AGL Energy Limited
T 02 9921 2999
F 02 9921 2552
agl.com.au
ABN: 74 115 061 375

Level 24, 200 George St
Sydney NSW 2000
Locked Bag 1837
St Leonards NSW 2065

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Anna Collyer

Chair, Energy Security Board

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Energy Security Board capacity mechanism high-level design consultation paper

AGL Energy (**AGL**) welcomes the opportunity to comment on the Energy Security Board's (**ESB**) capacity mechanism high-level design consultation paper.

AGL is a leading integrated essential service provider, with a proud 185-year history of innovation and a passionate belief in progress—human and technological. We deliver 4.2 million gas, electricity, and telecommunications services to our residential, small, and large business, and wholesale customers across Australia. We operate Australia's largest electricity generation portfolio, with an operated generation capacity of over 11 GW, which accounts for approximately 20% of the total generation capacity within Australia's National Electricity Market (**NEM**). We have the largest renewables and storage portfolio of any ASX-listed company, having invested $4.8 billion over two decades in renewable and firming generation.

Examining the rationale for major wholesale market reform

Although we acknowledge the nature of current challenges in the NEM, which are well outlined by the ESB in its consultation paper, and we strongly support consideration of the appropriate market structure to guide the NEM through the energy transition, we do not believe that the capacity mechanism high-level design presented in the consultation paper provides a solution to these challenges.

While we agree with the ESB that there is some merit in considering additional incentives for dispatchable capacity, the ESB has not put forward a compelling case that its present high-level design, consisting of a centralised capacity mechanism to operate alongside the existing NEM structure, is the best approach when compared to other resource adequacy options available. Instead, we consider there are other more compelling options, such as reserve mechanisms, which address similar concerns while also providing additional benefits to energy customers and the broader market.

We are particularly concerned at the potential for the proposed design to result in excessive costs for energy customers, and to dampen incentives for the broad range of emerging supply- and demand-side options that currently support reliability but also contribute to affordability and decarbonisation objectives.

A common critique of capacity markets internationally is that they struggle to produce the right mix of incentives, and often produce outcomes at higher cost. In the present environment, it is not clear that it is in the best interests of customers to make a structural transition towards a market design that is broadly criticised as exacerbating affordability challenges and reducing agility and flexibility in the types of resources it incentivises.

It is also particularly challenging to support the high-level proposal and provide feedback on detailed design elements when material issues that have been raised by stakeholders through the consultation process have been delegated to future policy decisions by State governments. For example, we consider that the most fundamental elements of a resource adequacy mechanism, such a generator eligibility and resource sharing

across jurisdictions, should be determined prior to detailed design and not after a framework has already been decided upon.[1]

In addition to these concerns, there is a lack of consideration in the ESB's high-level design of how the capacity mechanism would interact with elements of the existing market that currently support investment, such as the NEM reliability and price settings, which are fundamental to solving the investment challenges that the ESB has identified in its case for change.

Guiding investment through the energy transition

There are several ways that generation investment could be incentivised to support the energy transition, many of which have been briefly considered by the ESB throughout the Post 2025 Market Design reform program. However, the recent shift in policy position by the ESB to support a centralised capacity mechanism comes even though the ESB has previously stated that it did not support the development of a centralised capacity market within the NEM context.

In this respect, we broadly agree with the ESB's initial criticisms of centralised capacity markets, in particular that the design "translates to a more fundamental shift in risk allocation and does not utilise the market's ability to innovate and compete to keep prices as low as possible, and there is limited evidence of its success overseas."[2] Unfortunately, there is very little in the consultation paper that suggests that these primary concerns have been addressed in the current high-level design.

Significant market reforms, such as the proposed transition to a capacity market, comprise major work programs that often create substantial transitional risks and costs in the market, often reaching into hundreds of millions of dollars.[3] Consequently, these reforms must meet a high threshold of confidence—proposed changes should not just provide marginal or theoretical benefits to customers, but rather should be underpinned by clear policy directives and substantial evidence that the case for transition is clearly justified.

