



17th of September 2012

Queensland Competition Authority
GPO Box 2257

Brisbane QLD 4001

Via email to electricity@qca.org.au

**RESPONSE TO THE QUEENSLAND COMPETITION AUTHORITY'S ISSUES
PAPER: ESTIMATING A FAIR AND REASONABLE SOLAR FEED-IN TARIFF
FOR QUEENSLAND**

Dear Sir, Madam

Infinity Solar Pty. Ltd. as a stakeholder within the Queensland Renewable Energy Industry welcomes the opportunity to provide a response to the Queensland Competition Authority's issue paper titled "Estimating a fair and reasonable solar feed-in tariff for Queensland".

Should you require further information or wish to clarify items in our response please contact either Daryll Walk, Director or George Kastner, Project Manager on 07.3834 4705

Yours faithfully

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**ESTIMATING A FAIR AND REASONABLE SOLAR FEED-IN TARIFF FOR
QUEENSLAND**

ISSUES PAPER

SUBMISSION TO THE QUEENSLAND COMPETITION AUTHORITY

17TH OF SEPTEMBER 2012

This submission, which is available for publication in its entirety, is made by:

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Introduction

Infinity Solar is renewable energy company based in Queensland with its head office located at 43 Musgrave Road, Red Hill, Brisbane. Infinity is a market participant who is currently ranked as number 10 nationally in the Australian PV-market and is market leader in Queensland. Infinity Solar at present sells and installs approximately 1.5MWp of solar systems in Queensland per month, with the majority being residential systems in the Energex and Ergon networks. Infinity Solar was established in 2007 and currently employs 95 staff at 11 locations including sites in NSW and the Northern Territory.

Preamble

Infinity Solar understands that the current issue paper refers to residential small scale solar systems currently eligible under the Queensland Solar Bonus Scheme. As such these systems are defined as smaller than 5kW (AC) generation capacity and at sites consuming less than 100MWh per annum. Infinity Solar is aware that the terms of reference define a small scale PV-system as 10kVA per phase. Infinity Solar wishes to point out that the annual average generation capacity of a 5kWp solar system is approximately 22.5kWh/day, relatively similar to the average daily consumption of a typical Queensland household. Infinity Solar also wishes to point out that any system above 5kW capacity can be identified as embedded generator used for on-site generation of energy for self-consumption similar to any co- or tri-generation plant. Any surplus generation exported into the grid is subject to individual negotiations between the generator and the retailer, with the values determined by size, location, time of export and more. The network has technical authority and can prescribe or enforce compliance.

Executive Summary



Infinity Solar welcomes the Minister's Direction to the QCA to investigate and report on a fair and reasonable value for energy generated by small scale photovoltaic (PV) systems and exported to the Queensland electricity grid, the mechanisms by which these value(s) can be implemented and the potential for retailer contributions reflecting the benefits to retailers.

Infinity supports a change from the present Queensland Solar Bonus Scheme as being a distributor funded scheme to a fully retailer funded scheme, with the preferred metering scheme being net-metering as the only equitable metering scheme for all account holders. Net-metering allows account holders with small scale solar systems installed to use their own generated energy to off-set their usage when the solar system is generating, thus reducing the import of energy from the grid. This equals to account holders "switching off" loads, an undeniable right of any electricity account holder. Since the self-consumption represents a better value to the account holder than exporting energy, net-metering promotes behavioural change resulting in loads shifted from the evening peak more into daytime. This result is in line with the stated aim of "bending the peak-load curve" as promoted by the Queensland Government in their Energy Roadmap.

Any energy generated surplus to in-situ loads can be metered as export into the grid, and this exported energy will benefit the energy retailer of the account holder. Under the proposed retailer funded scheme the retailer shall determine a fair and reasonable value for the energy exported and credits the account holder with this value each billing cycle, without any cost to the distributor or impact on electricity prices for the R-component. Infinity supports the establishment of a compulsory minimum feed-in tariff reflecting the location and size of the small scale solar system, with retailers able to reflect their added benefits like customer retention, reduction of churn rate or "green energy" marketing value in market offers.

Any exported energy, when on-sold, still generates network revenue at the same level as any grid-supplied energy. Any self-consumed energy should not be subject to network charges, since this energy does not utilise neither transmission nor distribution networks. Network cost recovery should only be based on a user-pay system, with charges levied through service-to property charges and charges per energy-unit supplied.

