

**Network of  
Illawarra  
Consumers of  
Energy**

**Network of Illawarra Consumers of Energy  
Submission on the Capacity Mechanism High-  
Level Design  
August 2022**

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## Introduction

### NICE

The Network of Illawarra Consumers of Energy (NICE) is a recently formed informal network advocating for the energy transition to a net-zero carbon future to be managed with the interests of consumers at heart.<sup>1</sup> This necessary transition must occur at the least cost to consumers while maintaining reliability and security of energy services, appropriate consumer protections for essential services and a just transition for affected workforces.

We believe there is a role for regionally based advocacy within the context of nationally consistent energy policy. The choice and options for energy supply differ by geographic region regarding different climatic conditions affecting demand and supply options and different risk factors impacting resilience planning. David Havyatt is the sole author of this submission.<sup>2</sup>

### Background

We appreciate the opportunity to comment on the Energy Security Board's (ESB) *Capacity mechanism: High-level Design Paper* of June 2022 (the Design Paper) and participate in the online forum on 1 July. NICE previously commented on the ESB's *Post-2025 Market Design Consultation Paper*<sup>3</sup> and *Post-2025 Market Design Options Paper*<sup>4</sup>. We did not, however, respond to the ESB's *Capacity Mechanism Design Project: Initiation Paper* of December 2021 (the Initiation Paper).

In July 2022 we made what we termed our *Initial Submission on the Capacity Mechanism High-Level Design*. This submission was focussed on the single question of whether the ESB has made a case for ANY capacity mechanism. The paper concluded that the ESB had not made the case. For completeness we have attached that submission to this.

We note that this position is supported in a number of submissions in response to the Design Paper, sometimes more explicitly (e.g. the Australia Institute) than others (e.g. Telstra). We note in particular Telstra's emphasis of the point that we raised about the impact of policy uncertainty, and how discussions of (we argue unnecessary) mechanisms creates uncertainty that delays investment of the kind the policy intervention is supposedly trying to bring forward.

As a consequence, it is hard to assess submissions in support of the mechanism, such as the submission from Squadron Energy, as genuinely stating that their project needs the mechanism to proceed, or whether it simply needs the end of the uncertainty to proceed. Certainly, providers of dispatchable capacity will expect to receive more total return for their investment with the mechanism rather than without. The principle of self-interest means they are likely to support the mechanism even if it has no market wide benefit.

In the next section we attempt to evaluate the ESB's concept of a capacity mechanism against the Energy Ministers principles that were to guide capacity mechanism development. This exercise reveals the poor quality of drafting of these principles as they include the same essential concepts in three places (Principles 1.2 and 6) or are in direct conflict (Principle 7 with

both 13 and 14). The overall simple assessment is that the design outline does not meet the Ministers' principles.

Noting the intent of the ESB to consider the detailed design we respond in the final section of this submission with responses to the 43 consultation questions (allowing for the misnumbering of the three questions on page 15 of the paper). Overall, our response is that the capacity mechanism is excessively complicated and any decisions on detail will be arbitrary. If we want to substitute the wisdom of central planners for the processes of a market we should do so by recreating the State Electricity Commissions. However, as we noted in the initial submission, the motive for creating the NEM was the overinvestment in capacity that had occurred in this model.

## Summary

The detailed analysis of the ESB's proposal identifies the capacity mechanism as an unwarranted response to an issue the ESB could not substantiate.

Despite almost a decade of energy ministers being unable to agree on an energy policy to accelerate the move to renewable energy, the reality is that the combined effect of technology costs, various government programs and the backing of consumers is making the transition occur. The identified challenge is that variable renewable energy (VRE) is entering the system at a greater rate than can be supported by the system.

The two biggest issues are system security (or stability) that requires responses to improve the maintenance of frequency and voltage waveforms. These challenges can be resolved through the deployment of synchronous condensers and "big batteries" equipped with appropriate grid-forming inverters. These developments can be supported by the correct application of incentives to transmission revenues.

The next issue is the availability of sufficient resource to meet demand and the rate of change in demand (ramping). It has long been apparent that the use of VRE needs to be accompanied by storage, both shallow storage capable of supporting rapid frequency response and diurnal mismatches, and deep storage that will provide capacity for longer term balancing needs.

This storage investment requires two things. The first is the confidence that the price spreads in the market will provide sufficient margin to cover storage losses and capital costs, and second is the confidence that policy makers will support this new market. The ESB's consideration of resource adequacy as part of the Post 2025 market design has directly under-mined this confidence.

Other factors have included the excessive investment in deep storage in a location near neither load nor VRE in Snowy 2.0 and the ability of DNSPs to suppress the competitive market for distributed batteries through their direct entry in the community batteries (a simple and obvious case of exercise of market power to restrict competition in a downstream market).

The longer the ESB and Energy Ministers continue to dabble with any form of capacity mechanism the longer the delay in getting the storage investment we need. Without storage

investment we will start reaching limits of VRE investment, especially solar, as there will be no demand that can be met by additional supply.

## The Energy Ministers Principles

The table below is an evaluation of the sketched design of the capacity mechanism against the Energy Ministers' principles for the design. The ESB design cannot be supported on the basis of these principles.

Energy Ministers' principles	NICE evaluation of the sketched design
1. be consistent with the National Electricity Objective	The mechanism is not consistent with the NEO as there is no assessment of whether the additional cost to consumers will result in an increase in reliability that consumers are prepared to pay for.
2. focus on affordability, reliability, security, and continued emissions reduction of electricity supply	This principle, apart from emissions reduction, is a restatement of the NEO. The capacity mechanism will not assist emissions reduction as it will reward fossil fuel generators for staying in the market longer and it will depress investment in the storage necessary to support further investment in renewables.
3. provide a signal to value capacity that best supports the needs of the NEM	The signal will not value the capacity that best supports the NEM, it will value capacity that implements the outcome of an extensive collection of assumptions made by the market operator.
4. complement existing energy only market design and well-functioning markets for financial contracts, and other reforms in development	The capacity mechanism is inconsistent with the <b>existing</b> energy only market which is globally unusual by having a very high market price cap
5. minimise regulatory burden for market participants	Every part of the capacity mechanism is a regulatory burden, including the requirement for retailers to amend their pricing processes to accommodate the pass through of these costs.
6. safeguard energy consumers. In particular: a. ensure costs and revenues are efficiently and fairly allocated; and b. avoid duplication of costs to secure reliability	This is a restatement of the NEO with the addition of an equity (distributional) component. The mechanism does not meet this principle.
7. ensure sharing of resources across the NEM by supporting inter-regional contracting	This requires some gymnastics as the mechanism is regionally described and then has an inter-regional bolt-on.
8. provide greater certainty around closure dates of exiting generation	It only provides greater certainty about closure dates if a generator successfully wins a part of the capacity auction, and even then it is only for the period

	covered by that auction. It almost certainly will prolong the life of many generators, but it will not reduce the uncertainty over closure dates.
9. mitigate reliability risks presented by unexpected closures of existing capacity	For the same reasons as above, it will not mitigate this risk. The bigger risk of the market relying on increasingly unreliable plant (see recent events) will increase.
10. encourage the timely replacement of existing capacity through driving commitments to new investment within reasonable notice periods of closure of existing capacity	Unless the mechanism is constrained to new investment it will not do this, but if it is constrained to new investment it will increase the risks in 8 and 9.
11. to the extent it does not conflict with state and territory policies, be technology neutral to ensure a focus on the ability of each resource to deliver generation on demand, for the periods when it is most needed a. Jurisdictions must be able to determine, via their regulation, provided for in the National Electricity Law framework, which technologies are eligible for participation in a capacity mechanism in their region	The mechanism meets this criteria only to the extent that it is available to existing and new capacity, in which case it works against climate objectives.
12. recognise relevant state and territory policies and investment schemes to account for bespoke arrangements to retain and replace existing capacity	The mechanism does this.
13. enable jurisdictions to opt out, via the National Electricity Law framework	The mechanism does not do this (because the mechanism relies on sharing resources between regions). No mechanism can simultaneously meet 7 and 13.
14. enable jurisdictions to opt in, through triggered thresholds for the mechanism	Ditto

## Response to consultation questions

For completeness we have responded to the consultation questions in the Design Paper below. This is a difficult task when we believe no case for change has been made. However, an exploration of the detail reveals the extent to which the mechanism would rely on effectively arbitrary decisions.

Question	Response
Q1 What measures could be put in place to improve AEMO's forecasting process and to access the best information from retailers and large customers on their likely demand?	Demand forecasting needs to be augmented by demand forecasts prepared by DSOs as part of the proper development of a two-sided market. Proper demand side market participation will dramatically reduce the risks of forecasting errors resulting in capacity shortfalls. <sup>1</sup>
Q2 Do you agree that the capacity mechanism should provide for multiple zones being the existing NEM regions?	We do not agree there needs to be any mechanism. However, certainly having multiple zones will be preferable to a national mechanism. We remain unsure how there can be any guarantee that contracted capacity will not be constrained by transmission limitations.
Q3 Is there sufficient evidence to say that the at-risk periods can be defined on a time-based definition?	As recent events demonstrated so called "at risk" periods can occur at any time. An early cold snap
Q4 If there is a risk of the emergence of more than one at-risk period in the NEM how should that be addressed?	By not having a capacity mechanism, there isn't a problem for which it is the right solution.
Q5 The de-rating factors produced by different at-risk period definitions and modelling methodologies can show large ranges particularly for non-traditional technologies. How should this and potential year to year variability in de-rating factors be addressed?	By not introducing a capacity mechanism. Not only is it attempting to solve a problem that hasn't been substantiated, but it is substituting arbitrary centralised decisions in lieu of the wisdom of crowds (i.e. markets)
Q6 What approaches should be used to de-rate different technologies? Should different approaches apply to different technologies?	No approach should be used. The questions continue to reveal why the mechanism is a terrible suggestion.
Q7 What is the right balance between transparency/simplicity and accuracy?	The right balance is to have both which maximally occurs by having no de-rating mechanism.