Despite our lack of confidence in the claimed merits of the current proposal, we consider that the issues raised by the ESB remain important to consider. As the energy transition continues, debate will naturally continue on the appropriate market structure to deliver the enormous scale of investment required to completely decarbonise the NEM in an orderly yet very rapid fashion. In our view, this will require a much more ambitious and coordinated reform program than has currently been put forward by the ESB, including more open discussions about the appropriate role of subsidies for new generation and transmission projects, and the need to manage thermal closures in a coordinated and orderly way.

It is likely that such reform will only be possible when governments have established a more considered and holistic energy market reform agenda, which includes further guidance on the expected pace of transition, firm guardrails on minimum levels of reliability and secure operation of the grid, and consideration of the various ways that the costs of reforms should be recovered from energy businesses, customers, and taxpayers.

Current market challenges

Over the next three decades, substantial amounts of new large-scale renewable generation and distributed solar generation are forecast to be connected to the NEM. Aging thermal generation will be replaced by a

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[1] Policy positions taken by jurisdictions that are not technology neutral (i.e., seeking to support one form of generation over another) would be better structured through more targeted reforms rather than market-wide mechanisms—for example, we consider that a reserve mechanism could accommodate divergent policy positions between jurisdictions.
[2] Energy Security Board, Post 2025 Market Design Consultation Paper, September 2020, p.46
[3] For example, AEMO has recently estimated the system costs of the NEM 2025 Reform Program (for AEMO only) to be $250 - $330 million with an additional $9 - $18 million for the Data Strategy pathway. These indicative costs exclude a capacity mechanism, congestion mechanism and ongoing operating expenditure costs that may result from the reforms.

range of variable and flexible generation technologies with lower emissions intensity to rapidly decarbonise Australia's energy sector.

State and federal government policies aimed at meeting emissions reduction targets and climate commitments will accelerate the uptake of variable renewable generation. In NSW, the Electricity Infrastructure Roadmap will see contracting with 12GW of new variable renewable generation prior to 2030, and in Victoria, the Renewable Energy Target to achieve 50% generation from renewable sources by 2030 is being achieved through reverse auctions. More recently, the federal government has announced an ambition to rapidly accelerate the delivery of renewable generation through a $20bn investment program to deliver new transmission infrastructure.

While large-scale wind and solar are the cheapest forms of *new* generation, most recent generation projects have been constructed with support from government-backed incentives and programs intended to deliver on government policies, especially policies to address the imperative to act on climate change but also to meet other important government objectives. These programs have successfully delivered new generation that may not otherwise have been built based on expected revenues within the current market design.

Consequently, subsidised investment is placing downward pressure on energy spot prices and contract prices, weakening market signals for investment in new generation and capex spending on existing generation. This is also increasing the pressure on existing generation to exit the market, as evidenced by recent announcements by AGL and Origin to bring forward closure dates for the Loy Yang A, Bayswater, and Eraring coal-fired power stations.

However, as recent market events of June 2022 have highlighted, new additions of variable generation have not reduced spot market volatility or reduced the operational complexity of the NEM. Although the underlying causes of recent market events are varied and complex, it remains clear that under certain conditions the current structure of the energy market can produce very volatile pricing outcomes as well as presenting material operational challenges for the central market operator AEMO.

Within this context of these trends, it is therefore sensible to consider whether the current structure of the NEM is providing an adequate basis to deliver the right mix of generation that will support the energy transition into the future.

Shifting towards more direct incentives for new investment

Since its foundation in 1998, the design of the NEM has proved remarkably resilient at accommodating a range of changing policy objectives, which have variously focussed on price, reliability, and emissions, and have rarely been consistent across all jurisdictions. Despite the changing policy landscape, within the current market structure record amounts of low-emissions generation have been connected to the grid, while reliability forecasts have remained positive. And although recent market events in 2022 have created immensely challenging operational pressures, electricity has continued to be delivered to customers across the NEM.

However, contemporary trends in the Australian energy market have diminished the central role of the electricity spot price as the main driver for investment in new generation, which is an underlying principle of the NEM's 'energy-only' design. In addition to providing broad incentives for renewable generation to meet climate policies, governments are understandably choosing not to rely on market price signals and instead are taking action by setting policies to deliver specific types of generation as well as providing direct funding to ensure delivery of individual projects. This is a critical trend to examine prior to embarking on structural market reform.