Compulsory gross-metered feed-in tariffs would force small scale solar system owners into paying for network charges not incurred, without receiving any benefit for reducing network congestion, moving demand into daylight hours, reducing transmission losses and potentially deferring network augmentation. Any gross metered scheme requires dedicated export meters and wiring delivering generated energy to the location of this meter at the export point. These requirements will burden the system owner with additional costs and require often the provision of new metering cabinets or infrastructure costs.

Specific Comments to Chapter 3, Paragraph 1 of the Issues Paper:



(a) How should the term fair and reasonable be interpreted? Should it be interpreted as a subsidy-free value that reflects the benefits to retailers of electricity generated from small-scale PV generators? If not, how should it be interpreted and why?

Infinity Solar interprets the term fair and reasonable value as the sum of all benefits to the retailer and the network, free of any subsidies, based on the location of the small scale PV generator and the time of generation (Sic. export). These benefits include avoidance of energy purchase, reduction of energy purchase cost due to merit order effect, change of Net System Load Profile share, the premium for pure PV-generated energy, avoided NEM participation fees, ancillary avoided service charges, avoided energy losses from transmission and distribution, negative values from retail operating cost if additional to a fixed charge under a customer allowance, value from potential peak reduction, network congestion reduction, network augmentation deferral, network quality and reliability improvements.

(b) Should the Authority include the benefits associated with PV exports to other parties (all customers and distribution entities) in setting the fair and reasonable value? Why?

Infinity Solar submits that all benefits, irrespective to which party, make up the sum of the fair and reasonable value, as explained under section a.)

Specific Comments to Chapter 3, Paragraph 2 of the Issues Paper:

(a) Has the Authority correctly determined which costs a retailer can avoid when on selling PV exports?

Infinity Solar agrees with the Authorities methodology for determination which costs are avoidable when on-selling PV exports. Infinity Solar also submits, that the list of avoidable costs is not exhaustive, and does not include any avoidable costs for the network, nor marketing values like corporate image creation (“being green”) for the retailer and network, customer retention and acquisition costs.

(b) Is it reasonable to use cost estimates from notified prices to determine the feed-in tariff? If not, which cost estimates should the Authority consider using?

Infinity Solar believes that using the cost estimates from notified prices is the most efficient method for determining the feed-in tariff. Infinity Solar encourages the Authority to develop a methodology which accounts for the location, type of



network and time of generation to more accurately determine the true fair and reasonable value of PV-exports.

(c) What proportion of distribution losses are avoided when PV exports are on-sold?

Infinity Solar submits that distribution losses are most likely entirely avoided, since PV-generated energy exported to the grid will be consumed at the load in closest proximity, therefore eliminating distribution losses.

(d) Is it reasonable to split retail margin and headroom between the retailer and the PV exporter? What are some of the considerations in providing a greater proportion of the costs to either party?

Infinity Solar submits that retail margins and headroom is not attributable to the PV exporter, since the retailer recovers these margins at time of on-sell to another customer. It seems disingenuous that the supplier would have to pay part of the retail margins for an on-seller.

(e) Is it fair and/or reasonable to have different FIT based on geographical locations in a market with the Uniform Tariff Policy in place? What are some of the benefits or complications of creating geographically based FIT?

Please refer to our response to Chapter 3.1, section a.)

(f) What other issues should the Authority consider in determining the fair and reasonable value of PV exports.

Specific Comments to Chapter 4, Paragraph 1 of the Issues Paper:

(a) What form of regulation should be applied when implementing a fair and reasonable feed-in tariff in Queensland? Alternatively, should the fair and reasonable tariff be determined by market competition alone, without regulatory intervention?

Infinity Solar supports a regulated, minimum feed-in tariff representing the fair and reasonable value as determined by the Authority, with a voluntary additional feed-in premium as determined by the individual retailer based on market competition and marketing strategy. The sum of the regulated fee-in tariff plus the voluntary premium should be marginally higher than the theoretical true fair and reasonable feed-in tariff, since it will include variable and retailer specific inducements to PV-customers. Infinity Solar wishes to point out that in areas without any real market competition (e.g. Ergon network area) the Authority would have to mandate the additional feed-in premium to avoid the negative effects of lack of competition.



(b) Which regulatory approach is most appropriate to support competition in the Queensland electricity market, while recognising the need for certainty for small PV system owners?