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<sup>1</sup> [https://www.researchgate.net/publication/342276396\\_Two-sided\\_markets\\_application\\_to\\_electricity\\_A\\_working\\_paper\\_on\\_market\\_design\\_in\\_the\\_Australian\\_electricity\\_market](https://www.researchgate.net/publication/342276396_Two-sided_markets_application_to_electricity_A_working_paper_on_market_design_in_the_Australian_electricity_market)

Q8 Should de-rating factors be determined at a technology class/region level or at a station level?	By definition de-rating factors have to be employed at a station level, a further reason why the proposed mechanism is unduly complex.
Q9 Do you agree with the approach to setting the forecast capacity requirement and the target capacity in a region?	Once the words " This is not straight-forward given the stochastic nature of ESOO modelling means that it cannot be easily converted to a single, deterministic outcome" appear in the discussion it is clear the mechanism is excessively complex and, basically, random.
Q10 How should the target capacity be determined where there are gaps in more than one region?	It shouldn't be – just stop trying to do this.
Q11 Should retailers have a role in a centralised capacity mechanism?	No, they shouldn't. Both in principle (retailers should be buying energy from DSOs not the bulk market) and because there should be no mechanism.
Q12 If you support retailer involvement in procurement, what are your views on how this could operate?	N/A
Q13 Do you agree with holding two auctions for each delivery year and is this timing appropriate? If no, what auction frequency and timing is appropriate and why?	No.
Q14 How should the timing of the auctions align with the notice of closure obligation?	It shouldn't.
Q15 What are your views on how existing and new capacity should be treated in the auction process?	If the identified need is only for additional dispatchable capacity, then only new capacity should be included in the auction. But there should be no auction.
Q16 Are there other considerations the ESB should take into account for the detailed design?	Yes. Stop it. Now.
Q17 Do stakeholders have a view on the optimal duration of certificates or price certainty for new capacity?	I'm sure some stakeholders do, but this one doesn't.
Q18 Do stakeholders have a preference as to whether the investment support scheme provides guarantees of price only, or of both price and quantity?	I'm sure some stakeholders do, but this one doesn't.
Q19 Internationally, capacity mechanisms rely on some multiple of the net-cost of new entry (net-CONE) assessment to determine the capacity mechanism market price cap. Is this appropriate or should an alternative approach be used?	Once again this level of complexity reflects the arbitrariness of the proposed mechanism. Meanwhile all the ESB analysis ignores the difference between Australia and other jurisdictions in the very high market price caps in Australia.

<p>Q20 How should the price settings interact with the energy market price? Over time, when settings are regularly reviewed, should the price settings in the capacity auction and the energy market be jointly determined?</p>	<p>If the capacity mechanism is introduced, by definition the market price cap needs to be reduced. However, it is better that we stay with a well-functioning energy only market.</p>
<p>Q21 Are there other considerations the ESB should take into account when determining demand curves in the detailed design?</p>	<p>Demand curves, much loved by economists as abstractions, are just that – abstractions. They don't exist, so whatever curve is chosen it is just that – a choice. An arbitrary substitution the consequences of which can be dramatic.</p>
<p>Q22 While the RRO requires mandatory participation for the largest three participants in a region, the ESB considers a methodology for determining market power should be applied to account for changing market concentration over time. Are there specific market concentration thresholds of concern?</p>	<p>Market power cannot be mitigated by auction design. As an example look at twenty years of spectrum auctions trying to wish competition into existence.        Market concentration is a problem in the NEM, and despite the Finkel recommendation about supporting competitive entry, the Commonwealth never funded anyone under UNGI but instead supported Snowy Hydro which now has a monopoly on deep storage with an additional gas-fired power station.        Market designers can do nothing to mitigate market power in the face of government policy that is the functional equivalent of "no one ever got sacked for buying IBM".</p>
<p>Q23 Should market power mitigation measures be applied to capacity providers with large market shares in supply-side regardless of their market share in retail?</p>	<p>See above</p>
<p>Q24 Do stakeholders support the proposal to integrate capacity mechanism settlement with the existing NEM settlement process? If not, what alternative process would better meet the design objectives?</p>	<p>Since there should be no settlement it shouldn't be integrated.</p>
<p>P51 Q1 Do you have preliminary views on compliance obligations for capacity providers?</p>	<p>No</p>
<p>P51 Q2 Do you have views on compliance obligations for new entrant capacity in advance of the delivery year?</p>	<p>No</p>
<p>Q3 Do you support the ESB's proposed performance model for consultation? If no, what other proposed model would be better and why?</p>	<p>No</p>

Q27 Do you support the ESB considering capacity payments based on availability throughout the year and during periods of system stress?	No
Q28 If you support payments based on two factors, what is the preferred distribution of the first and second payment? Should more or less weight be given to responding to events? ? If yes, what is an appropriate threshold?	N/A
Q29 To support revenue smoothing, should the ESB consider grouping events within the delivery year? If yes, what frequency (such as quarterly or monthly) is appropriate?	No
Q30 Should an upper threshold of performance events in a delivery year be considered	No
Q31 Are there any other interactions with the existing energy only market that the ESB should consider when designing the capacity mechanism performance obligation?	Yes, the consideration should be to simplify the interactions by not having a capacity mechanism
Q32 Are there any other compliance issues the ESB should be mindful of in detailed design?	Almost certainly yes, and there will almost certainly be some that no stakeholders identify.
Q33 Are there any other implications the ESB should consider in detailed design?	Yes. If the design needs to be so complicated is it worth doing?
Q34 What is the appropriate combination of performance obligation and capacity de-rating methodologies??	Once again a design that results in " the form the performance obligation takes" having "implications for how 'at-risk periods' are defined and the de-rating methodology." Is a design that really shouldn't be introduced.
Q35 Should de-rating be based on pre-defined time periods or a forecast of when the anticipated trigger periods are expected to occur?	Isn't this question really one to be considered alongside Qs4 and 5?
Q36 Given VRE is likely to be particularly affected by any mismatch in the forecast and actual conditions during performance events, should special consideration be given to VRE's compliance with the performance obligation?	I really don't follow how VRE has a "performance obligation." The ESB proposes two incentives on performance, the spot price and payment for bid availability. VRE will always face the former and never be entitled to the latter.
Q37 Do you think the MPC should be reduced if a capacity mechanism is introduced, and if so, by how much? What key issues should the ESB take into account when considering this issue?	Of course it should – see answer to Q20. However, the preferable outcome is not to introduce a capacity mechanism. It will not be the ESB that will reduce the market price cap, that function is reserved to the Reliability Panel.

<p>Q38 Do you agree that costs should be passed on via retailers, rather than NSPs?</p>	<p>This question should be rewritten to read "do you agree that costs should be passed on <b>to consumers</b> directly by retailers rather than first to NSPs who will then pass them to retailers who will pass them <b>to consumers</b>". NICE prefers the convention that retailers have prices, while networks have tariffs. The simplest recovery mechanism is to have nothing to recover.</p>
<p>Q39 What do you consider to be the most appropriate mechanism to allocate costs to retailers?</p>	<p>Have nothing to allocate.</p>
<p>Q40 Do you think that Option 1 or Option 2 better meets the assessment criteria?</p>	<p>Wow, this is the only time we've been asked how something meets the assessment criteria. No opinion.,</p>
<p>Q41 Are there any other factors that the ESB should consider when assessing the relative merits of the options?</p>	<p>No opinion.</p>
<p>Q42 Are there other ways to ensure that procurement of interstate capacity resources does not exceed inter-regional transmission limits, in addition to the two approaches outlined above?</p>	<p>We don't understand why the ESB is only concerned about inter-region capacity. As we noted in response to Q2 the design cannot guarantee availability of intra-regional transmission capacity.</p>

**Network of Illawarra Consumers of Energy  
Initial Submission on the Capacity  
Mechanism High-Level Design  
July 2022**

## Network of Illawarra Consumers of Energy

### Initial Submission on the Capacity Mechanism High-Level Design

#### Summary

This submission is made by the Network of Illawarra Consumers of Energy (NICE), a recently formed entity advocating for the energy transition to a net-zero carbon future to be managed with the interests of consumers at heart. It is an initial submission in response to the Energy Security Board’s *Capacity mechanism: High-level Design Paper* of June 2022. It focuses only on the issue of whether the ESB has made a case for any resource adequacy mechanism to be included in market design.

We assert that the entire Post-2025 Market Design project was ill-conceived. We argue that the interplay between Energy Ministers and the Board has assumed that the other party has determined the need for the project. Governments created the National Electricity Market to address over-investment in generating capacity. Since its inception, it has effectively reduced the excessive overhead capacity much loved by previous governments.

We believe the Post-2025 Design project and the resource adequacy mechanism component are based on a naïve belief that the policy objective should be to keep the power on at all times, no matter the cost. The inadequate governance regime of the national energy system allows this concern to drive Ministers to be “seen to be doing something” rather than properly empowering the market bodies. In the spirit of “never let a good crisis go to waste”, every occasion where the energy system is under strain is used by Ministers to meddle with market arrangements.

These governance issues manifest in the inadequate incorporation of consumer voices in the consultation on the proposed capacity mechanism. The only consumer voice on record, like us, believes that the case has not been made to introduce a capacity mechanism.

The ESB attempts to make a case for change with five broad statements. We accept none of them. The statements and our responses appear in the table below.

