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Department of Climate Change, Energy, the Environment and Water (DCCEEW)
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Australia

Clean Energy Council Response to the Streamlining the connection of Electric Vehicle Supply Equipment and large Consumer Energy Resources Options Paper

The Clean Energy Council (CEC) welcomes the opportunity to provide the Department of Climate Change, Energy, the Environment and Water (DCCEEW) with a response to the "Streamlining network connection processes for consumer energy resources (CER) and Electric Vehicle Supply Equipment (EVSE) Options Paper" (the Options Paper). The Options Paper makes a number of important recommendations which we have addressed in full.

The CEC is the peak body for the clean energy industry in Australia. We represent and work with Australia's leading renewable energy and energy storage businesses, as well as a range of stakeholders in the National Electricity Market (NEM), to further the development of clean energy in Australia. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

Streamlining connections for distribution connected assets is vital. It is unlikely that the Australian Energy Market Operator (AEMO) Step Change Integrated System Plan (ISP) projections will be met without systems generation and storage connecting at the distribution and sub-transmission level, as well as the transmission level. Rapid deployment of EVSE is also fundamental to decarbonising the transport sector. However, this Options Paper has been released at a time when there are a number of concurrent reviews and papers that suggest that we need a broader review into the connection, ownership, and roles and responsibilities for systems connected at the Distribution Level.

This includes:

- The Australian Energy Market Commission's (AEMC) Market Review on "Electricity pricing for a consumer-driven future", which is considering tariff structures for both CER and front-of-the meter distribution connected systems (referred to in this response as "the AEMC Electricity Pricing Review").

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- Recommendations made in the "The Time is Now"[1] report, released by Energy Networks Australia (ENA) (referred to in this response as the ENA Report). This makes recommendations on what would be some fundamental changes to the current roles and responsibilities, and regulatory frameworks, applied to the distribution connected systems.
- The complementary work being undertaken by DCCEEW on a distribution system operator (DSO) model.

In addition to these reviews and reports which directly correlate to the recommendations made in the DCCEEW Options Paper, there are several parallel reviews, and reports underway that should also be considered when DCCEEW makes their final recommendations:

- The DCCEEW National CER Roadmap "Powering Decarbonised Homes and Communities" which considers the effective integration and management of CER through consumer, technology, market and power system operations reform (referred to as the "National CER Roadmap").
- The recent ENA Report "Harmonising Electric Vehicle Supply Equipment Connections and Service Installation Rules"[2]
- The AEMO public consultation report on "Technical Requirements for 200kW to 5MW connections".

Alignment of reviews

The current issue is that no single one of these reviews covers the full scope of topics that should be considered. There is a risk that if the recommendations made in the ENA Report are considered and progressed as isolated reforms, rule changes or class waivers requests to ring-fencing obligations[3], consideration will not be given to the broader reform landscape that is currently underway, and the role of connection or tariff reforms to provide alternative (and preferable) policy solutions.

A separate issue is that all of these reviews are considering slightly different classes and sizes of assets. Tariff reforms, improved connection processes, and changes to ring-fencing arrangements will benefit and/or impact assets of all sizes connecting at the distribution level or sub-transmission level. For this reason, we do not think it makes sense to have size thresholds or limitations within each review.

Table 1 provides an overview of the relevant scope in terms of both topics considered, and asset classes considered to be within scope of each review that is currently underway.

[1] Leveraging the Distribution Grid in support of the Energy Transition (endeavourenergy.com.au)
[2] Harmonising EVs - report covers (energynetworks.com.au)
[3] The electricity distribution ring-fencing guideline contains essential protections to:
- Prevent Distribution Network Service Providers (DNSPS) providing unregulated or contestable services that could be cross subsidised by its distribution services.
- Prevent DNSPs discriminating in contestable markets in favour of themselves or affiliated entities.
- Ensure DNSPs handle ring-fenced information appropriately.

