Australian Energy Market Commission
GPO Box 2603, Sydney NSW 2001

Re: AEMC– Rule Change - Allowing DNSPs to charge for exports to the network (ref: ERC0311, ERC0310, ERC0309)

Introduction

I would like to welcome for the opportunity to participate into the Australian Energy Market Commission (AEMC) consultation paper, 'Distributed Energy Resources –Updating Regulatory Arrangements'.

I personally write to you to oppose to the rule change request by St-Vincent de Paul Society to change to the National Electricity Rules (NER) to allow distribution network service providers (DNSPs) in the National Electricity Market (NEM) to charge for Distributed Energy Resource (DER) exports services to the network by removing the Rule 6.1.4. within the NER.

I have personally made a number of investments in DER (solar PV system and home battery system) and invested on energy efficiency over the recent years for my household in order to reduce my energy demand save on energy cost and accelerate the decarbonisation of the energy system. The home battery system is currently participating in a Virtual Power Plan (VPP) with an energy retailer in South East QLD, and is providing numerous advantage including being near self-sufficient (98%), being more resilient in time of network outages, helping reducing greenhouse gas emission (using self-generated power instead of consuming energy with a high greenhouse gas emission footprint from the network) and enabling capacity and energy balancing services to the distribution network. I have observed that energy efficiency and solar PV system offer the highest return on investment from a financial perspective while a home battery system offers very low return on investment due to the high cost of the product and installation but also because important services to distribution network and the system as a whole are not yet fully recognised and insensitive with the current legislative framework and the energy markets.

It is without a doubt that the rapid uptake of DER, especially solar PV system, is changing the electricity markets and creates a range of opportunities and challenges for all participants. For residential customers, this allows traditional one-way consumers to now participate in the market and inject electricity in the network from their solar PV system. The rapid uptake nationally is due to a number of factor including the very high electricity price which translate to significant cost savings opportunity, the renewable energy target which created incentive to acquire and install renewable energy solution through small-scale technology certificate, the growing global concerns around climate change and the desire to contribute to the transition to a greener economy and of course Australia's abundant clean and renewable energy resources which help to make the investment worthwhile.

New technology, market development and this rapid uptake is leading to significant disruption in the way customers and suppliers interact with the electricity system. Therefore, it is of no surprise that these changes are fundamentally changing and re-defining the role of DNSP from a central based electricity system with a limited number of large suppliers and a vast amount of consumers to a distributed energy grid requiring modern and complex

orchestration of small DER. This fundamental changes require investments with the help of smart technology and an energy legislative framework that is modern, fit-for-purpose and equitable for all participants.

The proposed reforms address a number of these issues by recognising the role of DNSPs in provision of 'export services' and 'hosting capacity' however in its current form, the proposal fail to fully recognise and appreciate a number of important factors:

- the urgency to decarbonise the energy system and the current absence of a price on greenhouse gas emission;
- the likely increase in operating cost for power distribution system as a results of unmitigated climate change;
- the cost reduction opportunity for network distributors in infrastructure spending with DER technology that support demand shifting and energy storage like home batteries;
- the societal benefits from the reduction in wholesale electricity prices arising from increased exports of zero marginal cost electricity generation;
- the essential contribution of DER in reduction in greenhouse gas emission;
- the significant investment consumers have made themselves in DER and potential negative impact of export tariff on future DER investment;
- the level playing for consumers and participants.

Climate change and the urgency to decarbonise the energy system

The Intergovernmental Panel on Climate Change (IPCC) concluded that achieving net-zero greenhouse gas emissions by 2050 is essential for keeping the rise in the global-mean temperature to 1.5°C above pre-industrial levels and minimising climate-change related risks.

In December of 2015, at the Paris climate negotiations, every nation in the world agreed to phase down greenhouse gas pollution to net zero emissions as early as possible as and no later than by the beginning of the second half of this century.

