

Senate Standing Committee on Environment, Communications and the Arts

Renewable Energy (electricity) Amendment (Feed-In Tariff) Bill 2008-08-15

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A handwritten signature in black ink, appearing to read "Adrian Ferraretto".

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15th August 2008

Summary

Solar Shop Australia is a designer, supplier and installer of grid connect photovoltaic (PV) systems as well small wind turbines.

In the last 18 months, Solar Shop Australia's revenue has grown over 400% and now has operations in Brisbane, Sydney, Melbourne, Adelaide and Perth.

Solar Shop Australia now employs over 100 people directly as well as engaging numerous contractors on an ongoing basis.

Over the past eight years, Solar Shop Australia has had to endure uncertainty over the government support for the solar panel industry. The solar panel rebate formerly known as the Photovoltaic Rebate Program (PVRP) has undergone the following evolution:

- January 2000: PVRP introduced at \$5.5/W up to 1.5kW (\$8,250)
- July 2000: PVRP *REDUCED* to \$5/W up to 1.5kW (\$7,500)
- January 2003: PVRP *REDUCED* to zero as budget has run out
- May 2003: PVRP reintroduced at a *REDUCED* amount of \$4/W up to 1kW (\$4,000)
- May 2005: PVRP extended and maintained at \$4/W up to 1kW (\$4,000)
- May 2007: PVRP extended and *DOUBLED* to \$8/W up to 1kW (\$8,000) and promised for five years
- May 2008: A \$100,000 household means test plus a cap of 6,000 homes per year are introduced as well as the program being renamed to Solar Homes and Community Program

Even the current \$8/W rebate which is heading way over its \$100m budget surrounding the PV industry with yet more uncertainty.

It's time for the PV solar industry to have long term certainty.

- Australia needs a Gross Solar Feed-In Tariff (FIT) based on the German scheme
- The German FIT scheme has a very small cost
- A Solar Gross FIT will generate considerably more jobs in Australia than other renewable sources
- The Solar Gross FIT needs to be based on gross production, and not net
- The Solar Gross FIT needs to be a long term 20 year program

Australia needs a Gross Solar Feed-In Tariff

Solar electricity is not cost competitive in Australia with fossil fuel sourced coal and gas thermal electricity.

Solar electricity needs assistance over a period of 20 years to enable the technology to mature and reach fossil fuel parity pricing.

Australia used to be a world leader in PV panel installations.

Right now, Australia has an \$8/W Solar Homes Community Program (SHCP) rebate. Even with this seemingly generous scheme, Australia has fallen behind and is now nowhere near leading the global PV industry.

The SHCP is a highly distorting rebate resulting in cheap Chinese made panels being installed on Australian homes. It encourages small solar systems capable of generating around 25% of the average home to be installed. It encourages cheap short life PV modules with poor installation by shonky installers.

A Gross FIT rewards a good installation by being directly linked to the output of the PV installation.

This SHCP rebate needs to bridge us to a national PV Gross FIT and then scrapped at the commencement of the scheme.

The typical solar system in Australia is around 1.5kW in size. The typical solar system size in Germany is around three times this at around 5kW.

Germany has a Gross Solar FIT.

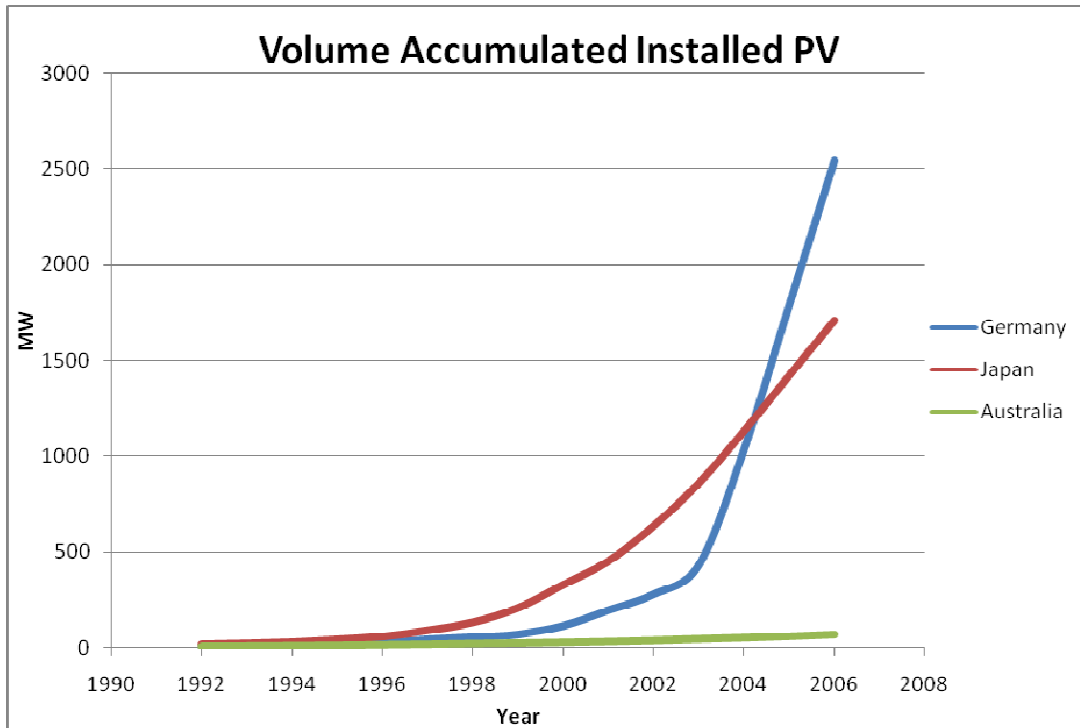
Germany's now leads the world in PV production plant construction and German solar cell manufacturers have a world market share of more than 20%.