Without robust distribution ring-fencing protections (which effectively separates distribution services provided by a DNSPs from the provision of provision of unregulated or contestable services by a DNSP or an affiliated entity), competition could be hindered:
- In emerging markets like EV charging (stifling potential innovation in the provision of these services).
- Competition in services provided by utility scale batteries, orchestrated behind the meter storage and community batteries.
- Between DNSPs and TNSPs in the provision of connection services which can be provided at both the transmission and distribution/ sub-transmission levels.

Table 1: Current reviews into distribution network policies and processes

		DCCEEW Consultation	AEMC Consultation	ENA[4]
Topics in scope	Tariff reform	No	Yes	No
	Connection reform (process and information access)	Yes	No	No
	Ownership / ring-fencing reforms	No	No	Yes
Asset types within scope	BTM CER (residential)	No	Yes	Yes
	BTM CER (commercial)	Yes	Yes	Yes
	Front of the meter generation/ BDUs (<5MW)	Yes	Yes	Yes
	Front of the meter generation/ BDUS (>5MW)	No	Yes	Yes
	Commercial Loads (<5MW)	Yes	No	Yes

Why do we need a broad review?

The AEMO ISP Step Change scenario sets ambitious projections for a future with significantly more BTM solar and storage, orchestration of BTM storage, electric vehicles (EVs), and utility scale storage infrastructure. It's a given that successful deployment of BTM assets will be linked to distribution network processes. It is also increasingly likely that utility scale storage and generation will need to be connected at both the transmission and distribution/ sub-transmission levels.

In the view of the CEC there is enough overlap in the topics considered in the scope of the Options Paper and the AEMC Electricity Pricing Review to warrant a broader review, or series of reviews, into

[4] Noting that this is not a market or policy review in itself. However, it makes a series of substantial policy reform recommendations. The CEC would not like those reforms to be implemented in isolation or without a detailed review into the alternatives.

Distribution Level Operation. This should cover all topics raised above, but importantly there also needs to be consistency in the class of assets considered. Not all topics will necessarily apply to all asset classes, but undertaking the work as a single review, or coordinated series of reviews will ensure full coverage.

Recommendations

The CEC recommends that a full coverage consideration of distribution system reforms should consider:

1. Broader scope review into the connection frameworks, roles and responsibilities and tariff structures for assets connecting to the distribution and sub-transmission system.
    - Inclusion of roles and responsibilities is particularly important as it currently sits outside of the scope of the reviews underway but will be integral to the DCCEEW DSO work.
2. Within scope should be front of the meter assets (<5MW), front of the meter assets (>5MW), loads, commercial behind-the-meter (BTM) systems (>200kW <5MW) and commercial loads – specifically EVSE.
    - Residential BTM CER should be excluded and become the sole focus of the AEMC Electricity Pricing Review.

The CEC is reasonably agnostic of what this looks like, but it may include:

- The AEMC carving out tariff considerations for all non-residential CER to consider the asset classes above and running this as a separate parallel review.
- Expanding the scope of asset coverage of the DCCEEW Consultation to ensure that all asset classes are considered.
- Any potential changes to ring-fencing arrangements, or proposals to change roles and responsibilities for participants connecting assets at the distribution and sub-transmission level is included in the scope of one of the above reviews.

The work of DCCEEW and the AEMC in this respect will be complementary, and running a parallel review will mean that the full suite of policy recommendations to unlock capacity at the distribution level is considered. Including potential changes to ring-fencing arrangements within the scope of one of these reviews will also ensure it is given appropriate consideration, and that the recommendations made in the ENA report are not considered later and individually – resulting in potentially duplicative policy solutions for problems which may be solved by streamlined connection frameworks, and better tariff structures.

There will also need to be alignment with the delivery of the recommendations made in the National CER Roadmap to ensure that there is more holistic coordination between opportunities and reforms considered for all asset classes – both in front of the meter and BTM. Leveraging the CER Roadmap Taskforce Reference Group may be able to play a role in supporting this work.