In the recent times, we have seen numerous countries, corporations, states, provinces and cities taking bold commitment to reduce emissions. To only name few, this include Australian giants like BHP who has recently committed to source their electricity from low emission energy source which will help reduce emissions for its Queensland operations by 50 per cent by 2025, based on FY2020 levels[1] or Woolworths who made an ambitious pledge with the intention of having net positive greenhouse gas emissions by at least 2050 and announced they will be powered by 100 per cent green energy by 2025 in a move it help grow the renewables sector[2].

[1] https://www.bhp.com/media-and-insights/news-releases/2020/09/bhps-queensland-mines-to-reduce-emissions-from-electricity-use-by-50-per-cent/
[2] https://www.news.com.au/technology/environment/sustainability/woolworths-supermarkets-commit-to-becoming-all-renewable-by-2025/news-story/ac4aa1f3855e6034ec04bb411a43faf0

Within the first months of 2021, countries representing more than 65 per cent of global carbon‑dioxide emissions and more than 70 per cent of the world economy have made ambitious commitments to greenhouse gas emission reduction and carbon neutrality.

Australia is currently a laggard and one of the top world worst offenders in terms of greenhouse gas emission per capita. This is due in among other to market inefficiencies to account for the cost of greenhouse gas emission resulting in the dominance of fossil fuels in our electricity systems, our industries, and our transport sector and the lack of leadership to support an effective transition. While some progress is being made due to large investment in renewable energy both from large scale utility project and private consumer uptake of DER, it is remain insufficient to meet our already weak 2030 emission reduction target submitted under the Paris climate agreement. Encouraging higher uptake in DER should be seen as an urgency and an essential part of the energy transition helping government achieve their emission reduction target.

In its report "Compost Cost, How climate change is damaging Australia's economy"[3], the Climate Council of Australia state clearly that reducing emissions to net zero by 2050 or earlier, through clear and coordinated policy leadership is absolutely essential. In fact, in order to stay within 1.5°C above pre-industrial levels and minimising climate-change related risks, we need to reduce emission by 8% every year to 2030.

The electricity system in Australia is the largest contributor to our national greenhouse gas emission. The National Electricity Market as therefore a significant role to play in reducing greenhouse gas emission and it is critical that any legislative changes affecting the electricity market recognise the urgent need to decarbonise and the significant role it has to play in accelerating the transition while keeping the lights on. In the context of the proposed change to the NEM rules, this means that while network tariffs shall reflect a price signal to encourage efficient use of the network they must also take into account the long-run marginal cost of greenhouse gas emission and therefore insensitive the use of electricity generated from clear energy source over the use of electricity generated from high emission intensity source. This mean that if DNSP are to charge an energy export fee, then this fees shall apply equally to all participants injecting electricity in the electricity system and that tariff shall be proportional to the emission intensity of the electricity injected so that there is a price incentive to achieve a faster decarbonisation of the energy system and deliver more equitable and efficient outcomes for all energy users. The revenue generated this way for DNSP shall be used to make the necessary investment required to allow higher integration of DER resources into the NEM.

Australia's climate has warmed on average by 1.44 ± 0.24 °C since national records began in 1910 according to the latest State of the Climate 2020 report by the Bureau of Meteorology and the CSIRO[4]. Australia is now experiencing longer, more severe, more frequent extreme climate and weather events such as droughts, heavy rainfalls, heat, cyclones and fire weather resulting in more floods, heatwaves and bushfires. The bushfire royal commission's final

[3] https://www.climatecouncil.org.au/wp-content/uploads/2019/05/costs-of-climate-change-report-v3.pdf
[4] http://www.bom.gov.au/state-of-the-climate/

report[5] recently issued a stark warning of a future marked by extreme weather impacts of climate change. The cost of these extremes events on our economy, our environment and our society are staggering and the NEM is of no exception. Without a fast transition to net zero greenhouse gas emission, we can expect cost for network distributor to increase as extreme weather events increase in frequency and intensity.

Network distributors shall be analysing and suggesting long term investment plans that are aligned with the different emission reduction scenarios included in the IPCC in such a way that the proposed expenditure to meet 'meet or manage demand' and 'maintain service performance' are transparent and correctly account for the higher operating cost of unabated climate change. The resulting cost avoidance shall be factored in when understanding the benefits of DER for distribution network and modelled by considering the impact of export charges on limiting or slowing down the investment in DER and therefore slowing down the reduction in greenhouse gas emission.

