

Author name: M. Gill

Date of submission: Friday, 21 October 2016

Submission: The attached submission concludes

- The majority of NSW electricity consumers will enjoy lower electricity costs once the NSW Solar Bonus Scheme (SBS) ends
- The NSW SBS was too generous. Over the life of the scheme eligible solar system owners have recovered almost double their initial investment
- Retailers are currently offering a fair market price for excess solar generation
- NSW SBS customers should install a net meter as savings available from using the electricity are more valuable than the feed in credit
- Net smart meters are available from a number of retailers with no upfront or ongoing charges
- Consumers currently on the NSW SBS will continue to receive significant benefits from their solar system

Speaking for the majority of NSW electricity consumers

Dr Martin Gill

The NSW Solar Bonus Scheme is about to end. Is this such a bad thing?

IPART Request

The NSW Minister for Industry, Resources and Energy has requested the NSW Independent Pricing and Regulatory Tribunal (IPART) review options for NSW consumers currently on the NSW Solar Bonus Scheme (SBS). The minister has given IPART 6 weeks to respond by which time there will be 1 month before the NSW SBS scheme ends.

Summary of findings

The NSW Solar Bonus Scheme (SBS) intended to encourage the installation of domestic solar systems by offering a subsidised feed in credit of 60 cents for every kWh generated by solar systems approved before mid-2010. This subsidy is recovered from all NSW electricity users.

- The majority of NSW electricity consumers will enjoy lower electricity costs once the NSW SBS ends
- The NSW SBS was too generous. Over the life of the scheme eligible solar system owners have recovered almost double their initial investment
- Retailers are currently offering a fair market price for excess solar generation
- NSW SBS customers should install a net meter as savings available from using the electricity are more valuable than the feed in credit
- Net smart meters are available from a number of retailers with no upfront or ongoing charges

Consumers currently on the NSW SBS will continue to receive significant benefits from their solar system.

SBS customers are in the minority

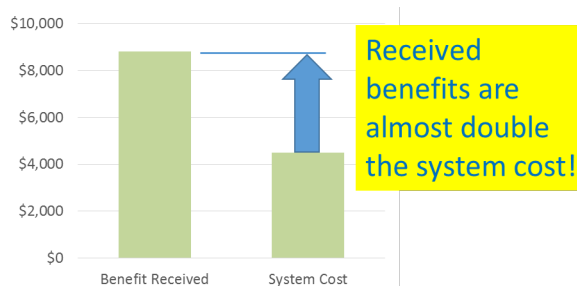
The first point is the NSW Solar Bonus Scheme (SBS) has required 2.9 million NSW electricity users to pay a surcharge on all their electricity use to support generous payments to 150,000 SBS consumers. The end of the scheme and removal of the surcharge means the majority of NSW electricity users will enjoy lower electricity costs.

Stated goal of the NSW SBS

The goal of the NSW SBS was to provide (additional) incentives to consumers prepared to install a domestic solar system. These payments are in addition to the financial incentives offered by the Federal Government. So [“How does the amount of this compensation compare to the cost of the solar system?”](#)

The Solar Choice website tracks the installed price of solar systems in Australia. In a 2011 post the website states *“the average market price for a 1.5kW system was \$2 - \$3 thousand after RECs ... with systems coming in at as low as \$1700”* In the rush to install systems before eligibility for the SBS closed consumers were often forced to pay higher prices. There was also an additional cost to install suitable electricity meters. This suggests an average price for a 1.5kW system on the NSW SBS was around \$4,500.

Calculating the bonus payments involves estimating the amount of electricity generated by an average solar system. A free website provided by the National Renewable Energy Laboratory (USA) uses actual solar measurements to estimate annual solar generation. Using the default values shows a 1.5kW solar system in Sydney should generate 2094 kWh a year. By the time the NSW SBS comes to an end customers will receive payments totalling \$8,794.



Comparing solar system cost to benefits (1.5kW system)

The figures show subsidies paid to eligible NSW SBS customers come to just under double the price they paid for their solar system.

The decision by the NSW Government to subsidise the feed in credit for eligible solar system was in addition to the Federal subsidy. Unlike the NSW SBS scheme the far less generous Federal Government subsidy continues today. The Federal scheme has provided financial incentives enabling around 1.5 million households to benefit from the installation of a solar system.

If the NSW SBS had been less generous then many more NSW households would currently be enjoying the benefits of a solar system. The generous scheme allowed a small percentage of households to receive subsidies totalling double their initial purchase price.

Alternatively if subsidies to NSW SBS customers had been limited to the initial purchase price of their solar system the financial burden placed on the majority of NSW electricity users could have been halved.

The majority of eligible solar systems were installed by households with above average incomes. Some will look at the purchase of a solar system as a financial investment. The figures show the NSW SBS has allowed these households to receive a very healthy rate of return of 14% per annum (well ahead of the 2 to 3% rate of inflation). Unfortunately this high rate of return has been funded by the majority of NSW electricity users not on the NSW SBS.

