



SAVEOURSOLARTAS.ORG

Response to Issues Paper

Department of State Growth

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Executive Summary

Show the world that we can make this work!

First we must get inspired. Get inspired to think outside of the energy generation box that we have been in for 100 years. We have to get outside of the box of our TasNetworks boss and similar thinkers who feel it is best to continue on our current pathway.

What are the Benefits of a Thriving Solar Industry?

The benefit of reducing costs, especially for small and medium business, is that it drives our economy. If a business was to install solar and reduce their cost of doing business they become more viable and have the ability to expand their capacity. Increasing their capacity mean more jobs. I may mean that a business can afford to upgrade a piece of equipment to produce a better product or service to drive their business. More benefits from a thriving solar industry come directly from the industry itself. There are over 450 people working in the solar industry already. If Tasmania was to encourage the use of solar technology in the state we would drive an industry that could potentially employ over 1000 people in the short term and, with an increased participation rate in solar, sustain jobs growth in the future. Potentially a thriving solar industry could contribute millions of dollars of investment and savings in our economy in a very short time. A thriving solar industry has the potential to drive the wholesale cost of power down using the Merit Order Effect. The Merit Order Effect, put simply, means lower electricity bills for consumers. That's because it means lower-cost electricity in the wholesale market when additional renewables are introduced into the mix. The small town of Wildpoldsried Germany is a perfect example of what an inspired and progressive community can do with alternative renewable energy generation. All of these green systems means that despite only having a population of 2,600, Wildpoldsried produces 321 percent more energy than it needs – and it's generating 4.0 million Euro (US \$5.7 million) in annual revenue by selling it back to the national grid.

How to grow the industry

Growth in the industry comes directly from sales. Government policy plays a crucial part in this. Solar technology does not need any government incentives to grow. All it needs is recognition that it is a legitimate contributor to a power network and be treated as such. **The best way to grow the solar industry is to increase the Feed in Tariff (FIT). Increasing the FIT in Tasmania does not require any contribution from the government to cover the cost.**

Peak Demand

One way to help reduce the price of power is to reduce the costs to run the network. Network cost make up 58% of the price of power in Tasmania. The only way to keep network costs in check is to reduce demand for power at peak times.

As suggested in the issues paper, Tasmania could explore the use of energy storage at the point of production. A person who installs a solar system could store part of the power they produce on their roof in batteries or other forms of storage.

A large part of peak demand is hot water systems starting up after households have showered and washed in the morning and evening. If the network invested a simple timer installed on their hot water system then we could delay the elements starting up till later in the morning. There is a real case here for government to fund a rollout of timers in communities like Kingborough where peak demand is putting a heavy burden on the power system.

Encourage the installation of Heat Pump technology over direct electric heating technology. . A popular 8kw direct electric heater can use 8Kw of power to produce 8Kw of heat. A heat pump, on the other hand, will only use a maximum of 2.5Kw of energy to produce 8Kw of heat during peak demand times.

All of these strategies are assisting customers to continue purchasing power instead of driving them away to other alternatives.

The Key Role for the Department of State Growth

SOST would like to put forward that the solar industry as an area where Tasmania can foster economic growth. This however may not be the best solution to increase the revenue of the network but the overall state benefit is larger.

With a little bit of inspiration the solar industry has the potential to be a very dynamic driver in further marketing Tasmania to the world as a tourism destination by becoming a world leader in the proliferation of alternative solar technology. The inclusion of electric cars in our thinking should start with the public service due to the obvious enduring cost saving benefits. Also, solar powered charging stations across the state will allow tourists to travel to all our destinations with a reduce fuel cost through the vehicle rental system.

Everyone knows that small business is the biggest business in our economy. The fact is that small business pays the highest price per Kwh for power, even higher than the smallest domestic customer. Reducing prices will make Tasmania an attractive place to move to or setup a small business. Creating a balanced mix of Hydro and Solar generation can deliver long term power price reduction by reducing the cost of producing power. What better way for the Department of State Growth to encourage cost cutting then by embracing the solar industry.

Purpose of this response

The main purpose of Save our Solar Tas.org (SOST)'s response to this issues paper is to show the government the huge opportunity that the solar industry presents to Tasmania and its people. We would like to show that there is opportunity for government to encourage the recovery of the embedded PV generation industry in Tasmania and by doing so, become a nation leader. Our response will show that it is very simple and easy to grow an industry which can have the potential of employing over 1000 Tasmanians in the short term and many more in the long term. This paper will also show that we have the ability, the technology and the foresight to make an industry which can not only grow the Tasmanian economy directly through this industry but also grow our economy through tourism and skills exports. We also will highlight to the government how solar technology can reduce the price of power to small business and by doing so make Tasmania competitive and a desired destination to do business. This paper also will highlight some of the dangers the government and the power companies must be aware of with the emergence of new technologies.

Show the world that we can make this work!

