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Collaboration on Energy and  
Environmental Markets

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# *Response to the AER's Issues Paper on Ausgrid's Community Power Network trial*

[Redacted]

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19 September 2025

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Melbourne VIC 3001  
Lodged electronically



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SYDNEY



Dear Ms Jolly,

**Re: Ausgrid CPN Trial Issues Paper**

The Collaboration on Energy and Environmental Markets (CEEM) welcomes the opportunity to make a submission in response to the Ausgrid CPN Trial Issues Paper, Aug 2025

**About us**

The UNSW Collaboration on Energy and Environmental Markets (CEEM) undertakes interdisciplinary research in the design, analysis and performance monitoring of energy and environmental markets and their associated policy frameworks. CEEM brings together UNSW researchers from a range of faculties, working alongside a number of Australian and international partners. CEEM's research focuses on the challenges and opportunities of clean energy transition within market-oriented electricity industries. Effective and efficient renewable energy integration is key to achieving such energy transition and CEEM researchers have been exploring the opportunities and challenges of market design and policy frameworks for renewable generation for the past two decades. More details of this work can be found at the [Collaboration website](#). We welcome comments, suggestions, questions and corrections on this submission, and all our work in this area. Please feel free to contact Associate Professor [REDACTED], [REDACTED] and/or Dr [REDACTED] [REDACTED], Joint Directors of the Collaboration.

**Our approach to this submission**

Our submission firstly acknowledges our conflict of interest based on a funding application to the CRC RACE for 2030 for a research project that assesses the outcomes of the Ausgrid CPN trial. We then provide an overview of the key issues relevant to the CPN trial, including suggestions for improvement. Finally, we respond succinctly to some but not all the questions posed in the Issues Paper.

We are of course happy to discuss any aspects of this submission or our proposed research project.

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Collaboration on Energy and Environmental Markets  
UNSW Sydney

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## Conflict of Interest

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We would firstly like to note that we have a conflict of interest with the Ausgrid CPN project. Most (all?) of the authors of this submission are also part of a funding application to the CRC RACE for 2030 for a research project that will address the following research questions.

- RQ1.** What are the drivers, barriers, and market appetite for consumer participation in the CPN?
- RQ2.** What is the impact of the CPN on the evolution of stakeholder sentiment and behaviours?
- RQ3.** What is the practical potential for increased PV deployment and how is this impacted by the CPN model?
- RQ4.** What are the benefits and challenges of the CPN PPA model for deploying more PV in the distribution network?
- RQ5.** What are the (network, market, consumer) benefits of the proposed DNSP CPN model?
- RQ6.** How might equitable sharing be defined and implemented, not only between different household and business cohorts but also across all affected stakeholders?
- RQ7.** Is the proposed model an efficient means to promote DER investment to support an assured, secure and economically efficient electricity sector transition over the coming two decades?
- RQ8.** How do present regulatory frameworks, utility business models, and market rules shape benefits and adoption of CER?
- RQ9.** What are the regulatory barriers to greater DNSP participation and how material are the risks to effective competition/crowding out that have been suggested by some stakeholders?
- RQ10.** How can regulation be reformed to access the benefits of DNSP-ownership of DER/CER while maintaining effective competition/innovation, fairness and the perception of fairness?

Of course, although our participation in the proposed RACE2030 project does represent a conflict of interest, we believe that it will also help to add credibility and rigour to assessing the outcomes of Ausgrid's CPN project should it go ahead. However, as discussed below, we believe there are areas of the CPN project that should be improved.

It is important to note that Ausgrid's CPN project is only a trial for a limited period. It will be subject to intense scrutiny by a range of stakeholders. In a complex environment such as Australian electricity market, such trials have a valuable role to play in identifying optimal ways forward by 'learning by doing' and enabling a thorough and transparent examination of new proposals and ideas. They also help to overcome policy inertia driven by 'the perfect being the enemy of the good'.