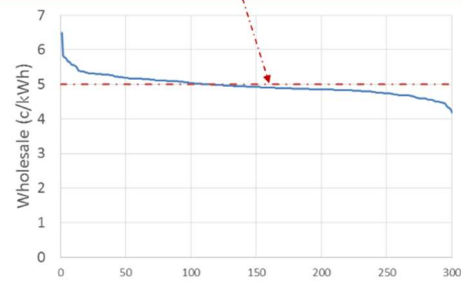
The end of the overly generous subsidy is not the end of benefits flowing to NSW SBS consumers. Having already recovered almost double the purchase price of their solar system they will continue to receive further benefits.

Market Price of Solar Generation

To keep electricity prices down the Government requires all large electricity generators (both renewable and non-renewable) to compete against each other in the National Electricity Market (NEM). Each generator offers to sell their electricity at a certain price. The Australian Energy Market Operator (AEMO) then selects those generators offering the lowest prices. AEMO updates the market price for electricity every 30 minutes.

Using actual 30 minute measurements of solar system output it is possible to calculate the average price of solar electricity generated by consumers on the SBS.

The average price of solar generated by NSW SBS customers is 5 cents/kWh



Average market price of NSW solar generation

The calculation reveals the average price of the solar generated from 2010 to 2013 was 5 cents/kWh. (The slight variation across the 300 households is related to more or less generation in the afternoon).

The NSW SBS paid a fixed price of 60 cents for every kWh regardless of its market price in the NEM. If the consumer receives 60 cents when the real price is 5 cents then **someone** has to pay the difference.

The NSW SBS pays consumers 60 c/kWh



The market price of generated solar is 5 c/kWh

The cross subsidy supporting the NSW SBS

The 55 cent subsidy is recovered by a surcharge placed on all NSW electricity use. The surcharge increases electricity costs for all NSW electricity consumers. Only 5% of NSW household installed a system eligible for the NSW SBS so the remaining 95% of NSW electricity consumers will be better off once they no longer need to pay the surcharge.

Setting a fair feed-in credit

If domestic solar systems were treated like large solar farms then the price of generated electricity would be set by the National Electricity Market (NEM). The above analysis shows the average price in the NEM has been fairly consistently around 5 cents/kWh. This simple analysis suggests offering solar consumers a feed in credit of 6 to 7 cents/kWh reflects the true value of the solar generation.

Suggestions retailers pay a premium feed in credit risks increasing electricity prices

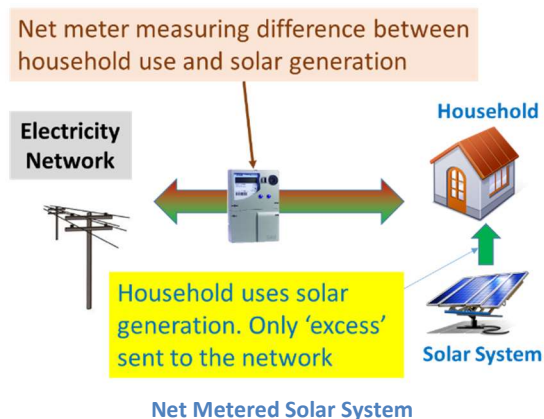
Some retailers are offering a feed in credit above the actual market value. This raises questions about how they are recovering the cost to subsidise the higher credit. An article by the author reviewed a retailer's 'special offer' with a feed in credit of 12 cents/kWh. The analysis revealed most NSW SBS consumers would be \$200 a year **worse off** if they accepted this tariff. The article concluded focussing on the feed-in credit may result in poor energy decisions.

Installing a net meter allows households with a solar system to increase the value of generated electricity to well above the feed in credit of 6 cents/kWh.

Valuing Solar System output with Net Metering

The NSW SBS pays 60 cents for every kWh generated by the solar system. This requires a dedicated electricity meter measuring only the output of the solar system. A second electricity meter is required to measure household electricity use.

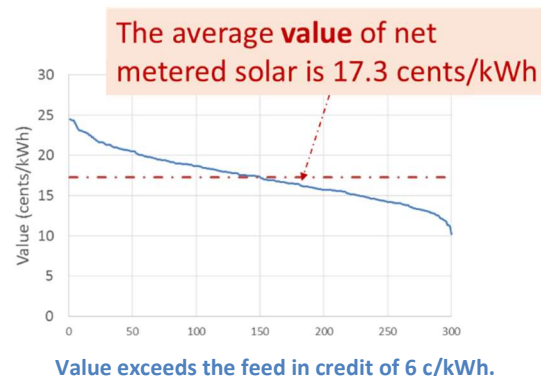
At the end of the NSW SBS consumers should install a 'net' meter. A net meter allows the consumer to use the electricity generated by their solar system.



The above figure shows one meter making net measurements. The net meter allows the household to use the electricity generated by their solar system. The meter also measures the excess solar electricity which receives the feed in credit.

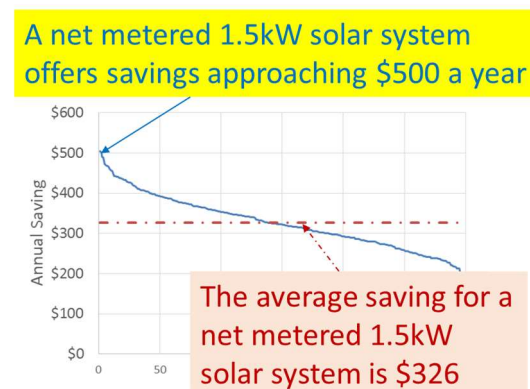
Most of the value of a net metered solar system is the electricity used by the household not the feed in credit

The following shows the value of electricity generated by a 1.5kW solar system for 300 Sydney households with a feed in credit of 6 cents/kWh.



