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Salim Mazouz
Capacity Investment Scheme Branch Head
Department of Climate Change, Energy, the Environment and Water

Dear Salim,

Energy Consumers Australia's Submission re: DCCEEW's Capacity Investment Scheme Public Consultation Paper

Energy Consumers Australia is the national voice of residential and small business energy consumers. We appreciate the opportunity to provide comments on the Federal Government's Capacity Investment Scheme (CIS) Consultation Paper.

Our submission focuses on two key areas which we believe are crucial to ensuring the CIS meets its own stated principles – particularly "affordability" and being "clean technology agnostic":

- Ensuring future iterations of the CIS allow Consumer Energy Resources (CER) to participate, and
- More closely aligning its final design with the Australian Energy Market Commission's (AEMC) work on reliability settings.

These points relate directly to the first consultation question raised in the paper. Our submission also touches on several other questions raised, particularly in Section 3 "Core design elements and delivery stages". We have included a one-pager summary of our responses to specific consultation questions as an appendix at the end of this submission.

Ensuring future iterations of the CIS include CER

The CIS Consultation Paper makes clear that CER is not expected to be eligible to earn a capacity incentive. Given the novelty of the scheme and short-term operational challenges, excluding CER from the CIS may be a reasonable decision as the scheme launches, however, we recommend future iterations of the CIS allow CER participation.

Enabling CER to earn a capacity incentive in a well-designed way would lead to:

- Lower cost capacity resources, reducing the cost of the CIS on taxpayers; and
- A lower cost total energy system, through improving AEMO's visibility of CER
- Incentives for participating consumers with CER, compensating them for the value their resources bring to the system.

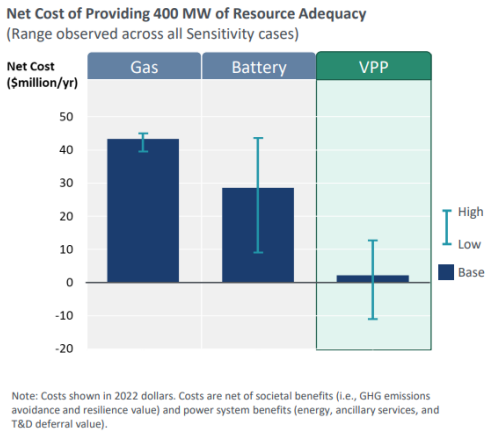
CER can bring important, low-cost sources of capacity to the system, and without the challenges and likely delays of resources dependent on new transmission infrastructure. The Integrated System Plan (ISP) is unequivocal in the importance of CER in meeting the 2030 capacity needs it identifies. If the Department decides to exclude CIS from earning the capacity incentive right now, it must soon identify a pathway for CER-owners to be rewarded for the capacity their CER brings to the system. If appropriately designed, the incentive could compel energy providers to schedule their resources with

the Australian Energy Market Operator (AEMO), enabling the whole system to benefit from greater visibility of CER. Importantly, rewarding CER for the value it provides the system would help provide the stimulus required to achieve the growth in CER, particularly small-scale batteries, that the ISP assumes.

CER should be allowed to participate in the CIS

CER meets the Consultation's principles and provides uniquely valuable capacity in at least two ways: first, it's often the least-cost capacity resource, and second, it does not depend on the construction of new network infrastructure, allowing it to be deployed more quickly and reducing total system costs.

Figure 2



In May 2023, the Brattle Group published, *Real Reliability: the Value of Virtual Power*.[1] The paper explores the ability of Virtual Power Plants (VPPs) to reliably reduce capacity (i.e. "resource adequacy") costs in the coming decade in the U.S. Figure 2 shows the affordability benefits of small-scale resources, like VPPs, compared to conventional capacity resources like gas peakers or large-scale batteries highlighted by the paper.

If the Department wishes to provide capacity at the least cost, CER needs to be provided with a pathway to achieve a capacity incentive.

Given the global push to increase renewable energy, supply chains are under pressure, and transmission projects in Australia are already facing significant cost blowouts and schedule overruns. Earlier this year, the Central West Orana Renewable Energy Zone, originally slated to cost $650 million and be delivered by July 2025, saw its cost increase to $3.2 billion (a 500% increase) and its scheduled delivery delayed to 2027 or 2028.[2] The Tasmanian Premier has stated that the cost of Marinus Link has also "blown out".[3]

CER projects do not face these same risks, because they operate on the local distribution grid that already exists. In many ways, using CER for capacity actually provides an additional benefit to the local grid, because often (though not always) times of system peak – or needs for capacity – coincide with times when the local grid also would benefit from a decrease in demand.

