the continuance of government policy to support investment decisions.

The jurisdictional schemes may be subject to change over time to meet objectives other than reliability. As policy decisions, rather than regulatory frameworks, the jurisdictional schemes may be changed, amended or removed relatively easily in the future, creating less certainty and stability for market participants. The amendment of the market price settings in the factual scenario improves the certainty and stability of reliability-related investment signals.

Moreover, relying solely on jurisdictional schemes in the circumstance where the Commission decides to not amend the market price settings does not align with the Commission's recent and expected future approach to the market price settings. This approach diverges from the expected future state-of-the-world that recent new entrants would have used in an investment case, ie, an increase in the market price settings every four years in line with the requirements for the Reliability Panel.[30] This may create problems for recently commissioned investments by reducing actual revenue relative to the level of expected revenue underpinning their investment case.

As such, amending the market price setting is more consistent with good regulatory practice than the counterfactual scenario.

4.4 Emissions reductions

The generation and storage technology mix in the scenario where the market price settings are amended is likely to contain more gas generation in the short term as the market price settings incentivise peaking capacity to meet reliability and security shortfalls, which would not be supported to the same extent through the jurisdictional schemes, which target zero emission technology.

However, reliance on jurisdictional schemes may delay existing thermal generators from exiting the market if there is insufficient new-entrant investment taking place to provide reliability services in the market.

As such, it is difficult to conclude which scenario delivers more emissions reduction.

[30] AEMC, *National electricity amendment (amendment of the market price cap, cumulative price threshold and administered price cap) rule | Consultation paper*, 11 May 2023, p B, para 3.

A1. Appendix 1: Further details of relevant jurisdictional schemes

A1.1 New South Wales

A1.1.1 Intention of the scheme

The *Electricity Infrastructure Investment Act 2020* (EII Act 2020) sets out three overall objectives for electricity infrastructure investment in NSW, namely:[31]

- minimising electricity costs for NSW electricity customers, which will be achieved through the installation of a legislated volume of renewable generation capacity;
- meeting the reliability standard, which will be achieved through the installation of a legislated volume of long-duration storage capacity and a non-legislated volume of firming capacity; and
- meeting the energy security target, which will be achieved through the installation of a non-legislated volume of firming capacity.

Much of this scheme is directly related to ensuring system adequacy, ie, reliability and security, rather than affordability.[32] However, AEMO Services, as the NSW Consumer Trustee, is legislated to 'act independently and in the long-term financial interests of NSW electricity customers'.[33]

A1.1.2 How the scheme will achieve the stated intention

Central to the achievement of the objectives under the EII Act 2020 is the establishment of long-term energy service agreements (LTESAs) between the operators and investors of the assets providing generation, storage and firming capacity, and the scheme financial vehicle (SFV) – a counterparty set up by the Financial Trustee under section 62 of the EII Act 2020. The LTESA is a financial contract that acts to mitigate the risk of low wholesale electricity prices for private investors of these assets while also providing some exposure and upside to higher wholesale electricity prices.[34]

These LTESAs are awarded by AEMO Services, as NSW Consumer Trustee, through a competitive tender process.[35] LTESAs include a Project Development Agreement (PDA) that includes obligations to construct and commission the project.[36] LTESAs will often be awarded alongside access rights to REZs.[37]

In addition, the NSW scheme includes planning and coordination processes through the biennial publication of the Infrastructure Investment Objectives Report by AEMO Services and the annual Energy Security Target Monitoring Report by AEMO (at a minimum). In addition, the recommended magnitude of procured generation, storage and firming capacity is flexible to changing market conditions.[38]

[31] EII Act 2020, s 44(2).

[32] AEMO Services, *Draft 2023 Infrastructure Investment Objectives Report*, May 2023, p 21.

[33] EII Act 2020, s 60(3).

[34] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, p 25.

[35] AEMO Services, *Tenders,* available at https://aemoservices.com.au/en/tenders, accessed 17 August 2023.

[36] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, pp 26 and 28.

[37] Department of Planning, Industry and Environment (NSW), *Long-term energy service agreement design | Consultation paper*, August 2021, p 10.

[38] AEMO Services, *Draft 2023 Infrastructure Investment Objectives Report*, May 2023, p 12.

A1.1.3 Magnitude of the scheme

The EII Act 2020 requires a minimum of 12 GW of new renewable generation capacity and 2 GW of long-duration (8 hours or more) storage capacity to be constructed by 2030.[39] The equivalent of 3 TWh of renewable generation capacity will be procured through auctions twice a year to 2030, while annual tenders will be held between 2023 and 2025 to reveal if long-duration storage is ready for deployment on this timeline, with contingent tenders between 2026 and 2028 if the technology requires more time to become commercially viable.[40] Tenders for firming infrastructure will only be conducted when directed by the NSW Energy Minister.[41]

On 1 August 2022, the NSW Energy Minister issued a direction to AEMO Services to undertake a firming infrastructure procurement round in response to the reliability shortfall identified by the Energy Security Target Monitor Report.[42] 930 MW of firming capacity (380 MW as originally intended by the NSW Minister for Energy[43] and an additional 550 MW under the Capacity Investment Scheme[44]) will be procured to address the forecast gap required to meet the NSW Energy Security Target in 2025-26.[45] Firming capacity is defined as battery storage, thermal storage, gas peaker plants and loads capable of participating in the Wholesale Demand Response Mechanism with run time or duration of at least 2 hours.[46] This firming capacity will be commissioned prior to December 2025.[47] This firming capacity is being procured to meet both the reliability standard and the NSW Energy Security Target.[48]

A1.1.4 Eligibility criteria, limitations and restrictions

The NSW scheme is neutral to the type of technology within the clearly defined eligibility criteria for each service that is being procured.[49] In particular:

- all capacity procured during generation specific rounds must be from a renewable source and exceed 30 MW;[50]
- storage capacity procured under:
  - the long-term duration rounds must have duration of at least 8 hours;[51] or
  - the firming capacity rounds must have duration of at least 2 hours;[52]
- capacity procured under firming rounds need not be renewable, ie, it can include plants using natural gas as a feedstock. However, there are legislated requirements for any generation capacity procured under the firming rounds to have scope 1 emissions offsets;[53] and

[39] EII Act 2020, s 44(3).

[40] AEMO Services, *Draft 2023 Infrastructure Investment Objectives Report*, May 2023, pp 9 and 11-13.

[41] EII Act 2020, s 47(2).

[42] Hon Matt Kean MP, *New firming tender to ensure energy reliability*, Media release, 1 August 2022.

[43] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, p 6.

[44] NSW Government, *Capacity Investment Scheme to power NSW with clean, cheap, reliable energy,* Media release, 29 June 2023.