Claim	Response
The NEM needs unprecedented investment in the coming years	The level of investment is only unprecedented compared to the last two decades since consumption growth slowed. Much of the investment is replacing aged generators that need replacement anyway. The CSIRO GenCost study tells us that renewables with firming have the lowest lifetime cost.
The market faces enormous uncertainties, making it riskier to rely on an energy-only market for capacity	The biggest uncertainty facing the market has been layers of policy uncertainty, of which this project is a large part.

Incentives to invest may not be sufficient under conditions of high uncertainty	The expected return is the only incentive to invest. The issue, if anything, is that uncertainty makes projects unfinanceable. Other strategies can support investment.
The NEM provides limited long term investment signals	This is not true; all the planning documents of AEMO give relevant information about future market conditions.
Sustained high wholesale prices are required to incentivise new investment – but put upward pressure on consumer costs	Periods of high prices do not equate to average prices increasing. Wide temporal price spreads are essential to bringing forth investment in storage.
Capacity mechanisms provide a more direct way of ensuring capacity requirements are met	The most direct way would be for all new investments to come from governments. Unfortunately, the ESB fails to acknowledge that its direct approach comes at the cost of efficiency.

*Table 1: ESB claims and responses*

We conclude that there is no case for a capacity mechanism. However, we believe there is action required to facilitate more targeted storage investment and the other reforms underway to facilitate the connection of resources to transmission and distribution networks. Accordingly, the ESB should terminate consultation on the mechanism and advise Ministers that the capacity mechanism is not warranted.

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## Glossary

ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACF	Australian Conservation Foundation
AEMA	Australian Energy Market Agreement
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
ALP	Australian Labor Party
COAG	Council of Australian Governments – an entity that existed from the 1991 recession until the 2020 recession
Collective or Collective of Energy Ministers	The collective of energy ministers that has previously gone by the names of the Ministerial Council on Energy, the Standing Committee on Energy and Resources, and the COAG Energy Council but now apparently is the National Cabinet Energy Committee and the Energy Ministers Meeting
DER	Distributed Energy Resources include generation, storage and loads that can respond to price or non-price signals.
Design Paper	The ESB’s <i>Capacity mechanism: High-level Design Paper</i> of June 2022
ECA	Energy Consumers Australia
ESB	Energy Security Board
ESAA	Electricity (later Energy) Supply Association of Australia
ESOO	Electricity Statement of Opportunities
Finkel Review	<i>Independent Review into the Future Security of the National Electricity Market: Blueprint for the future</i> , chaired by Alan Finkel, that reported to COAG leaders in 2017.
GW	GigaWatts
Hilmer Review	The Review of <i>National Competition Policy</i> chaired by Fred Hilmer
Initiation Paper	The ESB’s <i>Capacity Mechanism Design Project: Initiation Paper</i> of December 2021
ISP	Integrated System Plan – a recommendation of the Finkel Review designed to be more than a transmission plan on steroids.
LCOE	Levelised Cost of Energy
MCE	Ministerial Council on Energy – the name of the Collective of Energy Ministers in the AEMA and the NEL.
MW	MegaWatt
National Cabinet	A misleading title given to meetings of the first ministers of the Commonwealth (Prime Minister), States (Premiers) and Territories (Chief Ministers)
NCC	Nature Conservation Council
NEG	National Energy Guarantee
NEL	National Electricity Law
NEM	The (misnamed) National Electricity Market. The term refers to either the bulk power market operated by AEMO or the integrated electricity system, including regulated networks and competitive retail markets.
NICE	Network of Illawarra Consumers of Energy

REPI	<i>Retail Electricity Price Inquiry</i> conducted by the ACCC which reported to the Australian Treasurer in 2018
REZ	Renewable Energy Zone – a concept introduced by the Finkel review, referred to in the ISP, subject of an ESB proposal but not consistently defined across the NEM.
RRO	Retailer Reliability Obligation
SEC	State Electricity Commission
SCO	Senior Committee of Officials
TWG	Technical Working Group
UNGI	Underwriting New Generation Investment
Vertigan Review	<i>Review of governance arrangements for Australian energy markets</i> chaired by Michael Vertigan, that reported to the Collective in 2015.
VRE	Variable Renewable Energy

## Introduction

### NICE

The Network of Illawarra Consumers of Energy (NICE) is a recently formed informal network advocating for the energy transition to a net-zero carbon future to be managed with the interests of consumers at heart.<sup>1</sup> This necessary transition must occur at the least cost to consumers while maintaining reliability and security of energy services, appropriate consumer protections for essential services and a just transition for affected workforces.

We believe there is a role for regionally based advocacy within the context of nationally consistent energy policy. The choice and options for energy supply differ by geographic region regarding different climatic conditions affecting demand and supply options and different risk factors impacting resilience planning. David Havyatt is the sole author of this submission.<sup>2</sup>

We appreciate the opportunity to comment on the Energy Security Board's (ESB) *Capacity mechanism: High-level Design Paper* of June 2022 (the Design Paper) and participate in the online forum on 1 July. NICE previously commented on the ESB's *Post-2025 Market Design Consultation Paper*<sup>3</sup> and *Post-2025 Market Design Options Paper*<sup>4</sup>.

We did not, however, respond to the ESB's *Capacity Mechanism Design Project: Initiation Paper* of December 2021 (the Initiation Paper). We despair that the ESB has allowed the issue of 'resource adequacy' to continue through multiple cycles of advice to Ministers and their responses before it has demonstrated a resource adequacy problem. We note the ESB acknowledged that it hasn't made a case for change in the box in the Initiation Paper labelled "Critical issue for stakeholders to consider", which commenced:

*The ESB acknowledges stakeholder feedback on the need for a capacity mechanism. We accept that there is a continued need to demonstrate why new market arrangements that explicitly value capacity, separately from the energy price, are needed to support investment for a future net zero emissions NEM. This will form part of the design process.*

NICE acknowledges that the ESB has attempted to make this case in the Design Paper. However, we consider it an inadequate approach to take to the issue. In particular, being developed only after Ministers had effectively directed the ESB to design a mechanism, the ESB almost considers it unnecessary. In addition, we note that the ESB has sought no stakeholder response to this part of the Design Paper.

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<sup>1</sup> The network has not yet started actively recruiting participants.

<sup>2</sup> Mr Havyatt was employed as Senior Economist at Energy Consumers Australia from October 2015 to August 2020. For the avoidance of doubt, nothing in this submission is the position of Energy Consumers Australia.

<sup>3</sup>

[https://d3n8a8pro7vhmx.cloudfront.net/nice/pages/21/attachments/original/1623627802/NICE\\_Response\\_to\\_P2025\\_Market\\_Design\\_Consultation\\_Paper.pdf?1623627802](https://d3n8a8pro7vhmx.cloudfront.net/nice/pages/21/attachments/original/1623627802/NICE_Response_to_P2025_Market_Design_Consultation_Paper.pdf?1623627802)

<sup>4</sup>

[https://d3n8a8pro7vhmx.cloudfront.net/nice/pages/21/attachments/original/1623628013/NICE\\_Response\\_to\\_P2025\\_Market\\_Design\\_Options\\_Paper.pdf?1623628013](https://d3n8a8pro7vhmx.cloudfront.net/nice/pages/21/attachments/original/1623628013/NICE_Response_to_P2025_Market_Design_Options_Paper.pdf?1623628013)

However, this initial response from NICE will only comment on the ESB's case for change. One of the important issues is how the ESB's ongoing prosecution of a resource adequacy mechanism has contributed to the uncertainty it claims it wants to fix.

Our view is that the ESB has not made a case for change and that it should go back to the Collective of Energy Ministers (the Collective or Ministers)<sup>5</sup> explaining that fact and terminating the design of any additional resource adequacy mechanism. We are making this initial submission to separate this argument from any consideration of the actual design. Notwithstanding our opposition to any mechanism, we reserve our right to make a further submission that will attempt to limit the damage the mechanism can do.

## This Submission

As outlined above, this submission focuses exclusively on whether the ESB makes a case for change. Hopefully, it will be clear from what follows that we are not arguing about aspects of the design of the capacity market but only on the threshold question of whether there is a need for anything other than the existing market arrangements.

We begin with a background section that addresses our understanding of the genesis of the Post-2025 Design Project. We argue that the project was poorly conceived and that its commencement and conduct are symptoms of the governance failings that continue to pervade the energy systems. One minor example of this governance confusion has been the changing titles of the collective at the whim of first ministers (COAG or the National Cabinet). The first titled version – the Ministerial Council on Energy (MCE) – was established on 8 June 2001 and is explicitly empowered under the Australian Energy Market Agreement (AEMA) of 2004. The National Electricity Law (NEL) defines it as:

*MCE means the group of Ministers (constituting or forming part of a Ministerial Council, Standing Council of Ministers or similar body (however described)) responsible for energy matters at a national level comprising 9 Ministers as follows:*

- (a) 1 Minister from the Commonwealth;*
- (b) 1 Minister from each State (totalling 6 Ministers);*
- (c) 1 Minister from each Territory (totalling 2 Ministers),*

*acting in accordance with its own procedures.*

The definition in the legislation admits to the possibility that the MCE may be described in other terms. However, it does not permit the current arrant nonsense of there being two separate entities with different names supposedly responsible for different parts of the responsibilities of the three national energy laws. Therefore, in the absence of a single currently agreed term to refer to the Ministers collectively, we have referred to them as the Collective in recent submissions. In this submission, in keeping with the AEMA and the NEL, we refer to them as the MCE.

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<sup>5</sup> We use this term to refer to the collective of energy ministers that has previously gone by the names of the Ministerial Council on Energy, the Standing Committee on Energy and Resources, and the COAG Energy Council but now apparently is the National Cabinet Energy Committee and the Energy Ministers Meeting

The second component of the background section outlines the history of the National Electricity Market (NEM), particularly the issue of over-investment in capacity by jurisdictions. The final part of the section describes the recent events in the electricity market and our view that a resource adequacy mechanism of any kind would not resolve them.

