

A Fair Price for Solar

NAGA Advocacy Discussion Paper



Photo: Hume City Council

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Contents

1. Overview	3
1.1 Purpose	3
1.2 Key points	3
1.2 Background	3
2. Solar Feed in Tariffs	4
2.1 Current Situation	4
2.2 Quantifying Solar Benefits	6
2.3 The network business perspective	8
2.4 What is a fair price?	9
3. Other issues	10
3.1 Changes to electricity market rules	10
3.2 “Cost-reflective” tariffs	12
3.3 Fixed charges	13
3.4 The rise of storage	14
3.5 New Financing Models	15
3.6 Future thinking	16
4. Conclusion	17

1. Overview

1.1 Purpose

This discussion paper aims to assist NAGA develop an advocacy position on a fair price for solar feed-in tariffs and effective support for distributed renewable energy generation.

1.2 Key points

- Over the past decade solar feed in tariffs have substantially reduced across the country, with almost all states and territories now offering less than 10c/kWh or closing their tariffs altogether
- In Victoria, the feed in tariff is currently a minimum of 6.2c/kWh, with a new draft decision by the Essential Services Commission proposing a further cut to 5c/kWh
- Many factors other than feed in tariffs now drive the rapid uptake of solar PV; significant reductions in the cost of the technology, support from the Renewable Energy Target (RET), higher grid electricity prices, and an increased awareness of the need to reduce greenhouse gas emissions
- Nonetheless, solar does provide broad social, economic and environmental benefits that are not recognised in modelling of a fair price by regulators such as as reduced greenhouse gas emissions, as well as energy market benefits such as reduction in fuel, operations and maintenance, capital expenditure and network savings.
- NAGA advocates that these broader benefits to consumers and the network be recognised and recommends a fair price of 11-14c/kWh based on discussions with key energy advocates
- The electricity market is undergoing rapid transformation with an increase in ‘disruptive’ technologies (such as PV, storage) and other new products and services seeing dramatic shifts in the way energy is generated and delivered to consumers
- New advocacy issues are emerging that are equally important for ensuring distributed renewable energy generation is supported such as fixed charges, tariff reform, and new electricity market rules

1.2 Background

The energy landscape in Victoria is undergoing rapid transformation, driven by changes in the energy market as well as policy changes at the state and federal levels. The new Victorian government has committed to conduct a number of relevant reviews in this area, including the Victorian Energy Efficiency Target, renewable energy, a potential emissions reduction target,

and an inquiry into the true value to the grid of distributed generation and to ensure that distribution businesses are more open to distributed energy proposals and innovation.

Energy Minister, Lily D'Ambrosio has stated that "Labor will also ensure that energy retailers cannot discriminate against rooftop solar customers by charging extra supply fees". The Minister has directed the Essential Services Commission (ESC) to conduct the inquiry into the role and value of distributed generation. This would follow a recent 2014 review by the ESC into feed in tariffs that resulted in feed-in tariffs for household solar drop to a low 6.2c/kilowatt hour. The Essential Services Commission (ESC) has now released their updated draft decision for a new minimum feed in tariff to be further reduced to 5c/kWh from 2016.

Considering what is a 'fair price for solar' is complex and requires a broader look at the energy landscape, beyond feed-in tariffs. This paper aims to facilitate informed discussion amongst NAGA members on the following questions:

1. What is a fair price for solar in the current market?
2. What are some of the key issues for solar uptake beyond feed in tariffs?
3. What are the key barriers to different models of distributed generation more broadly?

Promoting and facilitating distributed generation is a key objective of NAGA in order to both mitigate and adapt to climate change, as well as to increase energy resilience and reduce energy poverty. Therefore, it makes sense that NAGA seeks to consider the complexities of distributed generation and what fair pricing for solar PV should be given current and future economic trends.

2. Solar Feed in Tariffs

2.1 Current Situation

Feed-in tariffs provide people producing their own renewable and eligible low-emissions energy with a financial return for the excess power they feed into the grid. In the past feed-in tariffs were one of the main incentives for installing solar PV, and when the tariffs were higher than the cost of grid electricity it made sense for homes and businesses to try and export as much power during the day as possible. Now the opposite is true, and the incentive is to try and consume as much of the electricity generated by their system that they can during times of peak solar output, or look to storage options.