[45] AEMO, *Energy Security Target Monitor Report | Further report*, May 2022, p 7.

[46] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, p 6.

[47] AEMO Services, *Draft 2023 Infrastructure Investment Objectives Report*, May 2023, p 14.

[48] AEMO Services, *Draft 2023 Infrastructure Investment Objectives Report*, May 2023, p 21.

[49] AEMO Services, *Draft 2023 Infrastructure Investment Objectives Report*, May 2023, pp 27, 29 and 31.

[50] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, table 8, pp 49-50.

[51] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1,* September 2022, table 8, pp 49-50.

[52] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, p 6.

[53] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, pp 8 and 39-40.

- the 550 MW of firming capacity procurement made available by the contribution from the Capacity Investment Scheme will only be available to zero-emission technology projects.[54]

In addition, LTESAs have a clause that could prohibit projects receiving funding from other state and federal government programs. However, for the first two procurement rounds this clause has been left largely unused.[55]

Furthermore, the NSW scheme plans for the required capacity of a service, ie, renewable generation, long-duration storage or firming, and then procures this capacity at least cost, regardless of technology (adhering to eligibility criteria). By way of example, the first procurement round for long-duration storage was expected to be won by pumped hydro projects, however it was won by an eight-hour duration battery.[56]

A1.1.5 Funding mechanism

The structure and form of the LTESAs are different for generation, long duration storage and firming capacity. However, in general, the LTESAs all provide certainty regarding a minimum revenue level subject to generation requirements, ie, protection against downside price risk, with a sharing mechanism for revenue obtained above a threshold.

These LTESAs provide ongoing revenue support by offering holders an option to secure a pre-determined price or revenue (as determined when bidding for the LTESA) in two-year increments with a requirement to opt-in at least six months prior to the start of the option. The holders of these LTESAs trade-off the certainty of a low price or revenue (when exercising the option) with potentially higher revenue without the risk mitigation of the option.

The LTESAs are structured to allow for the holders to mitigate against the risk of low future wholesale electricity prices (for generators) and low revenue streams (for long-term duration storage and firming capacity). This risk mitigation option allows for the holder to operate with some flexibility, for a period of up to 20 years for renewable generation capacity, 14 years for chemical batteries, 40 years for pumped hydro and 10 years for firming capacity.[57]

Generation LTESA

The generation LTESA allows the holder to set the price for a portion of their dispatched generation over a series of two-year options across a 20-year contract. The strike price is determined at the start of the 20-year contract and applies every time the holder exercises a two-year option. There are two components to the portion of sent out generation that is covered by this fixed price, one being the contracted portion of total nameplate capacity (the contracted capacity, or contracted percentage) which is set at the start of the 20-year contract and determines the maximum capacity that the holder can cover in any option, while the other is a swap portion of the contracted portion (the nominated proportion, or swap percentage) that the holder sets each time they exercise an option.[58]

[54] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme*, available at https://www.energy.gov.au/government-priorities/energy-supply/capacity-investment-scheme, accessed 17 August 2023.

[55] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, table 8, pp 49-50; and AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, p 40.

[56] AEMO Services, *AEMO Services nation leading tender and contract design delivers for NSW*, Media release, 1 May 2023.

[57] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, p 25; and AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, p 21.

[58] AEMO Services, *Draft generation long-term energy service agreement*, 18 May 2023, pp 2-4.

It follows that by exercising an option, the holder secures a fixed price for a nominated portion of their contracted capacity, with the swap payments (which are two-way) being made monthly.[59] The holder is paid on their actual sent-out generation, and the SFV is entitled to revenue from all markets, including revenue from LGCs.[60]

The LTESA includes a repayment mechanism (settled yearly) in which the holder will be required to make payments back to the SFV for 75 per cent of the revenue received above a threshold price (set at the start of the 20-year contract) that is earned through any non-nominated contracted capacity within an option.[61] Where this non-nominated portion of contracted capacity is hedged through an eligible contract, eg, a power purchase agreement or a cap contract, this portion of capacity will be exempt from the repayment mechanism.[62] This exemption encourages participation in contract markets by holders.

The repayment mechanism is intended to protect the SFV from the risk that options are only exercised during periods when outturn prices are low and not exercised during periods when outturn prices are high, ie, the SFV can recover some of the payments to the holders during years with low prices during periods of high prices. The repayment mechanism will be capped at the level of historical payments made to the holder.[63]

Long duration storage LTESA

The long duration storage LTESA allows the holder to receive an annuity payment to true up annual net operational revenue over a series of two-year options across a 14-year contract for chemical batteries and a 40-year contract for pumped hydro.[64] There are three components to the net annuity paid in any financial year. The first is the annual annuity cap, determined at the start of the contract.[65] The second is the adjusted annuity amount, determined by subtracting 75 per cent of net operational revenue above the annuity reduction threshold (set at the start of the contract) from the annuity cap.[66] The third is the annual revenue sharing amount, calculated as 50 per cent of the holder's net operational revenue (including the adjusted annuity amount) above the annual net revenue threshold (set at the start of the contract).[67]

It follows that by exercising an option, a holder of a long-duration storage LTESA will receive 25 per cent of the annuity cap for the first three quarters of a financial year. In the fourth quarter of the financial year, an annual reconciliation payment is made, either by or to the holder, calculated by subtracting the revenue sharing amount and the sum of quarterly annuity payments from the adjusted annuity amount.[68] In effect this becomes a revenue floor and ceiling, with 50 per cent revenue sharing for any revenue above the ceiling.

A repayment mechanism applies in financial years where the holder does not exercise the option and the net operational revenue for that non-exercise year is above the annual net revenue threshold (set at the start of the contract). The repayment mechanism requires the holder to return 50 per cent of any revenue earned above the net revenue threshold, up to 100 per cent of the historical het payments.[69] This repayment mechanism allows the SFV to recover some of the historical payments it has made to the holder when the holder makes significant revenue in the future.

[59] AEMO Services, *Draft generation long-term energy service agreement*, 18 May 2023, pp 68-70.

[60] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, p 27.

[61] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, p 27.

[62] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, p 27; and AEMO Services, *Draft generation long-term energy service agreement*, 18 May 2023, pp 9 and 28-30.

[63] AEMO Services, *Draft generation long-term energy service agreement*, 18 May 2023, p 29.

[64] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, p 25.

[65] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 1*, September 2022, p 29.

[66] AEMO Services, *Draft long duration storage long-term energy service agreement*, 18 May 2023, p 72.

[67] AEMO Services, *Draft long duration storage long-term energy service agreement*, 18 May 2023, pp 72-73.