The section following the background details our response to the ESB's articulation of the case for change. After a further discussion of governance issues (more directly related to the project), we discuss the issues under the sub-headings used in the Design Paper. Finally, we demonstrate that the ESB has not made a case for a resource adequacy mechanism.

The submission ends with a short conclusion recommending the ESB cease further consideration of a capacity mechanism.

## Background

### The Post-2025 Design Project

The MCE (as the Energy Council) in the Communique from its 26 October 2018 meeting<sup>6</sup> noted a discussion of the Retailer Reliability Obligation:

*Ministers discussed the ongoing work by market bodies to implement Finkel recommendations on reliability and system security in the NEM. Ministers also asked the ESB to provide advice on a long-term, fit-for-purpose market framework to support reliability that could apply from the mid 2020's as the market transitions. The ESB will report back to Council in December 2018 on a forward work program for endorsement.*

This discussion was the genesis of the Post-2025 Market Design project. It is worth noting that two paragraphs earlier, the Communique noted:

*Ministers agreed that the Energy Security Board will progress development of draft National Electricity Law amendments that would give effect to a Retailer Reliability Obligation, including undertaking any further necessary stakeholder engagement. ESB will return to Council with a final draft Bill for decision in December 2018.*

*The Retailer Reliability Obligation will ensure enough of the right resources will be available to meet demand in the National Electricity Market (NEM) particularly in regions with limited access to dispatchable generation. If the right investment does not come forward to address forecast supply shortfalls, this would trigger an obligation on electricity retailers to demonstrate they can meet their share of peak demand.*

Those who follow the development of the NEM will recall that the ESB developed the Retailer Reliability Obligation (RRO) in conjunction with the ill-fated National Energy Guarantee (NEG). However, stakeholders usually overlook that the purpose of the RRO was as an adjunct to the NEG. The RRO design sought to ensure that retailers contracted for reliable (dispatchable) resources, not just the new renewable generation promoted by the NEG.

That the RRO was pursued and implemented without the renewable component of the NEG was always an error that simply added to the regulatory burden. The RRO has, to date, been triggered four times by the South Australian Minister and exactly once by the Australian Energy Regulator (AER) for the period 1 January to 29 February 2024 inclusive<sup>7</sup>.

Bizarrely, at the same meeting, the ESB briefed the MCE on “a draft Strategic Energy Plan, which will provide overarching guidance on the operation and evolution of energy markets in Australia.” The development of this Plan was a recommendation of the *Independent Review into the*

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<sup>6</sup> <https://webarchive.nla.gov.au/awa/20211005085553/https://energyministers.gov.au/publications/20th-energy-council-ministerial-meeting-communique%C3%A9>

<sup>7</sup> <https://www.aer.gov.au/retail-markets/retailer-reliability-obligation/register-of-reliability-instruments>

*Future Security of the National Electricity Market* chaired by Alan Finkel (the Finkel Review).<sup>8</sup>  
Recommendation 7.1 read:

*By mid-2018, the COAG Energy Council should develop and maintain a strategic energy plan informed by the Panel's blueprint to guide the operation and evolution of the National Electricity Market.*

Unfortunately, this recommendation conflicted with earlier recommendations by the *Review of governance arrangements for Australian energy markets* chaired by Michael Vertigan (the Vertigan Review), being:<sup>9</sup>

*2.2 That the focus of the work of the Council be the determination of strategic direction and the associated work programme to support this direction, with appropriate assignment of tasks to SCO and the AEMC.*

*2.3 That SCO be charged with the responsibility to present to the Council for consideration recommendations on strategic direction and a supporting work programme. The AEMC should be charged with the responsibility for aiding the development of this advice. governance review.*

The MCE had already tasked the Australian Energy Market Commission (AEMC) with preparing that advice with an explicit direction to include the Australian Energy Market Operator (AEMO), the AER and Energy Consumers Australia (ECA) in its preparation. The MCE finally released the *Strategic Energy Plan* on 20 January 2020 (though it was dated November 2019).<sup>10</sup> The document stated:

*At the direction of the Energy Council, the ESB has begun assessment of whether the existing market design is fit for purpose post-2025 under a range of possible future scenarios. The outcomes and objectives in this Plan will also inform this work.*<sup>11</sup>

At this point, the ESB had converted the ministerial thought-bubble from October 2018, and seeking this advice became a 'tasking' to develop a post-2025 design. This action resulted in Ministers at their next (December 2018) meeting agreeing to "a work program for the ESB to develop advice on a long-term, fit-for-purpose market framework to support reliability that could apply from the mid-2020s."<sup>12</sup>

The ESB claims it was "tasked by the nation's energy ministers in March 2019 to advise on a long-term, fit-for-purpose national electricity market design. The request recognised the

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<sup>8</sup> <https://www.energy.gov.au/government-priorities/energy-markets/independent-review-future-security-national-electricity-market>

<sup>9</sup> <https://apo.org.au/node/65522>

<sup>10</sup>

<sup>11</sup> There is a fascinating back story here about the tensions between the AEMC and AEMO on the initial instruction to the AEMC from EC on developing strategic priorities, and the tension that then emerged as the ESB was tasked with the strategic plan responsibility and seized it from the AEMC. The final Strategic Energy Plan released by EC was based on the work of the ESB, but it had been significantly revised by officials. It was an extremely disappointing instance where market bodies collectively had been given the opportunity to develop the strategic direction, fumbled it and left clean up to the Senior Committee of Officials.

<sup>12</sup> <https://webarchive.nla.gov.au/awa/20211005084323/https://energyministers.gov.au/publications/21st-energy-council-ministerial-meeting>

problems faced by the current NEM design because of technology and market changes during the past 20 years, as well as proposed changes for the future.”<sup>13</sup> However, the March 2019 date was when Ministers posted the ESB’s proposed approach on their website.

This claim of being tasked can be contrasted with the Ministers’ statement in December that the ESB was assessing whether the existing design was fit for its purpose. We discover the ESB never did this analysis. That the ESB is making the ‘case for change’ on resource adequacy in the Design Paper demonstrates this fact.

The outstanding question is where the fault lies with this? Has the MCE been deficient by not asking the ESB for evidence of need? Have the ESB failed to provide evidence because they assumed the MCE was asking for a new design? Or is there still a continuation of the opening observation of the Vertigan Review?

*In this overall structure, scope for improvement exists to adapt to the challenges foreshadowed by two themes that consistently emerged during consultations:*

- *the pace of change in the energy sector is arguably unprecedented; and*
- *a ‘strategic policy deficit’ exists which has led to diminished clarity and focus in roles, fragmentation and a diminished sense of common purpose.*

The report noted:

*The Panel observed that the Council and SCO appear to lack a focus on strategic direction and are therefore not providing effective and active policy leadership to the energy sector. Whilst the inherent structure of the Council cannot be altered, the Council can improve the visibility, transparency and accountability of its processes and operations to more effectively progress strategic energy market reform. Clear and rigorous criteria should be established for assessing proposals by jurisdictions who seek derogations from otherwise nationally agreed arrangements.*

Since May 2022, the protocols imposed by the Morrison Government’s ‘National Cabinet’ arrangements have taken the Collective of Energy Ministers in the opposite direction.<sup>14</sup> The Vertigan Review and the Finkel Review recommended (2.9 and 7.3) reducing the scope for jurisdictional derogation. Despite this, Ministers asking for advice from market bodies now habitually request that it facilitate separate jurisdictional decision-making.

In summary, the Post-2025 Market Design project was misconceived from the outset. Before commissioning the ESB to provide any advice on possible reforms, Ministers should have commissioned a report on potential failures of the existing design. While nothing can be done now except highlight, as we will, that the case for the capacity market has not been made, the Post-2025 episode highlights the governance problems identified in 2015.

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<sup>13</sup> <https://esb-post2025-market-design.aemc.gov.au/all-about-2025>

<sup>14</sup> Though it is pleasing to note that a Communique was issued from the most recent meeting.

## The development of the NEM

The Design Paper makes certain claims about the development of the NEM and its capacity to promote investment. In particular, the Design Paper notes:

*Since the NEM's start, market participants have delivered around 11,600MW of investment in new scheduled dispatchable capacity. Only around 900 MW – eight per cent – of that took place in the past ten years.*

This comment needs to be placed in context around the history of the development of the NEM and the trajectory of total consumption. Unfortunately, an inaccurate historical narrative has dominated academic and policy discussions. In this narrative, electricity was supplied by fully vertically integrated government-owned providers in Australia until reformed as part of the competition reforms instigated by the *Review of Competition Policy* chaired by Fred Hilmer (the Hilmer Review).

This narrative is a very inaccurate and misleading view of history.<sup>15</sup> Firstly, it ignores the rich variety of ways electricity was provided in its municipal origins. Secondly, it ignores that the impetus for the creation of State Electricity Commissions (SEC) was either the large investments needed to develop resources remote from loads (hydro in Tasmania, brown coal in Victoria and South Australia) which in turn (the latter two cases) were necessitated by the unreliability of black coal supplies from New South Wales. It also ignores the role that interest in State development played (in Tasmania), including the development of non-metropolitan regions (a primary focus in New South Wales and Queensland).

It is inaccurate concerning the transition because there was a complete separation between the SEC and distribution authorities in NSW and a partial separation in Victoria and Queensland. But most significantly, the reforms weren't triggered by the Hilmer Review. While labelled as 'micro-economic reform' by the Hawke Government, they were initiated following two reports by the precursors to the Productivity Commission in 1989 and 1991. The Premiers conference established the National Grid Management Council in 1991, two years before Hilmer.