A recent comprehensive review by the independent Reliability Panel[4], found that the structure of the NEM remained relatively fit for purpose, and that investment required to maintain reliability over the near term could be met by utilising this structure, albeit with some potential changes to the underlying market settings such as increasing the NEM Market Price Cap (**MPC**).

However, governments are reluctant to accept some of these recommendations due to concerns about the effect on wholesale prices. Consequently, if market settings are not adjusted in accordance with the Reliability Panel's recommendations, some targeted policy measures may be required to drive investment. These targeted policies are likely to also align with other government objectives, such as regional development and jobs targets, and policies to pursue specific generation technologies and location-specific projects.

While it would be preferable to use efficient market mechanisms and leverage the existing design of the NEM to respond to challenges presented by the energy transition, clearly it is no longer the case that investment is driven solely by the spot price activity that has traditionally supported longer-term hedging arrangements and contracting. Increasingly, it is an objective of governments to ensure that new generation investment occurs in advance of closure of aging plant, and that infrastructure investment aligns with other policy objectives. This presents a significant market design challenge where price signals for these projects may not be apparent.

We agree with the ESB that continued interventions and utilisation of out-of-market subsidies place increasing pressure on the energy-only structure of the NEM to be able to provide the right investment signals that are needed to support the market through the transition. Over time, the continued departure from using the NEM spot price as a fundamental driver for new investment will therefore necessitate more substantial changes from the existing architecture of the NEM, including mechanisms that focus on attributes other than dispatched energy, including capacity.

However, market reform must also consider that governments are seeking to achieve multiple policy objectives and not just seeking to solve reliability at the lowest cost. Accordingly, it does not follow that implementing a capacity market is the correct response to these trends.

Maintaining system reliability to support the energy transition

As an essential service and a key driver for the broader strength of the Australian economy, it is imperative that a reliable supply of electricity is maintained at the lowest cost to customers, and in a way that considers the different perspectives that governments have on what constitutes resource adequacy in a modern electricity system.

While reliability standards have been met in recent years (and according to the Reliability Panel, can also be met in the future), there appear to be too many instances where the reserve margin has not been adequate to cover the perceived risk of unexpected events. It is increasingly clear that expectations about resource adequacy are changing, and there is concern regarding capacity shortfalls both over longer periods (i.e., *dunkelflaute*) and as a result of high-impact low-probability 'tail' events. There is also a perceived risk of price shocks from earlier-than-anticipated closure of thermal plant, despite recent reforms to ensure that plant closures are signalled many years in advance.

However, it is also clear that policymakers seem more concerned about these issues than market participants and customers, who, despite having the ability to hedge against such events, are much more concerned with receiving electricity supply to the accepted reliability standard and at the lowest price. This is evidenced by numerous customers (both market and retail) who are choosing to increase their spot price

[4] Reliability Panel, 2022 Review of the Reliability Standard and Settings (Draft Report), 9 June 2022

exposure to reduce short-term costs, rather than enter into longer-term hedging agreements at a fixed price to manage price risk.

In response to these perceived risks, governments have reacted by creating a range of measures aimed at developing more emergency reserves to provide greater comfort in managing contingency events, as well as developing interim and alternative reliability targets, which have been used as a basis for policy interventions outside of the market. The desire to have more 'spare' capacity available in the NEM has led to outcomes such as the procurement of greater volumes of AEMO's emergency reserve mechanism (**RERT**), pressure to keep aging thermal plant open beyond announced closure dates, and substantial public subsidies in new dispatchable generation.