First we must get inspired. Get inspired to think outside of the energy generation box that we have been in for 100 years. We have to get outside of the box of our TasNetworks boss and similar thinkers who feel it is best to continue on our current pathway. Once we get inspired we create ideas of things that didn't seem possible before. We start to dream of things that no one in our country has done before but is actually happening elsewhere successfully. Things like creating Australia's largest network of solar power producers. Like maybe creating a 50% participation rate in solar technology with local embedded solar. Like investing in research to make storage technology work for our state. Like encouraging existing technologies which make solar contribute to peak demand. We are small enough to make it easy to work together and we are big enough to get noticed when we make it happen. And when we are inspired and motivated and progressive, people want to come and see what you have done. Businesses will come to our state to setup because it is cheaper to do so. They will come to our clean green state and see what we are doing and take inspiration from us and encourage their own communities to use this technology to help their economies.

What are the Benefits of a Thriving Solar Industry?

The first benefit of anything solar goes to the person that purchased the technology. Every solar owner has invested to contain their cost of living or cut their cost of business. The first benefit a solar owner gets is from the reduced need to buy power. They used the power generated on their roof directly in their homes. The second benefit they receive is in the power they feed into the grid. The level of FIT they get from the power company directly impacts the value they receive back for their large investment in solar. For every person who reduces their cost of living there is a benefit elsewhere. That money is going into the local economy rather than paying for an overpriced power network. Remember, over 50% of the cost of power is paying for a network too large for our demand.

The benefit of reducing costs, especially for small and medium business, is that it drives our economy. If a business was to install solar and reduce their cost of doing business they become more viable and have the ability to expand their capacity. Increasing their capacity mean more jobs. I may mean that a business can afford to upgrade a piece of equipment to produce a better product or service to drive their business.

Small business is the biggest business in our state and country. To increased business activity is going to improve our state growth.

More benefits from a thriving solar industry come directly from the industry itself. There are over 450 people working in the solar industry already. If Tasmania was to encourage the use of solar technology in the state we would drive an industry that could potentially employ over 1000 people in the short term and, with an increased participation rate in solar, sustain jobs growth in the future. Potentially a thriving solar industry could contribute millions of dollars of investment and savings in our economy in a very short time.

Directly there are installers, sale people, office admin, and trainees and apprentices who are involved in this industry. These people make a direct contribution to our economy through their wages and their spending. Aurora employs people to replace old meters with smart meters to allow for the input and output of power from the property.

Indirectly, companies involved in the solar industry support local companies for their supplies related to running their offices and supplies to complete the fitting of panels and inverters. They also use local media companies to provide them with advertising support which in turn supports those industries. They also support the freight industries even down to companies who help deal with the freight equalisation scheme. Companies manage fleet of vehicles which are purchased, maintained, financed, insured and registered locally.

ACCREDITED SOLAR PANEL INSTALLERS AND DESIGNERS IN AUSTRALIA - BY STATE

	NSW	ACT	WA	QLD	VIC	NT	SA	TAS	TOTAL
2007	95	6	46	73	66	13	24	14	337
2008	192	11	95	143	245	11	57	24	778
2009	360	28	220	349	473	16	130	43	1619
2010	879	46	414	675	754	16	252	45	3081
2011	1034	53	531	1187	1004	22	593	71	4495
2012	948	48	514	1391	1122	28	650	120	4821
2013	894	44	439	1336	1093	41	604	144	4595

There were 144 accredited installers in Tasmania in 2013 and with their support staff and admin etc. we estimate that at the very least 450 jobs make up the industry. Anecdotal evidence shows that the number of people in the industry could have potentially have been a lot high if the industry was still on the same footing. Many companies were looking to expand and employ more people but instead have not employed those and have put of people to cut the cloth in their businesses. The installations of grandfathered units stopped at the end of August. Now that these installations are complete we face the hard reality of little or no work for installers going forward. With solar companies losing over 90% of their business due to the

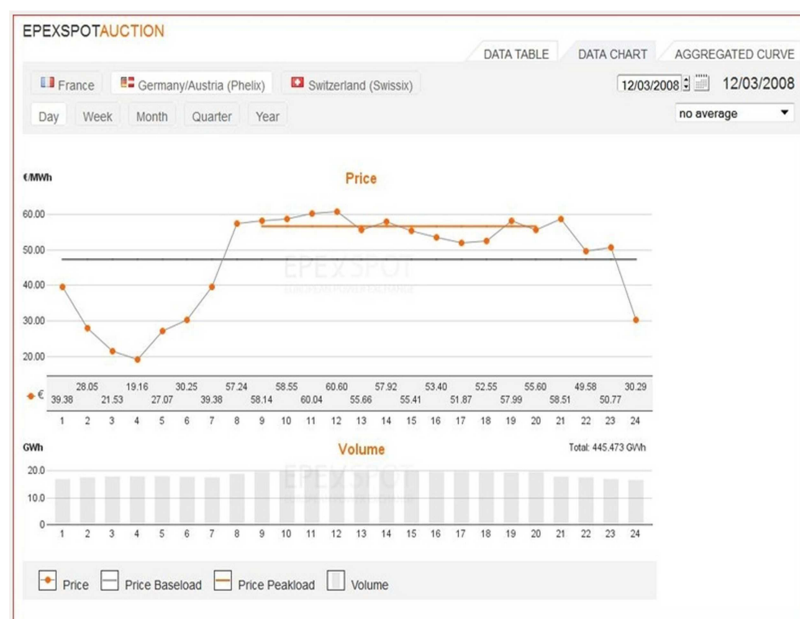
reduction in the feed in tariff may cause majority of these solar jobs to have to go. From the table above you can see from the other states that the number of registered installers dropped when the reduced FITs were introduced in 2012. The same will happen in Tasmania.