In the below we provide both a direct response to the DCCEEW questions included in the DCCEEW consultation, whilst also scoping topics that should be included in a broader review and providing commentary on those points.

Full scope of topics relevant to improving asset connection and build at the distribution and sub-transmission level

1. Tariff designs and exemptions

The application of Distribution Use of System (DUOS) to utility scale storage assets

Consideration of tariff structures for both behind-the-meter CER and commercial Distributed Energy Resources (DER), as well as in-front of the meter assets (<5MW and >5MW systems) are all within the scope of the AEMC Electricity Pricing Review. The initial AEMC Terms of Reference (TOR) only considered <5MW systems – neighbourhood battery scale – however the subsequent AEMC forum expanded the scope to include larger utility scale storage systems connected to the distribution and sub-transmission system. Noting that the scope of that review is incredibly broad, carving out the specific network tariff considerations that apply to front-of-the meter assets connected at the distribution and sub-transmission level would ensure that those topics are given the appropriate consideration.

Tariff design and specifically the application of DUOS to utility scale storage assets, has been an ongoing concern of the industry for several years, with CEC members highlighting that the current distribution network tariff structure would make distribution connected batteries uneconomic as far back as the original Integrating Energy Storage Systems Initiation Paper. The CEC response to the AEMC's *Integrating Energy Storage Systems into the NEM* in 2020 highlighted concerns around inconsistent treatment in applying DUOS and Transmission Use of Service (TUOS) costs to equivalent systems, with the only difference being whether they are connected at the transmission or distribution level[5].

While the CEC understands that consideration of transmission, and subsequently transmission connected assets, are out of scope of the Review, we do think that consistency in treatment of the same asset class is a fundamental principle within the NEM. Ensuring that distribution connected bi-directions units (BDUs) can respond to the same market signals and AEMO's directions, as transmission connected BDUs, without punitive tariff arrangements will be critical in achieving the storage build out needs projected by AEMO. This is particularly critical for scheduled BDUs who will be responding to the same AEMO NEM Dispatch Engine (NEMDE) signals regardless of whether they are connected at the transmission or sub-transmission level.

As such, we do think it important that this review considers the most appropriate treatment of distribution connected, utility scale BDUs, with reference to the equivalent treatment at the transmission level[6]. This should go beyond just considering tariff design, and should also include a consideration on whether asset class tariff exemptions should be embedded directly into the National Electricity Rules, or other guiding documents

[5] clean_energy_council_0.pdf (aemc.gov.au)
[6] Developers of transmission-connected batteries can negotiate access to the transmission network as a negotiated service.

To summarise the issue:

- Privately owned BDUs connecting to the distribution network are primarily offered the same tariff structures as any other large commercial loads – which have features such as peak demand charges, peak export charges, capacity charges, net consumption charges and other features specifically designed for end users.

- This effectively ignores the bi-directional nature of these assets, and the fact that they are not consuming energy. It leads to a double application of all consumption costs because BDU owners are paying for each kWh stored, with the same consumption costs then also applied to the ultimate end-use customer following discharge.

- The charges also effectively ignore the operational flexibility of BDUs assets when compared with traditional commercial loads:

    - Bi-directional assets (>5MW) are required to be registered as scheduled BDUs. These assets participate in the wholesale markets and require sub-second bi-directional ramp flexibility, dispatched and constrained by NEMDE. They also actively provide contingency and/or regulation frequency control ancillary services (FCAS). Consumption costs are applied to all kWh used to charge regardless of the service provided or the direction given by AEMO.

    - Applying consumption charges particularly disincentives BDUs (both scheduled and unscheduled) providing lower frequency services. It also disincentivises BDUs from providing system integrity services, such as system integrity protection scheme (SIPS) and wide area protection scheme (WAPS) services – both of which have charging components to maintain grid security[7].