There is significant CER capacity potential outlined in the Integrated System Plan

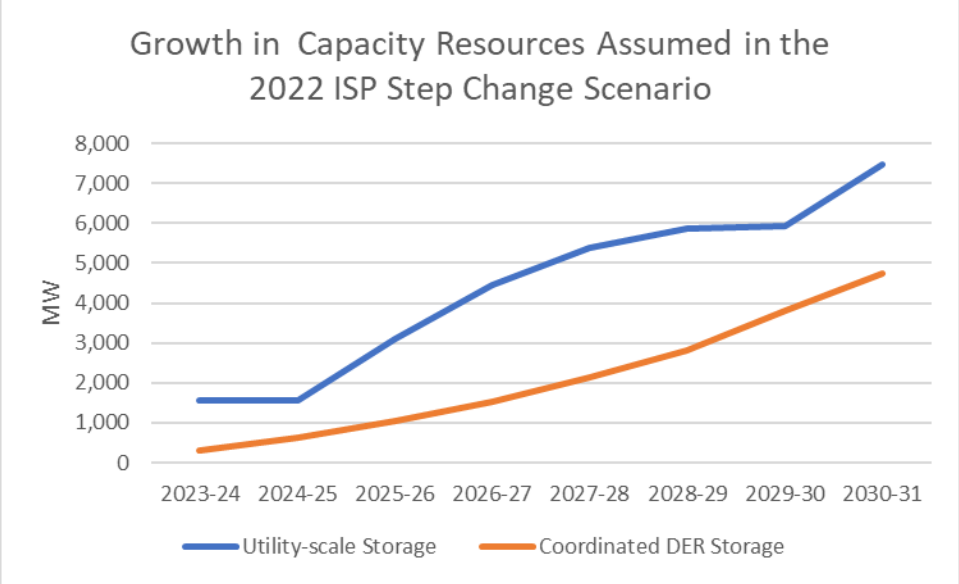
Australia's consumers lead the world in their adoption of rooftop solar. The ISP assumes that this adoption of rooftop solar will soon translate into the adoption of small-scale batteries. The ISP differentiates between these batteries, identifying one as "distributed storage", which is described as "non-aggregated behind-the-meter battery installations designed to support the customer's own load."

[1] Hledik and Peters, Real Reliability: the Value of Virtual Power, The Brattle Group, May 2023.
[2] Giles Parkinson, NSW renewable zones face delays and cost blowouts as questions hang over Eraring, RenewEconomy, 25 May 2023
[3] Lucy MacDonald, Cost blowout threatens massive underwater Marinus Link power cable project, ABC News, 4 August 2023

The other is defined as “coordinated DER storage,” which “includes behind-the-meter battery installations that are enabled and coordinated via Virtual Power Plant (VPP) arrangements.” (Note, “Consumer Energy Resources” or CER is a better description of the resources, which the ISP has termed “Distributed Energy Resources” or DER).

The ISP makes clear that coordinated DER storage is an important source of capacity in the short term, stating, “coordinated DER storage also plays a significant role in managing intra-day variability, particularly in the Step Change scenario.”[4] The Step Change scenario, viewed by experts overwhelmingly as the most likely scenario to emerge, also *assumes a more than 13x increase in the installation of “coordinated DER storage” between now and 2030*. The ISP lists 2023-24 installations of coordinated DER storage totalling roughly 300 MW, which balloons to more than 4,700 MW in 2030-31.

Figure 1



As Figure 1 demonstrates, the ISP assumes both utility-scale and coordinated DER storage will grow significantly this decade, with utility-scale storage increasing by 6 GW at an average, annual rate of growth of 28%, while coordinated DER storage is assumed to increase by 4.4 GW at an average, annual rate of growth of 49%.[5]

The ISP’s identified need of an additional 6 GW of utility-scale storage by 2030 is the basis of the proposed incentive scheme’s 6 GW capacity target. The Consultation paper makes clear that the Department does not view the CIS as the tool to create the 4.4 GW uplift in coordinated DER storage that the ISP also assumes exists to provide the 2030 system with the capacity it needs. If the CIS is the mechanism for procuring the 6 GW of utility scale storage the ISP says is needed by 2030, what is the mechanism for procuring the 4.4 GW of coordinated DER storage?