Infinity Solar submits that a certainty about the term the feed-in tariff will be available to the owner of a small scale PV-system is required as an incentive for relatively high capital expenditure. This guaranteed period should at the very least match the expected pay-back periods for the PV-systems.

(c) What evidence is available of the number of solar PV customers receiving voluntary feed-in tariff premiums in Queensland? Does the level of these tariffs represent a fair and reasonable value for the electricity exported by solar PV customers?

Infinity Solar has customers receiving voluntary feed-in premiums between 4 and 10cents/kWh over and above the compulsory feed-in tariff under the Queensland Solar Bonus Scheme. The variance in these premiums demonstrates clearly that retailers value PV-export very differently. The value of these voluntary premiums alone does not represent the true fair and reasonable value of the PV-export.

(d) What, if any, specific arrangements might be required when implementing the fair and reasonable feed-in tariff in the Ergon Energy distribution area? In particular, should different forms of regulation be used in the Energex and Ergon Energy network areas?

Infinity Solar submits that for equality reasons and social justice reasons alone different forms of regulation for the Ergon and Energex areas are required. Due to a lack of knowledge about the Ergon network Infinity is not able to make any recommendations beyond that.

(e) Are there any other factors (besides the competitiveness of the retail electricity market) that the Authority should consider in determining an appropriate form of regulation to apply in Queensland?

Infinity Solar wishes to submit that small scale PV-system have a variety of external benefits such as reducing air-conditioning loads, making owners more aware of their energy usage and behaviour, improving asset values or increasing resale values. None of these values can easily be monetised, but should be considered when determining the compulsory minimum feed-in tariff. Care should be taken not to de-incentivise PV-solar , but to use the feed-in tariff as a means to acknowledge the value of the energy exported only because no immediate load is present. Infinity Solar submits that the ideal sized PV-system will predominantly be used for self-consumption, and only spilled energy will be exported (or stored for later use)



Specific Comments to Chapter 4, Paragraph 2 of the Issues Paper:

(a) Is a net or gross metering arrangement most appropriate in Queensland, and why?

The Authority's Issue Paper states under Chapter 4, Paragraph 2: "In contrast, gross metering arrangements do not suffer from this problem. Gross metered PV customers draw their entire energy requirement from the network and therefore pay a network charge for all of their consumption (fixed and variable components) the same as other, non-PV customers. This approach could be considered more equitable than net metering in circumstances where network charges are not cost reflective, as it reduces the risk of DUOS under recoveries and consequential tariff adjustments that could impact all customers in later years."

In the above text it refers to a gross scheme as being more equitable as it apportions network charges to the usage of house as it would have been before any generation. We disagree with this assertion based on a number of points as follows:

As stated above, a solar PV system leads to a real reduction in the energy use at that property. This is the electrical reality of such a system and therefore we contend that the comment that they should be "charged for all their consumption" as though a solar PV system does not exist is incorrect and will only lead to financial benefits to retailers at the expense of the general public.

With reference to concerns net-metering is less equitable than gross-metering due to potential DUOS and TUOS under-recoveries because of reduced demand, we wish to point out that retailers are charged for network costs according to energy sales, which means that any PV-export that a retailer on-sells will incur the full network tariff. We also wish to point out that "off-setting" a load by supplying it from one's own generator has the same effect as switching the load off. Any attempt to recover network costs from inactive (self-supplied loads) equates to the attempt of charging a customer for using a lantern to light his house, because he might turn on a light bulb at some other day (for which he will be charged like any other customer, of course)

Solar PV generation is a negative load and is a means of households reducing their energy usage and controlling their power bills. This is no different to a customer investing in energy efficient devices such as LED lighting and heat pumps. All of these actions and devices have the effect of reducing energy demand and cost at the property.

We believe that any regulatory action, such as gross metering of solar PV systems, impacts on an individual's right to control the costs at their property and is inequitable to that customer. Infinity Solar does not believe that the owner of the energy generated by a small scale PV system shall be forced to sell his commodity at a dictated price, if he can achieve better benefits through self-consumption. Infinity also questions the legality of any such "forced sell"



Compulsory gross-metering with a feed-in tariff offering at a lower level than the actual cost of imported energy can be compared to somebody having a vegetable garden being forced to sell his produce at very low prices (the fair and reasonable price by force is the actual charged cost of import minus all costs excluded as outlined in Chapter 3.2 of this Issues paper) and be expected to buy the same quantity of produce at full retail price.