    - Non-scheduled BDUs (<5MW) – which include most neighbourhood batteries - are still most likely to be responding in a similar way to scheduled BDUs – dispatched in response to high energy market prices, reflecting market need. Though not scheduled through NEMDE, non-scheduled BDUs still provide a greater market benefit when able to provide sub-second response to market needs – rather than operating within fixed time-of-use (or similar) tariff bands designed for loads.

- Tariff structures are also opaque and bi-laterally negotiated between DNSP <> Developer; and apply over timeframes that are untenable for investment certainty.

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[7] Note that these points were also considered in the RRO Rule Change request lodged by Tesla, Neoen and Iberdrola (available at - New rule change proposal - Neoen Austral~ reliability obligation exemptions for scheduled bidirectional units - 20240408.pdf (aemc.gov.au)). The same principles on applying costs to charge are relevant for both RRO liabilities and consumption tariff arrangements.

The CEC believes it is important that the scope of a review considers the tariff cost structures applied to all distribution connected BDUs – not just neighbourhood batteries. The same principles apply, and all tariff cost structures ultimately flow back through to the consumer. The recent *Retailer reliability obligation exemption for scheduled bi-directional units*[8] touches on several of the same principles and concerns as those highlighted above and provides precedence for a more nuanced treatment of bi-directional units.

2. Information availability in respect of available network capacity

Several of the recommendations made in response to providing better access to network information could potentially address a number of issues impacting on driving higher uptake of distribution connected EVSE, generation and storage capacity (both below and above the 5MW levels).

The CEC is supportive of the recommendations made by DCCEEW, and would particularly like to see:

- Adoption of best-in-class hosting capacity models by all Distribution Network Service Providers (DNSPs) – we would particularly encourage the use of the NEARA model which creates digital twins of the distribution networks and is currently being used by several DNSPs.
- Standardised data format made available by all DNSPs.
- Standardised timelines for doing the work. Where costs will be incurred where not otherwise considered within the Regulatory Determination (due to timing disconnect) would consider what financial incentives are required to ensure that there's an alignment in timing.

This aligns with a recommendation made in the ENA Report which suggests creating grid capacity availability maps for commercial EV charging. As with all of our recommendations, we would suggest that network hosting capacity maps should consider capacity for hosting not just EVSE, but also storage assets.

It should similarly consider network hosting capacity for grid exports – both for behind the meter (which is already underway for most DNSPs to support dynamic operating envelope (DOE) work) as well as for front-of-the-meter generation.

3. Reduced connection and energisation timeframes

The CEC is also supportive of the recommendations made in the Options Paper regarding reducing timelines for both connection processes and energisations time. A separate recommendation, which the CEC also supports, is to create a “best practice” timeline which considers process flow and time from applicants lodging an application through to site energisation. This would provide a very useful benchmark. This best-practice timeline should consider not just the current timelines across individual Australian DNSPs, but also consider international best-practice.

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[8] Retailer reliability obligation exemption for scheduled bi-directional units | AEMC

We are also supportive of the recommended approach for harmonising technical connection requirements. As with our points above, we would suggest that the recommendations made in the Options Paper apply to a broader class of assets than that currently within scope – including >5MW generation and storage systems. There may be different expectations and approaches considered for larger assets, but in that respect, there are also lessons that can be learned from similar work programs focused on streamlining connections for transmission connected, equivalent assets.

The recommendations made in the DCCEEW Options Paper on fast-tracking connections, also appear to be closely linked to the ENA Report in respect of "Amplify Untapped Solar".

Amplify Untapped Solar: The Commercial and Industrial (C&I) specific approach to solar does not address the issue raised in the report (split incentives and cost barriers). C&I customers broadly do not face barriers that are not of the creation of the DNSP in installing large scale solar. We agree that DNSPs ought to better facilitate the ease and speed of larger rooftop solar connections but consider that this is their role within the market already and that this is something they ought to already be doing.

We would support their secondary recommendation to work with the Commonwealth and State governments to expand existing programs to provide low-cost, government backed, CER financing options for renters and customers with poor access to capital.