Incentives for solar PV uptake on households and businesses have changed considerably over the past decade and are now more driven by the falling cost of solar PV systems (which have

halved in cost in the past 18 months), the rising costs of electricity and the rebate from the small scale component of the national Renewable Energy Target. Almost all states and territories have now substantially reduced or closed previous feed-in tariff schemes. Most now offer less than 10c/kilowatt-hour for solar energy fed into the grid or a rate set by the retailer. This compares poorly to rates for electricity purchased from the grid via retailers, which can be between 20-30c/kWh (See Table 1). In Victoria, current feed-in tariffs are set at 6.2c/kWh with some retailers choosing to offer slightly higher feed-in tariffs.

Countries with strong feed-in tariffs for a long period of time have been able to create mature solar markets that are better able to stand on their own and which benefit from the greater economies of scale¹. It has been argued that Australia has created this economy of scale already (with more than 1.4 million homes with solar PV) and that the need for a regulated feed-in tariff is no longer required to support future growth in the market. As an incentive for self consumption, current feed-in tariffs have changed the economics of the solar industry, creating new opportunities for some while disadvantaging others. For instance, solar is more economically attractive for businesses that have high day time energy use, but less attractive to households that may not use much power during the day and are unable to shift their energy use through timed appliances etc.

Table 1: Feed in tariffs across the country

State / Territory	Key Elements of Scheme
Australian Capital Territory	<ul style="list-style-type: none"> Allocated by reverse auction in order to attract large-scale wind and solar projects at the lowest price. First solar auction in 2012 for 40MW of large scale solar capacity, and first wind auction of 400MW in 2014 with 18 proposals bidding. ACT government also provides a specific feed-in tariff for community solar, enabling individuals to pool resources and fund larger scale solar projects. 11.4% of dwellings with solar PV.
Northern Territory	<ul style="list-style-type: none"> Highest feed-in tariff rates with Jacana offering 26.88c/kWh. Despite high levels of solar radiation, has the lowest % of solar PV uptake on households (currently 5.1%). However, this is less to do with the tariff and more to do with the difficulty in negotiating power purchase agreements with the Power and Water Corporation.
South Australia	<ul style="list-style-type: none"> Highest % of households with solar PV (26.1%) yet a low feed-in tariff at 6c/kWh.

¹ <http://reneweconomy.com.au/2015/7-reasons-the-australian-solar-market-is-so-interesting-79237>

	<ul style="list-style-type: none"> • Morphet Vale postcode highest penetration in country.
Tasmania	<ul style="list-style-type: none"> • Lowest feed in tariff for rooftop solar (5.6c/kWh)
Victoria	<ul style="list-style-type: none"> • As of January 2015, is now 6.2c/kWh for less than 100kW systems, coming down from 8c last year. • Hoppers Crossing top postcode with 10MW installed. • Dwellings with rooftop solar =11.4%
Queensland	<ul style="list-style-type: none"> • Closed state-wide feed in tariff in 2014. Rates set by retailers. • QLD competition authority regulates feed in tariffs for regional areas currently set at 6.5c/kWh. • Ergon Energy limits feed in tariffs to below 5kW systems. • 25% dwellings with solar PV.
Western Australia	<ul style="list-style-type: none"> • Closed feed in tariffs in 2011. Rates set by retailers. • Synergy customers receive 8.4c/kWh and Horizon Energy customers between 10 to 50c/kWh. • 18.4% dwellings with solar PV. • Considering introducing additional charges to solar PV owners.
New South Wales	<ul style="list-style-type: none"> • Feed in tariffs are currently set at 6.6c/kWh, determined by the Independent Pricing and Regulatory Tribunal, reflecting value of Solar PV without subsidy and without increasing the price of electricity. • 11.8% dwellings with solar PV.

2.2 Quantifying Solar Benefits

Previous reviews of feed-in tariffs have often considered the value of solar power to electricity retailers, rather than the broader benefits of solar generation to the grid and the environment, as well as the costs of installation for the generator. The rationale for this approach of focussing on benefits to retailers is justified by the ESC that high FiTs are unfair to non-solar customers:

“... setting the retailer-funded feed-in tariff at a rate any higher than the direct financial benefit to retailers would likely result in retailers increasing electricity prices for all customers to cover costs that exceed the benefit they receive.” (QCA 2013, 10)

Factors considered by the ESC in the previous review to be relevant to the value of power supplied by small renewable energy generators include:

- The marginal cost of the equivalent amount of electricity that would otherwise need to be purchased from central generators.

- The locational value of electricity produced close to the final consumers compared to relatively distant central generators.

This method is supported by retailers like Origin and Energy Retailers Association of Australia, but it doesn't take into account broader benefits such as reduced greenhouse gas emissions, and energy market benefits such as network upgrade savings.

