SAPN TARIFF STRUCTURE STATEMENT
CONSULTATION PAPER
JOINT SUBMISSION
23 OCTOBER 2015

1. Introduction

This is a combined submission from Total Environment Centre (TEC) and Solar Citizens (SC). TEC has been working on reform of the National Electricity Market since 2004 to improve its environmental outcomes through advocacy for more demand management, energy efficiency and decentralised energy. Solar Citizens is is an independent community based organisation bringing together over 1.4 million solar owners and 80,000 direct supporters to protect and grow solar in Australia.

Our submission is in relation to residential consumers only, and solar households in particular. It has been prepared with the input of Solar Citizens supporters in South Australia. It represents our initial formal response to this ongoing reform process. In short, while we understand the context and potential long term benefits to consumers, we are concerned about the likely impacts of the proposed tariff on existing solar households and the future of the solar industry in South Australia without significant behavioural change and additional investment in batteries.

2. Background

Many solar customers have received substantial subsidies to install and run their systems in the form of the national Small Technology Certificate Scheme and SA Power Networks Feed-in Tariff Bonus Scheme. Feed in tariff bonuses of 44c per kwh (and later 16c per kwh) were offered to early adopters, rather than direct rebates. Customers who receive these bonuses have increased incentives to feed in, and to delay usage until evening. These subsidies are now being wound back, and new solar customers may be discriminated against, particularly if they are assumed to have materially different load profiles than other customers. We recognise that some of this discrimination occurs as a result of retail tariff structures rather than network tariffs, but network tariffs are directly reflected in the vast majority of retail tariff offerings.

Many new solar customers consider they are not receiving the full benefit of the value of solar to networks in exporting energy to the grid close to where it is consumed. This reduces the need for upstream infrastructure and related line losses and in many cases reduces peak demand, thereby reducing the need for future network augmentation.

The declining cost of solar and now batteries means most customers (other than tenants and those in buildings with poor solar access) are in a position of increasing market power. Networks cannot assume solar customers will remain connected to the grid if it is uneconomic for them to do so relative to going offgrid.

As a general principle, solar customers are willing to pay their fair share of network costs as long as they also receive their fair share of network benefits and are not discriminated against relative to non-solar customers.

3. Cost reflective tariffs

We recognise the need to move to more cost reflective network tariffs in order to send consumers a price signal about the cost of augmenting network capacity to meet peak demand Each network tariff must now be based on the long run marginal cost of providing the service, rather than being largely focused on recovery of sunk costs as is currently the case. If properly applied, this shift will be in the long term interest

of consumers as it will reduce the need for investment in infrastructure which is used for only short periods of the year.

However, on average solar customers have a more 'peaky' load profile and lower overall consumption than non-solar customers, so are more likely to suffer higher network charges as a result of the move to cost reflective tariffs. We note that as well as being cost reflective, new tariffs are required to conform to the new consumer impact principle that requires network businesses to consider the impact on consumers of changes in network prices and to develop price structures that are able to be understood by consumers. For example, customers on the 44c feed-in tariff bonus would face conflicting price signals during mild days, being both incentivised and punished for shifting usage later into the day.

We also recognise that the move to cost reflective tariffs will not increase SAPN's total revenue. It is important that in this move solar customers do not in effect subsidise non-solar customers - especially those with a large aircon load which is likely to increase network peak demand. It is therefore critical that SAPN engages with solar customers to help them understand new tariff structures and affords them ample opportunities to adapt.

We would have liked more information on why SAPN has selected demand tariffs as the preferred option to respond to the requirement in the Rules to develop more cost reflective tariffs based on LRMC. The consultation paper jumps straight from discussion of the problem of peak demand to the proposed solution - ie, demand tariffs. There are complex arguments around the relative merits and cost reflectivity of, for instance, time of use versus demand tariffs, the latter having little real world experience on which to draw in relation to residential consumers and evidence (including SACOSS's report released today) of considerable consumer resistance. Also, the literature widely acknowledges critical peak pricing tariffs as likely the most cost reflective of all, yet these have apparently not been considered. We would have liked - and would still like- to have a broader conversation around the design of more cost reflective tariffs.