The particular conclusion of the Industry Commission report in 1991<sup>16</sup> noted:

*The electricity and natural gas supply industries have not been performing to their full potential. Participants in the inquiry, including governments and utilities themselves, acknowledge significant shortcomings in performance.*

*Poor investment decisions leading to excess capacity and gross overstaffing during the 1980s provide the most striking evidence that electricity and gas have not been supplied at least cost.*

While its recommendations included all the elements of structural separation and progressive privatisation, its core focus was on the ability to reduce excess capacity by promoting the

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<sup>15</sup> These paragraphs are based on Havyatt, D 2022, 'History of Electricity Reform in Australia', in G Roger (ed.), *On the Grid: Australian Electricity in Transition*, Monash University Publishing, Melbourne.

<sup>16</sup> IC 1991, *Energy generation and distribution*, 0644144580 (v.1), Industry Commission.

interstate trade of electricity. That is, at market start, there was an acknowledged over-investment in capacity.

Following market start, the growth rate of total consumption slowed from 2004, declined from 2008, and then levelled off in 2015 after a small rise. This is shown by the purple line in Figure 1 using data from the Electricity (later Energy) Supply Association of Australia (ESAA). In 2003, the Australian Bureau of Statistics (ABS) started providing some data in Energy Accounts.

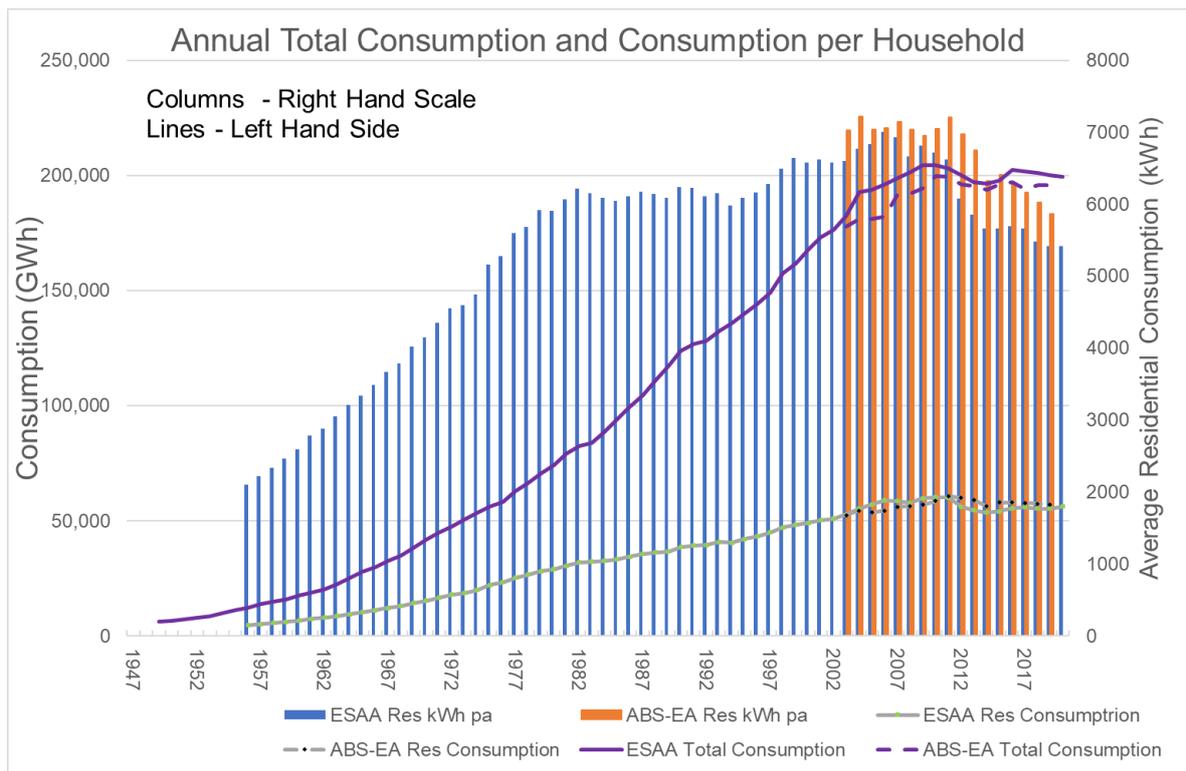


Figure 1: Total consumption, residential consumption and residential consumption per household

That little investment in generating capacity has taken place in the last eight years is a testament to the market doing its job: reducing the excess capacity that existed before 1998. Furthermore, the oversupply of capacity was potentially only exacerbated by the industry's collective failure to forecast, and even to notice, the decline (and then the end) of consumption growth. Figure 2 shows the familiar hedgehog diagram in which the body is the curve of actual NEM consumption while the quills are the successive demand forecasts.

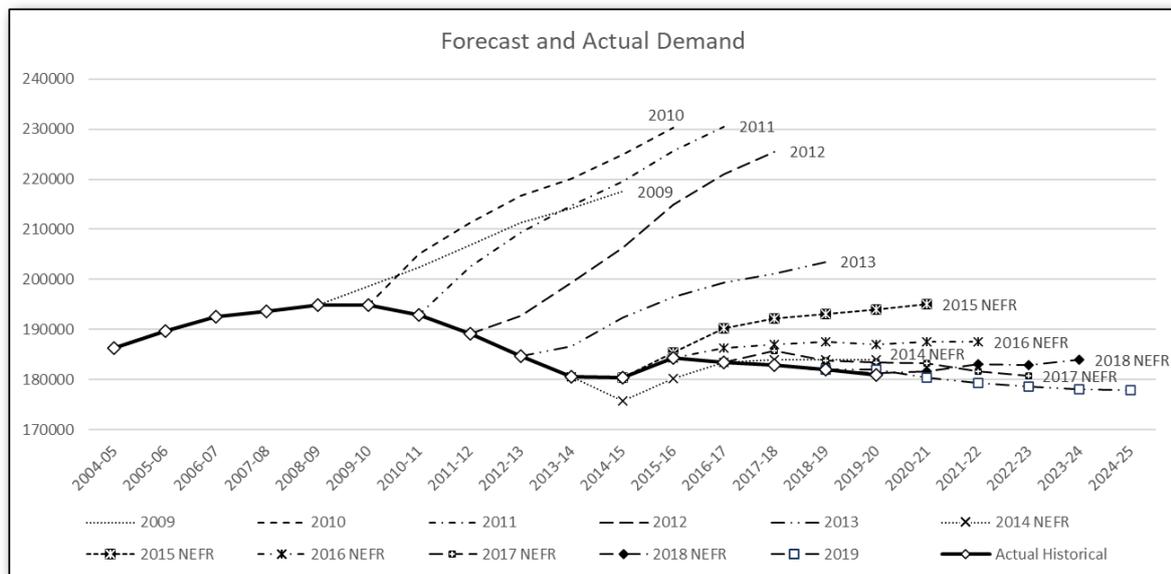


Figure 2: Forecast and Actual Demand in the NEM

A particular example of this error played out dramatically in NSW, where in 2008 the Government was told the State needed another large coal-fired power station. Treasury advised that the State could not afford this investment. This conundrum was the stimulus for the privatisation debate that consumed the State ALP Government.<sup>17</sup> Despite the political damage caused, no such plant was ever built.

Importantly, investment made after market start “broadly correspond[ed] to that which most experts expected: increased peaking capacity in Victoria and South Australia and more baseload to meet the fastest growing Queensland demand.”<sup>18</sup>

The NEM is, however, built on a false premise. Biggar and Hesamzadeh<sup>19</sup> identify three broad categories of market design reflecting the degree of competition introduced on the ‘buyer’ side. These are:

- The *single buyer* approach, under which a single entity purchases in the wholesale market;
- *Wholesale competition* under which entities with a local (distribution) monopoly purchase energy, and
- *Retail competition* under which any customer can, in principle, purchase electricity from any supplier.

Because we have retailers competing to supply end users, it is assumed that the NEM is a version of the third category, but it is not. Apart from a small number of non-retail market customers,

<sup>17</sup> Cavalier, R 2010, *Power crisis: the self-destruction of a state Labor Party*, Cambridge University Press.

<sup>18</sup> Moran, A 2006, ‘The Electricity Industry in Australia: Problems Along the Way to a National Electricity Market’, in F Sioshansi & W Pfaffenberger (eds), *Electricity Market Reform: An International Perspective*, Elsevier, pp. 173-202.

<sup>19</sup> Biggar, D & Hesamzadeh, M 2014, *The economics of electricity markets*, Wiley.

the amount of energy purchased and hence the price paid in each five-minute interval is made by the market operator based on their own forecasts. It is, in this sense, a single buyer approach.

To the extent that investment over the last decade may have been less than considered desirable, the ESB's estimate of 900 MW of new investment needs to be contrasted with the 'investment supercycle.' This term, coined by Paul Simshauser and Joel Gilmore, refers to the 16,000 MW of plant commitments comprising \$26.5 billion across 135 (mostly) Variable Renewable Energy (VRE) between 2015 and 2020. They identified three triggers for the supercycle: the demand contraction from 2010-15; the overinvestment in gas export facilities reducing gas generation for electricity's competitiveness; and policy discontinuity from 2011 to 2015 over the Renewable Portfolio Standard.<sup>20</sup>

We have already discussed the first of these; the second is widely understood but not amenable to simple policy resolution, while the third is worthy of further amplification. No investor has certainty about the future operating environment in which their investment will operate. One of the functions performed by capital markets is to enable investors to price and diversify that risk. However, the consequence of increased risk is always a higher cost of funds. The higher cost of funds can change a financeable investment into an unfinanceable one.