The solar industry is able to contribute to the economy with no subsidy from government either federal or state at all. What most people think are government subsidies are actually a privately run system of certificates that are bought and sold on a free market. Companies who produce renewable energy are able to sell these certificates to other companies who need to buy them to offset their emissions. This is directly connected to the laws involved with the Renewable Energy Target. People who invest in solar are awarded certificates which are sold on and the purchaser receives that money as an offset to the purchase price of their solar system.

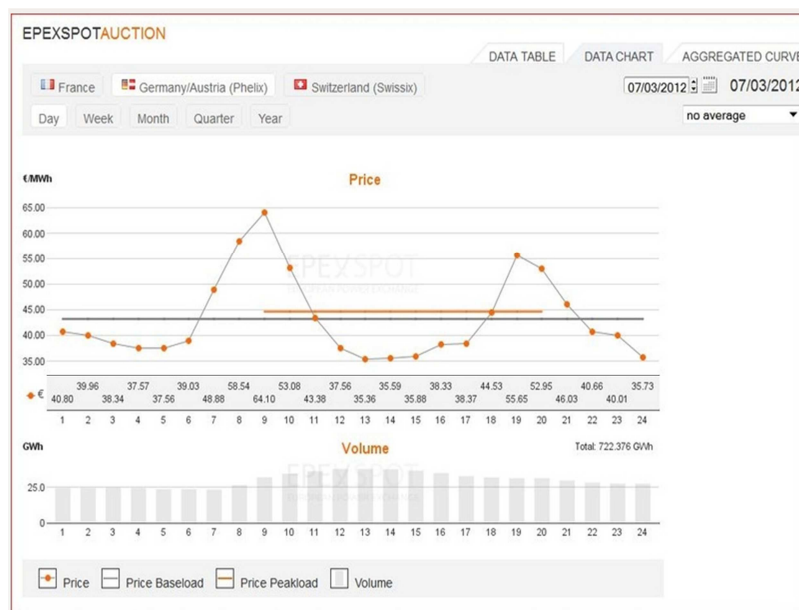
The solar industry is able to contribute to the Tasmanian economy through the power companies themselves. An issues paper released by Bryan Green mentioned an example where, in April 2008, Hydro Tas had to import all of their power from mainland because dam levels were so low. If the solar industry were to thrive and continue on the growth rate of 2013, then we would have around 20% participation rate of solar in Tasmania in ten years' time. With that many installations, we would have been able to avert a similar event to the one in April 2008 with just 12 months of solar production.

Embedded PV solar installed on local premises, both residential and business, deliver power with over 4 times the value of high voltage power from the dam face, wind farm or other large scale productions. It is better to allow Tasmanians to invest in and build a diversified solar infrastructure across the state using local roof tops than to build large scale solar farms at huge cost to the government. Or even worse see foreign ownership of these assets which will send the return on investment off-shore and will do little to control the cost of power.

A thriving solar industry has the potential to drive the wholesale cost of power down using the Merit Order Effect. The Merit Order Effect, put simply, means lower electricity bills for consumers. That's because it means lower-cost electricity in the wholesale market when additional renewables are introduced into the mix.



Germany's power price before solar.



Germany's power price after solar.

The effect has been demonstrated in Germany, where they have very significant deployments of renewables. The German government has identified that consumers saved €840 million in 2010 thanks to renewable induced Merit Order Effect.

Looking at Queensland we can see that solar has contributed to peak demand and has driven down the wholesale price of power.

Here is an extract of a news article from the Guardian:

Giles Parkinson

theguardian.com, Monday 7 July 2014 11.53 AEST

"Last week, for the first time in memory, the wholesale price of electricity in Queensland fell into negative territory – in the middle of the day.

For several days the price, normally around \$40-\$50 a megawatt hour, hovered in and around zero. Prices were deflated throughout the week, largely because of the influence of one of the newest, biggest power stations in the state – rooftop solar.

"Negative pricing" moves, as they are known, are not uncommon. But they are only supposed to happen at night, when most of the population is mostly asleep, demand is down, and operators of coal fired generators are reluctant to switch off. So they pay others to pick up their output. That's not supposed to happen at lunchtime. Daytime prices are supposed to reflect higher demand, when people are awake, office buildings are in use, factories are in production. That's when fossil fuel generators would normally be making most of their money."

These savings that can occur on the electricity market are thanks to renewables; they make our bills cheaper and can partially or fully offset the cost of funding renewables through feed-in tariffs or other renewable promotion schemes.