[68] AEMO Services, *Draft long duration storage long-term energy service agreement*, 18 May 2023, pp 70-73.

[69] AEMO Services, *Draft long duration storage long-term energy service agreement*, 18 May 2023, pp 32-33.

Firming capacity LTESAs

There are separate and distinct LTESAs offered to demand response capacity and other firming capacity, eg, supply side, with both LTESAs offered as a series of one-year options over a contract terms of 10 years.[70] The firming capacity LTESA takes the form and structure of the long-duration storage LTESA, ie, an annuity payment to true up annual net operational revenue. However supply-side firming capacity can nominate a contracted percentage as seen in the generation LTESA.[71]

The repayment mechanism allows the SFV to recover historical payments made to the holder through a 50 per cent revenue sharing arrangement with the holder, with the maximum amount the holder could be asked to repay equal to 100 per cent of the historical net payments.[72]

A1.1.6 Cost recovery mechanism

Costs related to the scheme are to come from an electricity infrastructure fund as per part 7 of the EII Act 2020. These costs are then recovered from customers through distribution network charges.

The AER is to make an annual contribution determination that sets out the amount required to be paid by each distribution network service provider in NSW.[73] The total contribution amount for 2023-24 is $138.14 million.[74]

A1.1.7 Other relevant schemes

The NSW pumped hydro recoverable grants program aims to establish a pipeline of shovel ready pumped hydro projects across NSW.[75] $51.84 million in recoverable grants has been provided to assist with the cost of early stage, detailed feasibility studies for six pumped hydro projects with a combined capacity of 2.56 GW.[76] This funding can be allocated towards the development of bids for long-duration storage LTESAs and will be recovered when the project reaches financial close.[77] The NSW government has committed a further $24 million to the projects and will invest a further $23.5 million to undertake feasibility studies to develop pumped hydro projects on key dams throughout the state.[78]

The NSW Emerging Energy program provides $75 million of funding to assist with the development of innovative large-scale electricity and storage projects in NSW.[79] Approximately $47.5 million of capital funding has been provided to five projects totalling 220 MW. An additional $10.1 million of funding has been awarded to nine projects for pre-feasibility and pre-investment activities, with the potential to deliver 2,700 MW of on demand electricity.[80] It is unclear if, how, or when the remaining $17.4 million will be allocated.

[70] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, p 21.

[71] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, pp 21-23.

[72] AEMO Services, *NSW electricity infrastructure tenders | Guidelines – tender round 2 firming infrastructure*, March 2023, pp 21-23.

[73] EII Act 2020, s 56(1)-(3).

[74] AER, *Contribution determination for 2023-24*, 24 February 2023, para 3.

[75] NSW Climate and Energy Action, *Pumped hydro grants*, available at https://www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes/pumped-hydro-grants, accessed 17 August 2023.

[76] EnergyCo, *Pumped hydro recoverable grants*, available at https://www.energyco.nsw.gov.au/industry/pumped-hydro-recoverable-grants, accessed 17 August 2023.

[77] NSW Climate and Energy Action, *Pumped hydro grants*, available at https://www.energy.nsw.gov.au/business-and-industry/programs-grants-and-schemes/pumped-hydro-grants, accessed 17 August 2023.

[78] EnergyCo, *Pumped hydro recoverable grants*, available at https://www.energyco.nsw.gov.au/industry/pumped-hydro-recoverable-grants, accessed 17 August 2023.

[79] NSW Climate and Energy Action, *Emerging Energy program,* available at https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/shift-renewables/emerging-energy-program, accessed 17 August 2023.

[80] NSW Climate and Energy Action, *Emerging Energy program,* available at https://www.energy.nsw.gov.au/nsw-plans-and-progress/major-state-projects/shift-renewables/emerging-energy-program, accessed 17 August 2023.

A1.2 Victoria

A1.2.1 Intention of the scheme

The Victorian government has legislated, under the *Renewable Energy (Jobs and Investment) Act 2017* (RE Act 2017), the Victorian renewable energy target (VRET) of 25 per cent by 2020 (which was achieved), 40 per cent by 2025 and 50 per cent by 2030.[81]

The Victorian government has announced its intention to increase these initial targets and legislate new renewable energy targets of 65 per cent by 2030 and 95 per cent by 2035.[82] The Victorian government is also targeting 2.6 GW of storage capacity by 2030 and 6.3 GW by 2035[83] and offshore wind generation capacity of 2, 4 and 9 GW by 2032, 2035 and 2040 respectively.[84]

To deliver on these targets the Victorian government has:

- commenced establishing the State Electricity Commission (SEC) as a government owned entity to accelerate the energy transition by partnering with industry and co-investors (while maintaining expectations of commercial returns) to deliver 4.5 GW of renewable energy generation and storage;[85]
- conducted two auctions to procure renewable generation capacity through long-term two-way contracts for difference, ie, the VRET auctions, with all successful projects from the second round yet to be commissioned.[86] It is unclear if future rounds of VRET auctions will be undertaken, however a Victorian government publication from March 2022 (ie, after bids had closed for the VRET2 auction), states that 'future offshore wind tranches will be planned, integrated and announced as part of future renewable targets and will form part of our VRET auction process';[87]
- established the Energy Innovation Fund (EIF), which focuses on the commercialisation of emerging and innovative renewable energy technology,[88] ie, to bridge funding gaps with direct grants;
- implemented the Victorian REZ Development Plan, including establishing VicGrid as a body within the Department of Energy, Environment and Climate Action (DEECA) to coordinate the overarching planning and development of Victorian REZs, including overseeing investment decisions related to the $540 million REZ fund;[89] and
- commenced development of Victorian offshore wind policy, which includes the establishment of Offshore Wind Energy Victoria (OWEV) as a division within DEECA to enhance the development of the Victorian offshore wind sector which will support the achievement of the VRET.[90]

[81] RE Act 2017, s 7; and Department of Energy, Environment and Climate Action (Victoria), *Victorian renewable energy and storage targets*, available at https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets, accessed 17 August 2023.

[82] Hon Lily D'Ambrosio MP, *Setting an ambitious emissions reduction target*, Media release, 16 May 2023; and Department of Energy, Environment and Climate Action (Victoria), *Victorian renewable energy and storage targets*, available at https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets, accessed 17 August 2023.

[83] Hon Dan Andrews MP, *Australia's biggest renewable energy storage targets*, Media release, 27 September 2022.

[84] Hon Dan Andrews MP, *Victoria launches Australia's first offshore wind targets*, Media release, 4 March 2022.

[85] State Electricity Commission Implementation Office, *SEC Pioneer Investment Mandate*, April 2023, p 2.

