



Clean Energy Council

**Senate Standing Committee on Environment,
Communications and the Arts**

**Inquiry into Renewable Energy (Electricity)
Amendment (Feed In Tariff) 2008**

Clean Energy Council Submission

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Clean Energy Council

The Clean Energy Council is Australia's peak national clean energy industry association, representing several hundred members with business interests in clean energy. The Council was formed in 2007 following the merger of Business Council of Sustainability (BCSE) and AusWind and is headquartered in Southbank, Melbourne.

Our Vision

The vision of the Clean Energy Council is to be Australia's most influential clean energy organization.

Our Mission

We are committed to leading industry development, technological innovation and behavioural change to positively impact the climate.

Solar PV Directorate

The Clean Energy Council has an established and effective PV Directorate working group. Membership includes a broad cross section of the solar PV industry with representation from solar PV:

- Manufacturers
- Suppliers
- Distributors
- Dealers and installers
- Research institutions
- Networks

Members of this Directorate have extensive experience and deep knowledge in solar PV and the workings of the Australian marketplace and all are keenly interested in driving a mature and sustainable Australian solar PV industry.



Executive Summary

The Clean Energy Council fully supports the adoption of a national gross feed in tariff (FIT) for solar photovoltaics (PV) as a way of creating material long term markets and driving transformation of the Australian solar PV industry.

The industry aspires to move beyond the residential sector and into commercial application in such a way that solar PV can ultimately play a significant role in meeting peak demand using a clean source. Key to driving investor dollars into large commercial roofs, agriculture roofs/business etc is delivering a financial return from the solar PV asset.

It is the view of the Council that FIT's are the best way of providing that financial framework and further are necessary to overcome the market failure that currently exists of failing to reward solar investors with peak power pricing.

Government intervention is the necessary precondition to underpin the maturity and sustainability of a solar PV industry but that intervention should be targeted on the failure and tapered once the failure is overcome.

The policy framework needs to be long, loud and legal and should include the following key principles:

- Legal Framework – embedded in legislation
- Long enough – to provide investment certainty 20 years
- Tariff high enough to provide a return on the capital investment
- Programme uncapped

In the last 18 months, the Australian solar PV industry has grown significantly and has continued to meet the rapid growth in demand through adjusting business models, recruiting new staff, investing in new resources. It is thus important that policy makers take the following into account when designing future support mechanisms for the technology to ensure the industry continues to evolve.

1. Clarify the policy objective
2. Reward production not capacity
3. Adjust existing subsidy / tariff levels very carefully to avoid dislocation

The Council supports transitioning the industry from rebates to an all sector inclusive gross FIT before July 2010.



Global and Australian Industry Trends

Growth in solar PV globally has for the last 5 years averaged at 47% due to continued strong growth in the key markets Germany, Spain, California and Japan and new demand emerging from new markets Italy, France.

Globally 2826MW was installed in 2007, a 62% growth from the prior year.

In Australia, growth for both the grid and off grid markets is tracking at 15-20%. 12.2MW of solar PV was installed in Australia last year – 50% in the grid market on the back of the doubling of the rebate programme, PVRP in May 2007.

The grid market now accounts for an estimated 18% of installed capacity nationally.

The market has traditionally been founded in remote and regional parts of Australia. Rising energy prices and long and expensive supply chains continue to encourage uptake in these markets but there is enormous growth potential in the grid market which in the coming years is expected to outstrip growth in the off grid market.

Ten years ago Australia used to be one of the largest markets for solar PV but its competitiveness globally continues to decline as more countries adopt FIT's and consequentially bring forward substantial demand from all sectors, commercial, industrial and enormous utility scale projects.

Birth of an industry

The solar PV industry in Australia is changing rapidly, with new players entering the market and new business models challenging those of the incumbents.

	Business Numbers
Solar Manufacturer	1
Suppliers	Approx 35
Wholesalers	Approx 50
Dealers	Approx 400
Accredited Installers	600

An estimated 3000 plus people are now employed in the industry nationally.