Finally, we recognise that the rapidly increasing affordability of peak-shaving batteries will greatly improve the ability of some solar customers to respond to demand tariffs. However, many households are on relatively low or fixed incomes, and may never be able to afford batteries without government, retailer or network rebates. In many cases - such as aged pensioners and non-English speaking households - these consumers may have little ability or willingness to respond to peak demand-based price signals.

4. Stakeholder consultation to date

We note that SAPN started its engagement with consumers on the TSS relatively late, but has been diligent in making up for lost time over the past two months with several rounds of consultations and (in our case) extensive and helpful backgrounding with SAPN's consultant Andrew Nance.

However, the characterisation of the key messages from the process to date fails to refer to TEC's clear message, delivered in a presentation to a consumer forum on 20 August, that we needed more information to properly assess the potential impact of the demand tariff on solar consumers, and that SAPN's proposed solar tariff represents a backward, discriminatory move that is completely unnecessary in the context of cost reflective tariffs and not in the long-term interest of consumers.

5. SAPN's proposed demand tariff

In common with other network tariffs proposed in draft tariff structure statements, SAPN's proposed demand tariff is probably more cost reflective than flat or block tariffs. We accept that the demand charge should reflect the long run marginal cost (LRMC) of supply, and that other (residual) costs should be recovered via the fixed and volumetric components. The actual amounts proposed to be charge for this tariff (9 cents in summer, 4.5 cents at other times and a volumetric charge of 4.8 cents per kWh) are broadly in line with other networks.

SAPN should also consider developing other, more directly cost reflective tariffs, such as critical peak pricing with rebates, which offer greater flexibility for some consumers to respond (especially where they have batteries or automated appliances). We recognise that even if it is passed through by retailers, most consumers are unlikely to respond to the uncertainty, relatively weak price and delayed signal sent by a

demand tariff, whereas some are likely to respond enthusiastically to direct incentives for efficient behaviour over short periods of critical network peaks. Retailers would be free to offer a number of smoothed tariff options, should customers prefer more price stability.

We note that in general, consumers with higher total consumption will be better off than those with lower consumption under the proposed demand tariff. This is because the demand charges will be more than offset by lower consumption charges. This is common to other network draft TSSs. However, it is regressive, since there is a positive correlation between household income and energy consumption. It is not yet clear how this problem would be handled by SAPN, other than by encouraging behavioural change (ie, load shifting). It also has a potential negative environmental impact, as the signal to households with large consumption is to use more (largely fossil fuelled grid) energy, as long as your peak demand doesn't rise.

Figure 9 shows an estimate from 2014 that uptake of residential solar panels would decrease by approximately 40% relative to current tariffs over a 5-year period. The assumptions driving these forecasts are questionable, however the result is intuitive given the weakened and uncertain value of new investment in small-scale solar. Less solar means higher consumption of grid-supplied energy, and battery storage does not reduce that increased reliance on fossil fuel generation.

6. Demand tariff structure

The proposed peak demand window - 4-9 pm - is generally in line with other network proposals. However, it is far from ideal from a consumer perspective as it offers little opportunity for load shifting, as Many households are winding down for the night by 9 pm. The only demand curve shown in the consultation paper (Figure 2) shows demand peaking on an extremely hot day at 7 pm ACDT (7.30 pm Eastern Time is shown) and drops steeply thereafter. while more data would have been useful, if SAPN wants to encourage behavioural response we recommend a shorter peak period - ie 4-8 pm.

The peak demand period - November to March - is appropriate in view of SAPN's historical network peaks. However, SAPN should consider how to prevent lower income households from experiencing bill shock when they receive their first bill after the Xmas-New Year period, when savings are depleted and demand has been relatively high. Some other networks have responded to this problem by making their demand tariffs year-round and smoothing the revenue recovery, but we recognise that this dampens the demand/ price signal.

The proposal to charge the peak demand tariff 7 days per week is not supported. SAPN has not provided data to suggest that network wide peaks occur on weekends. We think it is quite likely that demand is flatter on weekends, as there is not the same widespread pattern of low daytime and high evening load. Having a 7 day demand tariff also limits the ability of households to load shift. If there are heatwaves on summer weekends causing demand spikes in the top10 per year, SAPN could respond by a variety of other means including incentivising energy efficient air conditioners, promoting critical peak pricing tariffs and contracting demand response from commercial customers in residential areas such as shopping centres.