## General overview

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### The need for more renewable generation

The Australian government has set a target of 82% of electricity from renewable sources by 2030. Currently this target will be challenging to achieve, especially with the opposition to large-scale renewable energy developments in rural and regional areas, and the significant increase in the costs of transmission. This has emphasised the need for increased deployment of medium- and small-scale renewable generation on the distribution network – through distributed energy resources (DER) and CER. The importance of increasing deployment of renewable energy to reduce emissions is highlighted in the recently released *Australia's National Climate Risk Assessment, 2025*, which makes grim reading.

## Technical problems of increased distributed generation

Increased deployment of DER/CER is not without its own challenges, including potential negative impacts on the distribution network and the difficulty in achieving equitable distribution of the costs and benefits to all stakeholders, especially electricity customers. Indeed, the key reason for Ausgrid's battery deployment appears to be to soak up additional solar generation, although reducing demand peaks and so increasing network utilisation is also a benefit.

Achieving high levels of penetration of DER/CER in the distribution network is fundamentally a technical challenge. Of course, price signals have an important role to play, where tariffs can be used to align DER/CER operation with the needs of the distribution network, and spot and FCAS VPPs can be used to align with the broader markets. However, technical impacts must ultimately be addressed through technical measures, such as voltage control, fixed export limits, dynamic operating envelopes (DOEs) and even network VPPs.

The need for technical constraints is highlighted by the fact that Project Edith,<sup>1</sup> a price-based approach similar to the CPN, uses DOEs as guardrails to minimise any negative technical impacts. Ausgrid has also found that the effectiveness of price signals alone in Project Edith is limited in that different 3<sup>rd</sup> party providers can respond in very different ways to the same price signal. Thus, Ausgrid's CPN project will provide an opportunity to directly compare the effectiveness of more technical approach with Project Edith's price-based approach. Some learnings may also be possible through a comparison with Project Jupiter, although this is quite a different project that focuses on orchestration of residential behind-the-meter assets into VPPs.

## Spatial energy plan

During the CPN consultation there seemed to be little opposition to Ausgrid's proposal for a spatial energy plan. It would aim to optimise the architecture and operation of the distribution network by "[mapping] out the current energy loads, network constraints and CER/DER assets in the trial locations, and [identifying] the optimal locations for future CER/DER assets"<sup>2</sup>. However, as discussed below, there are concerns (which we share) around how and when this plan would be made available to the public, including 3<sup>rd</sup> party operators in competitive markets.

## Impacts on competition and equitable access

A critical issue identified in Ausgrid's regulatory sandbox proposal, in the AER's Issues Paper and in all the workshops, is that Ausgrid will be both the operator of the network and owner of network-connected assets that operate in competitive markets. These assets will include medium-sized batteries and potentially MW-scale rooftop solar. The ownership of such assets would increase Ausgrid's RAB, hence the need for regulatory sandboxing.

A related question, that was also raised by many stakeholders, is whether the same outcomes, including reliability and power quality, could be achieved by Ausgrid simply providing the relevant information and price signals to 3<sup>rd</sup> party operators in the competitive market. To some extent this question is being answered by Project Edith, which will provide a very useful comparison. Concerns raised by stakeholders operating in competitive markets include the potential for inequitable access to the spatial energy plan, network tariffs and land for 3<sup>rd</sup> party batteries. The appropriate arrangements for these could be explored during the trial, given the fact that Ausgrid estimates that the CPN batteries are expected to deliver only a quarter of the batteries required for the area. Of course, a clear benefit in the CPN approach would be, in real time, coordinating the installation of large-scale rooftop solar

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<sup>1</sup> Project Edith uses dynamic network pricing to provide 5 min price signals that can be used to both restrict DER operation to avoid negative impacts but also reward DER operation that provides network benefits.

<sup>2</sup> Ausgrid Trial Waiver Issues Paper, page 5

and the batteries required to soak up the excess solar. Another question that would be answered through the trial is whether Ausgrid's batteries may restrict the financial viability of 3<sup>rd</sup> party batteries participating in spot and FCAS markets, or may actually enhance 3<sup>rd</sup> party operation because their priority would be on stabilising the network, which may allow 3<sup>rd</sup> party batteries to charge or discharge at a greater rate. These issues of course extend beyond the trial, highlighting the importance of a very transparent process and publicly available outcomes.