For a 3 kW system in Melbourne, this is estimated to abate 53 tonnes of carbon over a period of 15 years. This is partially recognised through the Renewable Energy Target, which offers small scale renewable energy certificates to offset the cost of the systems, currently sitting between \$30-40 tonne of carbon². Thus the benefits of greenhouse gas reductions are often left out of modelling for feed in tariffs as it is assumed it is captured through this rebate.

Solar PV provides material benefits to the network by providing about a third of its nameplate capacity during the highest demand period in the late afternoon. The cost of these high demand days is what gets ultimately passed on to consumers in the form of ensuring the whole network has capacity to cope. Solar PV reduces that demand and it is argued that this should be reflected in a fair feed-in tariff. This was not recognised in the 2014 minimum feed-in tariff review.

To date solar PV has helped reduced daytime peak but has not impacted the evening peak, which is still responsible for almost half of electricity supply infrastructure costs (accounting for around half of the average electricity bill). According to the Energy Networks Association (ENA), a consumer without solar PV panels now pays about \$60 a year more to subsidise homes with solar PV panels, due to “under-recovery of network costs” during summer evening peak periods. However, the same ENA report notes that households without air conditioning subsidise households with air conditioning to the tune of \$350 a year. This is to cover the capital costs of power lines and power stations, most of which is to just to cope with a few days per year. It is estimated that \$11 billion dollars of network infrastructure is used for the equivalent of 4 or 5 days a year.

To address the costs of providing energy in these periods of peak demand it is necessary to send price signals through cost reflective tariffs. Some of these are currently being trialled, such as Seasonal Time of Use Tariffs, and Dynamic/Critical Peak Pricing (ENA). Shifting to demand based tariffs rather than consumption has the potential to have adverse impacts on solar PV, depending on how the tariffs are structured (see section 3.2).

Reducing the remaining night time peak can be met through a combination of energy efficiency and demand management. Incentivising battery storage for households with solar PV will likely address much of the issue in the next five to ten years.

² <http://www.green-bank.com.au/calculator/solar-pv-calculator/>

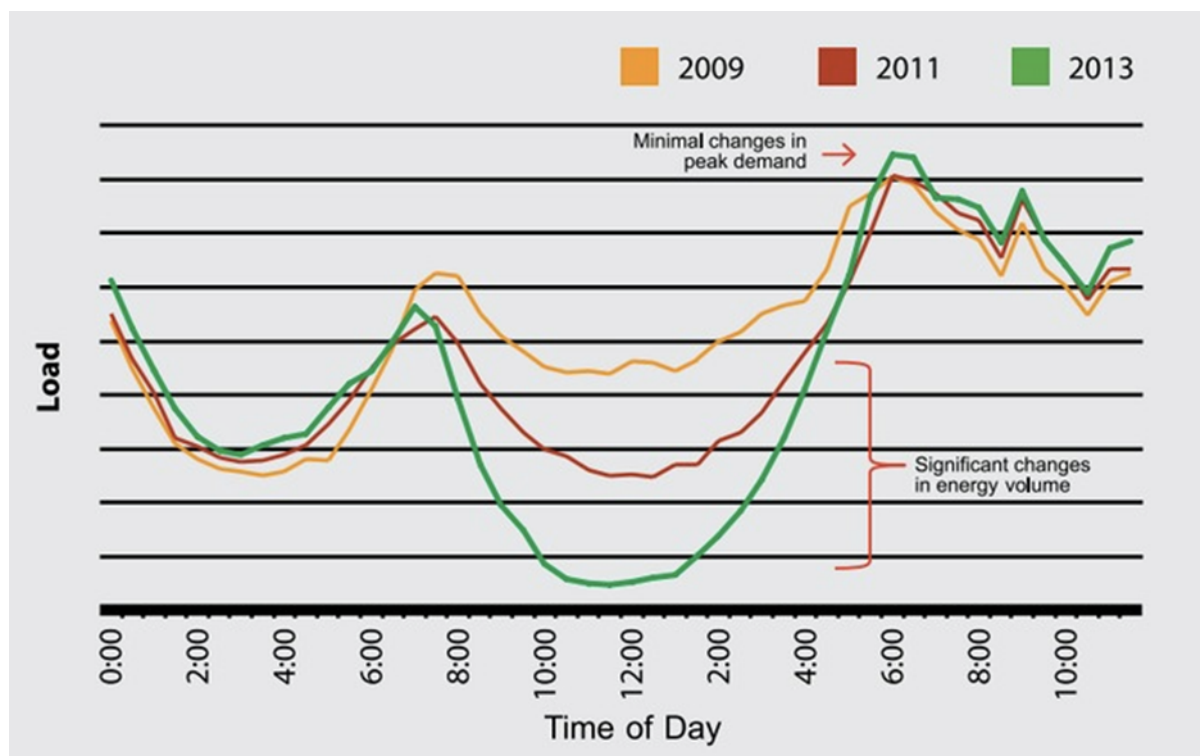


Figure 1: How demand for power over the day has changed dramatically in recent years linked with the rise of solar PV panels. There is now a steep drop in demand during the day but little has changed to the evening peak. Energy Networks Association, 2014