Gross-metering schemes in comparison to net-metered schemes require a more complex wiring design as well as metering hardware, resulting in a higher cost per kWp installed. This higher cost in turn will increase the levelised cost of energy produced by the small scale PV-system, while at the same time reducing the benefits to the owner through remuneration not reflective of the true value per kWh to the owner, but reflecting only the avoided cost to the retailer.

As mentioned in our introduction, we broadly support the current residential scheme of an 8 cent feed-in tariff. At this rate, it provides an active incentive for the customer to minimise the amount of energy they feed into the grid as it is significantly below the levelised cost of energy of the power generated by the system. As a result, we are currently seeing smaller solar PV systems that are matched to the load of the property or we are seeing slightly larger systems combined with a shift in behaviour to move energy usage into the solar generation window. Consequently, we are already seeing the current net metering scheme shift the residential peak load into an earlier time period which is undoubtedly advantageous to the network and will lead to a reduction in network investment over the short, medium and long term. This is further evidence that a net metering system will provide lower power costs to all users – not just those who invest in solar PV.

In addition to these points, we believe that a net metering arrangement has the ability to transform the Queensland electricity network. A net metering arrangement combined with the imminent change to time of use tariffs has the ability to achieve this. Under the proposed tariffs listed, we believe that the peak and shoulder tariffs will provide a powerful incentive for customers to shift their demand from these periods into the solar PV generation window. This can be achieved by a change in behaviour, or further investment by the customer into systems that can store solar PV generation to be used at peak times. As this residential peak is a major driver of ongoing network investment, we contend that the combination of a net metering arrangement and the current proposed peak tariffs will lead to a significant change in behaviour. Interestingly, the market is already experiencing significant interest in these systems; however any change to a gross scheme would only lead to higher peak use and network investment.

(b) Are the benefits to retailers different under net and gross metering arrangements?

We strongly believe the only party to benefit from a gross metering scheme is the energy retailers who increase their ability to sell kilowatt hours to their customers and remove a major tool that customers have at their disposal to reduce their power bills. A gross scheme would allow the retailers to continue to make



massive profits at the expense of residential customers rather than forcing them to adapt their business model to a new reality.

On the contrary, as discussed above, we believe a net metering scheme will benefit all power users in Queensland through lower investment caused by a shift in behaviour from the residential peak.

(c) Are there any other factors the Authority should consider when recommending an appropriate metering arrangement?

It is also interesting to note that with the recent reduction in the cost of solar PV systems, this option for customers to reduce their power bills and determine their own future and power costs is available to the vast majority of customers. Therefore, we believe it is inequitable to disadvantage those customers who act to control their own power costs, when this option is available to almost every household.

We note in the draft the reference to gross schemes in the Northern Territory and the ACT. We currently operate in the Northern Territory and from our meetings with Power and Water it has been confirmed the reason for their gross scheme is so that they can understand the exact generation from the systems in their jurisdiction. They also agree that the electrical reality of the solar PV system is that much of the generation is used within the property and as a result they set their gross tariff in line with the import tariff for this property. We believe this is the only justifiable position for a gross tariff and needs to be legislated on this basis (i.e. that the export tariff is in line with the import tariff.)

Specific Comments to Chapter 4, Paragraph 3 of the Issues Paper:

(a) How often should the fair and reasonable value be reviewed or updated?

Infinity Solar submits that the fair and reasonable value should be reviewed and updated annually, under the provision that previous values remain unchanged for the term they were guaranteed. Infinity Solar proposes to review the fair and reasonable values at the same time as network tariffs are reviewed, discussed and subsequently implemented. This procedure would allow stakeholders the same input and participation as presently is available for normal network tariffs.

(b) Should the Authority recommend a flexible review mechanism which allows updating the value in response to relevant changes and developments?

Please refer to our response under Chapter 4, Paragraph 3, section a.)

(c) If a flexible review mechanism is recommended, what criteria should be applied when deciding if an update to the value is necessary?

Please refer to our response under Chapter 4, Paragraph 3, section a.)



(d) What are the implications for the current review of a potential transition to a national feed-in tariff established through COAG processes?

Infinity Solar does not believe that any recommendation listed in its response to the issues paper has adverse implications for a transition to a national feed-in tariff established through the COAG processes. Infinity Solar would welcome the introduction of a national feed-in tariff.