

Submission to:

NSW / ACT / TAS / NT



ELECTRICITY DISTRIBUTORS CONSULTATION PAPER

PAPER ONE: SERVICE CLASSIFICATION

September 27, 2021

Introduction

The Electric Vehicle Council (EVC) welcomes the opportunity to make a submission to the 'NSW / ACT / TAS / NT electricity distributors consultation paper on service classification'¹ from the DNSPs across these states and territories.

Broadly, we are very pleased to see strong awareness amongst the DNSP community around EV charging infrastructure as an emergent area needing consideration. We particularly applaud the approach of multiple DNSPs coming together to address common issues in this way.

In addition to EV charging infrastructure specific matters which we address in this submission, we observe that there is likely to be substantial overlap between platform services and electric vehicle charging infrastructure.

The body of our submission addresses the questions raised in the consultation paper. We invite ongoing discussion and collaboration with the DNSPs, AER, and other relevant stakeholders on this matter.

¹ <https://talkwith.tasnetworks.com.au/70268/widgets/343267/documents/214081>

In response to expected roles of DNSPs (page 4, introduction):

The introduction of the consultation paper indicates that the DNSPs are unanimous in the view that they expect to play a more active role in platform services, and that they expect to play a facilitatory role only with respect to electric vehicle charging infrastructure.

The EVC would agree that in the long run, it is unlikely to make sense for the DNSPs to deploy EV charging equipment for public use. This is presently being done across the country by non-DNSP players in an increasingly competitive marketplace, supported by multiple federal and state government grant programs. Were DNSPs to be permitted to deploy public EV charging equipment as part of their respective RABs, this would be likely to disrupt the business models of the organisations successfully deploying EV charging equipment today. There is no need or benefit in extending the natural monopoly of the DNSP to include EV charging equipment.

With respect to the nature of the DNSP role in EV charging, however, upstream of the EV charging equipment that connects to the vehicle there will need to be DNSP-owned assets in virtually every case. The only exceptions will be standalone systems, which will often be cost prohibitive to deploy, and which will be exceptions to the general rule. This makes the role of the DNSP not just facilitatory, but crucial to the successful transition of the national road vehicle fleet to electric.

With respect to platform services, we expect these sorts of capabilities to be very important in the medium term with regard to the interaction between the EV fleet and the electrical networks. We agree with the unanimous view of the DNSPs that they should play a more active role in this space.

Responses to questions:

Platform services:

Question 1: Do you want to engage more with electricity distributors on how their DSO functions are changing?

To the extent that concepts like platform services relate to tracking delivery of energy into EVs, and modification of consumer behaviour around EV charging, yes, the EVC would like to be closely involved.

EV charging in a domestic context is widely considered to be a significant medium-long term DER opportunity. If we consider the passenger vehicles in the Australian light vehicle fleet as it stands today (about 14 million vehicles, doing about 15,000km per annum each, fuelled mainly with petrol and diesel), and imagine an alternative where the energy requirement for these vehicles was electric, it would amount to about 42TWh/annum.

This is on the order of 18% of the total ~234TWh of electrical energy used annually in the country². This figure does not include energy used by trade, freight, or public transport road vehicles. It's just the cars, which will mostly be charged in domestic driveways and garages across the country.

The downside risk of failing to manage this introduction is that if a significant portion of this 18% increase in annual electrical energy use occurs with timing coincident with existing peak demand, the networks will need to substantially build out the RAB across every suburb in the country. The cost of this buildout would then be passed on to all consumers in the form of increased network components in electricity bills.

The upside opportunity is that if the majority of this 18% increase in annual electrical energy use can be placed temporally such that it does not contribute to peak demand (ie, overnight and during times of excess solar generation), then the result is minimal increase in the RAB, higher asset utilisation across distribution and transmission networks, and resultant downward pressure on electricity costs for all consumers.

There are many pathways to realising the opportunity and reducing the risk – there will be no single silver bullet. Some of these pathways, such as demand response initiatives, are likely to be enabled through platform services involving the DNSPs.

Low voltage visibility is called out in the platform services section and is likely to be crucial to the efficient deployment of high power DC charging hardware. It will also be needed to inform timing of upgrades to suburban transformers, which will be needed due to a combination of densification of housing, increased aircon use, and EV uptake to the extent that EV load coincides with peak demand.

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Electric Vehicle charging:

Question 9: Can the AER's service classification approach contribute to an efficient recovery of network costs associated with EV charging?

Question 10: Other than facilitating charging infrastructure, is there anything else electricity distributors can or should do as EV take-up rates increase?

For deployment of AC EV charging in domestic homes, no particular network involvement is typically needed to support the installation. Long term, upgrades to the RAB may need to occur to the extent that widespread domestic EV charging load coincides with peak demand. Per our commentary in response to the platform services piece above, there is significant room for networks to be involved in the mechanisms by which consumer behaviour can be modified to mitigate excessive buildout of the RAB. This area of overlap between EV charging and platform services will merit work on the part of the DNSPs.

In terms of forecasting demand in the suburban landscape resulting from the transition to EVs, there will be merit in investigating data sharing approaches between vehicle registration bodies and DNSPs. It is the vehicle registration organisations that will be able to provide the granular data around the home address of EVs, which could be used as an input into upgrade plans for transformers and zone substations. This data won't necessarily be able to be captured from an electrical installation process perspective, because many drivers can be expected to use existing electrical infrastructure in their homes to charge their EV, rather than installing a dedicated piece of charging equipment.

For deployment of DC charging in public spaces where new connections or connection upgrades are required, industry has two key pain points.

One is the time taken to process connection requests – often many months. From the platform services piece above, better visibility in the LV (and potentially 11kV and 22kV) networks would probably help the DNSPs deliver faster turnaround to customer connection requests.

The other is peak demand charges being applied to high power connections. The EVC is of the view that it is reasonable for the operators of high power DC charging equipment to not be subject to granular cost reflectivity, because they are delivering a social good. Corollary examples where granular cost reflectivity is not applied to individual users can be found in many other highly structured sectors, like health, education, postal services, roads, policing, and so on. The challenge for us as a peak body has been gaining collective agreement to this principle, and then finding the best mechanism to bring this about.