We note, of course, that VPPs are not the only type of CER capacity resource. Residential hot water systems provide an excellent low-cost source of capacity. Electric vehicle charging programs are another emerging type of potentially low-cost capacity. While much of our submission highlights the

[4] AEMO 2022 | Appendix 2. ISP Development Opportunities, p. 9
[5] ECA analysis of AEMO 2022 | ISP Chart Data

role of small-scale batteries in providing capacity, the CIS should focus on making capacity from all types of low-cost residential and small business CER eligible for the scheme.

The rationale for excluding CER focuses on short term technical issues that can be solved

Excluding clean resources lower than 30 MW fails to meet the CIS's stated principle of the scheme being "clean technology agnostic". There may be valid technical reasons for excluding smaller projects in the short-term, but we do not recommend excluding smaller projects over time. By including CER and other clean, small-scale resources in the CIS, all consumers and taxpayers will get a more affordable energy system and participating CER owners will receive more benefits from their investments.

Capacity markets and schemes around the world have identified ways to cost-effectively evaluate and model the benefits of smaller projects. The California ISO, for example, allows Demand Response aggregations as small as 100 kW and "Distributed Energy Resource Provider" aggregations as small as 500 kW to participate in their wholesale energy markets and provide capacity. Indeed, a stand-alone storage unit as small as 100 kW can provide energy and capacity into the California market.[6]

Our view is that over time, AEMO needs to have the tools and ability to use the resources that industry can make available to it at least cost. The Consultation Paper often seems to argue that the most valuable capacity resources are the ones that can meet the current technical constraints of the market operator's modelling equipment. Ultimately, changing operating equipment and practices will be lower cost than ignoring or discarding lower cost capacity resources because they fail to provide the exact criteria today's operators identify.

The complexity of creating the tools and functions to evaluate and model the contributions of CER to the market are a valid short-term barrier for excluding CER. However, these barriers can be removed, and likely need to be removed, given what the ISP and, as we detail below, what the AEMC say about the importance of improving CER visibility for reliability.

CIS design considerations for CER

The Consultation Paper states that to earn an incentive, projects likely will need to "reduce demand for four hours or more" and be "capable of meeting medium storage duration requirements". It also states that "minimum duration requirements in tenders could result in capacity being less flexible. For example, a 4 hour, 100MW hour battery energy storage system (BESS) has less operating flexibility compared to a 1 hour, 400MW BESS. These trade-offs will be better understood over time."

Our experience of overseas capacity markets is that they often knit together different types of capacity to create a patchwork quilt that matches system needs. Long-duration storage can fit many types of needs, but so too can quick, high capacity, relatively low energy types of energy storage. Both can play important roles in meeting overall reliability requirements and system operators ultimately benefit from a diversity of resources at their disposal. Creating artificially low minimum duration requirements unnecessarily handcuffs system operators and keeps valuable capacity resources on the sidelines. For example, the operator can determine how to use four 25 MWh batteries as well as one 100 MWh battery. There's little technical difference between those resources, and the scheme should not create artificial ones.

Importantly, the Consultation Paper includes no indication of what short-term notice AEMO plans to give successful capacity tenderers to provide their resources when the system needs them, or if and

[6] California ISO, "Aggregated DER participation in ISO/RTO markets enabled by FERC Order 2222" Jill Powers, 2021

how tenderers should share information about the notice they require to provide capacity. This notice is particularly important for CER, because large-scale equipment and household air-conditioning both often require several hours of advanced notice to ensure that the equipment can be safely taken out of service or so the household can be effectively pre-cooled or pre-heated.[7] Batteries of all types also require some previous notice of the likelihood of a capacity event being called – because they will have to ensure sufficient battery charge/capacity to be available to meet the duration of their commitment. Increased notice requirements do make resources less valuable to operators than those that can be ready within just a few minutes. A well-designed CIS tender process should include information about the notification a given resource requires in order to provide its capacity contribution.

Including CER in the CIS can have the added benefit of improving AEMO's visibility of CER

Both the ISP and the AEMC's recently opened consultation into "Integrating price-responsive resources into the NEM"[8] make clear that all consumers can save considerably by including CER more deliberately within the NEM. The CIS has the potential not just to incentivise the uptake of CER to meet the ISP's assumptions, it can also help improve AEMO's visibility into the behaviour of CER, highlighted in the recent AEMC rule change consultation focused on "integrating price responsive resources".