A thriving solar industry and a high participation rate of solar would result in far too much power being generated here in Tasmania. In a coal fired power station situation that would be disastrous because the generator cannot be turned down or up as demand needs it. A hydro system is flexible and there is enormous potential to store energy. Solar will reserve water in the dams as kinetic storage. This reserve of energy storage also gives the power companies the

ability to produce power at time when demand in other jurisdictions can be met. These times generally provide the supplier with a higher price and profit margin. This also leaves room for expansion of Hydro's Momentum Energy Company to expand more into the mainland market and command premium prices for excess energy saved by Tasmania.

Wildpoldsried Germany



- Population of 2600
- 4.2km of biogas network
- All public buildings, 120 private flats and 4 companies connected to the village heating system
- More than 250 private owners of photovoltaic totalling 5 MW
- More than 300 local investors in 7 wind turbines, 12.1 MW
- Strong commitment to public participation
- More than 100 international groups visit per year

This small town is perfect example of what an inspired and progressive community can do with alternative renewable energy generation. All of these green systems means that despite only having a population of 2,600, Wildpoldsried produces 321 percent more energy than it needs – and it's generating 4.0 million Euro (US \$5.7 million) in annual revenue by selling it back to the national grid. It is no surprise to learn that small businesses have developed in the village specifically to provide services to the renewable energy installations. The village council hopes that it will inspire citizens to do their part for the environment and create green jobs and businesses for the local area.

Read more: [German Village Produces 321% More Energy Than It Needs! | Inhabitat - Sustainable Design Innovation, Eco Architecture, Green Building](#)

How to grow the solar industry

Growth in the industry comes directly from sales. Government policy plays a crucial part in this. Power is a highly regulated product in Tasmania and the government of the day is the only body who can influence how that power is distributed, bought and sold and ultimately at what rate.

Solar technology does not need any government incentives to grow. All it needs is recognition that it is a legitimate contributor to a power network and be treated as such.

The best way to grow the solar industry is to increase the Feed in Tariff (FIT). Increasing the FIT in Tasmania does not require any contribution from the government to cover the cost.

What is the Feed in Tariff?

A feed in tariff, or FIT, is the credit given to a solar owner on their power bill for the amount of power fed into the grid. At the moment it stands at 5.51 cents for each KWh of power fed in.

Feed in Tariff History

In the past Aurora had been voluntarily offering a 1:1 feed in tariff to solar customer. This means they were paying customers the same price for the power they fed into the grid as what they were paying for power when they drew it from the grid. At that time the price of power was 28 cents per KWh and the feed in tariff was 28 cents as well.

After the transition to full retail competition (FRC) was announced, an issues paper was released by the energy minister Bryan Green which was responded to by a number of industry people and meetings were held. There were quite a number of technical faults in the issues paper, so a supplementary paper was released with the changes to the technical parts. The Economic Regulator was issued with terms of reference for determining the Feed in Tariff (FIT) and they produced a draft report. Then a final report was produced and a FIT arrangement was made. The feed in tariff was set at 8.282cents per KWh.

Just recently the price of power was reviewed and changed and also the FIT was reviewed and changed. The price of power fell by 7.8% and the feed in tariff was reduced to 5.551 cents per KWh. The reason given is the expected passing of the carbon tax repeal bill in federal parliament which will result in a 9.4% reduction in the wholesale price of electricity. The overall drop was only 7.8% because there were price rises built into the power price determination by the TER originally to allow for extra marketing costs when full retail competition was introduced.

The next part gets a little more complicated but is just as important to understand. Feed in Ratios. The feed in ratio is the relationship between how much power is used from the solar panels directly and how much power is fed into the grid. The ratio for each household will be different. The depending factors are mainly to do with the times of the day that the homeowners use their power. Do they use their power mostly at night time? Or are they home during the day and use plenty of power then? Remembering that it is connected to tariff 31 (lights and power).

The solar industry in their system of quoting generally quote 50% used off the roof and 50% fed into the grid (50:50). Our research would indicate that a household where families are out during the day are more likely to be 30% used off the roof and 70% fed into the grid. Where as a person who works from home or a small business, for instance, will generally feed in a lot less power because they consume a lot of power during the day. A Jessups case study has revealed that a 9am-5pm 5 day a week small business in Invermay Launceston feeds in about 12.7% of the solar power produced into the grid. We see these examples as typical.

How do we determine the Feed in Tariff?

As we mentioned earlier, the best way to grow the solar industry is to increase the Feed in Tariff (FIT). Increasing the FIT in Tasmania does not require any contribution from the government to cover the cost. As it currently stands, at 5.551 cents per kWh, the feed in tariff in Tasmania is subsidising the price of power. Here is how it works.

The regulator used a formula to determine what the feed in tariff should be in 2013.

$$\text{FiTy} = (\text{WEPy} \times \text{MLFy} \times \text{DLFy}) + \text{AEMOy}$$

Wholesale electricity price (c/kWh)

Multiplied by

Marginal loss factor

Multiplied by

Distribution loss factor

Plus

NEM fees (c/kWh)

Equals

Total FiT (c/kWh)

Source: 2013 Standing Offer Determination for Retailer A.