Back in 1992, Australia used to be a big player in global solar installations and our installed capacity was greater than Germany's.

However in 2006, Australia's installed PV capacity fell to less than 3% of Germany's installed capacity.

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Germany	6	9	12	18	28	42	54	69	114	195	278	431	1034	1787	2540
Japan	19	24	31	43	60	91	133	209	330	453	637	860	1132	1422	1708
Australia	7	9	11	13	16	19	23	25	29	34	39	46	52	61	70

IEA Photovoltaic Power Systems Programme National Status Report 2006



Germany introduce it's FIT nationally in 2000.

The Renewable Energy Sources Act in Germany pays the following amounts for gross PV generation:

	2003	2004	2005	2006	2007	2008
Tariff* (Euro/kWh)	0.460	0.574	0.545	0.518	0.492	0.4675

** For rooftop- systems smaller than 30 kW; for bigger systems there are lower tariffs; façade integrated systems get a bonus of 5 Ct/kWh.*

Australia's FIT can be lower the Germany's FIT as we have considerably more sunlight than Germany.

The German FIT scheme covers PV, wind, hydro, geothermal and biomass and pays different amounts for different sources and applications.

The German FIT continues to generate considerable impetus for innovation, domestic value added and employment.

Australia has been left behind the rest of the world because we don't have a Gross PV FIT.

The Cost of the German FIT Scheme

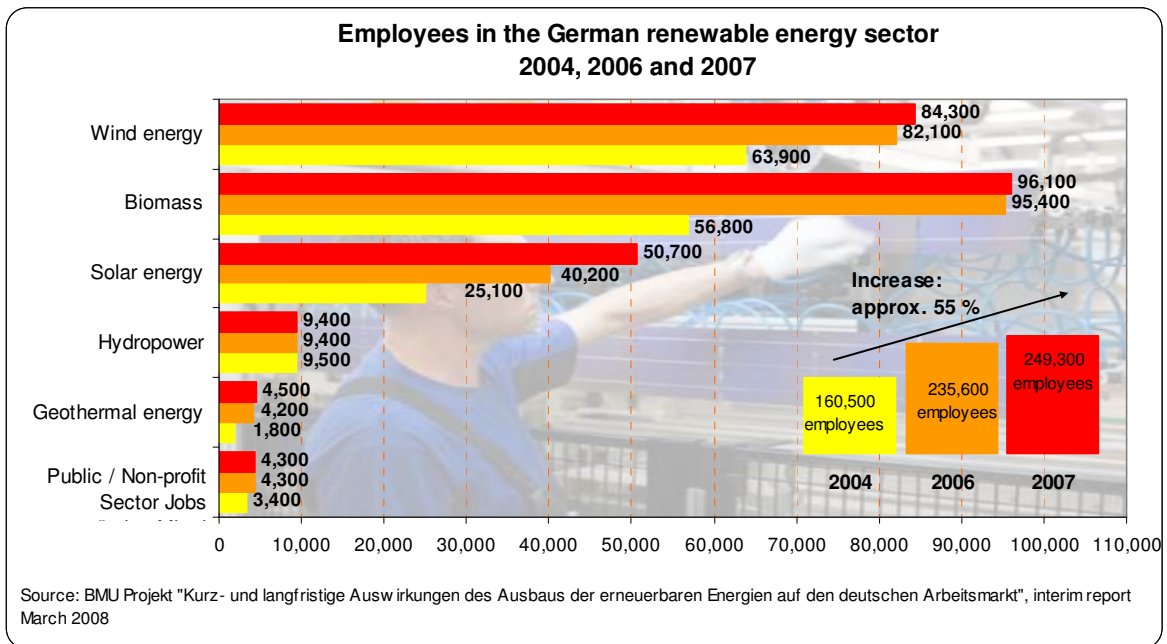
Additional costs to pay for the German FIT Scheme amounted to around € 3.3 billion in 2006. Energy supply companies' avoided cost of purchasing electricity from renewable sources, which would have been required without the German FIT Scheme, was around € 2.5 billion in 2006.