[86] AEMO, *NEM generation information July 2023*, 13 July 2023, 'ExistingGeneration&NewDevs' sheet.

[87] Victoria State Government, *Offshore wind | Policy directions paper*, March 2022, p 24.

[88] Department of Energy, Environment and Climate Action (Victoria), *Energy Innovation Fund*, available at https://www.energy.vic.gov.au/grants/energy-innovation-fund, accessed 17 August 2023.

[89] Hon Dan Andrews MP, *New projects to accelerate Victoria's renewable energy zones*, Media release, 3 August 2021.

[90] Victoria State Government, *Offshore wind | Policy directions paper*, March 2022, pp 24 and 26; and Department of Energy, Environment and Climate Action (Victoria), *Offshore wind energy,* available at https://www.energy.vic.gov.au/renewable-energy/offshore-wind-energy, accessed 17 August 2023.

A1.2.2 How the scheme will achieve the stated intention

There is very little information about the SEC, as it is currently developing its 10-year strategy. The SEC is offering 'Pioneer Investment' in proven renewable generation and/or storage technology with delivery as soon as possible.[91] Registrations of interest for this program closed on 15 May 2023, with the intention to announce the successful projects by the end of 2023.[92] This Pioneer Investment appears likely to be similar to the funding arrangements of the Clean Energy Finance Corporation (CEFC) which has a clear objective to 'facilitate increased flows of finance into the clean energy sector'[93] by investing alongside the private sector.

The VRET auctions undertook a competitive tender process to allocate long-term two-way contracts for difference with the Victorian government to successful proponents.[94]

Funds under the EIF were allocated through a competitive tender process, with the direct grant funding intended to help reduce the financial burden for early-stage offshore wind developments (stage 1) and for innovative technology (stage 2).[95]

VicGrid, as the planner of Victorian REZs, is in charge of the REZ Fund to invest in supporting infrastructure for developing REZs in Victoria. Stage 1 projects were focused on supporting network infrastructure, eg, synchronous condensers and network augmentation,[96] with stage 2 projects potentially including BESSs.[97] The actual funding mechanisms are relatively unknown, with the REZ Fund being available for:[98]

- funding investment gaps identified in the RIT-T process;
- direct grant funding or co-funding; and
- financing of investments with cost recovery from beneficiaries.

OWEV is still developing its preferred design for the procurement process for offshore wind developments, with further details on the offshore wind procurement process and design of the support package to be published in late 2023.[99] It is likely that proponents will bid for a support package, which will 'provide the certainty required for project developers and financiers to deliver offshore wind projects in Victoria'.[100] The financial support package may include a contract for difference (similar to those offered under the VRET auctions) and complementary financial contributions for capital expenditure and financing costs.[101]

---

[91] State Electricity Commission Implementation Office, *SEC Pioneer Investment Mandate*, April 2023, p 4.

[92] Victoria State Government, *Pioneer investment,* available at https://www.vic.gov.au/sec-investment, accessed 17 August 2023.

[93] CEFC, *Annual report 2021-22*, 27 September 2022, p 24; and *Clean Energy Finance Corporation Act 2012*, s 3.

[94] Department of Energy, Environment and Climate Action (Victoria), *Victoria renewable energy target auction (VRET1),* available at https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets/victorian-renewable-energy-target-auction-vret1, accessed 17 August 2023; Department of Energy, Environment and Climate Action (Victoria), *Victoria renewable energy target auction (VRET2),* available at https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets/victorian-renewable-energy-target-auction-vret2, accessed 17 August 2023; Herbert Smith Freehills, *Victorian renewable energy target (VRET) auction scheme now taking bids*, available at https://www.herbertsmithfreehills.com/latest-thinking/victorian-renewable-energy-target-vret-auction-scheme-now-taking-bids, accessed 17 August 2023; and Herbert Smith Freehills, *VRET 2: further auction to assist Victoria to meet its renewable energy target*, available at https://hsfnotes.com/environmentaustralia/2021/09/15/vret-2-further-auction-to-assist-victoria-to-meet-its-renewable-energy-target/, accessed 17 August 2023.

[95] Department of Energy, Environment and Climate Action (Victoria), *Energy Innovation Fund,* available at https://www.energy.vic.gov.au/grants/energy-innovation-fund, accessed 17 August 2023.

[96] Department of Environment, Land, Water and Planning (Victoria), *Victorian renewable energy zones development plan | Directions paper*, February 2021, pp 8-10.

[97] Department of Environment, Land, Water and Planning (Victoria), *Victorian renewable energy zones development plan | Directions paper*, February 2021, p 11.

[98] Department of Environment, Land, Water and Planning (Victoria), *Victorian renewable energy zones development plan | Directions paper*, February 2021, p 16.

[99] Victoria State Government, *Offshore wind energy implementation statement 2*, March 2023, pp 10-11.

[100] Victoria State Government, *Offshore wind energy implementation statement 2*, March 2023, pp 10-11.

[101] Victoria State Government, *Offshore wind energy implementation statement 2*, March 2023, pp 10-11.

A1.2.3 Magnitude of the scheme

The SEC intends to help accelerate investment in 4.5 GW of renewable capacity, with a current budget of $1 billion in Victorian government funding.[102]

The VRET auctions have delivered 1,430 MW of new renewable generation capacity, and up to 365 MW and 600 MWh of new battery energy storage.[103] There is no official word on whether future VRET auctions will be undertaken.

The EIF has delivered two rounds of funding worth just under $40 million each.[104] There are no official announcements for future funding rounds.

The REZ fund has $540 million of funding available over four years from 2020-21.[105] $480 million of this has been invested in 12 projects to strengthen and modernise the state grid.[106]

The Victorian Offshore Wind Development Plan does not detail the cost requirements or expectations.

A1.2.4 Eligibility criteria, limitations and restrictions

The SEC will provide partnership funding to renewable generation and/or storage technology with a minimum size of 100 MW preferably located within a REZ.[107]

Historical VRET auctions were available to new renewable generation, which may be collocated with a battery, with capacity in excess of 10 MW.[108] The second round pushed for this renewable generation capacity to be located within REZs and required successful proponents to surrender all large-scale generation certificates (LGCs) to the Victorian government.[109]

Each round of the EIF had different eligibility criteria, with the first round focused on feasibility and pre-construction requirements for offshore wind and the second round focused on deployment of innovative technology (which included a 100MW battery with two-hour duration).[110]

[102] State Electricity Commission Implementation Office, *SEC Pioneer Investment Mandate*, April 2023, p 2.