Considering reserve mechanisms rather than capacity markets

However, this desire to have spare capacity available to manage contingencies and anticipate earlier-than-forecast closures will not be alleviated by the proposed structure of the capacity market. Indeed, we consider that one of the principal challenges with the ESB's current proposal is that existing incentives for generation investment will be dampened, potentially leading to reduced investment and a subsequent increase in reliability risk. This is because under the ESB's current proposal, new generation projects could be incentivised to participate in rent-seeking behaviour by waiting until reliability risk increased to benefit from subsequent capacity auction payments. This is unless capacity was procured in advance at a much higher margin than under the current settings, which would increase the costs of the scheme.[5]

As experience in other jurisdictions has shown, it is also exceedingly difficult to leverage the full range of demand- and supply-side responses to address reliability risks under a capacity market structure. Globally, electricity markets are moving from provision of bulk electricity by large thermal generators to a much more two-sided market, with much more sophisticated demand side participation and a far broader range of distributed generation from innovative technologies that provide a range of essential system services. Indeed, many recent market reforms in the NEM have been specifically aimed at supporting these trends into the future, just as many markets internationally have grappled with the limitations that capacity procurement has in supporting these aspects of modern electricity markets.

On this basis, instead of a mechanism to bluntly procure market-wide capacity in the event of a risk, a far better objective would be to incentivise the broadest possible range of market resources prior to the emergence of reliability risk, and then to consider very targeted incentives to manage reliability risk in the market if a shortfall is considered likely.

Within this context, and in order to achieve the desired policy outcomes at lowest cost, we consider that a greater focus should be placed on the operation of the various reserve mechanisms that have been proposed by various participants in recent years, and the way that these could be constructed to efficiently deliver greater reserve margin at the lowest cost to customers.[6]

As a complementary step, further attention should be directed to examining the potential range of unanticipated market shocks that could result in a need for large capacity buildout without sufficient notice—and the resilience of the NEM to manage these unanticipated events from an operational, regulatory, and investment perspective.

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[5] For example, in the most recent 2022 T-1 capacity auction in the UK, the UK government elected to procure more capacity than was recommended by central authorities in order to manage perceived energy market risk, resulting in an auction clearing price at the market cap.

[6] While we consider that changes to the current NEM market settings could also improve the outlook for generation investment, we understand that governments are reluctant to pursue this option. Our preferred alternate option to is to establish a dynamic operating reserve, a reserve market for capacity that would be operate alongside the existing energy market and could be tailored to meet the needs of different jurisdictions.

Properly constructed reserve mechanisms would provide certainty to government that sufficient supply will be available in real time to meet energy needs on an ongoing basis, while providing additional revenues for new flexible and dispatchable generation that need to be constructed to maintain system reliability and security. Reserve mechanisms are also likely to be much more efficient than the market-wide capacity procurement that has been suggested previously under the Retailer Reliability Obligation (**RRO**) and presently under the proposed capacity mechanism.

Consideration of the need for additional capacity incentives would then follow the development of reserve markets, as well as the establishment of complementary markets for system services, and should principally address the issue of failure to invest in new generation despite the presence of appropriate market signals; for example, where reliability shortfalls are forecast but generation projects are still not being progressed.

In this instance, market reform and policy action should more directly address the nature of the failure to invest, which could be as a result of several issues including connection and planning approval delays, fuel supply challenges, access to capital, transmission infrastructure limitations, workforce or materials shortages, or indeed a lack of certainty on anticipated future revenues. In these instances, some targeted action from jurisdictions to support investment that aligns with other policy objectives is likely to be warranted. If these underlying investment issues are not addressed, the capacity market will risk failed delivery of contracted new generation.

While we therefore consider that there is little evidence to support major restructuring of the design of the NEM at this stage, continued investigation into various investment incentives and options to maintain reliability at lowest cost to customers is nevertheless a prudent measure to safeguard the energy transition against unanticipated price and reliability concerns.

We expect that as the energy transition progresses, debate will continue on appropriate market structures to deliver the scale of investment required. In our view, this will require a much more ambitious and coordinated reform program than has currently been put forward, including more open discussions about the appropriate role of subsidies for renewable projects and the need to structure thermal exits in a coordinated and orderly way.

AGL looks forward to working with the ESB to consider in more detail the issues facing the current structure of the NEM and the potential for a capacity mechanism to be developed that can appropriately safeguard the energy transition by ensuring energy continues to be provided to customers reliably and affordably into the future.

If you have any queries about this submission, please contact Aleks Smits (Senior Manager Policy) at ASmits@agl.com.au.

Yours sincerely,

Elizabeth Molyneux

GM Policy and Markets Regulation, AGL Energy