Additional cost avoidance for DNSP with DER

The current localised "traffic jams" and voltage issues occurring by the surplus of cheap and clean renewable energy should be looked at as an opportunity that needs to be tap into through innovation, technology and the right legislative framework. Rooftop solar power stored in home batteries, when used as a virtual power plant (VPP) for example, is a huge energy asset which can help to stabilise the grid, and negate the need for hugely costly network upgrades, during periods of extreme demand (e.g. during summer heatwaves) and also play a role in soaking up the excess solar generation during day time. Other solutions that allow demand shifting or dynamic control should also play an important role.

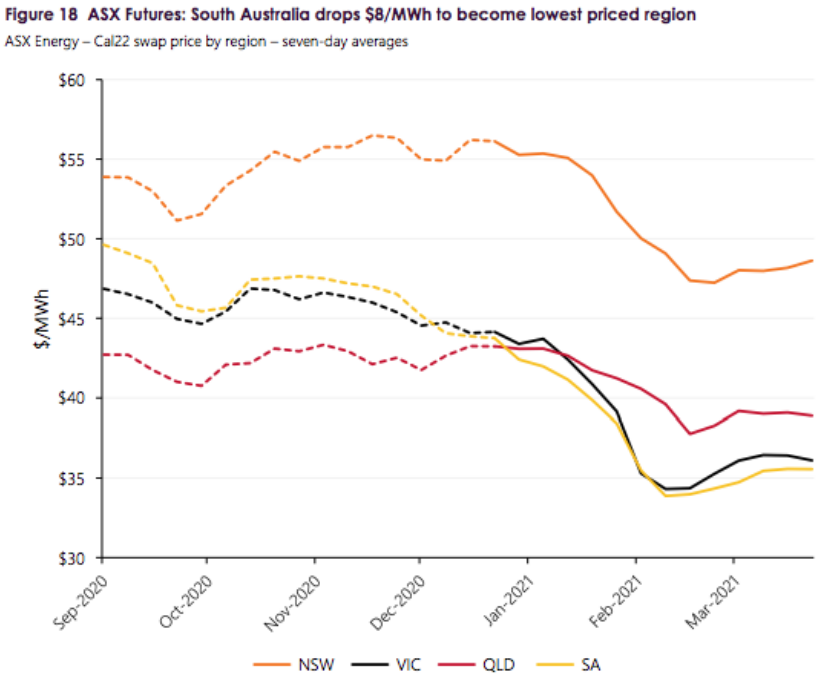
Similarly to the reason behind the proposal to recognise "export services" as a service offered by DNSP, we must look into creating new incentives to recognise the additional benefits to the DNSP (e.g. cost avoidance in additional spending in poles and wires, reduced stress on balancing the network) and to the NEM as a whole that are enabled by home batteries linked to a VPP. We need additional incentive to encourage the uptake in home batteries not export charges. It is understood that export fees that are likely to be introduced by DNSP as a result of the rule change would act as a disincentive for the uptake of the next stage of critical DER needed to address the current challenges by diminishing the overall return on investment for consumers while doing nothing to encourage and incentive the right uptake.

Societal Benefits of DER on electricity wholesale cost and emission reduction

Research from the Victorian Energy Policy Centre has shown rooftop solar uptake in Victoria led to network price increases of 1%, relative to the 8% reduction in wholesale prices caused by rooftop solar uptake, representing a net benefit to energy users of 7%[6]. This is further

[5] https://www.abc.net.au/news/2020-10-31/bushfire-royal-commission-final-report-a-stark-warning/12835096
[6] https://243b2ed8-6648-49fe-80f0-f281c11c3917.filesusr.com/ugd/cb01c4_2155920402f64e74b0f8d70ffd1bd999.pdf

observed in South Australia where the rise of renewables in the energy mix is to deliver the nation's cheapest wholesale electricity.[7]



AEMO screenshot shows SA is set to have the cheapest forward wholesale electricity prices. Image from AEMO Q1 2021 report.