The proposal to measure peak demand on the highest half-hourly period in the summer months is in line with other networks and is in keeping with SAPN's desire to "keep it (relatively) simple". Alternatives such as Ergon's original plan to average out the top four days in any summer month are difficult for most consumers to understand and have been resisted by retailers because of the difficulty in calculating them. However, as it and third parties roll out smart meters in coming years, SAPN could consider how it could enable households to access real-tie data on their consumption, to give them more control over their peak demand charge.

Finally, we support the proposal to reduce the planned minimum demand charge to 1 kW, since it is similar to current fixed charges. However, we do not support the imposition of any minimum demand charge. It acts like a fixed daily charge and distorts the cost reflectivity of the demand charge, since it applies independently of demand. It is also inherently regressive, being a relatively greater impost on low consumption consumers, including low income and solar households.

7. Impacts on solar customers

Solar households generally have lower consumption but individual peak demand roughly equal to similar non-solar households. They will therefore on average be worse off under the new demand tariff without behavioural change. In order to prevent them being exposed to higher bills we would not recommend that solar customers switch voluntarily to the new demand tariff.

We note the statements under figure 5, page 12, that "The typical outcome for residential customers with solar PV is less favourable than for those customers without PV. The PV customers have already received significant network bill reductions as a result of their PV investment, with usage-based tariffs over-rewarding the network benefit of such investment." While we agree with the former, the latter is asserted without any factual basis. As noted in section 8 below, solar has benefits to the network that have not been quantified.

We note the separate analysis of impacts on various households, including three with solar. The combination of variables - dwelling and family size, aircon type, daytime use, etc - makes it difficult to discern the likely influence of solar specifically on their total annual bills. Eg would a solar household with only a small energy efficient aircon still be worse off? Another factor not considered is whether these solar households are on the 44c feed-in tariff, which incentivises them to export during the day and import in the evening.

We recognise that the primitive metering in South Australia makes this difficult, but we would have preferred to see modelling of the impact of the demand tariff on four cohorts of solar customers: stay at homes with a relatively flat load profile versus working families with peaky profiles; and both with or without the 44 cent FiT, which increases peakiness by incentivising them to export energy during the day and import it in the evening.

The new load control tariff seems to provide worthwhile benefits to both customers and to SAPN. It has been discussed that a solar system and/or small storage may be connected to this load control circuit. If this was in addition to solar connected to the main circuit this would be a welcome development - as long as it does not result in peak daytime demand increasing to pre-solar levels.

Also, the current and proposed connection policy unfairly treats existing customers who invest in solar or storage as new customers, removing tariff options which are available to other existing customers. The tariff change 'trigger' has been changed from a meter upgrade to the installation of an inverter. This is strong and direct discrimination against solar customers.

8. Implementation

We agree that moving to a demand tariff should be voluntary for the foreseeable future - even though we recognise that this will likely result in consumers who are likely to benefit from it making the switch, while those that are unlikely to benefit remain on existing tariffs. This method of migration is one SAPN has used for many years with its business customers.

The analysis of the benefits of solar would become more complicated with the introduction of demand tariffs. Therefore it is important that customers and solar installers are as fully informed as possible of the changes that are in train even if it will be some years into the future – NPV studies need this. Providing examples outlining typical cases and how the calculations can be done would be beneficial. We consider that SAPN will need to engage directly on an ongoing basis with solar customers to understand and respond to their concerns and to provide practical and financial incentives to make the switch to cost-reflective tariffs.

We also need more clarity around the modifications needed to solar customers' meters in order for them to participate in demand tariffs, how SAPN intends to charge for these modifications, whether these modifications are consistent with the AER's competitive metering objectives, and why customers were given meters which do not function to their full potential.

9. Adapting

SAPN needs to consider how solar customers can adapt to the new tariff to ensure their network charges will not increase (assuming the price signals are passed through by retailers). This could occur by:

- Load shifting to off-peak times.

- Installing real time monitoring and alerts so consumers can effectively respond to incentives.
- Installing batteries to store energy during the day and consume it during the evening peaks.
- New customers installing solar panels to face north-west or west to produce more energy in the late afternoon.