Industry Aspiration

The aim of any programme should not be that it become a never ending industry support mechanism. We believe that an appropriately structured gross FIT will provide the most effective way to catalyze rapid uptake, diffusion of solar PV, industry growth and ultimately grid parity.



There are a variety of objectives that an appropriately designed gross FIT can offer:

Short term - industry support. The previous government support schemes have built up the PV industry as can be illustrated in the DEWHA figures for the ever increasing number of applications it is processing under the now labeled Solar Homes and Communities Programme. The nature of these government funded rebate programmes has grown the market place and the renewable energy industry has responded. One example in this area is that the number of accredited installers has nearly trebled over the past 15 months.

Medium term - opportunity to improve learnings, value add and benefit from existing and previous funding programmes. Without some level of support the values and learnings from programmes such as Solar Cities will not be truly realized. Based on the longer term aspirations of the industry and price point expectations, this medium term provides a time to become prepared; for utilities to understand issues related to grid connection of PV systems, for standards to be better developed, for industry training programmes to become more readily accessible.

Long term - reaching grid parity in the pricing of photovoltaics to centralized grid costs. Although Australia will only ever be a small market for photovoltaics, as part of the economic development of PVs across the world it is clear that grid parity in pricing will be reached in the next decade. The approaching of this parity would result in significant issues on existing electrical infrastructure throughout Australia if providers are not prepared for this time.

The Value Attributes of solar PV

Solar PV is a technology that provides many values that are currently unrewarded in the Australian marketplace. The value of having de-centralised technologies is not recognized in the electricity market nor do the market rules recognize the benefit of having local production or provide an effective and efficient mechanism for distributed energy providers to trade in the wholesale market.

This market failure has and continues to bias capital investment away from solar PV.

The significantly unrewarded values of solar PV include:

Network Augmentation – solar PV value in being able to defer investment in network augmentation is grossly under appreciated and disputed by many.

Peaking Value – solar PV systems produce energy in the middle of the afternoon when the demand for energy is both at its highest and most expensive

Transmission Losses – solar PV systems produce energy where and when it is needed thus providing reduced transmission losses because the energy does not need to be transported great distances.

Environmental Benefits – solar PV systems provide both clean green energy and also contribute to improved local air quality conditions.



Societal Benefits – through distributed solar PV systems, thousands of new green collar jobs are created and

Existing Policy Landscape

The current policy setting encourages small domestic sized systems to be installed, typically 1-1.5kW for households and approximately 2-5kW for schools and community buildings. There is no policy today to encourage large scale commercial projects (MW), hence, to date no such projects have been undertaken.

MRET

Provides tradable Renewable Energy Certificates (REC).

This measure helps reduce the upfront cost of a solar PV system. For a household installing a 1.5kW system the value of the RECs would be \$1k-1.5k.

Solar Homes and Community Plan

Provides \$8/watt capped to 1kW system and is available to households that have an income less than \$100,000.

Estimated uptake

7-9MW in 2008

Solar Cities

The original intent of the Solar Cities program was as a trial to demonstrate introduced by the Howard Government to help inform future energy policy by trialing the installation

Estimate uptake

5 – 7MW over 5 years

National Solar Schools Programme

The National Solar Schools programme aims to make every school in Australia a solar school. Finance is provided to ensure every school installs a minimum 2kW system.

Estimate uptake

35MW over 8 years

With the exception of RET, all of these programs are funded through Government Budgets and whilst welcomed will not deliver transformational growth nor inject the scale required to move down the cost curve.

The Solar Homes and Community Plan (previous PVRP) has undergone significant change since the program was first introduced in 2000. The rebates have changed five



times during that time and the total level of funding allocated to the program has also been difficult to forecast with any great certainty.

In an environment when the future is uncertain, industry investment and confidence is undermined significantly.

The Australian solar PV industry wants a long term commitment and seeks to transition from short term rebate arrangements to a long term gross national feed in tariff.

Additionally, there is currently no policy in place that will encourage commercial or utility scale solar PV systems in Australia.

This omission in the policy framework will fail to deliver the wholesale market change that is a precondition to reduce installed costs.