## Community engagement and consultation

Another aspect highlighted throughout the consultation process is that community engagement and consultation will be critical, especially when explaining what is happening and why it should result in benefits for all customers. This should occur throughout the project and assess how attitudes change over time. Through the UNSW research project, Ausgrid's CPN project will also provide valuable insights into customer perspectives through UNSW's Research Questions 1, 2, 5, 6 and 10.

## Financial/economic impacts of the trial overall and how they are calculated

A variety of potential direct financial and broader economic benefits may arise from the trial, but their likelihood and magnitude are uncertain. The potential benefits include reducing export peaks and flattening load in the trial area and so increasing utilisation rates<sup>3</sup>, reduction in spot and FCAS costs, and education of the community about integration and operation of DER/CER. These benefits should be transparently calculated/assessed as appropriate and made publicly available so they can be independently verified, including the outcomes for the counterfactual driven purely by price signals (as discussed above). They should include an assessment of the benefits transferred to different types of customers in the CPN area, including through the CPN community payments, and a comparison to the benefits received under a pure price-based approach.<sup>4</sup> The UNSW Research Question 6 "How might equitable sharing be defined and implemented, not only between different household and business cohorts but also across all affected stakeholders?" will help to address these issues.

## Impacts on CER in the trial area

There is also a need to assess how the trial impacts on CER installation and operation in the trial area. For example, it is not clear whether distributed solar PV will remain subject to static export limits or whether a DOE will be in place. The latter will make higher FiTs more effective in increasing the financial viability of rooftop solar. Alternatively, is it possible that the additional batteries installed by Ausgrid will be at times unable to soak up the large-scale rooftop solar generation and so reduce the financial viability of small-scale PV systems.

## Resilience

Although the CPN project does not focus on the potential operation of sections of the network during power outages, it could still provide valuable insights. Resilience could include not only the area in question remaining energised, but given the meshed nature of the network, could include enabling more resilient areas to keep other areas energised.

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<sup>3</sup> According to IPART's 'Monitoring the NSW retail electricity market 2023-24: Annual Report', 87% of NSW residential customers are on volumetric tariffs, which should benefit from reduced rates as utilisation increases.

<sup>4</sup> These calculations will of course need to take into account that large-scale batteries operating purely in competitive markets have been found to game the spot market and so increase prices.

## Responses to AER Questions

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The following responses to the AER's questions should be read in the context of the above discussion. Not all questions have been answered.

### **3. What potential do you see in the trial to develop new and improved services for consumers?**

Assuming something similar is rolled out broadly then, apart from increased renewable generation, reduced GHG emissions and the potential for reduced network costs, the main new and improved service for consumers (both residential and larger) is the opportunity to install larger rooftop solar PV systems and for customers who don't have CER to benefit from this.

UNSW's Research Questions 1, 2, 5, 6 and 10 are relevant to this question.

### **4. Which elements of the trial do you consider will generate the most valuable learnings?**

The elements of the trial that will generate the most valuable learnings are:

1. Use of the spatial energy plan to optimise utilisation of the distribution network, with a particular focus on comparing the responses of 3<sup>rd</sup> parties and Ausgrid when provided with the same information.
2. How the CPN compares with a more price-based approach such as that undertaken by Project Edith.
3. How to quantify of the costs and benefits of the CPN approach for customers and how they are most equitably distributed.
4. Optimisation of the best way to encourage IFOM batteries to soak up solar, reduce demand peaks, and so increase utilisation of the network.
5. Social science research on the various aspects of consumer perception of DER, DNSP and retailers etc, and how the proposed approach could help improve them

All UNSW's Research Questions will help to answer this question.

### **6. Could the spatial energy plan deliver broader benefits or support other trials?**

It is too early to say at this stage, with this trial really the only way to find out if this is the case. However, as demonstrated in Project Edith to date, the effectiveness of price signals in addressing technical impacts can be limited. There certainly seems scope for a more centrally planned yet local approach to optimise utilisation of the distribution network. A key focus of the trial could be a comparison of the degree to which a spatial energy plan could lead to either 3<sup>rd</sup> party or DNSP assets being appropriately incorporated into the network.