2.3 The network business perspective

The electricity market has a complex number of players. Integrating household and business solar PV is a challenge that sits with Distribution Network Service Providers (DNSP), which are economically regulated poles-wires businesses, quite separate from the retailers who buy electricity on the wholesale market and on-sell to consumers. Virtually all households have single phase inverters connected to the low voltage network. The DNSPs have areas of their network with different degrees of solar penetration, creating spots of high penetration that pose technical challenges, particularly concerns with voltage regulation and phase imbalance. However, there is no clear evidence that this has had a significant impact, and can often be addressed through low cost solutions. Other network issues caused by end user equipment, such as high power air conditioners, are likely to be a larger problem but have less of a revenue impact. These network costs are still relatively minor as suggested by the recent distribution network pricing proposals from the DNSPs. DNSPs also note that PV systems may modestly reduce some longer term costs by reducing peak demand.

The main issue however is not a technical one or related to the costs of managing these issues but is to do with the revenue implications of solar PV for the DNSPs. Network tariffs are mostly based on average consumption (kWh), which means that self-consumption of solar PV generated electricity means less network revenue. Each DNSP has different tariff arrangements and has additional complexities such as fixed charges and time of use pricing. The main issue is that a household generating and using its own electricity is paying less to the networks. DNSPs still receive money if that solar PV generated power is exported to the network and on-sold by the retailer, although these savings are not factored in when considering the benefits. Network savings don't get factored in here.

Network tariffs have risen considerably in the past few years, driven largely by network gold plating driven by inappropriate incentives in the regulation of network businesses, such as an assured return on approved capital expenditure. There is an expectation by DNSPs that they should be able to recover the costs of their investments, and indeed an interpretation by the AEMC that this return of investment is valid. But why should this be the case? Who should pay for the costs of lost revenue from reduced demand?

To address the technical and revenue challenges being experienced by DNSPs different proposals have been put forward. Some suggest restricting solar PV in high penetration areas of the network by capping size of systems and even banning exports. Some DNSPs have been accused by solar PV companies of taking substantial amounts of time to do network studies or have developed onerous technical requirements designed to slow the uptake of PV.

DNSPs may see a solution to the revenue loss resulting from increased uptake of solar PV by imposing increased fixed charges, but such charges would reduce incentives to deploy PV, energy efficiency and demand management that help to save on network expenditure. Indeed, this may increase the likelihood of residents going completely off grid. NAGA continues to advocate to the DNSPs and the Australian Energy Regulator of the need to establish new business models that facilitate active support for and integration of appropriate distributed generation options.

2.4 What is a fair price?

As outlined in Table 1, it is hard to demonstrate that feed-in tariffs play much of a role in overall uptake of solar in the current market. Although this may have been important in the past in decision making for outright purchases, there are now different drivers for choosing to go solar, including installation cost, amount of sunlight and panel orientation, amount of electricity that the home consumes, the feed-in tariff if available, and the cost of electricity from the grid. Depending on these assumptions, a payback period for a PV system in Melbourne can range from 5-8 years for a 3kW system.

Nonetheless, it is reasonable to hold the view that solar feed-in tariffs at 6.2c/kWh is not fair for those who choose to install systems, given the costs of installation and maintenance, as well as the broader environmental benefits such as reduced greenhouse gas emissions, as well as energy market benefits such as reduction in fuel, operations and maintenance, capital expenditure and network savings. For many households, there is an understandable view they are being ripped off by providing electricity retailers with cheap electricity and having to pay up to five times the amount for importing from the grid.

So what is a fair price and what is a reasonable advocacy position for NAGA to hold?

It is unlikely that advocating for a 1:1 feed in tariff (where electricity exported receives the same price as electricity used from the grid) is realistic given the new market conditions and drivers, let alone above a 1:1. That subsidy could be better directed to support new distributed generation models and help to bring down the cost curves of less economically competitive technologies, such as storage capability. Thus, advocacy on a fair price for solar could be directed to promoting certain models that incentivise Solar PV and storage, recognising the higher network benefit.