CPRS / RET

Gross FITs are complementary policies to CPRS and are required to address the existing market arrangements which fail to adequately reward the solar investor for producing clean peak distributed energy.

Whilst CPRS will place a value on carbon this is unlikely to be high enough to drive market uptake and direct the size of investment required to inject the scale required to develop a sustainable solar PV industry.

Equally, both the CPRS and RET are market based mechanisms and therefore it can be expected that this will bring forward investment in lower cost technologies such as wind.

Sustainable Market

A stable, predictable policy environment for solar PV is required to enable the industry to invest with certainty. There is much that can be learnt from overseas experiences but it is also necessary to acknowledge that the adoption of a national gross FIT in Australia will be motivated by different drivers – climate change, energy security. Although we can look to these overseas markets and learn from their experiences, it is necessary to formulate an Australian gross Feed-in-Tariff that considers our own needs, our resources, and our own long term aspirations.

Feed-in-Tariffs Models

Different FIT models are being adopted throughout the world. It is **the** single most significant support mechanism for solar PV throughout the Western World. 75% of the worlds uptake in solar PV is in markets with FITs. Following are some examples of what is occurring elsewhere.



Germany

Germany introduced a gross FIT model in 2001. Since then the uptake of grid connected solar PV in Germany has increased over 11-fold. Today Germany is home to almost half the worlds solar installations, around 3GW, with more than 1GW being installed in 2007.

Over 350,000 people have installed solar PV systems on their roofs in Germany and the industry has created more than 40,000 new jobs.

More than 5000 companies are now active in the sector: manufacturers, specialized installers and maintenance contractors.

The continuity of the Feed-in-Tariff and explosion in demand has meant that solar PV now comprises approximately 1% of the German renewable energy generation portfolio. In conjunction with the Feed-in-Tariff is a Solar Loans programme to provide upfront assistance in purchasing costs.

Spain

Spain introduced an aggressive FIT programme two years ago which thus far has resulted in a 300% - 400% growth in the local solar PV industry. This scheme however has a cap of and as the market has progressed towards that cap there has been a prevailing mode of uncertainty as to what happens beyond the fulfillment date (expected to be 28 September 2008).

USA

In the US, many states have adopted RPS and some net tariffs which are supplemented with a Federal tax credits of 30% off the capital cost of installing solar PV. The US is now one of the top 5 markets for solar PVs in the world and multi-mega watt programmes are now being run through utilities.

Other Markets

In many countries such as South Korea, Greece, Italy, the Czech Republic and France FITs exist. Many of these countries have tiered FITs which are deliberately targeting development of specific sectors, from domestic and small PV systems to ground mount solar farm projects through to building integrated photovoltaic systems. However, unlike Australia most of these countries, have poor solar insolation and far higher electricity supply costs.

Australian solar FIT

In the last 2 years several Australian State and Territory Governments have announced intentions to implement FIT specifically for solar PV. All of the models adopted differ and clearly the policy objective underpinning the announcements are varying.

It is the Council view that there is a need for a consistent approach to solar FIT's and that this will inevitably mean that some states will need to make changes to existing commitments.

A common approach is strongly supported to ensure that the costs of doing business are reduced, processes streamlined and simplified and to ensure ease of integrating offers into the market place

Three states have proposed / legislated models that use net tariffs to encourage the uptake of grid connected PV systems. These Australian states have deployed the least cost net FIT but are very heavily reliant on the existence of the Federal Governments SH&CP rebate programme. The net tariffs will not on their own be sufficient to drive uptake nor an Australian PV industry.

In these markets without the SH&CP program in place, demand would decline rapidly with significant potential to damage the industry.

The Council notes that the Rudd Government made an election commitment to ensure there is a nationally consistent approach to solar PV FIT's and undertook to progress this through COAG. It is imperative that national consistency is advanced as a priority for the industry in tandem to transitioning the industry from the rebate arrangements.