The policy uncertainty Simshauser and Gilmore identifies is merely the policy uncertainty that was resolved and unblocked a backlog of investment projects. However, Ministers seem to have a bottomless well of policy uncertainty to inflict on the market. Not least of these uncertainties has been the Post-2025 market design process itself and, in particular, the desire to address resource adequacy despite never having undertaken any study to identify a fundamental problem with resource adequacy.

We will return to this issue in our commentary below on the ESB's purported 'case for change.' At this point, we simply want to observe, or restate the issue, that the biggest design flaw in the NEM is the governance arrangements. As Fiona Simon labelled it in her excellent book<sup>21</sup>, Energy Ministers have a perpetual need to be 'seen to be doing something.' At the same time, we think by design, Ministers have constrained the ability of market bodies to resist this Ministerial meddling.

Indeed, we interpret the creation of the ESB as a mechanism for the sole purpose of facilitating this meddling and, in particular, overcoming strong views that were at the time coming from the AEMC. The ESB's conduct since its creation has done nothing to counter this interpretation.

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<sup>20</sup> Simshauser, P & Gilmore, J 2022, 'Climate change policy discontinuity & Australia's 2016-2021 renewable investment supercycle', *Energy Policy*, vol. 160, p. 112648.

<sup>21</sup> Simon, FC 2017, *Meta-Regulation in Practice : Beyond Normative Views of Morality and Rationality*, Taylor and Francis.

## Recent market events and resource adequacy

The ESB released the Design Paper in the middle of the latest ‘crisis’ in the NEM. Only Energy Ministers could consider a circumstance in which the Rules worked to ensure no involuntary load shedding as a crisis.

Unlike the pseudo-crisis that led to the black system event in South Australia in 2016 or the involuntary load shedding in South Australia early in 2017, the challenges the market faced were not a consequence of poor decisions by AEMO. However, just like those earlier events, a full analysis of the issues may take some time.

To summarise events, a cold snap accompanied by high winds hit the East Coast. The higher-than-normal loads this produced followed an earlier weather pattern that had flooded several open-cut coal mines. In addition, quite normal scheduled maintenance of coal plants was combined with several plant failures or withdrawals (which may or may not have been associated with coal quality or availability). Finally, all of this happened against a backdrop of surging global coal and gas prices created by the war in Ukraine and accompanying embargos on Russia.

That these events together caused a spike in wholesale prices was understandable. What is still the subject of investigation is whether the conduct of any of the generators in this period was counter to the requirements of the Rules or contravened Part XICA of the *Competition and Consumer Act 2010*.

What is not in dispute is that AEMO took two actions, first to impose a \$300 price cap and second to suspend the market. The need for the second action was triggered by the first. The consequence of these actions was that AEMO could direct sufficient generation to be available to meet demand. The ultimate price that will need to be paid for that generation will take a few more weeks to determine fully.

Unfortunately, the labelling of these events as a ‘crisis’ and the perception that the problem was the availability of resources has become a rationale for the Post-2025 Market Design response to resource adequacy, now offered as the capacity market. However, unless there has been misuse of market power (already illegal), additional gas-fired generation would not have made any difference to the market suspension. This is true even if we assume they had been able to ship gas to meet their needs. Additionally, a capacity market would not have made any coal plant that suffered a fault or could not acquire coal suddenly be available.

## The ESB has not made a sufficient case for change

### Wider project governance issue

The ESB acknowledges in the Design Paper that a case for change has not previously been made. However, the failure to do so reflects a fundamental governance flaw that the ESB does not address.

We addressed part of this governance issue in our review of the background of the entire Post-2025 project. We can summarise this failure as the Ministerial desire to be “seen to be doing something” and the market bodies being complicit by undertaking work to further that objective. It is widely recognised that the obligations of the professional public service to give ‘frank and fearless advice’ have been eroded in favour of a public service that meekly implements government policy without question. The formal establishment of agencies with legislated objectives and powers is intended to weaken this ability of political direction.<sup>22</sup>

However, an additional part of this flaw, another recurrent theme across market bodies, is the inadequacy of interrogation of the long-term interests of consumers. While all processes acknowledge the essential requirement of the National Electricity Objective (the NEO) to promote the long-term interests of consumers, agencies make very little effort to seek the opinion of consumers on issues of importance actively. And where consumer advocates make an effort to participate, which is difficult given their relative level of resourcing compared to industry and market bodies, their voice is frequently ignored.

The Design Paper notes that the ESB received 35 submissions in response to the Initiation Paper. As far as we can determine, only one consumer advocacy body (Energy Users Association of Australia (EUAA)) submitted comments. A further three civil society organisations (the Australia Institute, the Australian Conservation Foundation (ACF) and the Nature Conservation Council (NCC)) did so.<sup>23</sup>

In its submission, the EUAA, under the heading “The case for change has not been made”, noted:

*While recognising the ESB are acting on instructions from energy ministers to develop recommendations on a capacity mechanism, we thank you for recognising the concerns raised by the EUAA and others that we feel the case for change has yet to be made and that the need to clearly demonstrate this will be a feature of the work moving forward.*

In its submission, the ACF stated, “The need for a capacity mechanism has not been clearly demonstrated.” The other two organisations focussed more on questions of design, namely that

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<sup>22</sup> The ‘statutory corporation’ as a governance model of public enterprise is an example of this. That model was initially developed in Victoria to address political interference through Departmental operation of the railways. Statutory regulatory agencies such as the ACCC, the Australian Competition and Media Authority have similar objectives.

<sup>23</sup> <https://www.energy.gov.au/government-priorities/energy-ministers/priorities/national-electricity-market-reforms/post-2025-market-design/post-2025-market-design-capacity-mechanism-initiation>

any capacity mechanism that rewarded the continuation of existing capacity would only further defer new capacity.

These comments are not new. They are the response the ESB has received on resource adequacy from consumer advocates and civil society groups throughout the Post-2025 project. Nevertheless, they persisted.

The ESB also notes in its Design Paper that it has established “governance arrangements” for the capacity mechanism that includes:

- An Advisory Group – senior nominated representatives of market participants, including generators, retailers, energy consumers, financial institutions, and project developers, and
- A Technical Working Group (TWG) – nominated representatives of market participants, including generators, retailers, energy consumers, financial institutions and project developers.

We have been unable to find any detail of who the members of these bodies are, how frequently they have met or any summary of discussions.<sup>24</sup> However, we presume that Energy Consumers Australia is represented on one of the bodies, if not both. We hope their attendance has been frequent and their contribution substantial. We would welcome any advice that they or any other consumer representative has supported the need for a resource adequacy mechanism in the market.

The report's section headed “The Case For Change” is divided into three substantive sub-sections, the second of which has three further sub-sections. We will respond to the content under the six headings for Sections 3.1, 3.2, 3.2.1, 3.2.2, 3.2.3 and 3.3.

### The NEM needs unprecedented investment in the coming years (3.1)

Underlying this observation are certain undeniable facts; these include:

1. After nearly two decades of slowing growth and then flat consumption, electricity consumption, as forecast in the Draft 2022 Integrated System Plan (ISP), will increase at rates similar to those that applied throughout the last half of the twentieth century.
2. Coal plant at the end of life needed to be replaced anyway.
3. Because wind and solar are Variable Renewable Energy (VRE), the capacity required to deliver a given amount of energy is greater than the capacity of coal and gas plant being retired. However, the unit cost of capacity is significantly lower than the matching unit cost of coal or gas capacity.
4. Because of near zero short-run marginal costs, the CSIRO GenCost study estimates that Variable Renewable Energy (VRE) has lower Levelised Energy costs than coal or gas, including the storage cost for ‘firming.’

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<sup>24</sup> Though we note *The Australian* carried a story about the lack of support for parts of the ESB's design <https://www.theaustralian.com.au/business/mining-energy/energy-industry-concerned-over-plan-for-power-reliability-mechanism/news-story/b37fcd317a7126485f3d6a351a1e0470>

- Because the best VRE resources are not in the same place as coal resources, new transmission needs to be built to connect the resources. However, projects like offshore wind in the Hunter and Gippsland will use some transmission.

These facts do not support the contention that there is a requirement for ‘unprecedented levels of investment.’ The investment that fed the long post-World War II growth cycle was of the same scale relative to the size of the economy. Figure 3 shows historic consumption in Australia and the forecast consumption in the NEM under each ISP scenario.

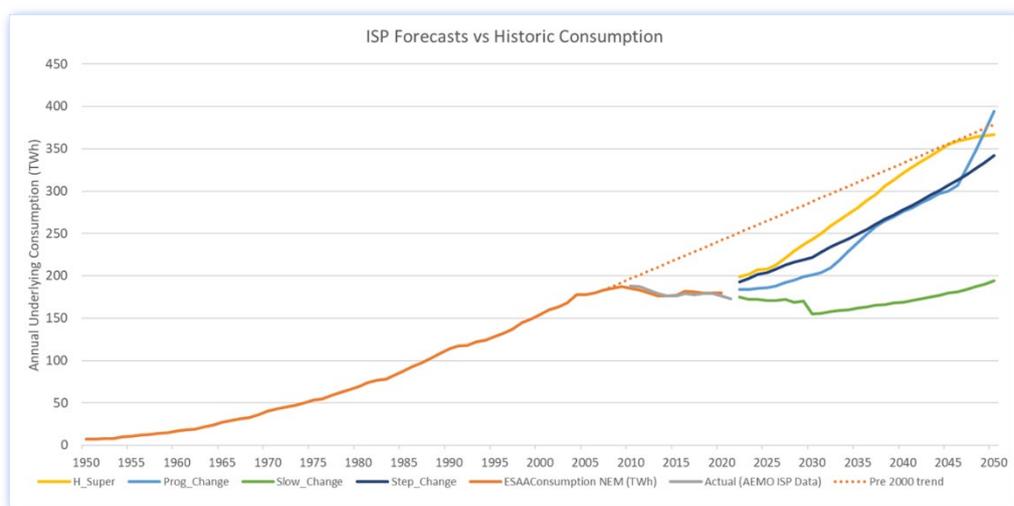


Figure 3: Historic and ISP scenario consumption

Quoting the amounts of generation installed since NEM start without discussing the consumption profile is misleading, if not deceptive. Furthermore, the ESB should be conscious of the impact of policy uncertainty on the investment climate. The fact the ESB has talked about the issue of resource adequacy throughout the time of the Post-2025 project has added to policy uncertainty. In particular, any suggestion that the mechanism intended to encourage coal to exit the market later has only made the climate for VRE and storage less favourable.

