

17 July 2024

Mr Ashwin Raj  
Australian Energy Markets Commission (AEMC)  
Level 15, 60 Castlereagh St,  
Sydney NSW 2000

Dear Mr Raj,

**Consultation paper – Enhancing the Integrated System Plan (ISP) to support the energy transition (ERC0395)**

Endeavour Energy appreciates the opportunity to provide feedback to the AEMC's *Enhancing the ISP* consultation paper.

Customers continue to drive the decarbonisation of the energy system at the distribution level through their investment in customer energy resources (CER) which represents a substantial proportion of the energy mix. The importance of CER is underscored by projections in the 2024 ISP indicating it will contribute almost half the National Electricity Market's (NEM) dispatchable capacity by 2050. Increased deployments of community batteries and connections of utility-scale generation to the distribution network will also provide key sources of dispatchable generation to support system reliability and stability.

The value of CER and distributed resources is optimised when they can be coordinated, and the industry is working to develop the capabilities and frameworks to facilitate orchestration at scale. It is therefore important that the impact of their controlled operation on operational demand be captured in AEMO's forecasts to inform an optimal development path (ODP) that balances its technical performance and decarbonisation objectives at lowest cost. We welcome the addition of sensitivity analysis exploring the impact of low CER orchestration in the 2024 ISP. We suggest this analysis is broadened beyond 'with' and 'without' orchestration to consider multiple scenarios and impacts beyond utility scale storage requirements, such as avoided investment in both generation and network infrastructure and loss factors.

We therefore support the intent of the proposed rule to enable AEMO to access information on distribution network constraints to better consider coordinated CER and distributed resources in the ISP. More broadly, we consider access to Distribution Network Service Providers (DNSP) datasets can provide AEMO with a more complete view of system characteristics downstream of bulk supply points (BSP) and allow opportunities to increase generation capacity within distribution networks to be considered in their assessment of prioritised investments needed to support the energy transition.

However, orchestration of CER, while critical to the ODP, is not the only distribution level factor worth having regard to in informing the ISP. We consider the rule change should broaden the ISP scope further to also have regard to the following:

1. Distribution Renewable Energy Zones (DREZs): we remain of the view that distribution networks can host substantial levels of renewable generation and storage with no or relatively minor augmentation costs. We are currently working with both the Federal and NSW Department of Climate Change, Energy, Environment and Water (DCCEEW) on a NSW Network Opportunities Study to host utility-scale generation. The ENA have commissioned similar research into the potential of the distribution grids across the NEM,

and we are currently conducting our own analysis suggesting 3-4 GW of additional renewable generation could be hosted across several areas of our network. In terms of consumption, our network supports 10% of the NEM meaning this initiative can meaningfully contribute to the achievement of the ODP and emissions reductions targets. The potential for relatively low cost and rapid deployment of renewable generation across our network, and those of other DNSPs, is worth further consideration in future ISPs to promote an efficient transition and/or manage the growing risk of delays and generation shortfalls.

2. DNSP spot load and organic growth forecasts: AEMO forecasts focus on the BSP level of the grid, and we have historically observed a material difference between DNSP and AEMO forecasts when the latter is cascaded to the distribution network level. We expect this difference to grow as DNSPs cater for significant population growth and electrification and with unprecedented growth in data centres. The ISP would benefit from the insights DNSPs can offer on forecast demand growth considering these trends to ensure the ODP is well informed on the amount of renewable generation and storage required.

In relation to the introduction of new data requirements to support the rule change, we consider a principles-based, co-design approach is required with further collaboration between DNSPs and AEMO. A prescriptive, rules-based approach risks introducing disproportionate cost increases, administrative burden and/or compliance risks for DNSPs or AEMO. These matters are discussed in more detail in the Appendix A.

For any further enquiries, please contact Patrick Duffy, Manager Regulatory Transformation and Policy at Endeavour Energy via email at [patrick.duffy@endeavourenergy.com.au](mailto:patrick.duffy@endeavourenergy.com.au).

**Yours sincerely**



**Colin Crisafulli**  
**General Manager Future Grid & Asset Management**

## Appendix A – Detailed response

**Barriers to CER orchestration should be reflected in the ISP forecasts but further changes are needed to provide confidence the ODP reflects the best ‘whole-of-system’ pathway to promoting the National Electricity Objective (NEO).**

Like all DNSPs, we have been working hard on developing capabilities (e.g., dynamic operating envelopes) and initiatives (e.g., flexible connection agreements) to efficiently integrate CER by utilising the intrinsic capacity of the existing network within the confines of the AER’s DER Integration Guidance Note and Customer Export Curtailment Value (CECV) methodology. However, the rapid pace of rooftop solar and battery installations and electric vehicle (EV) uptake means CER driven network constraints do and will continue to arise and investment to address them cannot be avoided.