Insights from AEMO's VPP Demonstrations Trial have also demonstrated how orchestrated DER can respond to energy market prices, fostering increased competition in wholesale and frequency markets and potentially deferring the need for further utility scale generation assets.[8]

Rooftop solar and DER in general are playing an important part of enabling the energy transition and lowering emission reduction. The investment to install rooftop solar (and especially to install a battery) is significant and solar owners should not incur an additional financial penalty through export charges, when our collective actions are assisting the government's intention of slowing down climate change. Furthermore, rooftop solar has contributed in creating a log of jobs for Australians and as a result many are now employed in the rooftop solar industry. Reducing the investment return by introducing export charges will lead to fewer people installing solar ultimately leading to job losses and unemployment of solar installers

Customer and investment impacts and level playing field

It is expected by the proponent of the proposal of the rule change that would result in:

[7] https://indaily.com.au/news/business/2021/05/10/rise-of-sa-renewables-to-deliver-nations-cheapest-wholesale-electricity/?fbclid=IwAR3laNA58DjOADjMtPAjjhlec5FkxkykE68HCYGCfqnxUPsHNwv-kBLmLPo

[8] https://arena.gov.au/assets/2020/03/aemo-virtual-power-plant-demonstration-knowledge-sharing-report-1.pdf

- Enhanced opportunities for Distributed energy providers and other participants in this market
- Greater options and choices for Energy consumers and communities
- Increased participation of Distributed energy resources in the wholesale and other markets

I do not believe these expectations are correct. Consideration should be given to how capacity charges for export services may be counterproductive to the aims expressed above. This will not give greater options for consumers and communities because while customers can generally chose which energy retailer they do business with and which energy plans suit them most, they have no option in the selection process of deciding which distribution network they do business with. This mean that existing customers who have on the basis of good faith invested significantly in DER will not be able to choose a different network provider and will likely be impacted negatively as energy retailers would be likely to pass on this export charge to customer directly without offering option for customers.

Furthermore, attempts to introduce cost-reflective pricing to encourage efficient price signals for investment and consumer behaviour must be balanced against the likely risk that new export charges could limit new investment in DER if not structured appropriately and therefore could slow down the decarbonisation of the energy system.

As mentioned previously, the absence of positive incentive along with the export charge to stimulate the development of new opportunities and allow customer to make optimal consumption choice in a way that reduce total system costs introduce equity and access issues which discriminate against additional investment and newcomers to DER product. This is especially true for the type of DER that is needed (e.g. home batteries) in the future.

Close consideration must be given to the customer impacts of any export tariff structure. Evidence-based approach that draws on available DER field data to analyse the impacts and benefits of any future tariff structures must be followed. Consumers already pay a daily service charge for the connection to the distribution network while their consumption may be very minimal (e.g. in case where home batteries are used for instance). For these consumers, it may seem unfair to be both charge a daily connection charge AND export charge while their usage of the energy grid is in fact minimal. If consumers with solar PV system and home battery system are unable to obtain some financial return for the services provided to the DNSP, they may eventually choose to disconnect from the network to avoid paying these fees and this would be a poor outcome for everyone.

Also, consideration must be given around the feed in tariff (FIT) offered by energy retailers to customers for exporting their energy to the grid. The FIT offered for consumers is already trending down across the nation and slowly eroding the investment case. This is expected to further decrease as more DER is introduced into the grid and electricity price continue going down therefore reducing the financial incentive to invest in DER. Additional export charge will only exacerbate this. Instead, Time-based Feed in Tariff and seasonal tariffs designed to

provide clear signals to customers and third party DER aggregators may provide more potential to stimulate full potential of DER exports with the most cost-efficient outcomes.

Lastly the design of the new export charges as per current proposal may result that some exporter will be charged more and other charged less (e.g. large power companies) to participate in the same energy markets over their asset life creating inequity between consumers. It is important that level playing field is considered.

Thank you for considering my submission.

Best regards,

Pascal Rodrigue