The above reveals the value of the solar generated electricity is greater than the offered feed in credit. In fact as households use more of their solar generated electricity the value of their solar system approaches the price paid for electricity, assumed to be 25cents/kWh.

Consumers currently on the NSW SBS can continue to significantly reduce their electricity costs. The following figure plots annual savings for Sydney households with a 1.5kW solar system.



Annual saving for a net metered 1.5kW solar system in Sydney

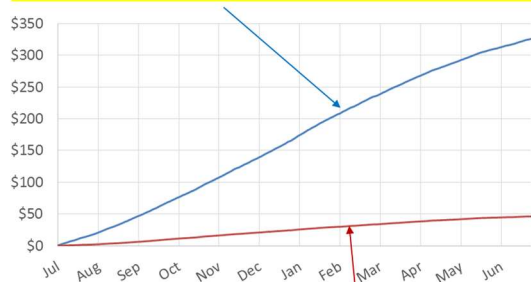
The above shows the significant savings available to NSW SBS consumers even when the feed in credit is "only" 6 cents/kWh. Consumers with a 1.5kW system choosing to use their solar generation can reduce their electricity bill by up to \$500 a year.

Some argue allowing net metering is unfair. For example despite the similarity between electricity generated by a large solar farm and a domestic solar system, only domestic solar systems are allowed to install net metering. As a result a large solar farm only receives the market price around 5 cents/kWh. Allowing households to install net metering increases the value of the same electricity to over 20 c/kWh.

A problem of perception

One observation is the change to a net meter means NSW SBS customers must adjust how they view the value delivered by their solar system. On the SBS the value is clearly shown on the bill. After switching to net metering the actual value they receive from their solar system is no longer shown on the electricity bill.

Value customers receive from a net metered solar system NOT shown on bill



The Solar credit shown on the bill

Value of a net metered solar system is not shown on the bill

The above shows the annual value of a 1.5kW solar system to an average Sydney consumer is \$326. The feed in credit only contributes \$46 towards this total value. Only the \$46 credit is shown on the bill.

The issue is one of perception with the electricity bill only showing the \$46 and not the true value of \$326

Viewing the end of the NSW SBS as an opportunity

Minister Roberts has been a vocal supporter of the retailers lead rollout of smart meters. A quick review of current retail offers reveals several retailers are offering smart meters with no upfront (or even on-going) fees. Picking one of these smart meters ensures NSW SBS consumers can continue to receive financial benefits from their solar system with no additional costs.

Many consumers on the NSW SBS have assumed they were unable to change retailer without losing the subsidised 60 cent feed in credit. While this was incorrect they should now treat the end of the NSW SBS as an opportunity to review the numerous retail electricity offers. Selecting a new tariff and smart meter provides a simple and highly effective means of lowering the total cost of their electricity use. Comparing market rates to standard offers shows savings of at least 10% rising to over 20% for many consumers.

Conclusion

The end of the NSW Solar Bonus Scheme (SBS) should result in lower electricity costs for the majority of NSW electricity users. For the life of the NSW SBS they have been subsidising the generous 60 cent feed in tariff offered to those able to afford to install a solar system before mid-2010.

The NSW SBS was too generous. Subsidies paid to SBS customers have allowed them to recover almost **double** the initial purchase price of their solar system. A less generous scheme could have provided incentives to many more households to install solar.

The market value of the solar generated electricity is around 5 cents/kWh. A number of retailers are offering 6 to 7 cents/kWh reflecting the true value of the solar output (without subsidies).

Installing a net meter allows consumers to increase the value of their solar system. With a net meter most of the value is delivered by using the generated electricity thereby making the offered feed-in credit less important.

The end of the NSW SBS does not mean the end of benefits. Choosing the right meter and tariff allows these households to continue to reduce their electricity costs.

Citation

All references to this article should include the author's name and website www.drmartingill.com.au.

About Dr Martin Gill

Dr Gill is an independent consultant specialising in the provision of advice and data analysis to the energy industry. He has provided this advice to government regulators, distributors, retailers, consumers, asset operators and equipment vendors.

Dr Gill has a broad technical background having personally developed advanced communication modems, burglar alarms, electricity meters, high voltage fault monitors and power quality analysers.

Dr Gill is a metering expert. His innovative products have been recognised with the Green Globe Award, NSW Government's Premier's Award and Best New Product by the Australian Electrical and Electronics Manufacturers Association.

Comments or Questions?

The author is happy to receive comments or questions about this article. He can be contacted at martin@drmartingill.com.au

References

Anthony Robert's letter to IPART (ipart.nsw.gov.au)

Historical solar system cost (solarchoice.net.au)

Average solar system output (pvwatts.nrel.gov)

Source of 30 minute solar data (ausgrid.com.au)

Source of 30 minute price data (aemo.com.au)

Appendices

Review of a tariff offering a high Feed-in credit
"How the 'twitter-sphere' is misleading NSW Solar consumers"

A recent comparison of tariffs available to NSW solar customers
"Comparing Net Solar Tariffs (for NSW Consumers)"

How the 'twitter-sphere' is misleading NSW Solar consumers

Dr Martin Gill

The end of the NSW Solar Bonus Scheme is generating often heated debate on various online forums. Unfortunately well-meaning advice may be misleading affected consumers.