Design Principles of a Feed In Tariff

Based on experience from overseas FIT schemes, the Council PV Directorate maintains that FITs schemes should include the following principles:

Long Term

Long term commitment to the programme such as rates guaranteed for a minimum of 15 – 20 years

Gross Metering

That is, the feed in tariff rate is applied to all of the energy generated from the solar PV system not just the energy that is surplus to the investors needs. However, it should be recognised that in some instances net metering might be the best cost effective solution for some customers.

All sectors

The programme should be open to all sectors not just the residential sector but community halls, distribution centres, churches, shopping centres, factories etc.

Tariff

The feed in tariff should be high enough to provide a 10 year payback on the system. Additionally, it should be:

Indexed to inflation



Decreased by no more than 7% per annum

Tiered to suit different size systems

Levy

The FIT levy should be applied through a distributor levy.

Retrospectivity

The FIT levy should apply retrospectively, that is, it is not just for new installations.

Programme Review

The programme should be reviewed every 5 years with industry involvement to ensure changes address any industry issues and avoid undermining the industry.



Transitioning to a national gross FIT arrangement – how and when?

As discussed previously, there are a number of limitations with the Solar Homes and Communities Programme in its current form.

The programme is financed through the Governments Budget on an annual basis and has since inception failed to provide stability for the industry and / or the marketplace.

Equally, it is worth noting that since the capping of the rebates to 1kW since May 2007, and the subsequent means testing arrangement May 2008, the average installation size has been declining from 1.5kW to now 1.2kW systems.

Investment in larger size systems is essential to injecting economies of scale into the industry.

We recommend that a FIT be implemented for both the residential and community sector commencing July 2009 and that there be an overlap of the existing rebates arrangements for 6 months after the FIT is introduced.

This will then allow both the marketplace and industry to adjust to the new policy settings and avoid any perverse outcomes.

Additionally, it is recommended that the Green Loans programme be extended to provide financial assistance for the upfront cost of the system acknowledging that rebates are currently providing this bridging assistance.

Lastly, we recommend that the gross FIT be extended to the commercial/industrial sector commencing July 2010. This should be announced as soon as practical to enable to industry make appropriate plans to respond to commercial sector investment that is likely to be triggered by a gross FIT signal.

Metering Technology Required

Gross metering had been the norm throughout many states until their respective governments brought in Net Feed-in-Tariffs. Gross metering in most instances is clear and simple and gives all involved a clear picture of what energy is being generated at the source.

Gross metering is in most cases simple for all retailers/utilities to offer. There are however cases where this can be complicated and consideration of these instances is necessary:

1. Where the generation source is remote from the metering which is often the case in installation in schools and larger facilities, it can be an extremely costly to bring separate circuits back to the main meter board to collect this generation data separately. The possibility for separate
- 2.
- 3.



4. metering for these sites needs to be considered and worked in with the MCE programme for Smart Metering rollout across the country.
5. If installations that existed prior to the Feed-in-Tariff programme were not eligible then metering issues may exist which would most certainly complicate the maintenance of the sites by the utilities. Continuity in a metering regime would be the most ideal situation and the implications of not doing this should be considered.

RECOMMENDATIONS

The PV Directorate of the Council are unanimous and unequivocal in their support of gross FITs and it is their wish to recommend that the Senate Environment Committee:

- give full support for Australia to transition from rebates to a nationally consistent FIT by July 2010 which is based on
 - o gross generation
 - o applies to all sectors
 - o provides a payback under 10 years on system capital cost
 - o applies for 20 years

Additionally, the following issues should be considered in relation to the implementation of a gross FIT:

- A Green Loan programme to bridge the cross over between rebates to FITs. This loans programme should be reviewed on an annual basis and scaled up according to demand.
- A study be conducted to determine appropriate FIT levels for different technologies and different sized projects.(the Council are currently developing the ground work for this study and are happy to assist the government in this area)
- Launch an awareness and education campaign to build knowledge and understanding in the community and business sector of the technology and how FITs work.
- Significantly boost support for training and accreditation schemes, standards development through EL42 and industry research and development.
- A programme that can focus on deploying solar PV to housing for low income earners to ensure that the costs of rising electricity prices are not crippling.

References



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