Discussions with energy experts such as the Melbourne Energy Institute, the ATA and other advocacy groups suggest that a price of between **11-14c/kWh** is more likely to reflect the broader value of solar and a more realistic advocacy position. However, any increase needs to consider that a very low feed in tariff stimulates people to self-consume, install heat pumps, buy electric cars, and of course batteries³. A high feed in tariff is a potential disincentive to the in-home uptake of those gas-switching, petrol-switching coal-switching technologies. For NAGA it is recommended to advocate within this range and adjust when further modelling is undertaken by groups such as the ATA or the Melbourne Energy Institute.

3. Other issues

A number of other issues are emerging in energy markets and policy that are likely to be potential barriers to renewable energy uptake. These issues may be considered to be more pressing for advocacy by NAGA members.

3.1 Changes to electricity market rules

Rising costs of electricity are largely driven by infrastructure investment to address periods of peak demand, which is at the moment on average 100 hours per year; the equivalent of

³ T.Forcey, Melbourne Energy Institute, pers. comm

building an extra six lanes on a freeway to cope with peak traffic⁴. These periods are in line with cold snaps or heatwaves, which will become more frequent with climate change and hotter conditions. This infrastructure investment, driven by regulatory incentives by the AER has led to prices increasing five times since 2007⁵.

A new rule put forward by the Australian Energy Market Commission (AEMC) to the AER to incentivise network businesses to work with consumers to manage demand could help shift the attitudes of network businesses. This rule aims to:

“provide a framework to guide the AER in developing and applying a demand management incentive scheme and innovation allowance mechanism which would help to balance the incentives on distribution businesses to make efficient expenditure decisions”⁶.

The draft rule responds to concerns that the current regulatory framework creates a bias towards expenditure on network investment over non-network options that are not adequately addressed by the existing schemes.

The new framework is broken into two streams:

- **Demand management incentive scheme** – provides DNSPs with an incentive to undertake efficient expenditure on relevant non-network options relating to demand management. The scheme would reward distribution businesses for implementing relevant non-network options that deliver net cost savings to retail customers.
- **Demand management innovation allowance** – the objective of the innovation allowance is to provide distribution businesses with funding for research and development on demand management projects that have the potential to reduce long-term network costs. The allowance would be used to fund innovative projects that have the potential to deliver ongoing reductions in demand or peak demand.

The draft rule adopted in May 2015 could drive a different attitude towards energy efficiency, local generation and peak load management. It will definitely make the case for solar panels and batteries more attractive. It will provide incentives for power companies to support the installation of more solar with storage, helping to lower energy bills. However, recent rulings by the Australian Energy Regulator (AER) in NSW and Qld do not reflect these rule changes, and they are likely to not come into force until after 2020. Supporting the distribution businesses undertake new demand management activities is an important advocacy issue for NAGA. These issues are currently being advocated by NAGA, along with the other

⁴ <http://theconversation.com/explainer-how-does-the-electricity-grid-work-19289>

⁵ <http://theconversation.com/a-simple-rule-change-can-save-billions-for-power-networks-and-their-customers-38657>

⁶ <http://aemc.gov.au/getattachment/3391c37e-dc95-40fa-bbcf-32f4c653bd4f/Fact-sheet.aspx>

greenhouse alliances to the AER in the Victorian Electricity Distribution Price Review (EDPR).

3.2 “Cost-reflective” tariffs

Another rule change from the AEMC in November 2014 has instructed network operators to design and introduce “cost reflective” tariffs to reflect consumer demand in peak periods. The goal is to reduce overall peak demand periods with a view to reducing overall costs and the associated need for infrastructure upgrades. Whilst the current Electricity Distribution Price Review sets out the overall revenue the DNSP’s are allowed to generate over the next five years, the tariff reform will require DNSPs to identify how they will recoup this revenue from different consumer groups.

For the past few decades most electricity users (households and businesses) have been charged based on their consumption over the whole year rather than their contribution to demand peaks. This has allowed low energy consumers to receive lower power bills; however it does not take in to account how these consumers use energy in peak periods (more expensive times). It is argued that this does not accurately convey to consumers how expensive high usage in peak periods really is.