In this section, the ESB also notes (disapprovingly) that Government programs have supported dispatchable capacity development over the last decade. This section incorrectly labels Snowy 2.0 and the Hunter Power Project as ‘government-initiated projects.’ They are not simply government-initiated; both are direct investments by a Government Business Enterprise owned by the Commonwealth. Both have worked to discourage private sector involvement.

The requirement for storage is a lot of smaller physical storage (pumped hydro, compressed air, gravity storage) projects that are of an investable size and located near either load or generation. AEMO chose the Renewable Energy Zones (REZs) because of the good wind or sun resources and the availability of locations for storage. But Snowy 2.0 has overshadowed all these investments. Similarly, the gas plant at Kurri Kurri provides additional fossil fuel based dispatchable capacity on probably uneconomic terms (as private sector generators were not prepared to invest in it).

This subsection includes a further sub-section on how the reliability of the NEM is currently maintained. It is unfortunate, if not willfully deceptive, to not refer to Australia's market price cap being far higher than most other markets in this discussion. This failure is particularly relevant when combined with the ESB's statement in the Executive Summary that "the vast majority of electricity markets around the world already explicitly value capacity and pay for it directly. Australia is one of very few 'energy only' markets remaining."

The argument of "Australian exceptionalism" from global norms is almost always bad. For example, that argument would have stopped granting universal adult suffrage (including women) in the 1890s. Today it could be used to argue against having a strong independent Electoral Commission. Economically, economists have explained Australian exceptionalism in our economic development based on the strength of our economic institutions.<sup>25</sup> Australian exceptionalism in electricity market design isn't the energy-only market; instead, it is the high price cap.

## The market faces enormous uncertainties, making it riskier to rely on an energy-only market for capacity (3.2)

The first sentence of this subsection states:

*Implicit in the NEM's energy-only design is that commercial investors will respond to incentives and therefore maintain reliability.*

This statement of the obvious applies equally well to any change designed to address resource adequacy. A market with a capacity mechanism would also include an implicit expectation that "commercial investors will respond to incentives and therefore maintain reliability." It is just that they are different incentives.

### Incentives to invest may not be sufficient under conditions of high uncertainty (3.2.1)

This section is highly qualified as it only suggests that conditions of high uncertainty **may** not provide sufficient investment incentives. Finance theory would more completely explain it as projects may be priced out of construction as the higher cost of capital arising from uncertainty makes them uneconomic.

The practical function of a capacity mechanism is to transfer the financial risk of over-investment onto current consumers. Without a capacity mechanism, the risk is dissipated because demand will eventually (under ISP forecasts) catch up to supply. If the lack of a

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<sup>25</sup> See McLean, I 2013, 'Why Australia Prospered', *The Shifting Sources of Economic Growth*, Princeton and Oxford, p. 147. And Chester, L 2012, 'The Australian variant of neoliberal capitalism', in D Cahill, L Edwards & FJB Stilwell (eds), *Neoliberalism: Beyond the free market*, pp. 153-79.

mechanism results in a higher cost of capital due to demand and price uncertainty, the effects are spread over the asset's life.

To the extent that the higher risk needs to be offset by an even higher market price cap, that is a decision for the Reliability Panel. However, that prices in the wholesale spot market can be very high at times is **not** an issue if, at the same time, they are also very low at times because of the growing use of near zero short-run marginal cost generation. We will discuss below why higher price variation while maintaining a lower overall average price is what the market needs.

### The NEM provides limited long term investment signals (3.2.2)

This claim is simply not true. The NEM provides price signals in the immediate term, but the full system operation provides multiple signals. These signals include all the forecasting work of AEMO from the medium term to ESOO to the ISP.

Unfortunately, governance fragility provides many negative investment signals, that is, policy uncertainty. Policy uncertainty is a risk that investors have very little control over.

The argument that electricity derivative contracts are only traded three years out is largely irrelevant. These contracts share risk between generation and retail, not eliminating risk in investment. Furthermore, the same contracting environment has existed for the life of the NEM, and there has been sufficient new investment to meet the demand to date.

The role of large industrial loads like aluminium smelters in the era of constructing large coal generation facilities has not primarily been the financial underwriting available from long-term offtake. These customers provided two services to the system. The first is the infamous 'base load' that was always present, meaning the coal fleet could generate 24 hours a day without stopping. The second was providing a large load capable of being shed as large-scale demand management.

In the development of the energy-only spot pricing market, Schweppe and his colleagues carefully examined<sup>26</sup> "investment decisions in the spot price-based marketplace and their relationship to the statistical behaviour of spot prices." From this, they derived optimal investment conditions from the viewpoint of society's cost minimisation and compared them to optimal investment conditions from the perspective of market participants. They conclude that the market participant decisions meet society's goals.

They provide an important caveat, noting:

*Implementation of the ideas of this chapter is non-trivial because they include the expectation operator "E" over future uncertainties associated with load growth, cost of capital, capital costs of new technologies, etc. Given today's technology of investment decision planning, an exact implementation is not practical in most instances. This, however, is not a shortcoming that is associated uniquely with the energy*

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<sup>26</sup> Schweppe, FC, Caramanis, ME, Tabors, R, D & Bohn, RE 1988, *Spot pricing of electricity*, Kluwer Academic. Chapter 10.

*marketplace of this book. The same uncertainties exist and should be incorporated in investment planning under the present-day system.*

That is, the source of uncertainty is the inputs, not the operation of the market. The NEM provides all the available financial information.

### Sustained high wholesale prices are required to incentivise new investment – but put upward pressure on consumer costs (3.2.3)

Given that new generation's Levelised Cost of Energy (LCOE) is lower than the LCOE that it is replacing, it is illogical to claim that 'sustained' high wholesale prices are required. However, this is the point at which the ESB should have taken the time for some analysis and differentiated between four classes of assets that can provide supply: coal and other 'base load' generation, peaking generation – typically gas turbine, variable renewable generation and storage, both deep physical storage and batteries.

There are two general issues with resource adequacy, which we will identify as the diurnal (daily) issue and the seasonal issue (winter and summer peaks). Due largely to the wide deployment of solar PV, everyone is aware that the daily consumption curve (the duck curve) has been declining in the middle of the day (the duck's back) and increasing at night (the duck's tail). Equally, weather conditions determine the peak demand in summer and winter. Both patterns create resource adequacy challenges that no single technology has been able to satisfy.

If we limit ourselves to the daily pattern, serving that entirely by baseload generation only creates excess capacity in the middle of the day. Previous strategies designed to shift load (e.g. off-peak hot water) are the only mechanisms available to address this. We can add to the base load peaking plants that meet the evening peak. They are more costly to run, so there is an optimal position of 'wasting' some coal power in the middle of the day to keep the base higher and use less peaking plant.

VRE cannot meet the load pattern on its own at all. No level of VRE capacity can guarantee to serve all required loads. However, because of its cost structures, it will almost always be dispatched and displace some baseload generation or peaking. If it is solar or is a 'dominant' diurnal wind pattern (on and offshore winds at the start and end of the day), it will potentially only worsen the 'duck curve' problem.

Short-term storage is the solution to this problem. Storage is an interesting generator because its 'fuel cost' is determined by the state of the market. So its economics is determined by the difference between periods of high and low spot prices. Storage economics work very well with VRE, but they break down in the presence of baseload generation and peaking capacity. These both work to reduce the gaps between high and low prices and thus work against storage economics.

The challenge of seasonal load variance requires physical storage. The Design Paper suggested that 14 GW of dispatchable generation may become uneconomic by 2030. It then noted:

*14 GW represents around one-third of the NEM's dispatchable capacity, a significant amount to exit over an eight year period. Replacement would require the equivalent of another Snowy 2.0 to be connected every year from now until 2030.*

This analysis is both cursory and, we suspect, wrong. The question is whether the 14 GW is reasonable and whether all of it needs to be replaced, or whether the existing generation capacity (peaking gas) might be able to meet some of this demand in the short term.

It is also misleading because no one has been hiding the need for more investment in deep storage, but it will not be projects of the scale of Snowy 2.0. The ESB has provided no analysis of what barriers there are to storage as a form of dispatchable resource. Similarly, it ignores the storage capacity introduced through the various big battery, community battery and household battery investments. Not insignificant in the latter will be the substantial vehicle-to-grid capacity likely to become available from the electrification of transport.

Here is the real challenge for the market. It must demonstrate, or credibly forecast, price spreads sufficient to justify storage investment. All discussion about resource adequacy and capacity mechanisms completely contradicts the latter. Moreover, the consistent commentary by the ESB and others that incidents of high spot prices are a problem undermines the confidence of storage investors.

Similarly, the oft-repeated claims that after Hazelwood's closure, 'prices' increased by 85% (Design Paper P. 8)<sup>27</sup> is misleading because retail prices did not change by that amount.