[103] Department of Energy, Environment and Climate Action (Victoria), *Victoria renewable energy target auction (VRET1),* available at https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets/victorian-renewable-energy-target-auction-vret1, accessed 17 August 2023; and Department of Energy, Environment and Climate Action (Victoria), *Victoria renewable energy target auction (VRET2),* available at https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets/victorian-renewable-energy-target-auction-vret2, accessed 17 August 2023.

[104] Department of Energy, Environment and Climate Action (Victoria), *Energy Innovation Fund*, available at https://www.energy.vic.gov.au/grants/energy-innovation-fund, accessed 17 August 2023.

[105] Department of Environment, Land, Water and Planning (Victoria), *Victorian renewable energy zones development plan | Directions paper*, February 2021, p 6.

[106] Department of Energy, Environment and Climate Action (Victoria), *Renewable energy zones,* available at https://www.energy.vic.gov.au/renewable-energy/renewable-energy-zones, accessed 17 August 2023.

[107] State Electricity Commission Implementation Office, *SEC Pioneer Investment Mandate*, April 2023, p 4.

[108] Herbert Smith Freehills, *Victorian renewable energy target (VRET) auction scheme now taking bids*, available at https://www.herbertsmithfreehills.com/latest-thinking/victorian-renewable-energy-target-vret-auction-scheme-now-taking-bids, accessed 17 August 2023; and Herbert Smith Freehills, *VRET 2: further auction to assist Victoria to meet its renewable energy target*, available at https://hsfnotes.com/environmentaustralia/2021/09/15/vret-2-further-auction-to-assist-victoria-to-meet-its-renewable-energy-target/, accessed 17 August 2023.

[109] Herbert Smith Freehills, *VRET 2: further auction to assist Victoria to meet its renewable energy target*, available at https://hsfnotes.com/environmentaustralia/2021/09/15/vret-2-further-auction-to-assist-victoria-to-meet-its-renewable-energy-target/, accessed 17 August 2023.

[110] Department of Energy, Environment and Climate Action (Victoria), *Energy Innovation Fund,* available at https://www.energy.vic.gov.au/grants/energy-innovation-fund, accessed 17 August 2023.

The REZ Fund must be allocated to projects located within declared Victorian REZs. Stage 1 funding will be available to network augmentation investment and synchronous condensers only, but stage 2 funding may potentially include batteries.[111] VicGrid will consider options that can leverage the government's investment, and complementarity with other government initiatives such as the EIF and possible CEFC or Australian Renewable Energy Agency (ARENA) support will also be investigated.[112]

The Victorian offshore wind development plan does not detail eligibility criteria. OWEV is still exploring the optimal design of the procurement process for offshore wind developments, with further details on the offshore wind procurement process to be published in late 2023.[113]

A1.2.5 Funding mechanism

The commercial terms of support from the SEC are currently unknown.

Under the VRET1 auctions, successful proponents entered into a 15-year support agreement with the Victorian government (ie, taxpayer funded) in which:[114]

- a fixed base amount is paid annually in arrears;
- a variable two-way contract for difference is paid on a monthly basis, with the Victorian government setting the strike price (in $/MWh) and the payment owed will be the difference between the strike price and the actual wholesale price, ie, generator pays back any revenue above the strike price and receives any revenue underneath the strike price (with a $0/MWh floor);
- payments to the holder are subject to a cap;
- proponents must bid a minimum base amount and a maximum payment cap – one where LGCs are surrendered and another where LGCs can be retained and traded; and
- the contracted strike price and the base amount are escalated annually.

Under VRET2 successful bidders must achieve commercial operation by 30 December 2024, with a liquidated damages regime in event of delay.[115] Successful proponents will enter into a 10-year support agreement with the Victorian government (ie, taxpayer funded) in which:[116]

- a two-way contract for difference payment is paid monthly, with the amount payable calculated as the difference between the contract price (which is bid by the proponents over the life of the service agreement) and the pool price, which is the greater of the Victorian spot price and $0/MWh;
- a payment cap is applied to the cumulative net sum of all payments, ie, the net amounts over the term of the contract with no payments between either party required whenever the net amounts exceed the payment cap (payments will resume if the net amounts no longer exceed the payment cap);
- proponents must bid for the contract price and the payment cap over the 10-year service agreement; and
- unlike VRET1 there is no fixed annual base amount or escalation of the contract price.

[111] Department of Environment, Land, Water and Planning (Victoria), *Victorian renewable energy zones development plan | Directions paper*, February 2021, pp 8-14.

[112] Department of Environment, Land, Water and Planning (Victoria), *Victorian renewable energy zones development plan | Directions paper*, February 2021, p 6.

[113] Victoria State Government, *Offshore wind energy implementation statement 2*, March 2023, pp 10-11.

[114] Herbert Smith Freehills, *Victorian renewable energy target (VRET) auction scheme now taking bids*, available at https://www.herbertsmithfreehills.com/latest-thinking/victorian-renewable-energy-target-vret-auction-scheme-now-taking-bids, accessed 17 August 2023.

[115] Herbert Smith Freehills, *VRET 2: further auction to assist Victoria to meet its renewable energy target*, available at https://hsfnotes.com/environmentaustralia/2021/09/15/vret-2-further-auction-to-assist-victoria-to-meet-its-renewable-energy-target/, accessed 17 August 2023.

[116] Herbert Smith Freehills, *VRET 2: further auction to assist Victoria to meet its renewable energy target*, available at https://hsfnotes.com/environmentaustralia/2021/09/15/vret-2-further-auction-to-assist-victoria-to-meet-its-renewable-energy-target/, accessed 17 August 2023.

It is unclear how the contracts for difference offered through potential future VRET auctions will be structured.

The EIF provided grant funding for early stage development for offshore wind facilities and for the deployment of innovative technology.[117]

VicGrid is responsible for the development and future delivery of projects through stage 2 of the REZ Fund. This will include determining appropriate funding and ownership models for these assets.[118]

OWEV is still exploring the optimal design of the procurement process for offshore wind developments. This may include a contract for difference (similar to the VRET auctions) and complementary contributions for capital and financing.[119]

A1.2.6 Cost recovery mechanism

All policies appear to be taxpayer funded, with:

- the SEC offering partnership funding from the government that seeks a commercial return;[120]
- the VRET auctions offering a two-way contract for difference with the Victorian government;[121]
- the EIF having no repayment mechanism from successful proponents for the grants they receive;
- VicGrid still working through the cost recovery mechanism for the REZ Fund;[122] and
- the procurement design for the offshore wind development plan currently unknown, although this will likely mimic the VRET auctions for any contracts for difference and the REZ fund for other capital support,[123] ie, be taxpayer funded.