UNSW's Research Questions 3, 4, 5, 6, 7 and 10 are most relevant to this question.

### **10. What other factor/s should be taken into account when considering if the trial is successful?**

The Issues Paper states that the success of the pilot should be assessed according to the financial benefits for customers and reduced peak demand. Other factors that are just as important, if not more so, are the increase in renewable generation (and reduction in GHG emissions) and increased understanding/acceptance of DER/CER in the community.

UNSW's Research Questions 1, 2, 3, 5, 6 and 7 are most relevant to this question.

### **12. How should equitable dividend distribution be defined?**

This is a very good question and will be the focus of the UNSW work answering RQ6 "How might equitable sharing be defined and implemented, not only between different household and business cohorts but also across all affected stakeholders?" In particular, UNSW proposes to focus on ways to distribute benefits that balances considerations of equity and incentivising participation (as well as regulatory constraints) and maximises stakeholder acceptance and social licence.

**13. What sort of principles and process considerations should guide design of a delivery mechanism for consumer dividends as part of this trial?**

Again, we prefer not to pre-empt the research work that we hope to undertake to answer RQ6, although we would be very interested in stakeholder responses to both questions 11 and 12 – whether the project is successful or not.

**14. Noting Ausgrid's commitment that no consumers will be worse off in trial area, what are your views on consumers not having the ability opt out of this trial??**

Unfortunately, even if customers are assured that they will not be worse off, some will still object because they would feel the CPN project is being forced on them. We recommend that Ausgrid avoid a potentially significant backlash by making participation in the trial optional; but maximise participation by engaging in effective community consultation and by making the trial as attractive as possible.

**19. How might the trial support innovations in other areas or support the development of new markets or services that would benefit consumers?**

There are two main areas of potential innovation.

One is in the development of the implementation processes used by 3<sup>rd</sup> party developers of large-scale rooftop PV systems and medium-scale batteries connected to the distribution network. This will include the formulation of rapid responses to information provided through the spatial energy plan process.

The other is in the development of procedures to calculate and equitably allocate the costs and benefits of DER/CER, whether that be in the context of a CPN-type project or some other approach. As the deployment of DER/CER continues to increase, this will become significantly more important for maintaining the social licence required for supportive actions and policies.

UNSW's Research Questions 3, 4, 6, 8, 9 and 10 are most relevant to this question.

**20. How could Ausgrid's proposed trial impact the contestable markets in which it seeks to participate? Which markets could be affected and in what ways?**

This depends on how the CPN trial is implemented. If well implemented it should stimulate the large-scale rooftop solar and battery market throughout all distribution networks.

UNSW's Research Questions 4, 7, 8, 9 and 10 are most relevant to this question.

**22. What other benefits could be delivered, or learnings contributed, by Ausgrid's proposal to orchestrate CER and DER?**

To the best of our knowledge, unlike Project Jupiter, Ausgrid is not proposing to orchestrate CER (defined as behind-the-meter assets), only DER (in-front-of-meter assets on the distribution network).

One very interesting outcome would be an analysis of how well the operation of the batteries providing network support correlate with how they would be operated to participate in spot and FCAS markets, and indeed how all these correlate with operation directed by the network tariff. This would provide information that is valuable to 3<sup>rd</sup> party owners of battery assets that are considering entering a bilateral network support contract, or conversely, a DNSP that is considering leasing a battery that normally provides network support to a 3<sup>rd</sup> party operator.

The social science research proposed to be undertaken by UNSW will also provide valuable information regarding community/customer impressions and understanding of how DER can be operated for their benefit. This will help elicit valuable broad-based support from members of the community who may otherwise be locked out of benefit from CER and DER.

UNSW's Research Questions 1, 2, 5, 6, 7 and 10 are most relevant to this question.

**27. What data should the AER and/or Ausgrid publish (and when) to maximise learnings and benefits from the trial and are there specific metrics that should be used?**



Unfortunately we don't have time to answer this question fully, but as a general rule, the trial should be very transparent, with data made available to all stakeholders. It should also be provided relatively frequently, on an ongoing basis. This is particularly true of the findings and data related to the spatial energy plan.