The resultant surcharge payable for renewable generated electricity was € 0.7 ct/kWh, which amounts to less than 4% of the average price of domestic electricity.

PV Job Creation

Germany is the most successful market in the world for installing solar panels. Around 50% of global PV installations was in Germany in 2006.

The number of PV employees in German in 2007, was 50,700.



PV gives more jobs per installed Watt compared with other renewable technologies.

PV installations produce around seven times as many jobs per installed MW, compared with wind power. PV installations are distributed and broad based compared with wind and hydro.

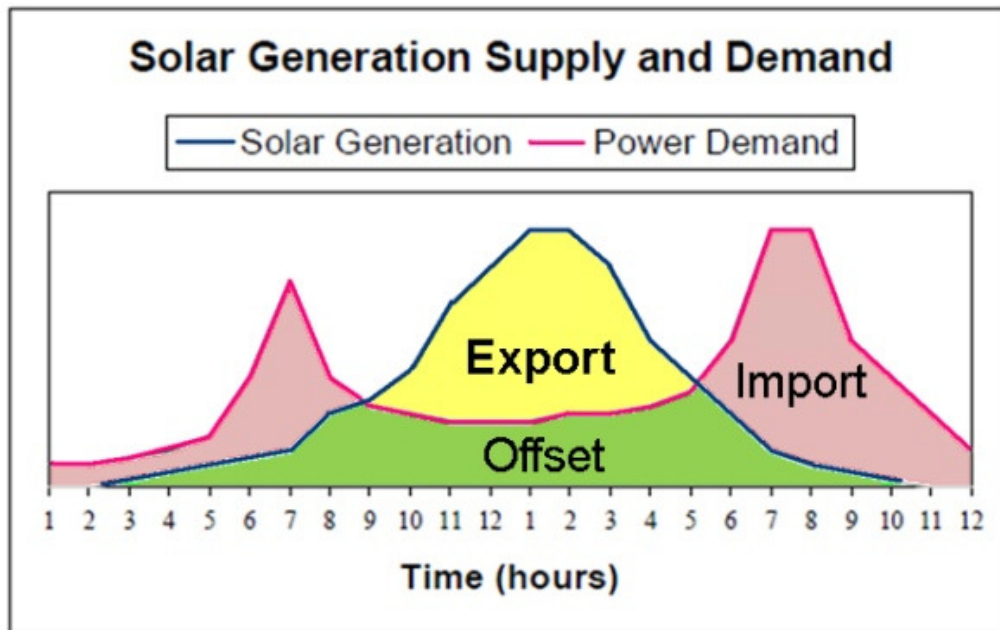
	MW Installed	Jobs Created	Jobs/MW
wind	39500	84300	2.1
biomass	19500	96100	4.9
solar	3500	50700	14.5
hydro	20700	9400	0.5

Source: BMU according to Working Group on Renewable Energies / Statistics (AGEE-Stat)

The Need for a Gross FIT

It is possible to predict within a very small percentage exactly how much energy a solar system will generate in Australia. We have the Solar Radiation Data Handbook that provides us with a plethora of data to enable an accurate prediction backed with ongoing Bureau of Meteorology and real life performance data gathering.

It is imperative from a return on investment point of view to have a gross feed-in scheme as oppose to a net feed-in scheme. A gross feed-in tariff levels the playing field for investors, giving predictability to any programmed investment.