4. Network incentive structures

EVSE connection incentive structures

The model suggested by Oakleigh Greenwood in the DCCEEW Options Paper considers linking incentives for fast-tracking EVSE to Australia's decarbonisation goals, with the financial incentive tied to the annual value of emissions reduction (VER). The CEC would support exploring this option in more detail, with two additional points/ caveats:

- Any incentive tied to fast-tracking EVSE connections in respect of decarbonisation goals should apply equally to fast-tracking connections of generation and storage.
- Any suggestion of an enhanced incentive approach will also need to consider the impact on network costs, and the subsequent pass through to customers via their retail bill. These costs will need to be weighed against the relative benefits for customers – both in potential retail bill savings, and/ or in improving customer services.

Ultimately an incentive structure will need to show that it overcomes some market or financial barrier that exists, and the benefits created by it justify the cost of the scheme. We would be interested in working with DCCEEW to further unpack what an incentive scheme may look like.

The Options Paper also considers an alternative approach of moving to a weighted average price cap when considering the current incentive structure Network Service Providers (NSPs) have in fast-tracking new investments. Again, we would encourage this to be further considered with more information made available.

Local energy hubs

In addition to the proposal for new incentive structures for EVSE connections to be fast-tracked, the ENA Report also notes that there is a "Link Local Energy Hubs" recommendation that includes "an alignment of the treatment of connection costs between transmission and distribution to remove the disincentives for renewables to connect to local energy hubs". The CEC agrees with this recommendation and would support changes to the way that DNSPs are incentivised, to ensure that they are proactively identifying where an opportunity for a 'Local Renewable Energy Zone (LREZ)' may exist and sharing this information with the market to ensure sensible investment decisions in relation to CER within them.

Identifying an LREZ doesn't seem to be particularly dissimilar to establishing locational DOE's; both would identify where there is an over/ under supply of CER and inform investment decisions (for instance in batteries) at all levels (customer/ installer through DNSP) alongside any need for augmentation to support this.

5. Review of roles and responsibilities and of current and future ring-fencing requirements

Importantly this is a topic that is not currently considered within the scope of the either the AEMC review or the DCCEEW Options Paper but appears to be intrinsic to the success of both reviews.

The ENA Report suggests that a class ring-fencing waiver is the best way to unlock the deployment of small and medium scale batteries, and EVSE, connected to the Distribution Network. This would go beyond the current limited ring-fencing waivers that apply solely to distribution connected batteries funded through the DCCEEW and ARENA Community Battery Program.

Improved connection frameworks, and improved tariff structures appear to be a precursor, and alternative policy solution, to introducing broader ring-fencing waivers. In particular, a number of the recommendations put forward in the DCCEEW Options Paper would seem to be in direct conflict with some of the recommendations made in the ENA report. A broader review could also consider the gaps and opportunities for some of the recommendations made in the ENA report, without creating duplicative or conflicting policy solutions (as an example creating a new incentive structure for DNSPs to fast-track private EVSE connection applications, while also considering a ring-fencing waiver for DNSPs to own their own EVSE would be a direct conflict).

Noting that ultimately DNSPs are regulated monopolies, CEC members have also raised competitive neutrality concerns regarding any changes to the existing ring-fencing arrangements and potential change to DNSP assets ownership.

Ownership of EVSE (including pole chargers)

Network businesses control the connection of public EV chargers to the grid. As highlighted in the DCCEEW Options Paper, there are several recommendations that could be made to streamline connections and make it simpler for EVSE to connect to the Distribution Network[9].

The risk of enabling DNSP ownership of EVSE is that they would be able to block their competition. It would also create a relative disincentive for DNSPs to implement the streamlined connection approval recommendations made in the DCCEEW Options Paper. If the recommendations in the ENA Report were implemented and DNSPs were granted waivers to own EVSE, there is a risk that private investment will be scared off.