The Twitter-sphere ...

As an energy expert I am constantly alarmed at the comments posted in online forums. Well-meaning advice may lead consumers to choose more expensive energy options.

This article examines a common online misconception suggesting consumers with a solar system should always choose the retail tariff offering the highest solar feed-in credit.

Lowest price of petrol

Australia's petrol price cycle means the price of petrol varies from week to week and suburb to suburb. So:

How far out of your way are you prepared to drive to purchase cheaper petrol?

At first glance this is a simple question with a majority of car owners admitting to choosing the cheapest petrol station to save a couple of cents per litre.

Choosing the highest solar feed-in credit is exactly the same as deciding to purchase petrol from the cheapest petrol station, regardless of where that petrol station is located.

Choosing to purchase the cheapest petrol regardless of the extra distance ignores other costs including the amount of petrol used to drive the extra distance. An accurate calculation requires a comparison of:

- The price of petrol
- The amount of petrol to be purchased
- The fuel economy of the car
- The distance to get to the petrol station

In exactly the same manner consumers with a solar system should compare the total cost of the retail tariff and not select a tariff based only on the offered feed-in credit.

(Deliberately) misleading labelling

Australian Government legislation enforces strict price labelling requirements. This legislation ensures retailers clearly label the cost of products allowing consumers to easily compare prices.

Some electricity retailers keen to capitalise on consumer confusion at the end of the NSW Solar Bonus Scheme are advertising higher than average solar feed-in credits. Unfortunately the majority of consumers choosing these tariffs will pay (significantly) more for electricity.

The total cost of electricity comprises four major components. Broadly these are:

- Solar feed in credit (c/kWh)
- Electricity usage charge (c/kWh)
- A daily charge (c/day)
- A discount (usually for pay on time)

Current Government legislation allows electricity retailers to advertise one attractive figure. To meaningfully compare the retailer offers consumers must consider all the components contributing to the yearly cost of electricity.

Existing Government labelling laws have already addressed this issue in the financial sector. Financial institutions offering loans must show a "comparison rate" allowing consumers to quickly compare the total cost of loans. The comparison rate includes the interest rate and all fees and charges associated with the loan.

The Government should consider introducing similar requirements for electricity retailers. A 'comparison annual cost of electricity' would include all the tariff costs. The figure would allow consumers to quickly compare the various retail offers reducing the potential for a single attractive figure to mislead consumers.

Know how much are you buying

When buying a new car many consumers admit to considering the advertised fuel economy. Most also realise potential fuel savings depend on the distance travelled each year.

When considering an electricity tariff offering a high solar feed-in credit consumers should consider how much electricity will be eligible for the credit. Unfortunately for the majority of customers affected by the end of the NSW Solar Bonus Scheme this figure is not shown on their current electricity bill.

The majority of NSW consumers on the Solar Bonus Scheme elected to have their solar credit calculated on the total amount of electricity generated by their solar system. Current electricity bills therefore show the total amount of electricity generated by their solar system and the total amount of electricity they have used.

Most affected consumers will find they can lower their annual cost of electricity by using their solar generation. This involves installing a new 'net' meter measuring the difference between household electricity use and solar system output. These net values are not shown on current electricity bills.

Importantly net measurements result in less electricity use and less solar electricity earning the feed in credit

Consumers should be aware using values shown on current electricity bills risks over-estimating the value of the solar credits.

Analysis of a retail tariff

While the typical solar feed in credit at the end of the NSW Solar Bonus Scheme is 6 cents/kWh, one retailer is offering a feed in credit of 12 cents/kWh. To qualify for this higher feed in credit consumers must pay an annual fee of \$240 (\$20 per month).

The average solar system size for consumers on the NSW Solar Bonus Scheme is 1.5kW. Assuming their solar system continues to operate efficiently they can expect to generate 1900kWh each year.

The higher feed in tariff is only paid on solar generation in excess of household electricity use. A typical Sydney household with a 1.5kW solar system

will use around 60% of their solar generation. This suggests 760kWh will receive the higher feed in tariff.

A solar credit of 6 cent/kWh is available from several retailers without an annual fee. Assuming all other charges are the same it is now possible to consider if paying an annual fee to receive a higher solar feed-in credit is justified.

6 c/kWh	12 c/kWh
Solar Credit : \$45.60	Solar Credit : \$91.20
Annual Fee : \$0	Annual Fee : \$240
Solar benefit : \$45.60	Solar benefit: -\$148.80

The typical Sydney household is \$194 worse off every year they choose the higher feed in credit

The typical Sydney household, currently on the NSW Solar Bonus Scheme, is almost \$200 a year better off if they choose **not** to pay the annual fee to obtain the premium feed in credit.

Even larger savings are readily available from retailers offering lower electricity usage charges.

Comparing Retail Electricity Tariffs

Government legislation ensures consumers have access to a tariff comparison website. Consumers considering selecting a new retailer tariff are encouraged to visit the Energy Made Easy tariff comparison website.

Unfortunately the legislation providing the tariff comparison website has a number of major failings.