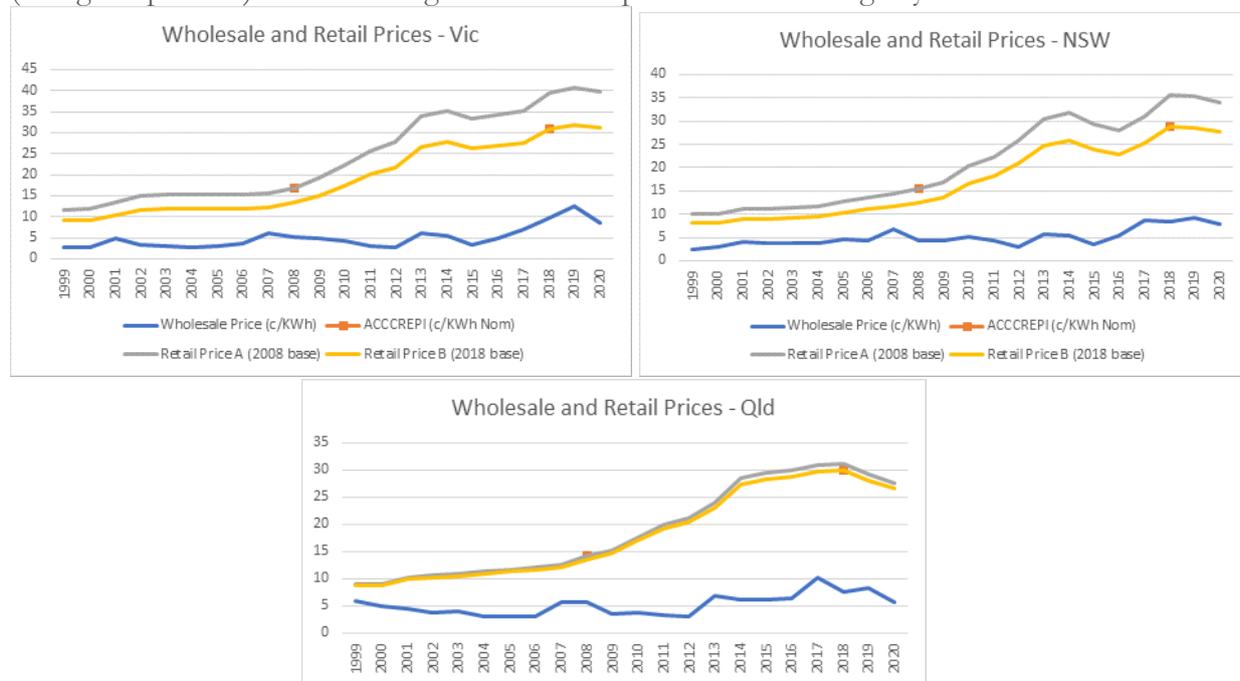


Figure 4: Retail price response to wholesale price changes

<sup>27</sup> It has also been suggested to the author that careful analysis shows the spot price increased before Hazelwood closed. Because final spot prices are determined by generators bids, it is not surprising that there can be transitory

Wholesale electricity prices make up 30 to 40% of residential retail electricity prices. Figure 3 shows the wholesale spot price and average residential retail prices for the three Eastern seaboard mainland states demonstrating the minimal effect on retail prices of Hazelwood's closure. (Note, we generated the retail price curves using the ABS electricity price index for the relevant capital city converted into prices using the 2008 – blue – and 2018 – yellow- retail prices observed in the Australian Competition and Consumer Commission's (ACCC) Retail Electricity Price Inquiry (REPI)).<sup>28</sup>

The Design Paper states:

*To protect customers, governments have acted to prevent high wholesale prices by supporting new generation into the market. Such recent actions have sought to align generator closure and replacement capacity. Examples include the Yallourn battery, Hunter Power Project and Warratah battery in response to the closures of Yallourn, Liddell and Eraring respectively.*

*This apparent mismatch between the expectations of governments and market operations has led to government investment occurring ahead of a market-led response.*

The ESB seems reluctant to accept any culpability in this matter. Clearly, the ESB believes that Ministers have acted unwisely in supporting these investments because they have pre-empted commercial investors and added to investor uncertainty. But the ESB has not provided direct advice as part of its Post-2025 design project for governments to stop intervening in this way. Instead, the ESB's response effectively says we need more of the same through paying for capacity.

In this discussion of governments' pre-emptive investment, there has been insufficient discussion of the issue of Snowy 2.0. This project was always too much capacity in the wrong place. That it is over time and budget just adds to the damage the overhang of storage projects deterring commercial investment.

### Capacity mechanisms provide a more direct way of ensuring capacity requirements are met (3.3)

If a 'more direct' means of meeting capacity requirements is a goal, then the ESB should embrace Government investment as it is the most direct mechanism available. However, the ESB ignores the underlying logic of the NEM and all moves to generation markets, which is to remove the over-investment in generation that otherwise occurs.

The discussion above highlighted that the residual uncertainty for market investors is uncertainty over demand. At least for these investors, demand uncertainty is something they can ultimately

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artificial effects from any discontinuity if it is sufficiently large to require recalibration of generator's bidding strategies.

<sup>28</sup> These charts were put together when the former Federal Minister Angus Taylor claimed "We had a glimpse of what such a future would look like following the sudden closure of the Hazelwood power station in 2017, when electricity prices skyrocketed by up to 85 per cent in Victoria, 63 per cent in NSW and 53 per cent in QLD" – see <https://www.minister.industry.gov.au/ministers/taylor/opinion-piece/energy-market-reforms-will-create-grid-we-need-future>

influence by other actions in the market (such as accepting a temporary reduction in the retail margin to stimulate more demand growth or implementing demand-management-based price offers). If those uncertain demand estimates get converted into ‘capacity requirements’ by a market body (or Ministers), then the generators are less incentivised to take risk mitigating activity.

In short, capacity mechanisms are certainly more direct, but this directness makes them highly inefficient.

## Summary

In section 3.3, the Design Paper summarises the case for change as (reformatted):

*The market dynamics outlined above highlight at least three challenges with the existing reliability framework:*

- 1. uncertainty weakens incentives to invest in line with reliability objectives,*
- 2. only a limited number of market participants are likely to finance investment in new generation, and*
- 3. a misalignment between the expectations of governments and needs of investors perpetuates a requirement for further government support for new investment.*

The first and third items taken together reveal that one of the challenges is that Ministers, acting on poor advice from the ESB, are operating to a reliability standard beyond that set by the Reliability Panel. At its core, this is a political problem created by the perception that ‘the lights must not go out’ and fails to acknowledge that there is a cost for that level of reliability and that this cost exceeds consumers’ willingness to pay. It further reflects the previous failure of the market bodies and the ESB to effectively develop a demand response framework that would enable price discrimination between customers about their willingness to reduce consumption in periods of stress.

The second and third items together indicate that governments should focus on assisting the financing of marginal investment projects rather than becoming the full financier (or owner) of the projects. We understand this activity was the original intention of the Clean Energy Finance Corporation (CEFC). The appropriate advice from the ESB to Ministers on resource adequacy is advice on the mechanisms government should use to support investment. (In writing this, we note that the Coalition Government announced its Underwriting New Generation Investment (UNGI) program in October 2018. It shortlisted 12 projects based on Registration of Interest required by January 2019 but concluded arrangements with none of them. It is unclear whether discussions were continuing with the shortlisted project proponents or whether all projects had been found not suitable for funding.<sup>29</sup>)

Instead of acting on the first order issue, demand response, the ESB is pursuing a strategy that will make all the other essential developments harder, not easier. Instead of acting on the second

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<sup>29</sup> <https://www.energy.gov.au/government-priorities/energy-programs/underwriting-new-generation-investments-program>

order issue and advising governments on projects that might be worthy of support, the ESB is pursuing a strategy that passes consumer money to generators to slow the energy transition.

## Conclusion

This initial submission has focussed only on the case for change outlined in the Design Paper. Accordingly, we have limited our comments above to the failure of the ESB's argument. We think the sources of the erroneous identification of a case for change are the following set of assumptions or claims by the ESB.

1. The ESB assumes that Ministers and consumers want a higher reliability standard than that which analysis shows consumers are prepared to pay for.
2. The ESB believes that high spot prices are always undesirable rather than recognising that the issue for consumers is volume weighted average price.
3. The ESB fails to recognise that a greater spread between low and high prices can be consistent with a lower average price and provide the necessary environment for storage.
4. The ESB fails to be sufficiently self-aware to realise that its protracted discussion of resource adequacy as part of the Post-2025 project has significantly added to investment uncertainty.

We have avoided any discussion of the proposed design of the capacity mechanism. However, we note a difference between the types of dispatchable resources and their impact on the market. Stepping through these, increased base load type generation alone will reduce the unmet peaks but not solve them. On the other hand, more investment in fossil fuel peaking plant will meet demand at peaks and may lower prices. However, both are retrograde steps in reducing greenhouse gas emissions.

Investment in additional storage is the only form of dispatchable capacity worthy of support, which is probably better provided by direct government support than by the inefficient levy inherent in a capacity mechanism. Additional storage will, in turn, create additional investment in the renewable generation that will find a market at times of surplus supply for end-use demand. However, other impediments to greater renewable investment currently are various network constraints. These include connection limitations in both distribution and transmission networks. While the ESB has programs to address these, they should prioritise both over discussing a capacity mechanism.

Lionel Robbins described economics as the study of scarcity.<sup>30</sup> In the current environment, scarcity includes the intellectual capacity in policy, industry and consumer circles to address the challenges of transitioning to a zero-emissions energy system (including the electrification of transport and heat). Therefore, the best thing the ESB can do is advise the MCE to terminate the consideration of the capacity mechanism because the ESB has not found a case for one. There are higher priority issues requiring attention.

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<sup>30</sup> Robbins, L 1932, *An essay on the nature and significance of economic science*, London.