NET SOLAR FEED-IN SCHEME

South Australia, Victoria and Queensland all have Net Solar Feed-In Tariffs. This means that surplus solar electricity exported into the grid and recorded on your import/export meter attracts the premium tariff. Not the complete amount of solar electricity produced by the solar panels. In South Australia, the following occurs:

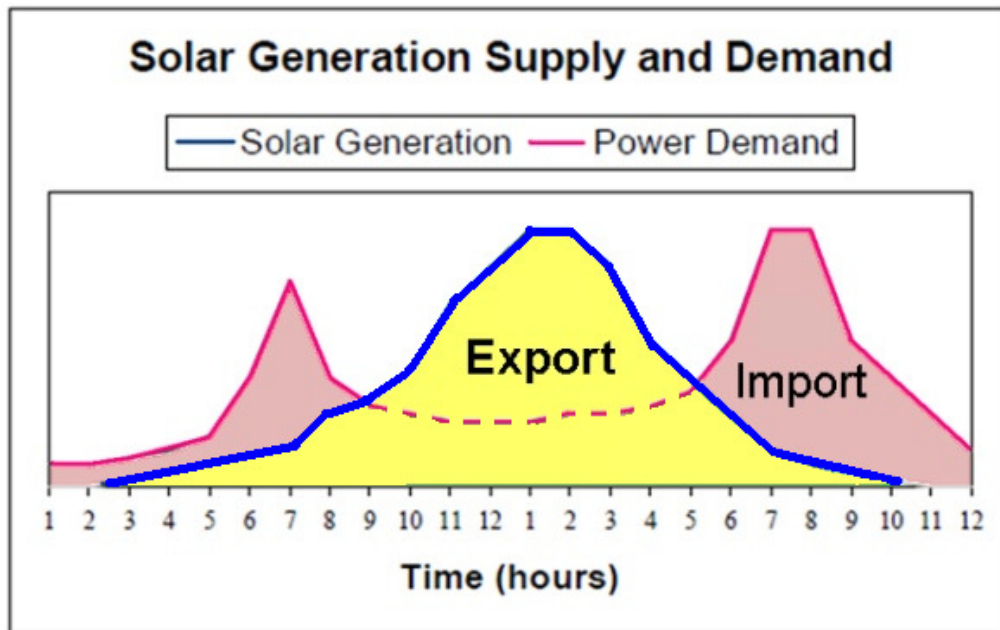
- IMPORT** - Electricity imported into your home: Customer pays around 18c/kWh
- EXPORT** - Solar electricity exported into the grid: Customer receives at least 44c/kWh
- OFFSET** - Solar electricity used in the home: Customer benefit is around 18c/kWh

It is very difficult to calculate what financial benefit the customer receives from their investment. Here are two scenarios:

1. If the customer uses the solar electricity produced by the solar panels during the day in the home, the export proportion is reduced and hence the return on investment is reduced
2. If the customer is at work during the day and the customer's home consumes minimal quantity of the solar electricity produced by the solar panels, then the return on investment is greater.

The problem with a Net Solar Feed-In Tariff is that it is not possible to quantify WHEN the customer consumes electricity. This is not recorded on power bills.

This makes the return on investment ambiguous and makes it much more difficult for a customer to make an informed decision on the financial return on investment.



GROSS SOLAR FEED-IN SCHEME

A Gross Solar Feed-In Tariff pays a premium tariff to the complete amount of electricity generated by the solar panels.

Every single kWh of electricity generated by the solar panels is recorded on an electricity meter and received the premium tariff.

This is the system that has been used in Germany for the past eight years.

This enables the customer to borrow funds from a lending institution with confidence on a return on investment which has proved to be crucial with the German FIT scheme.

Conclusion

Australia needs a Gross PV FIT. The amount payable needs to be adjusted compared with the German level of funding because of Australia's higher level of solar radiation compared with Germany.

The scheme needs to have long term certainty so that investors can have clarity and confidence in the industry and product. This will also encourage local manufacturing.

The scheme needs to provide a similar return on investment percentage to the German scheme. The German scheme is the most successful one in the world and we know it works. The return

on investment is spot on and proven for attracting a lot of PV business in both manufacturing and installations.

The payback on a PV systems needs to be less than 10 years.

The scheme needs to encourage small domestic home systems. This type of distributed style installation is more efficient than large centralised installations because the renewable source is installed directly where the load requirement is. Smaller systems also tend to be more expensive to install as they need more labour resulting in more jobs.

The scheme also has to allow for large “sunfarm” type installations and needs to be priced accordingly. This type of installation has proven to be extremely popular in Germany and an important part of the industry’s success. Households and businesses that don’t have suitable conditions for solar generation can invest along with interested parties in centralise “sunfarms”.

Taking many of the aforementioned points into consideration, the Gross PV FIT needs to have the following attributes:

- PV Feed in price of 60c/kWh for systems <10kW
- PV Feed in price of 56c/kWh for systems sized from 10 to 30kW
- PV Feed in price of 53c/kWh for systems sized from 30 to 100kW
- PV Feed in price of 50c/kWh for systems sized from 100kW+
- Available to residential as well as business/commercial/government sectors
- 20 payment guarantee with and open to applications for 20 years

Wind and geothermal are so close to grid parity, they don’t need a FIT.