- Not all tariffs are listed on the site
- Energy Made Easy does not include solar feed in credits in its calculations

From the perspective of a consumer representative the first failing is particularly disappointing. Legislation only requires retailers to publish generally available offers on Energy Made Easy.

The same legislation allows retailers to make 'special offers' which are not published. For example the retailer tariff considered above is not shown since it is only available to current customers affected by the end of the NSW Solar Bonus Scheme (estimated to be around 50,000 households).

This is not the first time the author has found a retailer's 'special offer' to be significantly worse than

the market average. The 'special offer' loop hole allowing retailers to avoid listing their tariffs on the Energy Made Easy website should be viewed as a major failing of consumer protection.

Conclusion

Online energy comparison websites offer a relatively easy to use means of comparing available retail electricity tariffs. Unfortunately the same cannot be said of many online forums where well-meaning advice could easily result in consumers making the wrong energy choices.

Of particular concern is online advice suggesting consumers affected by the end of the NSW Solar Bonus Scheme should select the tariff offering the highest feed in credit. Analysis of several of these tariffs reveals they are not the best tariff option for consumers affected by the end of the NSW Solar Bonus Scheme.

It is also suggested current Government legislation is failing to adequately protect consumers. In particular electricity retailers continue to use one attractive headline to entice consumers into accepting high cost tariffs. Requiring retailers to provide an estimate of the total cost of a particular tariff and ensuring all tariffs are listed on Energy Made Easy would be a useful start in protecting consumers.

Citation

Copyright of this article remains with Dr Martin Gill. All references to this article should include the author's name and website www.drmartingill.com.au.

Comments or Questions?

The author is happy to receive comments or questions about this article. He can be contacted at martin@drmartingill.com.au

About Dr Martin Gill

Dr Gill is an independent consultant specialising in the provision of advice and data analysis to the energy industry. He has provided this advice to government regulators, distributors, retailers, consumers, asset operators and equipment vendors.

Dr Gill has a broad technical background having personally developed advanced communication modems, burglar alarms, electricity meters, high voltage fault monitors and power quality analysers.

Dr Gill is a metering expert. His innovative products have been recognised with the Green Globe Award, NSW Government's Premier's Award and Best New Product by the Australian Electrical and Electronics Manufacturers Association.

References

Energy Made Easy (energymadeeasy.gov.au)

Customer Support 1800 [REDACTED] - "Call recorded for training and quality purposes" on 6th Oct 2017

Comparing Net Solar Tariffs (for NSW Consumers)

Dr Martin Gill

Consumers affected by the end of the NSW Solar Bonus Scheme can continue maximising the financial benefit of their solar system while reducing their annual electricity bills by choosing a new retail tariff. The following demonstrates how to use online tariff comparison tools to simplify the process of choosing a better tariff.

Retail Competition

In 2014 NSW electricity consumers were given the opportunity to significantly reduce their electricity costs by choosing a suitable retailer and tariff. One reason consumers on the NSW Solar Bonus Scheme give for not choosing a new tariff is fear of losing the 60 cent solar subsidy. Now the NSW Solar Bonus Scheme is coming to an end they should consider reviewing available tariffs.

To demonstrate available savings the following compares 'Doing Nothing' against choosing a suitable retail tariff and new net meter.

<u>Do Nothing</u>		<u>Install a Net Meter</u>
Low Tariff : \$1542	Minimum 22% saving	Low Tariff : \$1199
High Tariff : \$2095		Saving : \$343

Annual electricity costs of different options

The figures reveal the typical Sydney household can reduce their annual electricity bill by a minimum of \$340 or 22% and as much as 43%! The figures assume household consumption averaging 16kWh/day with a 1.5kW solar system.

Why choosing the right tariff is important

Electricity prices are no longer fixed by the Government. Instead retailers compete against each other by offering different retail tariffs. Electricity bills on different tariffs can vary by hundreds of dollars.

Consumers affected by the end of the NSW Solar Bonus Scheme should install a net meter. Many retailers now also offer suitable meters. As a result choosing a suitable retailer can increase the financial benefit of their solar system and reduce their annual electricity bill.

The task of comparing the numerous electricity tariffs has been made easier using various online tariff comparison websites.

Summary of findings

Consumers affected by the end of the NSW Solar Bonus Scheme should consider installing a net meter and selecting a suitable retail tariff. These changes can potentially reduce annual electricity bills by several hundred dollars a year.

The task of comparing retail tariffs is relatively straight-forward using online websites. The catch for NSW consumers is they must estimate their electricity use *after* installing the net meter:

- Most consumers currently on the NSW Solar Bonus Scheme cannot use information shown on their electricity bill to accurately compare net tariffs
- A relatively simple adjustment of the figures is required to start the net tariff comparison
- Further adjustment is recommended to manually include solar credits (which most tariff comparison websites do not include in their calculations).

Once a short list of retail tariffs has been produced it is recommended consumers carefully review the terms and conditions. Particular attention should be paid to what is required to qualify for any offered discount(s).

Finally call the retailer to confirm the selected tariff is being offered with a new net smart meter.

Exploding some myths

Buying electricity from low cost retailers is not as risky as some consumers seem to assume. In the unlikely event a low cost retailer goes out of business Government legislation automatically assigns a new retailer. The legislation ensures consumers continue to have access to electricity (although the new retailer does not have to offer the same price for electricity as the low cost retailer).