Referencing AEMO's rule change request, the AEMC writes in its Consultation paper that limited visibility over VPPs and other CER will cause AEMO to have to purchase additional capacity unless the problem is solved. It quantifies those costs:

> *AEMO states that duplicating 20 per cent of the projected coordinated price-responsive resources through investment in additional shallow grid-scale storage (2-hour large-scale batteries) each year to 2040 would come at a cumulative capital cost of around $1.8 billion, rising to approximately $4.4 billion if 50 per cent of the capacity were to be replicated over that same period.*[9]

There is an inherent tension across the ISP and the AEMC's Consultation Paper. On the one hand, both the ISP and the AEMC's paper recognise the value CER can provide to the system. At the same time, they are unclear about how or why CER will be adopted by consumers, and if adopted, under what terms or for what reasons energy service providers (aggregators or retailers) will provide visibility of the resources to AEMO.

A capacity incentive provides a means to solve both issues simultaneously: by providing an incentive for the services that such resources provide to the market, they can help ensure that the optimistic assumptions made by the ISP about future adoption of CER come true. Moreover, by attaching an incentive payment to a requirement by the energy service provider to provide transparency to AEMO, the scheme can enable the visibility the market operator requires.

The Way Forward: Recommendations for incorporating CER into the CIS

If the Department decides to exclude CIS from earning the capacity incentive right now, we recommend it identifies a pathway for the capacity value of CER to be rewarded soon. The next iteration of the CIS should include a recommendation for Ministers to agree to provide an incentive for

[7] Notwithstanding that the poor insulation of most Australian households make us more wary about the total value of air-conditioning or home heating demand response compared to other small-scale capacity solutions

[8] https://www.aemc.gov.au/rule-changes/integrating-price-responsive-resources-nem

[9] *Ibid*, p. 12

small-scale capacity resources and a commitment between the AEMC, AEMO, and the Department to work together to deliver this incentive in a way that meets the overall needs of the system.

We recommend the Department creates a clear roadmap and approach to enabling CER to participate over time that requires the market operator and other market bodies to complete the steps necessary to enable a more robust market over time.

We also suggest that the Department include a recommendation for Ministers to agree to provide an incentive for small-scale capacity resources by a certain date and a commitment between the AEMC, AEMO, and the Department to work together to deliver this incentive in a way that meets the overall needs of the system.

The recommendation should outline the list of specific technical and other barriers that need to be addressed to enable CER – or at least specific types of CER, like residential and community batteries – to provide capacity.

The recommendation should create a specific, ambitious but achievable deadline for creating a tender process for CER to provide capacity, and a number of earlier milestones for specific technical and other barriers to be addressed. Just as the large-scale CIS has a stated target (6 GW), there should be a specific target for adding scheduled CER capacity to the market by 2030 (or sooner), with dedicated funding to provide incentives.

The need to align the final design of the CIS with the work of the AEMC

We believe that the scheme's scope raises important questions about the on-going role of the market price cap (set by the AEMC). In particular, the AEMC is currently entertaining an increase in the market price cap because the Reliability Panel believe a higher cap is needed to incentivize the development of additional capacity. Given that the CIS is intended to solve the same problem, there should be clarity between this consultation and the AEMC's price settings one, and between the Department and the AEMC, on the expected role of both the CIS and the market price in spurring the development of new capacity.

We support the creation of jurisdictional reliability targets as part of the CIS because they provide direct investment signals to encourage new capacity into areas of the market that need it most.

In our submission[10] to the AEMC's consultation we expressed that specific capacity investment schemes are the most effective investment signals moving forward, not prices. Due to the introduction of the CIS, we argued that the Reliability Panel had not demonstrated that the market price settings needed to increase.