Similarly, there are a variety of policy, market and customer behavioural factors that are largely outside the control of DNSPs which inhibit the pace and effectiveness of CER orchestration. These include:

- Low voltage network visibility: The contestable metering framework has not provided cost-effective or timely access to Power Quality Data (PQD) data required to unlock the benefits of smart metering. Once-a-day delivery of basic PQD as recommended in the AEMC’s metering service framework review will not be sufficient for DNSPs to implement dynamic voltage control and dynamic operating envelopes (DOE), which are critical to managing and maximising hosting capacity and instead require real-time and extensive data access. Addressing this issue will be a key enabler to orchestration of CER.
- Device responsiveness: Compliance with CER technical standards is another foundational requirement for CER orchestration. We note compliance rates, like the DER Register, are improving but remain below AEMO’s target. This is particularly challenging in NSW given its contestable connections framework. Addressing this issue will require action from jurisdictional regulators, CER manufacturers, installers and DNSPs.
- Regulatory requirements: The AER’s interim guideline for flexible export limits will set the regulatory settings and impact the extent to which DNSPs offer these services and on what terms (e.g., capacity apportionment methodology, consultation requirements, etc). This guidance has yet to be published and further delays risks inconsistency in the progress of flexible connection initiatives. The AER’s Ring-fencing guideline also applies onerous requirements to DNSP-led community batteries which inhibits their scaled deployment. It is important that a flexible regulatory approach is taken in the early stages of development and innovation amongst networks to test and refine multiple options. It is also important for the regulatory framework and incentives to reinforce the objectives of the ISP to deliver outcomes customers value. To that end, we do not consider the low and declining CECV reflects customers’ expectations for CER and storage investments and their importance to the ODP (or potential to deliver a lower cost transition).
- Customer acceptance and behaviour: The extent to which DNSPs and the industry more broadly can establish a social licence with customers will determine the extent to which customers accept and/or participate in CER orchestration. Failure to do so will inhibit CER orchestration given the voluntary and opt-in provisions in many complementary reforms. An industry wide effort will be required to educate and inform customers, particularly in support of tariffs, basic export limits and flexible connection agreements.

Although it is difficult to ascertain the relative impact of each of these factors, uncertainties related to non-network constraints collectively present a considerable risk to achieving CER orchestration and electrification levels assumed in the ISP. Therefore, it is important that AEMO work closely with the AER, AEMC and jurisdictional regulators to monitor the progress of their respective reforms and model their effect on CER assumptions and projections.

There could also be opportunities for AEMO to consider information held by other parties. For instance, to address knowledge gaps on customer behaviours information collected from retailers and aggregators could provide valuable insights on customer usage profiles and the responsiveness of devices which are operated as part of a virtual power plant (VPP). There may also be a role for government agencies to share information that could be useful to both AEMO and DNSPs for planning purposes subject to privacy considerations (e.g., EV data collected through registration processes).

From a DNSP perspective, more network constraints will emerge as CER becomes ubiquitous. The growing impact of multi-directional energy flows are likely to be exacerbated by the introduction of flexible connection arrangements designed to facilitate the connection and control of larger capacity CER. To the extent these flows will impact power system forecasting and planning, there could be value in providing AEMO with greater visibility of CER-related constraints and our cost estimates to address these, in addition to the aggregated demand forecasts at each BSP currently provided as part of routine joint-planning activities.

Sharing this information would complete a feedback loop allowing AEMO a more granular view of the size, location and duration of CER constraints in the distribution network which could be used to help inform its CER uptake and coordination assumptions and operational forecasts. If incorporated into AEMO's Input, Assumptions and Scenarios Report (IASR), more robust information could be used by a variety of stakeholders to make better informed decisions, including DNSPs using ISP data as an input to export hosting modelling and other analysis.

We also believe there is considerable scope to improve AEMO's assessment of distribution-level solutions to ensure the ISP presents the optimal mix of large- and small-scale investment needs across the NEM. Sharing information on curtailed energy and estimated augmentation expenditure to increase CER hosting across various modelled "constrained" scenarios could allow AEMO to better assess opportunities to leverage areas of high CER penetration or unlock latent network hosting capacity as a lower-cost alternative to investment in large-scale generation at transmission levels.