All electricity supplied to consumers is identical. Choosing a different retailer does not change the

supplied electricity. The only difference is the price consumers pay.

Why are there differences?

The typical retail electricity tariff is made up of four parts

- Charges for electricity use (per kWh)
- A daily service charge
- Possible discounts (usually for pay on time)
- Solar credits for excess generation

It is not possible to compare tariffs based on any ONE of these parts. For example tariffs offering generous solar credits often include higher electricity usage charges; and tariffs with low usage charges may have higher daily service charges. Online tariff comparison websites allow consumers to accurately compare the numerous retail tariffs available in their local area.

Correctly valuing solar system output

The average solar system size for consumers affected by the end of the NSW Solar Bonus Scheme is 1.5kW. After installing a net meter their solar credits will be around \$50. This is *NOT* the value of the solar system!

The value of a net metered solar system is the solar credits **PLUS** the value of electricity the household uses directly. For typical Sydney households the value of a net metered 1.5kW solar system will be around \$350 a year.

Energy Made Easy Tariff Comparison Website

The Australian Energy Regulator (AER) is obligated to provide an independent tariff comparison website. Consumers prepared to enter details about their electricity use are presented with the estimated annual cost of each retail tariff available in their area.

Consumers affected by the end of the NSW Solar Bonus Scheme immediately face a problem.

Current electricity bills do not show the values required to compare net tariffs

The following shows how to overcome this problem.

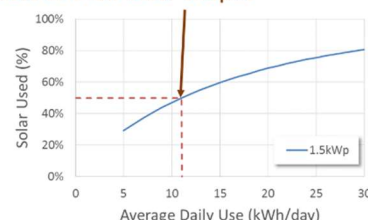
Estimating Solar Use with a net meter

The amount of household electricity use supplied by a net metered solar system depends on several factors

including the size of the solar system and household electricity use (particularly during daylight hours).

The following graph is provided to allow affected NSW consumers to estimate the percentage of electricity generated by their solar system they will use. The graph is produced by analysing solar data from 300 Sydney households with a 1.5kW solar system.

Typical household using 11kWh/day with a 1.5kW solar system will use 50% of their solar output



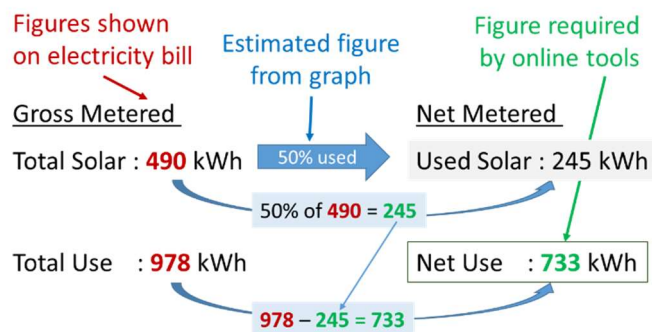
Estimated Solar Use for a 1.5kW solar system

To use the above graph find the average daily use shown on a recent electricity bill. For example the author uses 11kWh/day. The dashed line shows he can expect to use 50% of the output of his 1.5kW solar system.

Using information from the electricity bill

Electricity bills for consumers on the NSW Solar Bonus Scheme show the total amount of electricity used by the household and the total amount of electricity generated by the solar system. Both these values will change once the new net meter is installed.

After the net meter is installed, net use is the total use shown on the current bill **LESS** the amount of electricity supplied by their solar system. This value was estimated in the previous section.



Estimating net figures needed for online comparison websites

Improving the estimated net values

The amount of electricity generated by a solar system changes throughout the year. More electricity is generated during the sunny summer months and less

during the cooler winter months. Similarly household electricity use changes from season to season. To enable a more accurate tariff comparison it is recommended households use a full year of electricity bills (typically four) to calculate the total amount of electricity the household uses and total solar generation.

The two yearly figures for the author are:

- Net Use: 2818 kWh / year
- Net Generation: 865 kWh / year

Still frustrating

Details of how to use Energy Made Easy are included at the end of this article. BUT NOTE:

**Energy Made Easy estimates
DO NOT include solar credits**

For unfathomable reasons the Australian Energy Regulator has decided not to ask solar consumers to enter the Net Generation. Entering this single figure would allow Energy Made Easy to include solar credits in the tariff comparisons. Their decision forces the 1.5 million Australian households with a solar system to manually adjust the presented estimates.

Most consumers can simply assume solar credits will be around \$50. A more accurate value requires manual processing which is described in the next section.

Manually adjusting for solar credits

When using Energy Made Easy a summary of each tariff can be quickly viewed by clicking on the "Offer name and ID". To manually adjust the estimated bill locate the feed-in tariff shown towards the bottom of the summary.



Locate the feed-in tariff on the summary

**Solar feed-in tariff
shown towards
bottom of tariff
summary**

The following shows the five lowest cost tariffs in the author's area along with a manual adjustment for solar credits.