What does all this mean? Well to put it as simply as possible, the FIT is the wholesale price of power plus line losses and Market fees. Line losses occur when electricity is transported and converted. Heat is generated by conductors and resistance causes power to be lost as it is transported. The power companies are able to determine an amount of loss. It was included in the FIT because the losses occurred in the transportation of power do not happen when power is fed into the grid from a solar owner. This power only travels a very short distance, possibly to the neighbour's house. NEM fees are the market and ancillary fees charged to retailers based on the amount of wholesale electricity they purchase through the NEM (National Electricity Market). It was included in the FIT because the power company's fees are reduced by solar system contributions because there is a reduced need for them to buy power from the NEM.

This basically means that the TER has included in the FIT the full wholesale cost of power. They don't need to buy power from Hydro Tas because it is supplied from the solar systems. Then there are some costs associated with that power that are included in the FIT. The existing FIT formula includes costs avoided by the fact that the power from a solar system only travels a short distance. All line losses from both high voltage transmission and low voltage distribution have been included as costs avoided by the solar generated power.

What Needs to Change?

If the TER includes 100% of generation and line losses in the FIT, then they must also include 100% of the high voltage transmission and the correct proportion of the low voltage distribution network in the FIT. You can't argue with the simple fact that the power does not touch the high voltage network. The report from the TER basically says that because of the method used to work out the networks costs, they can't include it in the feed in. "It was too hard!" they said, "If you touch it you pay for it". This is simplistic and a grossly unfair position to take. SOST solution is simple. A simple payment between the distributor who benefits and the retailer. Network costs avoided is explained below.

Network costs avoided

Save our Solar Tas.org proposes that the formula for calculating the FIT for micro distributed generation be as follows:

$$FiTy = (WEPy \times MLFy \times DLFy) + NCAy + AEMOy$$

Where:

FiTy is the regulated fair and reasonable feed in tariff in c/kWh

y is the period

WEPy is the wholesale electricity price in c/kWh from the 2013 Standing Offer Determinations.

NCAy is the portion of the network costs avoided by the Distribution Company and passed through to the retailer.

MLFy means the load weighted average marginal loss factor at the regional reference node for Tasmania for the relevant period as approved by the Regulator in the 2013 Standing Offer Determinations.

DLFy means the load weighted average distribution loss factor for the relevant period as approved by the Regulator in the relevant 2013 Standing Offer Determinations.

AEMOy means the forecast charge in c/kWh, as billed by AEMO for market participant and ancillary services fees presented in the 2013 Standing Offer Determinations.

What is the difference you may ask? The difference is a thing called "network costs avoided." The fact that the power generated by a solar system does not travel far and is used locally, means that the major part of the network cost in transporting, converting and maintaining the power is not incurred. Then if that power is sent to a neighbouring property and sold at a premium price which includes the network costs then someone has an unfair advantage.

There are 2 parts to the network costs.

First is the cost to transport power from the dam face to the substations is the high voltage transmission. This part is costed separately from the low voltage distribution in the price of power. Power fed in to the grid from a solar system is already low voltage and does not go anywhere near the high voltage system. This means that this power avoids all of the cost entirely.



Second is the distribution system (poles, wires and substations). This is the part where the power is refined to be used in our properties and transported over long distances to eventually end up at the user's property. This also includes substations and transformers to maintain the quality of the power to the end user. Power which comes from a solar grid system is using these poles a wires, but only a small amount. In talking to the TER, we submitted that while we don't know the average distance the power travels on the network, we can assume that it only travels around 50-200 meters from the source. We also could not define the average distance the normal power travels. That may be 50km-200km. Because this may vary we saw that it was their task to define. We suggested that 2% would be more than adequate to cover the costs and reasonable for solar owners to bear.

To work out what the network cost is we need to know how the current system works out that cost. It's fairly simple. You work out how much you likely spend on the network and how much it cost to run that part of the business with a margin for profit. Then you divide that into the budgeted consumption for the forward estimates and you have a cost per KWh of power determined by the TER. This is the current formula.

The argument from the power companies is that those costs are there no matter how much you use the system and anyone who touches the system has to pay those costs. They follow on from that by saying that when you contribute to lowering the costs of the network everybody benefits not just the solar owners. This is an archaic and fundamentally unfair system.

Here is an extract from our TER submission.

"The argument that everyone benefits from avoided transmission cost does not fall under the terms 'fair and reasonable'. This goes to the heart of fairness and cross subsidy. The benefit of avoided transmission and distribution cost belongs to the rooftop power producers. Sharing that benefit across the network results in cross subsidy and the TER should, in its determinations, reflect that in an increased FIT with the costs to be passed through to the Distribution Company."

It is the government owned Distribution Company who will profit from avoided cost of transmission. The TER has acknowledged this in the draft report and has consulted with Aurora on this point. [Aurora's response was that the avoided cost benefits all customers](#). While that statement is true, the benefit does not belong to all customers. [These avoided costs belong to the embedded generators](#). The fact that no embedded generator is paid for this results in a clear profiteering situation. It also skews the true value of the power generated on the rooftops of PV owners and the price of power to everyone.