How these changes will impact on solar customers will depend very much on what sort of tariffs the distribution businesses introduce. There is a lot of concern that businesses will dress their tariffs up as ‘cost reflective’ when they are not cost reflective at all. If a tariff is designed to be ‘time of use’ (i.e. peak, shoulder and off peak) then this might act as an incentive for battery storage, depending on how the prices are structured and whether it is cost-effective to store energy at off peak times and use it at peak times.

There are numerous tariff options that are possible (see Figure 2). A critical peak demand tariff would be cost reflective and good for the battery storage business case. NAGA will be attending a Tariffs Masterclass in July to better understand the implications of each of these.

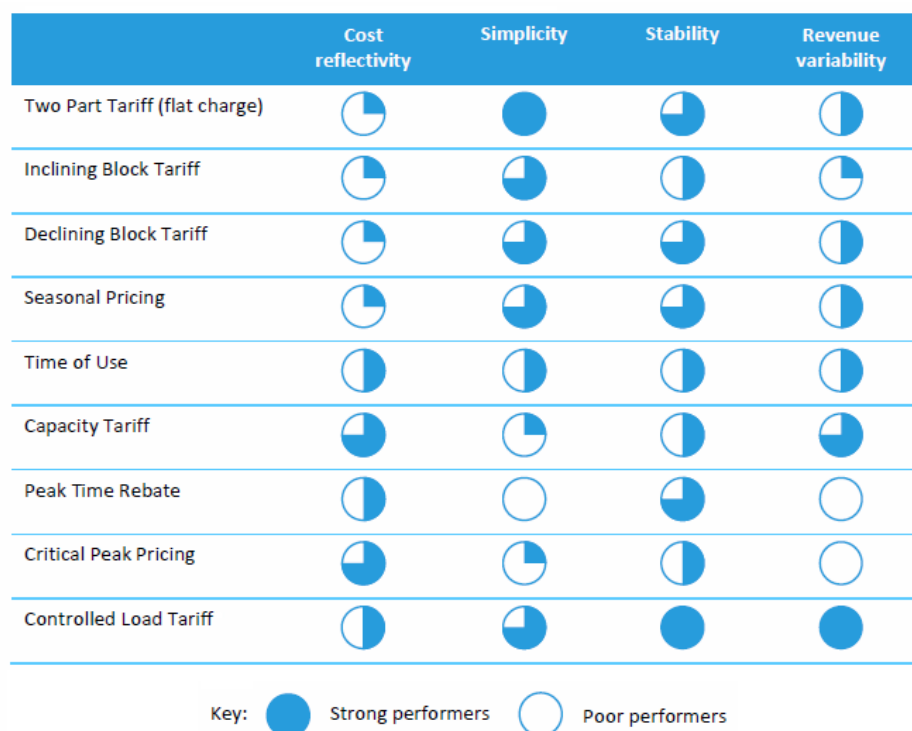


Figure 2: Different network tariff options (Deloitte 2014)

For NAGA, an advocacy position should concentrate on opposing any tariff that treats solar customers differently to other customers, in line with the Clean Energy Council's position. If a DNSP attempts to introduce what the SA Power Networks proposed in their recent pricing proposals to the AER (an extra \$100 per year charge for solar customer because they have solar), then NAGA would oppose this strongly ⁷.

3.3 Fixed charges

One of the growing concerns from all consumers across the board is the trend towards large increases in fixed connection charges. Fixed charges relate to the “availability” of electricity, rather than usage. Increasing these charges to pay back overinvestment in the network is likely to only further push people off the grid, but also disempowers consumers to reduce their energy bills through behaviour change. Fixed charges hide the price signal that would otherwise incentivise customers to reduce both their consumption and peak demand. In Queensland, fixed charges for households will jump more than 20%, meaning that with GST,

⁷ Darren Gladman, CEC, pers comm.

households will pay a minimum \$428 a year on fixed charges, no matter how little electricity they consume⁸.

However, of more concern than general increases in fixed charges, is the potential for fixed charges to be higher for solar PV owners than other consumers. For example, SA Power Networks have put forward a recent proposal to introduce fixed charges for solar owners only. Similarly, a recent rule from the AER has required NSW distribution businesses to get full cost recovery from metering services. This means for solar customers that a new meter installation will go from \$66 to about \$500 from July 1 2015⁹. Indeed, NAGA is already having some experiences with expensive smart meter “upgrades” for domestic solar programs. It is an important advocacy issue for NAGA to ensure that solar PV is not unfairly penalised through increased fixed charges and other hidden costs that do not reflect the value of solar to the networks.