Retailer	Offer name and ID	Contract	Solar	Estimated bill incl. GST	Estimated bill with all discounts incl. GST	Solar Credit cents/kWh	Final Estimate
dodo POWER & GAS	Ausgrid Res No Term Market Offer (E2EAR-MAT1) DOD148518MR	No contract term \$0 exit fee	☀️	\$961	\$826	5	\$783
COMMANDER	Ausgrid Commander Residential No Term Market Offer (Single Rate) (CE2EAR-MAT1) MZE130542MR	No contract term \$0 exit fee	☀️	\$987	\$848	5	\$805
red energy	Easy Saver 10% - Residential RED175711MR	No contract term \$0 exit fee	☀️	\$946	\$852	5	\$809
POWERSHOP	Standard Saver POW162193MR	No contract term \$0 exit fee	☀️	\$1,072	\$916	7.2	\$854
dodo POWER & GAS	Ausgrid Res Standing Offer (E2EAR-SAT1) DOD148890SR	No contract term \$0 exit fee	☀️	\$961	\$961	5	\$920

Manually extracted from the tariffs

Manual adjusting figures to include solar credits

Most of the value of a net metered solar system is delivered by the amount of electricity the household uses, not the solar credits.

The best tariff is an individual thing

Annual electricity use after the net meter is installed makes the biggest difference when comparing tariffs. This does not mean consumers can just look at the usage charges as the daily service charge and offered discounts can also make a big difference. For example one retailer offers a low charge for electricity use, higher than average solar credit and significantly lower daily service charge.

Retailer	Offer name and ID	Contract	Solar	Estimated bill incl. GST	Estimated bill with all discounts incl. GST	Solar Credit cents/kWh	Final Estimate
dodo POWER & GAS	Ausgrid Res No Term Market Offer (E2EAR-MAT1) DOD148518MR	No contract term \$0 exit fee	☀️	\$961	\$826	5	\$783
mojo	Energy without Benefits MOJ171457SR	No contract term \$0 exit fee	☀️	\$1,073	\$1,073	7.3	\$1010
mojo	Energy with Benefits (Annual EnergyPass™) MOJ171412MR	No contract term \$0 exit fee	☀️	\$1,146	\$1,146	7.3	\$1083

Importance of comparing all tariff charges

Using Energy Made Easy reveals despite the attractive features of this tariff it is still a more expensive option for average consumers. The tariff would benefit consumers with well above average daily consumption.

An important point is the lowest cost tariff for one consumer may not be the lowest cost option for another. Energy Made Easy allows consumers to enter their own consumption figures to compare all tariffs available to them.

Always check "Special Deals"

Advertisers use attractive headlines to generate interest in their product, for example one widely promoted retailer offers a generous solar credit of

10 cents/kWh and a discount of up to 15% off the total bill. These figures provide attractive headlines but before selecting any special deal it is worth using Energy Made Easy to compare estimated costs.

Tariff offering the higher Solar Credit increases annual costs by \$69

Retailer	Offer name and ID	Contract	Solar	Estimated bill incl. GST	Estimated bill with all discounts incl. GST	Solar Credit cents/kWh	Final Estimate
click energy	Click Shine Saver - Domestic CL1183757MR	No contract term \$0 exit fee		\$1,188	\$1,010	7	\$950
click energy	Click Shine - Domestic CL1183763MR	No contract term \$0 exit fee		\$1,188	\$1,105	10	\$1019

Comparing tariffs with different solar export prices

Analysis shows despite being promoted as a 'special deal only available to group members for a limited time' the offered tariffs are more expensive than tariffs offered by other retailers.

Smart Meter Options

Having shortlisted the best tariffs the author rang the retailers to discuss their smart meter options. At this time the majority of low cost retailers are still preparing their smart meter offers. Until he can confirm the new meter continues to make separate (gross) measurements to the end of the NSW Solar Bonus Scheme and he can review all terms and conditions associated with the tariff he is not going to change his current retailer.

Conclusion

Consumers affected by the end of the NSW Solar Bonus Scheme should consider installing a retailer offered smart meter. Rather than "Do Nothing" or accept a meter from their existing retailer it is recommended consumers consider using a tariff comparison website to review all available tariffs.

The author estimates it took less than an hour to use Energy Made Easy to compare all available tariffs and call several retailers to discuss their smart meters. The hour of effort has the potential to reduce his annual electricity bill from \$1047 to \$809, a saving of \$238 or 23%! Brief analysis of the typical Sydney household suggests similar savings are available to most consumers.

About Dr Martin Gill

Dr Gill is an independent consultant specialising in the provision of advice and data analysis to the energy industry. He has provided this advice to government regulators, distributors, retailers, consumers, asset operators and equipment vendors.

Dr Gill has a broad technical background having personally developed advanced communication modems, burglar alarms, electricity meters, high voltage fault monitors and power quality analysers.

Dr Gill is a metering expert. His innovative products have been recognised with the Green Globe Award, NSW Government's Premier's Award and Best New Product by the Australian Electrical and Electronics Manufacturers Association.

Citation

Copyright of this article remains with Dr Martin Gill. All references to this article should include the author's name and website www.drmartingill.com.au.

Comments or Questions?

The author is happy to receive comments or questions. He can be contacted at martin@drmartingill.com.au.

References

Energy Made Easy (energymadeeasy.gov.au)

One Big Switch (onebigswitch.com.au)

Using Energy Made Easy

The Energy Made Easy tariff comparison website is provided by the Australian Energy Regulator. Unlike other tariff websites it independently compares **all** available tariffs.