If our formula is used, our analysis show that currently the impact on the price power of power is less than 0.2 of 1 cent per KWh. This means that the price of power would need to rise by that amount to cover the cost of a fair and reasonable FIT. Therefore the true price of power has been skewed by the fact that these network costs are being avoided and the benefit not being passed on.

A little Story

To illustrate the argument for avoided network costs we have devised a little story.

Growing your own veggies.

Let's say that we, the tax payers, built a really large conveyor belt system to bring veggies to everyone's home. This conveyor belt delivers veggies to the customer's door from the grower via system of transport and distribution. This is run by a separate company from the supermarket. In a normal situation the homeowner buys their veggies from the supermarket and has them delivered to them straight from the grower through the system. The customer pays the supermarket full retail price for the veggies and the supermarket then pays for the transport to the distribution center where they are packaged and sorted and also pays for transport to the home via this conveyor belt. Factored into that price is the fact that some of the veggies fall off the conveyor belt along the way and some are thrown out at the sorting stage.

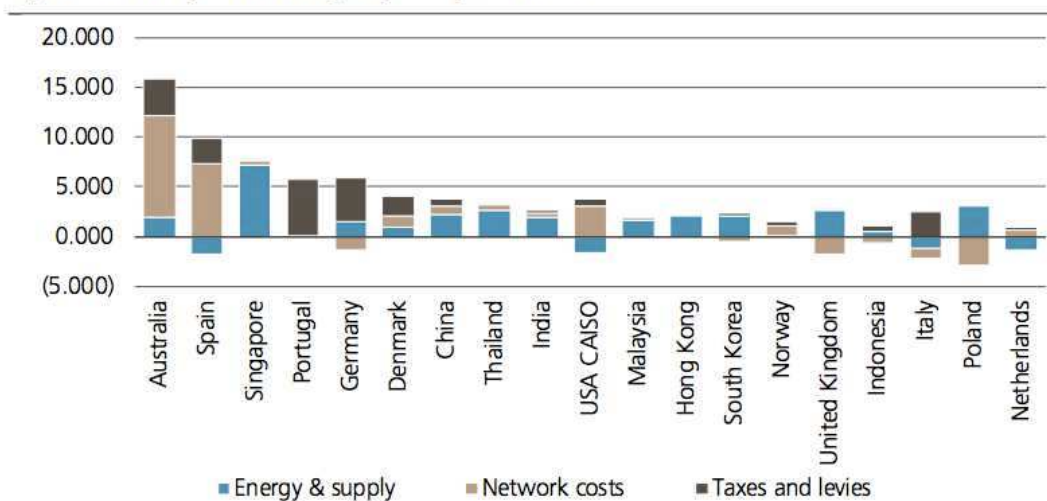


Let's say the homeowner is also growing some veggies for themselves and sometimes they produce more veggies than they need at a particular time. They then get the veggies they grow themselves and clean them and package them and place them on the conveyor belt to send to their next nearest neighbour. The supermarket charges the neighbour for the veggies at full price including the conveyor belt charges and packaging etc. They then pay you, the homeowner who grew the veggies, only the same amount they would pay the large grower. They also pay you an allowance factor for spoilage and losses. Yet you have washed and packaged them and you only sent it 50 meters up the conveyor belt.

Who is making an extra profit here? Well, the company who runs the conveyor belt is charging full price to your neighbour and doesn't have to pay for packaging and sorting. The veggies also only went 50 meters up the road and the company didn't pay you for the fact that you only used 50 meters of the conveyor belt. The homeowner feels hard done by because he contributed to the supermarkets supply but was short changed by the cost of transport from the farm gate to the distribution center and further short changed by the fact that he has sorted and packaged the veggies already which is normally done by the distribution center. Yet the homeowner is paid for the fact that there is no spoilage because the veggies only travelled a very short distance to their neighbour.

SOST believes that the homeowner should pay for the fact that they used 50 meters of the conveyor belt but should also be paid a fair price for all the costs that were avoided. Also the supermarket should get to make their full margin either way. This would encourage more people to grow their own veggies and then would mean that the large grower could export more of their veggies to other states, who are a hungry export market, at premium prices. A large part of the community agrees that it is a great thing that we can produce our own veggies and share the excesses with our neighbours in this way. In essence this is a fair and equitable deal for everyone concerned.

Figure 5: US cents per kWh change in power prices 2007-13



Source: Power utility companies, government databases, UBS estimates

Peak Demand

One way to help reduce the price of power is to reduce the costs to run the network. Network cost make up 58% of the price of power in Tasmania.

While solar grid systems do not relieve peak demand in Tasmania, solar should be viewed no differently than cutting energy consumption through energy efficiency. The statement that solar systems have a detrimental effect on the stability on a power system is not been realised in places such California and Germany. SOST believes this to be a red herring statement by non-progressive thinkers.

The only way to keep network costs in check is to reduce demand for power at peak times. Here in Tasmania those times are morning and evening time. Reducing peak demand can be done in a number of ways. Here are some suggestions of what can be done.