A1.3 Queensland

A1.3.1 Intention of the scheme

The Queensland government has announced, through the Queensland Energy and Jobs Plan (QEJP), a renewable energy target of:[124]

- 50 per cent by 2030;
- 70 per cent by 2032; and
- 80 per cent by 2035.

[117] Department of Energy, Environment and Climate Action (Victoria), *Energy Innovation Fund,* available at https://www.energy.vic.gov.au/grants/energy-innovation-fund, accessed 17 August 2023.

[118] Department of Environment, Land, Water and Planning (Victoria), *Victorian renewable energy zones development plan | Directions paper*, February 2021, p 11.

[119] Victoria State Government, *Offshore wind energy implementation statement 2*, March 2023, pp 10-11.

[120] State Electricity Commission Implementation Office, *SEC Pioneer Investment Mandate*, April 2023, p 4.

[121] Herbert Smith Freehills, *Victorian renewable energy target (VRET) auction scheme now taking bids*, available at https://www.herbertsmithfreehills.com/latest-thinking/victorian-renewable-energy-target-vret-auction-scheme-now-taking-bids, accessed 17 August 2023; and Herbert Smith Freehills, *VRET 2: further auction to assist Victoria to meet its renewable energy target*, available at https://hsfnotes.com/environmentaustralia/2021/09/15/vret-2-further-auction-to-assist-victoria-to-meet-its-renewable-energy-target/, accessed 17 August 2023.

[122] Department of Environment, Land, Water and Planning (Victoria), *Victorian renewable energy zones development plan | Directions paper*, February 2021, p 6.

[123] Victoria State Government, *Offshore wind energy implementation statement 2*, March 2023, pp 10-11.

[124] Queensland Government, *Queensland Energy and Jobs Plan*, September 2022, p 11.

The Queensland government is in the process of legislating these targets through the *Energy (Renewable Transformation and Jobs) Bill 2023.*[125] This bill will require at least 50 per cent of generation assets and 100 per cent of transmission and deep storage assets to be publicly owned, either wholly or partly.[126]

The QEJP also aims to achieve targets by 2035 of, amongst others, up to:[127]

- 7 GW of long duration storage through two new pumped hydro projects;
- 3 GW of low to zero gas generation for peak demand and backup security; and
- an additional 22 GW of wind and solar in Queensland REZs.

A1.3.2 How the scheme will achieve the stated intention

In order to deliver more publicly owned renewable energy, the Queensland government is boosting the Queensland Renewable Energy and Hydrogen Jobs Fund (QREHJF) to $4.5 billion.[128] The QREHJF allows government owned corporations to increase ownership of commercial renewable energy and hydrogen projects, including in partnership with the private sector.[129] The QREHJF continues to evaluate investment opportunities submitted by government owned corporations.[130]

In addition, the Queensland government set aside $273.5 million to advance the construction of two pumped hydro projects and established a new publicly owned entity (Queensland Hydro) to develop further pumped hydro assets.[131] On 13 June 2023 the Queensland government announced $6 billion in equity funding for the 2 GW Borumba pumped hydro project, with the remainder of the estimated $14.2 billion project cost to be funded through borrowing from Queensland Hydro.[132]

Furthermore, in 2019, CleanCo was established as Queensland's first publicly owned clean energy company.[133] CleanCo entered into a power purchase agreement with Acciona to support 400MW of new wind capacity, which compliments a further 102 MW of future installed capacity at the site which will be owned and operated by CleanCo.[134]

The Queensland government will also invest in a new 200 MW hydrogen ready gas peaking power station.[135]

A1.3.3 Magnitude of the scheme

Through the QREHJF, the Queensland government is allocating $4.5 billion of financing to state owned corporations to achieve targets for 2035 of:

[125] *Energy (Renewable Transformation and Jobs) Bill 2023*, Exposure draft, s 8.

[126] *Energy (Renewable Transformation and Jobs) Bill 2023*, Exposure draft, s 12.

[127] Queensland Government, *Queensland Energy and Jobs Plan*, September 2022, pp 6 and 27.

[128] Queensland Government, *Queensland Energy and Jobs Plan*, September 2022, p 28.

[129] Queensland Treasury, *Queensland Renewable Energy and Hydrogen Jobs Fund,* available at https://www.treasury.qld.gov.au/programs-and-policies/queensland-renewable-energy-and-hydrogen-jobs-fund/, accessed 17 August 2023.

[130] Queensland Treasury, *Queensland Renewable Energy and Hydrogen Jobs Fund,* available at https://www.treasury.qld.gov.au/programs-and-policies/queensland-renewable-energy-and-hydrogen-jobs-fund/, accessed 17 August 2023.

[131] Queensland Government, *Queensland Energy and Jobs Plan*, September 2022, p 24.

[132] Queensland Hydro, *Borumba pumped hydro project greenlit with $6 billion funding*, available at https://qldhydro.com.au/borumba-pumped-hydro-project-greenlit-with-6b-funding/, accessed 17 August 2023.

[133] Department of Energy and Public Works (Queensland), *Queensland's renewable energy target*, available at https://www.epw.qld.gov.au/about/initiatives/renewable-energy-targets, accessed 17 August 2023.

[134] Department of Energy and Public Works (Queensland), *Queensland's renewable energy target*, available at https://www.epw.qld.gov.au/about/initiatives/renewable-energy-targets, accessed 17 August 2023.

[135] Queensland Government, *Queensland Energy and Jobs Plan*, September 2022, p 30.

- new generation and storage capacity of:[136]
  - 22 GW of new wind and solar generation capacity;
  - 7 GW of long-duration storage; and
  - 3 GW of low to zero gas generation; and
- a government ownership requirement, either wholly or partly, of:[137]
  - more than 50 per cent for generation assets, ie, solar, wind and gas; and
  - 100 per cent for long-duration storage.

A1.3.4 Eligibility criteria, limitations and restrictions

The QREHJF is for government owned corporations only, which may be in partnership with the private sector, although overall the Crown has to have an ownership stake, either wholly or partly, of at least 50 per cent of generation assets in the state.[138]

The key criteria considered when assessing investment proposals to the QREHJF include:[139]

- supporting additional renewable energy generation and storage capacity, including (but not limited to) solar, wind, batteries and hydrogen;
- demonstration of commercial value in the investment proposal; and
- the creation of new and ongoing employment opportunities in Queensland.