3.4 The rise of storage

The recent Tesla Powerwall announcement excited many in the industry with its offering of household batteries at lower than expected prices. Considered to be the missing link of mass adoption of solar, the Deutsche Bank predict that cost competitive energy storage will be deployed on a large scale in the next five years. Storage capacity would largely address many of the intermittency issues of renewables, but would also be of higher value to the network in that it increases grid resilience and displaces more-expensive gas peaking plants.

ATA analysis suggests that solar PV with storage is likely to still be too expensive for many households and businesses to consider, despite the fact that prices for storage solutions are coming down year by year. In a sense, storage capacity is in a similar situation to PV systems when the original premium feed-in tariffs were first introduced as a way to incentivise early adopters. Thus it may be that storage capacity is the area of energy development that needs the most policy support to grow as a market in Australia. The Victorian Government has also flagged its intention to use much of its New Energy Fund (\$20 million) to direct toward storage solutions¹⁰.

Some companies such as Reposit Power are developing and piloting new business models that aggregate small scale energy generators (i.e. household PV with storage) and by taking control of the systems remotely are able to offer the electricity to the grid in peak demand

⁸ <http://reneweconomy.com.au/2015/queensland-pushes-through-massive-rises-in-fixed-electricity-charges-52523>

⁹ <http://reneweconomy.com.au/2015/nsw-act-households-face-450-hike-in-cost-of-installing-solar-pv-77179>

¹⁰ <http://www.theage.com.au/victoria/andrews-government-powering-up-battery-focus-in-energy-plans-20150510-ggybmg.html>

times, thereby maximising profits and acting like a regular generator¹¹. This model aims to take the complexity out of the energy market from households and businesses, and offer a premium price for systems with storage.

Reposit's GridCredits system can control and store solar energy, giving consumers access to their own power overnight and at peak times, and reducing their demand on the grid.

“Networks should be a platform for trading and exchange of electricity, so tariffs should be structured to encourage this, not to prevent it, or that will accelerate the death spiral of the grids. This is about households being able to go head to head with the major companies.” (CEO Luke Osborne of Reposit Power).

The company is currently trialling a pilot project in Canberra from an ARENA grant, and if successful will aim to roll out wider deployment of services mid-2015. This is in essence supporting a ‘prosumer’ model of future grid development. For local governments there may be opportunity to look at an aggregation model for council facilities across the NAGA region.

Some distribution businesses are choosing to fund larger battery storage units instead of needing to update poles and wires. Ergon Energy, in Queensland, is installing series of batteries that will help reduce potential upgrade costs by one-third. Other utilities are realising the opportunities in storage and are rushing to enter the market acknowledging they did not predict the solar boom, with AGL and Origin both seeking to offer storage/PV options to their customers.

Indeed, storage should be seen favourably by distribution businesses for it can help to smooth out peak demand and offer greater levels of supply control. The issue will be how the distribution businesses incentivise storage uptake, or whether they would rather create barriers to consumer owned storage for its threat to their traditional business model. NAGA will be developing a position on storage separate to this paper.

3.5 New Financing Models

Over the past few years, a number of new financing models have emerged and are being tested out in the market. Though this is the topic for a separate paper, they can be largely summarised into the following:

1. Council special rates charge (eg. the Darebin model)
2. A solar operating lease or aggregated solar PPA (e.g. SunEdison)
3. Community solar model (eg. the peoples solar model)
4. Outright subsidy/bulk buys (eg. positive charge)

¹¹ <http://www.solarchoice.net.au/blog/news/energy-storage-reposit-power-startup-allow-solar-homes-bypass-electricity-retailers-171214>

Solar leasing is a response to the current economics and lack of feed in tariffs. This involves a solar company installing a PV system on a house or business for little or no upfront cost, and then charging a cheaper rate for the power generated than if purchased from the grid. This model is growing in popularity in the US and more recently in NZ, although it has not been available until recently in Australia. Solar leasing deals are most appealing to residents or businesses that use a lot of electricity during the day and whose power bills are more than \$1000 a quarter.

3.6 Future thinking

Recent NAGA meetings have demonstrated that there is significant scope and interest in NAGA thinking further ahead to be able to truly transform to a decarbonised electricity system. It is important that NAGA maintains pressure and advocacy for distribution businesses to adapt, promote and facilitate this shift to a low carbon future, and if not, then at least to not be permitted to put up barriers to protect their own interests.

Numerous councils and housing estates around the country are considering options of going off-grid or buying back the networks altogether as has happened in parts of Europe and the U.S.¹². In Darwin recently, Defence Housing announced its new housing estate will be a solar suburb near the CBD with each home to feature a 4.5kW rooftop solar system and charging points for electric vehicles. Similarly, in WA, property development groups Lend Lease and LandCorp are installing a major community-level battery storage pilot that could change the way that residential communities source and trade their energy.