As suggested in the issues paper, Tasmania could explore the use of energy storage at the point of production. A person who installs a solar system could store part of the power they produce on their roof in batteries or other forms of storage. This would be a Hybrid solar system. A Hybrid system is already available to the Tasmanian market and is fast becoming cost effective. This system stores part of the energy produced on the roof in batteries or other storage facilities and this stored energy is then used at times when the sun is down. This will make a huge difference to peak demand. The difficult part for the power company is that this will see consumers move away from the grid to a higher level.

Large network battery storage has also been suggested as a possible solution to peak demand issues. But that isn't economically viable. We must realise that we have the largest possible battery for the storage of our power by simply reserving water in our dams and storages when solar feed in is offsetting demand. The ability to adjust our production to specific times and seasons is a valuable tool to save electricity at times to export at another time.

Another very simple and cost effective way of reducing peak demand is to change how we heat our water. A large part of peak demand is hot water systems starting up after households have showered and washed in the morning and evening. A standard hot water system uses a 3.6Kw element to heat the water. Once a household has used some or all of hot water cylinder the element starts to heat the water again ready for the next time they use it. If the network invested a simple timer installed on their hot water system then we could delay the elements starting up till later in the morning. It would cost \$200 to install each timer. The logistics are very simple. If we look at a community and install timers in 1,000 homes then we can reduce demand on the power system at that peak times by 3.6 Mega Watts per hour. There is a real case here for government to fund a rollout of timers in communities like Kingborough where peak demand is putting a heavy burden on the power system. This micro management strategy is far cheaper and easier than large project alternative to reduce peak demand with a better outcome. Instead of creating a bigger network to cater for these peak demands this simple method helps resolve the problem and not interfere with the customers comfort.

Encourage the installation of Heat Pump technology over direct electric heating technology. Heating is another large contributor to peak demand. A popular 8kw direct electric heater can use 8Kw of power to produce 8Kw of heat. A heat pump, on the other hand, will generally use

a maximum of 2.5Kw of energy to produce 8Kw of heat during peak demand times. While this is fantastic in itself, emerging technologies are providing lower input consumption for the same heating result. Government policy to incentivise installation of heat pumps starting with the department of housing is essential in this process. Removing panel heaters and direct electric heating is a crucial element for government to look at when developing policy for energy. This strategy could see an encouragement through a systematic withdrawal of direct heaters from the hydro heat scheme coupled with supporting finance options to assist them convert away from these “hydro tills.”

All of these strategies are assisting customers to continue purchasing power instead of driving them away to other alternatives.

In regards to smart meters, SOST does not see the value of these because of the huge cost of implementation. Smart meters would allow for charging different rates of power at peak times against cheaper rates at off peak times. There are other effective strategies that are more beneficial for reducing peak loads without the huge investment needed. This should be left for future retailers to consider implementation at their cost. Smart meter would drive customers away from electricity to other forms of energy production which will further decrease sales. People who use PAYG power in Tasmania are encouraged to use power at off-peak times by paying more for power at peak times. Anecdotal evidence shows that moving from the PAYG system of power to normal metering results in a saving to the consumer.

The Key Role for the Department of State Growth

SOST would like to put forward that the solar industry as an area where Tasmania can foster economic growth. This however may not be the best solution to increase the revenue of the network but the overall state benefit is larger.

The benefits of a thriving solar industry have already been discussed earlier in this document. But how far can it go?

With a little bit of inspiration the solar industry has the potential to be a very dynamic driver in further marketing Tasmania to the world as a tourism destination by becoming a world leader in the proliferation of alternative solar technology. The inclusion of electric cars in our thinking should start with the public service due to the obvious enduring cost saving benefits. Also, solar powered charging stations across the state will allow tourists to travel to all our destinations with a reduce fuel cost through the vehicle rental system. Our state owned Power Company can profit from charging them for power to charge their cars with and our clean green image is also enhanced. This gives another outlet for the distribution network to take part along with a strategic investor. Tasmania is an ideal and compact state in which to build an electric car rental fleet such as this. None of this is breaking new technological grounds but merely facilitating current technology.



The search for energy intensive industries to boost the revenue of the power companies may not be the only solution to helping the state to grow. Solar technology is dynamic. It is also here to stay. If we don't embrace the industry we run the risk of pushing generation away from our normal grid.

The role the department of state growth is to create an environment where doing business is cost effective and attractive.

Everyone knows that small business is the biggest business in our economy. Currently small business is still emerging from the GFC issues. The fact is that small business pays the highest price per Kwh for power, even higher than the smallest domestic customer. Small business buy much more power than domestic, per site, but is not rewarded for volume purchases. If we rectify this situation and change to a fair price for small business, coupled with the fact the Tasmania is not using fossil fuel generation, should see us able to reinvigorate the small business sector. Coal, oil and gas are all burdened with systemic high costs of production. Reducing prices will also make Tasmania an attractive place to move to or setup a small business. Creating a balanced mix of Hydro and Solar generation can deliver long term power price reduction by reducing the cost of producing power. The sun is free energy and embracing that technology will drive the opportunity to significantly invest in reducing the price of power to business. We only have to have some vision and build on what we already have to realise the states potential. Energy price can create a dynamic point of difference for Tasmania. Otherwise we deserve our reputation as the "subsidised state".