A1.3.5 Funding mechanism

The details of the funding mechanisms by which this investment will take place are currently not known. However, we expect that the government owned entities will be funded through the usual mechanisms in Queensland, which are clearly stated in the Code of Practice for Financial Arrangements. This includes the following:

- when raising debt funding, government owned corporations must borrow exclusively from Queensland Treasury;[140] and
- while Queensland Treasury can borrow at lower rates than the private sector, a competitive neutrality fee is applied to the government owned corporation's cost of debt so to not give a competitive advantage over privately owned corporations.[141]

This suggests that borrowing from the Queensland Treasury will not give these government owned entities an advantage to deliver this investment at lower cost than the private sector. In addition, these government owned entities will seek an appropriate return to the equity invested in these projects.[142]

[136] Queensland Government, *Queensland Energy and Jobs Plan*, September 2022, pp 6 and 27.

[137] *Energy (Renewable Transformation and Jobs) Bill 2023*, Exposure draft, s 12.

[138] *Energy (Renewable Transformation and Jobs) Bill 2023*, Exposure draft, s 12.

[139] Queensland Treasury, *Queensland Renewable Energy and Hydrogen Jobs Fund*, available at https://www.treasury.qld.gov.au/programs-and-policies/queensland-renewable-energy-and-hydrogen-jobs-fund/, accessed 17 August 2023.

[140] Queensland Government, *Code of Practice for Financial Arrangements,* 7 July 2020, p 6.

[141] Queensland Government, *Code of Practice for Financial Arrangements,* 7 July 2020, pp 9-10.

[142] Queensland Treasury, *Queensland Renewable Energy and Hydrogen Jobs Fund*, available at https://www.treasury.qld.gov.au/programs-and-policies/queensland-renewable-energy-and-hydrogen-jobs-fund/, accessed 17 August 2023.

A1.3.6 Cost recovery mechanism

The increase in the QREHJF is funded by coal royalties.[143] As the QREHJF is entirely government funded, the costs of the scheme will be recovered from Queensland taxpayers.

A1.4 Capacity Investment Scheme

A1.4.1 Intention of the scheme

A consultation paper outlining the specific details of the Commonwealth Capacity Investment Scheme (CIS) was released in August 2023. The consultation paper stated that:[144]

> The objective of the CIS is to encourage new investment in clean dispatchable capacity to support reliability and reduce market volatility in Australia's rapidly changing energy market.

Relevantly, the federal government stated that the CIS will aim to complement the current reliability framework in place in the NEM.[145] In addition, the CIS will support existing jurisdictional and Commonwealth schemes and may be adapted to remain consistent with these schemes,[146] eg, the CIS will be implemented in collaboration with the NSW Electricity Infrastructure Roadmap [147] as noted in appendix A1.1.3.

The scheme will support investment in new capacity to meet reliability needs between the 2025-26 and 2029-30 financial years, with competitive tender processes undertaken between 2023 and 2027.[148] The need for further rollout of the CIS beyond 2027 will be considered by the federal government as part of a broader review of the long-term national energy market framework.[149]

However, the quantum of new capacity supported by the CIS:[150]

> …is not intended to be sufficient to meet 100% of Australia's need for both dispatchable and non-dispatchable (e.g. VRE) capacity. Substantial volumes of dispatchable and non-dispatchable capacity are also expected to be built outside of the CIS, including by investors responding to market price signals and potentially through state and territory government support in each jurisdiction (e.g. NSW Electricity Infrastructure Roadmap, WA Reserve Capacity Mechanism).

[143] Queensland Government, *Queensland Energy and Jobs Plan*, September 2022, p 28.

[144] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper*, August 2023, p 6.

[145] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 7.

[146] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, pp 6-7.

[147] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 8.

[148] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper*, August 2023, p 4.

[149] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper*, August 2023, p 4.

[150] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 11.

A1.4.2 How the scheme will achieve the stated intention

The scheme is available in all jurisdictions across Australia,[151] not just those in the NEM, and will offer long-term Commonwealth underwriting agreements for an agreed revenue floor and ceiling to reduce the financial risk for investment in new capacity.[152] The Commonwealth underwriting agreements will be allocated through a competitive tender process.[153]

The objective of these competitive tenders will be to select the projects that provide capacity and reliability at the lowest cost.[154] More formally, successful bids will be those that demonstrate the highest levels of merit when assessed against two distinct criteria and stages, ie:[155]

- the project bid stage (stage A), which assesses the technical, commercial and social license merit of the proposed project, with strong performing projects shortlisted and invited to bid for the next stage; and
- the financial bid stage (stage B), which assess proposed projects against their contribution to achieving reliability and lowering end-use consumer prices, ie, the objectives of the CIS. Stage B bids 'will be expected to provide pricing bid variables for competitive assessment'.

A1.4.3 Magnitude of the scheme

The scheme is targeting 6 GW of new, clean, dispatchable capacity by 2030, bringing forward at least $10 billion of investment in this capacity.[156] This 6 GW of total new capacity will be allocated across jurisdictions through 'reliability targets', representing the amount of capacity to be built in any one year.[157]

The reliability target is expected to be expressed in terms of capacity (MW) of medium storage (4-hour) equivalents,[158] which is a better measure of reliability compared to rated capacity as it reflects the actual reliability need and means that the target can be set without assuming an underlying technology mix.[159] This annual reliability target reflects the new capacity requirement to be procured now for a future year, reflecting the different lead times for potential technology types.[160] These lead time assumptions may be updated on an annual basis to reflect any changes in relevant market and regulatory settings.[161]

[151] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 4.

[152] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 5.

[153] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 6.

[154] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 6.

[155] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 19.

[156] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 11.

[157] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 13.

[158] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 11.

[159] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 12.

[160] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 13.

[161] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 11.

The annual reliability targets will be determined through a bespoke modelling process leveraging information from the most recent Integrated System Plan and Electricity Statement of Opportunities processes undertaken by AEMO and will include guidance on the required location of this investment across Australia,[162] ie, will capture the contribution of each jurisdiction to the total reliability target.

Where the total capacity required to meet the reliability needs in each jurisdiction between the 2025-26 and 2029-30 financial years, ie, the total reliability target, exceeds the 6 GW cap under the CIS, the 6 GW of CIS capacity will be allocated amongst jurisdictions based on the relative contribution of each jurisdiction to the total reliability target.[163] In addition, where tenders under the CIS are run jointly across jurisdictions, the tender guidelines are expected to specify the allocation of capacity and funding across these jurisdictions.[164]

In addition, the targeted volume in each tender and across the scheme as a whole will be set to the extent achievable under financial budget caps.[165] Specifically, if the targeted capacity cannot be delivered within the allocated budget to the tender, eg, due to a lack of competition or higher than forecast costs, then the tender will be constrained to ensure it remains within the allocated budget.[166]

The Commonwealth government will publicise the targeted tender volume but not the specific details of the capacity and financial budget of each tender to avoid undermining the competitive tender process.[167]

A1.4.4 Eligibility criteria, limitations and restrictions

There are a number of eligibility criteria applicable to the CIS, which 'are intended to achieve consistency and transparency of decision-making' within the CIS tender process.[168] The final eligibility criteria may vary for each tender, including jurisdiction specific amendments, and will be outlined in the CIS tender guidelines for the specific tender.[169]

The eligibility criteria for the CIS will likely include, amongst others, a requirement for:

- projects to be registered with AEMO and have registered capacity greater than or equal to 30 MW and an intention to participate in the central market dispatch mechanism;[170]
- the use of a fuel source or storage fuel source with zero scope 1 emissions, ie, generators using a blended fuel are not eligible, noting that storage projects that charge from the network are considered to have a zero contribution to scope 1 emissions;[171]
- any storage project to be able to charge directly from the network;[172]

[162] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 10.