Using the website is straight forward requiring only a few details to be entered.

Search for energy offers

i To search for electricity and gas offers available in your area, please enter your details.

What kind of offer are you looking for? ☒ Home ☐ Small business ✓

What is your postcode? So we can show offers available to you ✓

What would you like to compare? ☒ Electricity ☐ Gas ☐ Both electricity and gas ✓

Basic information required by Energy Made Easy

Most households are choosing Single rate tariffs. While Energy Made Easy also supports Time of Use tariffs estimating the required electricity use is beyond the scope of this current analysis.

Your electricity usage

What is your electricity tariff type? ☒ Single rate ☐ Time of use ☐ Flexible pricing ☐ I'm not sure ✓ **Single Rate**

Do you have a controlled load for your hot water or another appliance? ☐ Yes ☒ No ✓ **No load**

Do you have your kilowatt hour (kWh) usage from a recent bill? ☒ Yes ☐ No ✓ **Have bill**

Enter details about the required tariff

Finally enter the estimated annual electricity use calculated using several bills and two dates covering the billing period (preferably a full year).

Electricity bill 1

Start date ✓

End date ✓ **A full year**

Standard (peak/anytime) ✓ **Enter estimated annual electricity use**

Enter the estimated annual electricity use

After agreeing to the terms and conditions select 'Show energy offers'. A large number of results are then presented.

i We've found 72 offers that meet your criteria, ranging from \$905 to \$2,161.

Use Filter search to reduce the number of offers

72 tariffs are offered but not all are suitable

In the author's area Energy Made Easy lists 72 tariffs not all being suitable for solar customers. The next step is to use the 'Filter search' option to only show tariffs with solar options.

Filter search

Contract term

- ☒ No contract term
- ☐ 1 year
- ☐ 2 years
- ☐ 3 or more years
- ☐ Ongoing contract with benefit period
- ☐ Other

Options

GreenPower At least % GreenPower **Only show offers with solar options**

☒ I have solar panels, and only want to see offers with solar options

Only show tariffs with solar options

After selecting Apply filters 49 tariffs are listed supporting solar options. To reduce this further the author chose to select only those tariffs with no contract term reducing the number of tariffs to 26.

Discounts

By default Energy Made Easy shows the estimated cost of each tariff for a full year. These are presented from the least expensive to the most expensive tariff *without* any discounts.

Retailer	Offer name and ID	Contract	Solar	Estimated bill incl. GST	Estimated bill with all discounts incl. GST
red energy	Easy Saver 10% - Residential RED175711MR	No contract term \$0 exit fee		\$946	\$852
dodo POWER & GAS	Ausgrid Res Standing Offer (E2EAR-SAT1) DOD148890SR	No contract term \$0 exit fee		\$961	\$961
dodo POWER & GAS	Ausgrid Res No Term Market Offer (E2EAR-MAT1) DOD148518MR	No contract term \$0 exit fee		\$961	\$826

By default estimated bills are shown without discounts

By default estimated bills are shown without offered discounts

The last column shows the estimated cost if all discounts offered by the retailer are applied. While the terms and conditions vary the main requirement is to pay the outstanding amount before the due date (so called Pay on Time). Agreeing to Pay on Time can save as much as 20% making it well worth the effort.

Points of Clarification

Estimates Only

Tariff comparison websites can only estimate annual electricity bills. Changes in household electricity use and solar system output will affect the actual electricity bill.

Curve showing Estimated Solar Use

The estimated Solar Use for a 1.5kW solar system presents an average value obtained from 300 Sydney households with a solar system. It is emphasised the value is an average value which should be adjusted slightly depending on known electricity use during daylight hours. For example consumers who are home during daylight hours can increase the value slightly, while households left unoccupied during daylight hours should use a slightly lower figure.

Using Interval Data

Consumers in the Ausgrid area who are proficient with Excel should consider asking their retailer for a copy of their interval data. Their retailer must provide up to two years of data free of charge. Analysis of this data can be used to improve the accuracy of the estimated solar use.

Deliberately increasing Daytime electricity use

Once the net meter is installed consumers choosing a fixed tariff should consider deliberately shifting some of their electricity use to daylight hours. For example doing the washing, running the pool pump and programming the dishwasher to run. Adjusting electricity use in this way will further increase the savings from the solar system.

Warning for load shifting on Time of Use tariffs

Consumers choosing a Time of Use tariff must be much more careful about which appliances they choose to run during daylight hours. If the appliance uses more electricity than the solar system is generating they will pay the higher daytime rates. For this reason shifting the wrong appliances to more expensive Time of Use periods can actually increase electricity costs.

Minor Problem with Energy Made Easy

The author found the Energy Made Easy website to be unstable. On a regular basis the website would reject valid data entries. Once this occurs the author found it was necessary to completely close the browser and start all over again. The instability was reported to the AER who have responded they are working on a fix.

Installing a Net smart meter before 1st Jan 2017

Consumers on the NSW Solar Bonus Scheme are reminded installing a new smart meter only making net measurements before the end of the 2016 will result in the loss of solar credits. Consumers accepting a new smart meter should ask the retailer to confirm the new smart meter continues to make separate (gross) measurements of solar system output to the end of 2016. The retailer should also confirm they will remotely switch the meter to make net measurements from 1st Jan 2017.