6 April 2021

Department of Industry, Science, Energy and Resources

Submitted electronically

Dear Sir or Madam,

Submission to the Future Fuels Strategy discussion paper

The Public Interest Advocacy Centre (PIAC) is an independent, non-profit legal centre based in New South Wales. Established in 1982, PIAC tackles systemic issues that have a significant impact upon people who are marginalised and facing disadvantage. We ensure basic rights are enjoyed across the community through litigation, public policy development, communication and training. The Energy + Water Consumers' Advocacy Program represents the interests of low-income and other residential consumers, developing policy and advocating in energy and water markets.

PIAC welcomes the opportunity to respond to the Department's Future Fuels Strategy Discussion Paper.

EVs and decarbonisation

PIAC considers accelerating higher penetration of Electric Vehicles (EV) is an essential part of any timely and efficient plan to decarbonise the economy. Policies to encourage the take up of EVs will help deliver true choice to consumers by removing structural barriers that currently hide the true total cost of petrol or diesel vehicles. For instance, the impacts on community health and the environment from tailpipe emissions are not reflected in vehicle costs.

PIAC questions the modelling of vehicle emissions in the discussion paper and disagrees with its findings that "driving a hybrid in many Australian states has a lower emissions intensity profile than driving a battery electric vehicle".[1] In particular, the analysis takes a pessimistic outlook of renewable energy uptake, which will reduce the emissions-intensity of charging from the grid.

The discussion paper's findings are also in contrast to many other analyses that show EVs have a clear and immediate reduction on emissions. For instance:

> … when compared to fossil-fuelled (petrol, diesel, LPG, CNG) vehicles, battery electric vehicles (BEVs) significantly reduce average life cycle GHG emission rates for passenger vehicles with a high level of confidence. …
>
> The weight of evidence suggests that electrification of the passenger fleet would reduce GHG emission rates (g/km) from between 16% to 40% for the current (2018) Australian electricity mix, which is still largely generated with fossil fuels. Even in a marginal electricity scenario (i.e. 100% fossil fuelled electricity production), BEVs will still reduce GHG emission rates (g/km) between 5% to 29%. Importantly, in a renewable Australian electricity mix (i.e.

1 Department of Industry, Science, Energy and Resources, *Future Fuels Strategy: Discussion Paper*, February 2021, 4.

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90% renewable, 10% fossil fuels), BEVs will produce deep GHG emission reductions of about 70% to 80%.[2]

EVs and the electricity system

PIAC agrees that the well-managed integration of EVs with the electricity system can have substantial benefits for energy consumers, in addition to the emissions reduction benefits described above. The ability to charge from the grid and discharge into the grid provides an important and flexible tool to manage the supply demand balance in the electricity system and provide support to ensure the system remains stable and secure.

In addition to reducing wholesale energy prices, as noted in the discussion paper, the coordinated integration of EVs may also reduce network costs by deferring or avoiding the need for costly network augmentation or upgrades.

Accelerating the uptake of EVs may bring forward many of these benefits for the electricity system and energy prices as well as reducing emissions.

Cost reflective network tariffs

Moving to more cost-reflective network tariffs will be an important tool to manage the impact and maximise the opportunities from the widespread uptake of EVs. They can help reduce overall network costs by incentivising customers to charge (and discharge) their EVs at more favourable times to the network such as in the evenings or overnight rather than at peak times.

Even if customers do not respond to such price signals, introducing more cost reflective network tariffs can more fairly distribute costs between consumers on a beneficiary-pays or causer pays basis.

In addition to more cost-reflective tariffs overall, PIAC supports the development of EV-specific network tariffs to better reflect the unique characteristics and opportunities of EV charging and discharging. EV-specific network tariffs could allow more of the upstream benefits of the efficient use of EV charging and discharging to be captured and reflected in the signal and incentives seen by the customer. This was highlighted in a submission by Renew (formerly the Alternative Technology Association):

> ATA believes that cost reflective network pricing signals such as peak time rebates and time of use pricing (including critical peak pricing) are an appropriate way to incentivise EVs. Measures that respond to wholesale market signals or retail costs are also appropriate.
>
> Further, ATA considers the following to be of relevance in the context of pricing signals:
> - Given the unique nature of the of the issues and opportunities of EVs, it is appropriate for distributors and retailers to offer EV-specific tariffs, especially where the EV load is externally controlled by any party;
> - Given the potential volume of energy that EVs may consume from the network, it is appropriate that ToU tariffs for EVs include:
>   - Lower charge for off peak energy use, and
>   - Higher charger for peak energy use;
>
> than ToU tariffs for non-EV customers;
> - Nodal or location pricing may be appropriate and effective, accounting for:

[2] Transport Energy/Emission Research, *Meeting our greenhouse gas emission targets: can electric vehicles meet the challenge? – A probabilistic Life Cycle Assessment (LCA) for GHG emissions from Australian passenger vehicles*, December 2020, 1.

    - Different network losses in different parts of the network;
    - Opportunities to address current or forecast network constraints through the deferral or avoidance of planned network upgrades;
- Distribution business should be required to retain more knowledge of the consumers with major loads than they currently have in order to provide appropriate incentives to consumers and manage the network efficiently.[3]

Energy retail products for EVs

PIAC expects energy retailers to develop EV-specific offers for consumers that may package the signals in network tariffs into a form that consumers prefer and/or packaged with other energy services such as:

- Offers, either from retailers or from independent third-party aggregators, that would utilise the EV charging and discharging loads to provide demand response at times of system peak or at times of local network congestion.
- Retail offers that bundle traditional retail energy services with support to purchase or lease EVs, rooftop PV or storage systems.
- Retail offers that bundle traditional retail energy services with access to public charging infrastructure (potentially at discounted rates).
- Smaller, specialist retailers emerging that cater predominantly or even exclusively to EV owners, similar to Pooled Energy catering exclusively to customers with pool pumps.

Engaging with consumers on EVs

Exploiting the opportunities that EVs can provide to the electricity system will require an understanding of consumers' preferences as well as understanding the impact on the system. This must inform the design of network tariffs and retail products that consumers understand so they have confidence to use their EVs in a way that supports the overall system.

There is also a need for coherent consumer protections that cover EVs to ensure continued access to essential services for households, as well as to help facilitate the uptake of EVs by providing consumer confidence. While many of the first adopters of EVs are likely to be households that are "better off" (given the generally higher cost of EVs compared to new non-electric and especially compared to second-hand non-EVs) this will not be the case as EVs become more mainstream.

PIAC supports a framework where the consumer protections offered are proportional to the potential harm the consumer may face should something go wrong – the higher the potential harm, the stronger the protections offered to the customer. This should not depend on the model of provision and reflects the nature of energy as an essential service. Similarly, risks of lower harm need only be met with proportionately lower protections.

For a household with an EV, losing electricity supply, such as for non-payment, means losing the ability to charge at home. The consequences of this may include facing higher costs to use public EV charging stations and risk exacerbating financial stress, or losing self-transport capability altogether. A household with a non-electric vehicle that has lost their electricity supply, may still retain the ability to refill their petrol or diesel vehicle.

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3 Alternative Technology Association, *Submission on Energy Market Arrangements for Electric and Natural Gas Vehicles – Draft Advice*, October 2012, 4.

Continued engagement

PIAC would welcome the opportunity to meet with the Department and other stakeholders to discuss these issues in more depth.

Yours sincerely,

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