The network costs for the system currently stands at around 14 cents per Kwh. This cost is paid by small domestic customers and small business. But when big business gets their power they pay little or no network cost. If a large company is purchasing their power for as little as 4 or 6 cents per Kwh, then there is no provision for use of the network. Also some apparently are buying in blocks of power and on-selling the excess for a profit. Yet they are a significant cost of the network. While we see one company buying 25% of the state's power, the return in dollar terms may only be contributing to the network costs some 5% in dollar terms. So it is quite clear that regardless of your opinion on the solar issue that the system for charging for network costs is archaic and fundamentally flawed.

A second Bass Strait interconnector would be a major step for the government to allow the growth of the solar industry. As the issues paper correctly states, the opportunity exists in the future where the mainland jurisdictions can retire their coal fired power stations. SOST cannot stress enough the potential for Tasmania to take advantage for the inevitable demise of fossil fuel power generation plants as they become redundant.

“The key objective of the Tasmanian Energy Strategy will be to identify ways in which energy can once again be utilised as an economic driver, including by securing a stable and sustainable price path for power that can provide relief to consumers and help grow the economy and attract new investment.” Issues paper page 25

Point number 3 following this quote in the issues paper is a crucial one. Consumers and especially business must have the choice of how they meet their energy needs. If the feed in tariff in Tasmania remains incorrectly determined you are taking that choice away from them. We must change the way the feed in tariff is calculated to enable consumers to include solar in their list of choices.

With falling consumption, Aurora have actually increased their revenue by \$50 million and more than quadrupled their before tax profit from \$20.7 Million in 2012/13 to \$84.5 Million in 2013/14. The 52% increase in the power retailer's allowed margin that has been approved by the regulator for the beginning of full retail competition has begun on the first of July. Obviously, since the Aurora's customer book has not been sold, and may not be, the increased margin is pure profit and will top up the already increased profit before tax. This gives scope and opportunity to either directly relieve small business costs or write down business assets and/or liabilities. This is just one example of how to deliver better value to small business and drive the economy.

Previous governments have demonstrated their willingness to burden the energy sector with such things as buying back Tasrail and the west coast ABT railway. Then also wastefully buying white elephants like the Bell Bay gas fired station that the Minister at the time said “might be handy”. The questions to be asked should include: Is the government going to waste more of the company's profits on white elephants propping up third party operation not directly involved with that business. Are the power companies paying the government interest on the capital value of the plant, equipment, infrastructure and other assets?

Another role of the Department of State Growth is to build policy for our power companies to reduce their debt heavily to control interest costs. We would suggest that any costs outside of their core business model should be correctly identified as a fee or levy to the price of power. This creates full transparency and exposes these issues to public scrutiny.

Sale of the Aurora Book

There is no advantage in selling the Aurora book. In fact we lose many advantages. As shown in the TER pricing, new retailers require a higher margin in sharing the Aurora book. This was due to marketing costs increasing and market risk with full retail competition. Aurora quadrupled their profit last year!

Aurora employs over 900 staff, primarily in Tasmania. Many jobs will be replaced with interstate and overseas or simply absorbed into other retailers business.

The benefit in keeping the Aurora book is that it drives the best outcome for jobs in Tasmania and it is the best way to put downward on the price of power by taking back the awarded margin increase for competition. This would revert the company back to its original profit margin allowance of 3.5% which is more than adequate as shown in last year annual report.

Tasmanians have enjoyed a high standard of service from Aurora and have distanced themselves from the confusion of complex pricing schemes under full retail competition which is disadvantage many customers financially and lowering service standards.

For the full details on this issue please see the follow link on SOST.org.

<http://saveoursolartas.org/images/2014/Motion%20for%20halt%20to%20sale%20of%20aurora%20book.pdf>

Conclusion

As stated at the beginning of this document, the main purpose of Save our Solar Tas.org (SOST)'s response to this issues paper is to show the government the huge opportunity that the solar industry presents to Tasmania and its people. Throughout the process of learning about how power is generated and charged for in Tasmania we found obvious issues that we felt should be addressed along with the solar related components.

We must look to the future and see that a thriving solar industry is a crucial part of the Tasmanian economy. A FIT which reflects the true value of the power generated by PV owners is one which must not only involve no cross subsidy, but also must not penalise a PV owner for contributing to the power system in Tasmania

The benefit of avoided transmission and distribution cost belongs to the rooftop power producers. Sharing that benefit across the network results in cross subsidy "between customer and customer classes". This breaches the integrity of the terms of reference that should have been followed by the TER at the time. The method for passing through is already in place with the transitional premium FIT arrangements. There are no extra costs involved or infrastructure to be installed. Solar is a significant benefit to the small PV owners and adds to the Tasmanian economy overall.