A bigger question beyond this paper is how NAGA can be a driver of this type of dynamic change, rather than simply advocating for tweaks to the current system.

The CSIRO future grid project outlined four future scenarios for the way electricity is generated, delivered and consumed by 2050¹³. It is difficult to identify which of these scenarios will in fact eventuate, but it is clear that the electricity system we have today will be radically different in ten years time. For NAGA it is important to proactively advocate for a shift towards a low carbon and equitable energy system, as well as to continue to develop and test these solutions through the member councils.

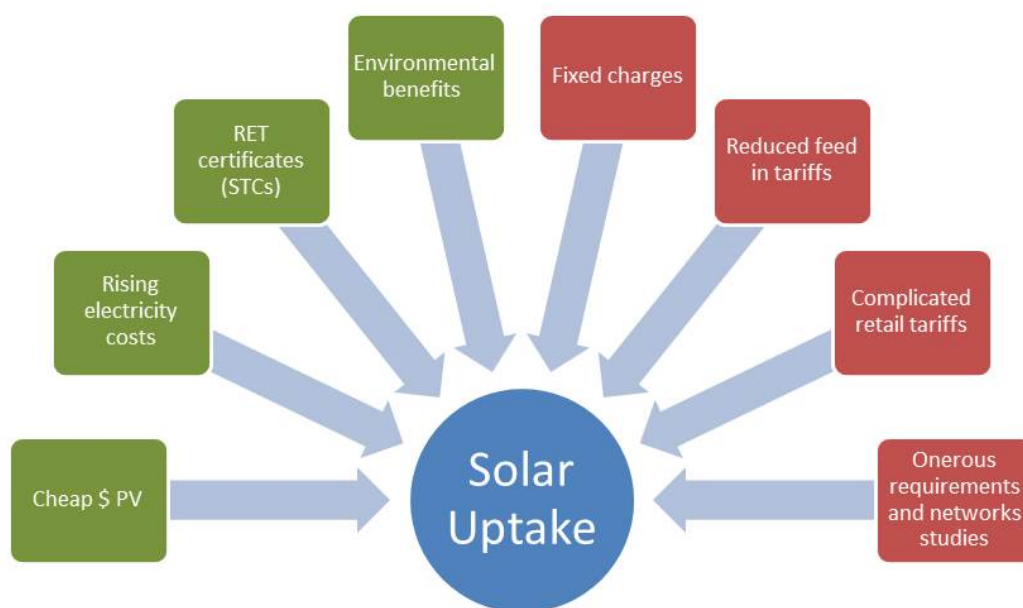
¹² <http://reneweconomy.com.au/2015/why-new-housing-estates-and-whole-towns-will-go-off-grid-27409>

¹³ <http://www.csiro.au/en/Research/EF/Areas/Electricity-grids-and-systems/Economic-modelling/Future-Grid-Forum>

4. Conclusion

The next five years will likely see a dramatic change in the energy landscape, with distributed generation continuing to profoundly disrupt traditional business models of generators, retailers and grid operators. There are a number of drivers and barriers to the uptake of PV and many areas for NAGA to advocate on, beyond fair feed in tariffs (see fig 1).

Figure 1: Summary of main drivers and barriers to uptake of Solar PV in Victoria



Advocacy would also need to equally be centred on removing emerging barriers to PV such as fixed charges, higher metering charges and understanding the impacts of different retail tariff structures, and advocate for policy support for new financing models and distributed generation models including renewable storage solutions.

There are several current avenues open for NAGA advocacy on these matters:

- AER Electricity Distribution Pricing Review (currently underway and NAGA making a submission with EAGA)

- Victorian State Government Essential Services Commission review (submissions due late july)
- Victorian State Government Energy Policy (eg. Renewable Energy Action Plan, Victorian RET, New Energy Jobs Fund)

In conclusion, NAGA is seeking feedback on proposed advocacy positions of:

- A fairer feed in tariff of between 11-14c/kWh?
- Advocating against increased network charges, especially if they are specific to solar PV owners
- Ensure that any “cost reflective” tariffs are consumer wide and do not have different penalty tariffs for solar customers
- That the tariffs are designed to incentivise battery storage and have at least a benign impact on the business case for solar PV
- Work to ensure innovation is encouraged in the AER determination on the pricing review of networks revenue by supporting demand management and embedded generation initiatives

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