We would also like to know how SAPN intends to incentivise reductions in peak demand by non-tariff means of demand management - eg, by continuing to offer rebates for aircon units with direct load control (DLC) or by subsidising battery installations by consumers in constrained areas of the grid.

10. Value of solar exported to network

While SAPN and other networks claim that solar customers receive a cross-subsidy from other consumers, most do not recognise the benefit that solar also brings to networks, especially where it flattens and pushes out till later in the day the network peak, thereby reducing pressure on constrained parts of the grid.

Ausnet pays a ~4c/kWh summer generation tariff to solar customers, which reflects the value of exports in reducing total demand on hot summer afternoons. ActewAGL pays a 0.5c/kWh tariff to solar customers to reflect avoided transmission use of system (TUoS) charges. SAPN does not appear to be planning any similar tariffs to recognise the value of solar exports. Why not?

There is currently a rule change request before the AEMC to implement local generation network credits (LGNC) across the NEM in networks' annual tariff pricing proposals to the AER. SAPN is participating in a trial project to understand how this credit might be calculated and paid to generators and potentially also netted off to related consumers (such as councils moving energy between adjacent or nearby sites). We therefore recommend that SAPN recognises this pending reform in its TSS and supports the rule change as a reform that is complementary to cost reflective consumption tariffs.

11. Other consultation questions

Solar PV Feed-in-Tariff: We do not support the option of recovering the cost of the Solar PV Feed-in-Tariff scheme by charging a larger premium to residential customers, since this would place a larger burden on non-solar households.

Mitigating impacts: One way that SAPN could respond to the consumer impact principle would be to impose either a maximum demand charge of 5 kW or a maximum bill increase of 20 per cent in the first year of switching to the demand tariff. Choice of a critical peak tariff would mitigate many of the problems with demand tariffs for small customers, especially solar owners.

Special purpose tariffs: We are wary of this proposal, as a similar argument could be made for holiday home owners or solar households, and our submission has been made on the basis that we accept the need to move away from special interest cross-subsidies. Issues of fairness point to problems with cost-reflectivity of charging parameters and conflicting price signals, which should be corrected before exceptional measures are considered.

Air conditioning costs: A charge that is cost reflective should reflect the LRMC of expected increases in network peak demand caused by air conditioning loads, so we are not particularly concerned by this issue. As stated earlier, though, SAPN could better signal the value of efficient use of the network during hot days, especially in constrained areas of the network. SAPN could also advocate for higher building energy efficiency standards with the state and federal governments.

Robust for the future: Looking further into the future, SAPN needs to consider how solar plus storage will again reduce network reliance and how it will respond, keeping in mind that leaving the grid is not likely to be an efficient result both those who go and those who remain connected. Does SAPN intend to further increase fixed charges to recover the same total revenue?

The bigger answer to this last question concerns the regressive message SAPN is sending by continuing to push for a solar tariff despite the AER's rejection of it. There is nothing guaranteed to send a signal to

progressive consumers to reduce their use of or disconnect entirely from the grid than telling them that because their load profile is "less favourable" (to SAPN's current business model, that is, not to the long term interest of consumers) they should pay more. This is a problem that will largely go away with the widespread implementation of cost-reflective tariffs, so SAPN should concentrate on incentivising solar households to install smart meters rather than singling them out for discriminatory treatment - especially since there is considerable evidence (including Figure 2 of the consultation paper) that the impact on peak demand of, and cross-subsidy to, households with air conditioners is much greater, yet they are not being singled out for special higher tariffs.

12. Transition options: metering

It is regrettable that to date SAPN has chosen not to introduce type 4 (smart) or fully functional type 5 (interval) meters when connecting solar customers. Since most solar households are not likely to benefit financially from the move to demand tariffs, they are unlikely to voluntarily install smart meters unless they are also installing batteries, which would then enable them to be net winners in the move to a demand tariff. Choice of critical peak tariffs would be a much stronger incentive for solar customers to adopt interval meters. Considering the impacts on solar households in general, we recommend Approach C - "Wait and see" - since it gives more time to adapt and leaves choice with the customer.

Yours sincerely,

Mark Byrne
Energy Market Advocate
Total Environment Centre