Kerbside charging will be a necessary feature of a high proliferation EV world. Yet there currently does not appear to be a well-justified reason to make public kerbside charging a distribution service, without a very detailed review into current market failings, and first assessing the effectiveness of streamlined connection processes. If the existing poles are convenient locations for kerbside charging, then the DNSP can enter into agreements with third parties to install these.

If asset utilisation is too low to be economical for commercial providers, then this would indicate that access to kerbside charging is not an issue or priority in that area, and other charging options can be developed which serve consumers. The DNSP incentives structures (recommended by DCCEEW and discussed above), will also help ensure continued roll-out in suitable locations, as well as the other recommendations above – better information on network hosting capacity, and defined connection standards, will also help ensure that EVSE is deployed where needed.

Ownership of utility scale storage/ ring-fencing waivers

The ENA Report also tables a class ring-fencing waiver for ownership of small and medium-sized battery storage connected to the distribution network (see “Soak Up Surplus Solar” recommendation). As with any changes to the current ownership structures of EVSE, amending the ring-fencing requirements to enable DNSP ownership of distribution and sub-transmission connected batteries. This has raised the same concerns with CEC members on competition and competitive neutrality issues.

As with EVSE scalability points raised above, increased deployment of small and medium batteries connected to the distribution and sub-transmission, should largely be resolved through the combination of the recommendations made above and being considered in the AEMC and DCCEEW submissions – better tariff structures and exemptions, improved access to network hosting capacity information, and streamlined connection processes. These privately owned batteries should still be able to provide critical network services to the distribution network – which would serve the purpose of the “Soak Up Surplus Solar” recommendations made in the ENA Report.

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[9] Note that a number of these concerns and recommendations were made in response to the DCCEEW consultation on the National Electric Vehicle Strategy. The Tesla submission, for instance, includes a 20 page set of recommendations on how to rapidly scale Australia’s Public Charging Infrastructure by improving DNSP connection processes (all 500 responses to that submission are available at - National Electric Vehicle Strategy - National Electric Vehicle Strategy: consultation paper - Climate (dcceew.gov.au))

We are increasingly seeing Transmission Service Network Providers (TNSPs) consider contracts with non-network service providers for critical grid services such as inertia and system strength. The new AEMO Transitional Services[10] model will further support this.

Within the scope of a broader review framework, the CEC would support a consideration of whether there is anything in the current RIT-D or demand management incentive scheme (DMIS) regulatory frameworks that would prevent non-network services being provided by third parties.

6. Consideration of Technical Standards

When considering the ENA Report recommendation "Sync with the grid", while these are reasonable things for the ENA to point to as desirable, arguably it is more useful if DNSP's work with each other to ensure consistency across technical limits, installation and interoperability requirements. It may be debatable whether Standards (as in, Australian Standards) is the right path to go down in all cases as these are much less adaptable-at-pace than well designed regulatory or policy settings.

Given the pace of change in the development of CER technologies (both existing and emergent) and the need to appropriately integrate these with an already complex system, consistent industry standards are preferable in many cases. Where Original Equipment Manufacturer (OEM) technical standards are to be developed, this would seem an area where Australian Standards rather than an industry standard would be preferable, as it would ensure any imported CER appliance met the requirements rather than effectively continuing the current arrangements (with additional DNSP input) where this is not compulsorily the case.

The CEC offers the above considerations as a means of improving the consistency and scope of work into distribution network policies and processes. We are interested in ongoing involvement in the development and design of this work. The recommendations made in the DCCEEW Options Paper, and the CEC recommendation for this scope to be broadened, will also need to be considered parallel to the recommendations made in the DCCEEW National CER Roadmap.

If you have any queries or would like to discuss the submission in more detail, please contact Emma Fagan at efagan@cleanenergycouncil.org.au.

Kind regards,

Emma Fagan
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[10] isf-transitional-services-guideline-qa-presentation-august.pdf (aemo.com.au)