A preliminary assessment of opportunities across our network area indicates the potential for at least 3-4 GW of additional renewable capacity in our existing grid, generating over 5 TWh annually, at a relatively lower incremental cost to a transmission REZ. These potentially local DREZs could more actively support local communities and establish a social licence through utilising CER via a combination of solar and wind across rural land; Commercial & Industrial (C&I) and residential rooftop solar supported by investments in storage, network upgrades and flexible demand.

Additionally, implementing distribution solutions would avoid the significant lead times typical of large-scale investment and DNSPs are well placed to deliver a faster execution which could mitigate the increasing risks of generation shortfalls and failure to reach emissions targets due to delays encountered by ISP projects.

Notwithstanding changes to incorporate CER and distribution resources capacity investment in the ISP are explicitly outside the scope of this rule change, we encourage the AEMC to make recommendations for a review of the changes necessary to enable AEMO undertake a more fulsome and balanced assessment of all potential distribution and transmission investments that can support the energy transition. Limited information of network conditions behind BSPs may in part contribute to the focus of the ISP towards transmission solutions and allowing AEMO to access DNSP data would be an important first step in facilitating a more balanced consideration of options.

We are in the early stages of investigating and scoping the technical feasibility of a range of options to determine a 'merit order' of potential investments to complement the ODP. Following this more detailed work on business models, funding mechanisms and regulatory settings will be required. Once this work has sufficiently progressed, we would welcome the opportunity to

actively participate in any review of the regulatory barriers and changes required to unlock the significant potential of distribution solutions to the ISP.

**A collaborative approach would better facilitate a proportionate and flexible information sharing arrangements that considers differences in type and granularity of data which can be provided by DNSP**

The robustness of the ISP would benefit from improved understanding of distribution network hosting constraints and opportunities, and we have recently been working with AEMO to provide an uplift in distribution-level information in its preparation for the 2026 ISP. However, these engagements have only just commenced and there is still substantial work needed – potentially more than can be achieved through the standards guideline and rule consultation processes – to better understand and match the type of information collected by individual DNSPs to those required by AEMO to improve its CER coordination forecasts.

It may therefore be premature at this stage to amend the Rules and embed new guidelines and mandatory information disclosure obligations without first establishing the scope of the information required by AEMO, and the cost to DNSPs in providing it to AEMO.

We appreciate sharing information though individual information requests may not deliver the consistency, certainty and efficiencies capable through prescriptive rule-based obligations. However, the proposed rule does not adequately consider compliance risks arising from differences in the type and granularity of information collected by DNSPs and their respective capabilities to supply the requisite information in a designated format.

Jurisdiction-specific challenges could also materially hinder the provision of network constraint information. Prohibitive smart meter data access arrangements mean non-Victorian DNSPs may be unable to provide the same coverage and granularity capable by Victorian DNSP. Delays to the metering framework reforms to designed improve DNSP access to PQD will also limit the extent DNSPs can provide requisite information in time for the 2026 ISP. The NSW DNSPs are further disadvantaged due to comparatively poor levels of compliance to the CER technical standards and inaccurate and incomplete DER Register data.

Whilst our compliance concerns are centred specifically on the proposed expansion to the Distribution Annual Planning Report (DAPR), we also query whether the DAPR is the appropriate mechanism to share information given the agility with which DNSPs can manage constraints. That is, annual disclosure of CER constraints may not fulfil AEMO needs, especially where CER network constraints are rectified in the same year they are identified. Furthermore, the mismatch in forecasting horizons between the DAPR and ISP may limit opportunities for AEMO to consider any longer-term forecasts and trends developed by DNSPs.

Instead, there would be greater value in utilising digitalised systems which allow a more dynamic exchange of information to ensure AEMO's forecasts are based on the most up-to-date network data. AEMO's CER Data Exchange project will develop a common platform to enable the efficient exchange of data required for CER orchestration which could also be used to facilitate the transfer of CER hosting constraints and any associated investment cost data. Arrangements should also permit DNSPs to provide estimated data, noting proprietary planning tools and models have proved effective in enhancing visibility of the CER where actual data is not available.

In summary, we consider amending the DAPR may not achieve the desired objective of the rule change and therefore encourage the AEMC to allow AEMO and DNSPs to collaborate on developing information sharing arrangements that build on the current bespoke information requests. We also recommend the rule change allows DNSPs the flexibility to provide data on an estimated, voluntary or best endeavours basis where information gaps exist.