[163] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 11.

[164] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 15.

[165] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, pp 10-11.

[166] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 13.

[167] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 13.

[168] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 15.

[169] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 15.

[170] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 17.

[171] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 16.

[172] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 16.

- any generation capacity to be dispatchable,[173] eg, variable generation without associated storage will not be eligible for support under the CIS given the limited contribution to system reliability;
- a minimum duration of dispatch at full capacity, ie, four hours, with longer duration projects encouraged by potentially placing higher value on longer-duration capacity in the evaluation process;[174] and
- financial close to be achieved after 8 December 2022, avoiding artificial clustering of projects around the timing of CIS tenders and encouraging progress without impacting eligibility for future CIS tenders.[175]

Demand-side participation will be eligible for CIS tenders when contributing to the objectives and eligibility criteria of the CIS, eg, registration as a Demand Response Service Provider to participate in the Wholesale Demand Response Mechanism with at least four-hour demand response duration.[176] Conversely, Virtual Power Plants are not currently eligible as they do not provide system reliability, while participants in AEMO's reliability and emergency reserve trader mechanism will also not be eligible for the CIS.[177]

In addition, projects receiving ongoing or periodic revenue support payment from other Commonwealth or jurisdictional schemes will be ineligible for support under the CIS.[178] However, this is distinct from public ownership, as publicly owned projects are eligible for support under the CIS.[179] Recipients of Commonwealth certificate schemes, eg, large-scale generation certificates (LGCs), investment from a Commonwealth or jurisdictional body, eg, through the CEFC, grant funding from a Commonwealth or jurisdictional body, eg, from ARENA, or any other form of Commonwealth or jurisdictional support intended to support the CIS will remain eligible for the CIS.[180]

Finally, the Commonwealth underwriting agreements will contain performance requirements to supplement existing price signals and regulatory frameworks.[181] Under these performance requirements the holder will be required to:[182]

- make the project available. A strict abatement regime will apply where a project is not available at the capacity (other than scheduled maintenance);
- respond to price signals in relevant markets; and
- bid a minimum of 50% of the project capacity in an LOR3 event (or equivalent event in the relevant market), that has been forecast by AEMO more than two hours ahead of the LOR3.

[173] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 16.

[174] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 14.

[175] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, pp 4-5.

[176] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 16.

[177] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 16.

[178] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 17.

[179] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, pp 15 and 17.

[180] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, pp 17-18.

[181] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 22.

[182] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, table 1, p 25.

The performance requirements will be limited to the portion of the project that is being supported by the CIS,[183] which need not be the entire capacity of the unit.

Holders will also be subject to AEMO direction, as defined under the National Electricity Rules.[184]

A1.4.5 Funding mechanism

The Commonwealth government describes the CIS commercial structure as:[185]

> For a scheduled generator (including storage), if net revenues (including net revenues earned by the project through eligible wholesale contracts (Net Revenue per Year), are below a total annual net revenue amount (Net Revenue per Year Floor), then the Guarantor will top up a percentage (e.g., 90%) of the difference between the Net Revenue per Year and the Net Revenue per Year Floor. This percentage is the "floor sharing percentage" and will be set by the Commonwealth.
>
> The floor prices will be bid by projects in the competitive tender process and set on a "pay as bid" basis.
>
> If Net Revenue per Year is above a ceiling price on an annual basis, the Capacity Provider will share net revenue for a scheduled generator with the Guarantor. The units and measure for the cap price will align with the unit and method outlined in Floor Price above.
>
> The cap and % sharing of net revenues will be set through the competitive tender process, with guidance provided in the tender guidelines on expected parameters.

More simply, the Commonwealth underwriting agreement offered through the CIS reduces investor uncertainty by providing a long-term contract for a revenue floor and allowing some upside revenue to be retained by the holder through the sharing mechanism above the revenue ceiling.[186]

Payments between the Commonwealth government and the CIS contract holder will be calculated and paid on a quarterly basis, with an annual true up to smooth out seasonal variation in payments determined at the end of the year.[187]

Similar to LTESAs offered in NSW, the term of the CIS contract is determined through the competitive process and can be chosen to cover some portion of the total rated capacity of the unit.[188] However:[189]

> …unlike the NSW LTESA, the CIS underwriting agreement is not expected to be an option and the floor and ceiling mechanisms will operate for the term of the agreement.

[183] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, table 1, p 25.

[184] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, pp 6-7.

[185] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, table 1, pp 23-24.

[186] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 6.

[187] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, table 1, p 24.

[188] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, table 1, pp 24-25.

[189] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, table 1, p 23.

The revenue support mechanism within the CIS relates to total, or net, revenue, which includes revenue from participation in Frequency Control Ancillary Services (FCAS) markets, eligible wholesale contract markets and other sources of revenue.[190] By including revenue from eligible wholesale contract markets, CIS contract holders are encouraged to participate in these markets, similar to market participants without a CIS contract.[191] This supports the ongoing effective operation of the NEM contract market and improves access to risk management activities for retailers and other wholesale market participants, improving outcomes for end-use consumers in the electricity market.[192]

A1.4.6 Cost recovery mechanism

As the counterparty to the long-term underwriting agreements under the CIS, the Commonwealth government will bear the costs of the scheme.[193] These costs will be recovered from taxpayers,[194] as distinct from the NSW scheme which recovers the costs through a contribution order on electricity consumers.[195]

[190] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, table 1, p 23.

[191] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 7.

[192] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 7.

[193] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 6.

[194] Department of Climate Change, Energy, the Environment and Water (Australia), *Capacity Investment Scheme | Public consultation paper,* August 2023, p 6.

[195] See appendix A1.1.6.

HOUSTONKEMP
Economists

Sydney
Level 40
161 Castlereagh Street
Sydney NSW 2000

Phone: +61 2 8880 4800