Energy Consumers Australia's research shows that affordability is consumers' first priority in the energy transition.[11] Clearly taxpayers and consumers should not pay more than necessary for the introduction of the capacity the system requires, particularly during the current cost of living crisis. **We recommend the Department engage with the AEMC to ensure that consumers are not going to be paying 'twice' for the new entrant capacity** - i.e., once through the higher market prices, and

[10] Energy Consumers Australia, Submission to the AEMC on the Market Price Cap, Cumulative Price Threshold, and Administered Price Cap, 23 June 2023.
[11] Energy Consumers Australia, Energy Consumers Sentiment Survey, June 2023, "Challenges ahead for the energy system".

then again through tax revenue (to support the CIS). It is possible that the introduction of the CIS will mean that the reliability settings will not need to increase, which would provide considerable value to consumers. One could argue that given the introduction of the CIS, market price settings should decrease.

Targeted capacity schemes like the CIS are likely to be more efficient and equitable solutions to support new investment for at least three reasons:

- If market price caps increase, all generators, not just incoming generators will receive the higher prices. This increases market costs more than required.
- Capacity schemes can be targeted towards the specific jurisdictions that need the capacity, while prices will be applied across the entire NEM, even in jurisdictions with no capacity shortfall.
- Recovery of costs through the tax base is likely more equitable than recovery through energy prices and bills. Lower income households pay less, on average, for the CIS than they likely would if the same costs were recovered via electricity prices.

Effective collaboration between the Department and the AEMC regarding integrating CER into the market and the intersection of the CIS with the long-term role of the market price cap will help achieve the clean, affordable future that consumers want. Without effective collaboration, we will have market and incentive approaches that are not fit to enable a least-cost transition. Taxpayers will pay more for capacity and consumers will pay more for energy than required, and we won't get the future we all want.

Thank you for providing this opportunity to comment on the scheme. If you have any questions about our comments in this submission, or require further detail, please contact Ashley Bradshaw at ashley.bradshaw@energyconsumersaustralia.com.au.

Yours sincerely,

Brian Spak

Enclosure: Appendix: Consultation Questions

APPENDIX: CONSULTATION QUESTIONS

- The Department is seeking feedback on what other implications the CIS might have on the energy market, and how the CIS can be designed to mitigate risks while delivering on key policy objectives.

As we detail above, the CIS could have material impacts on the development of CER to meet the future system's capacity needs as outlined by the ISP. The CIS could also help solve the challenge, outlined in a currently open AEMC consultation, AEMO has with visibility of CER by creating a *quid pro quo* with energy service providers, in which CER is able to earn a capacity incentive if and only if it provides the required visibility to AEMO. Finally, the CIS has a material impact on the AEMC's open consultation on increasing the Market Price Cap, given that an increased Cap is intended to incentivise additional capacity to enter the market, which is the same problem the CIS solves.

- What minimum storage duration should be required for tender eligibility, to achieve CIS policy objectives?

The CIS should have a relatively low minimum storage duration – lower storage duration would enable the policy to be more affordable and truly clean technology agnostic. As with overseas markets, AEMO could knit together capacity resources of various durations to meet the system's total needs. Creating artificially low minimum duration requirements unnecessarily handcuffs system operators and keeps valuable capacity resources on the sidelines.

- How could the CIS eligibility criteria and assessment methodology change and adapt over time?

The CIS should clearly include various small-scale CER as eligible. If these resources are deemed too challenging to include immediately, the CIS should include a clear pathway and timeline for including CER in the near future.

- What types of demand response would be consistent or inconsistent with the CIS objectives?

We believe that all types of demand response would be consistent with the CIS objectives, particularly demand response from residential and small-business consumers. We note that this is often the lowest cost source of capacity and has the additional benefit of providing direct incentives to participating consumers. Residential and community-scale storage and electric vehicle charges can provide types of "demand response," all of which are assumed by the ISP.

- How can the CIS design be future-proofed for an evolving/changing technology mix?

The CIS design needs to determine how to effectively include capacity from consumer resources. Australian consumer's world-leading adoption of rooftop solar can translate into world-leading contributions to providing system capacity, but the CIS design needs to specifically cater for these technology types. Assuming that the tender and dispatch process for large-scale and small-scale resources could or should be the same would be a mistake. CER can provide very low-cost capacity, but it will require more intentional market design to ensure that the market is open to the types of capacity consumers can offer. It also needs to be aligned with work underway at the Australian Energy Regulator focused on consumer protection for CER.

- The Department is seeking feedback on the eligibility requirement of projects in the NEM for equal to or greater than 30MW registered capacity.

As identified above, we believe projects smaller than 30 MW should be eligible. Indeed, allowing aggregations as small as 500 kW seems reasonable, as occurs in the California ISO.