

Chapter 2

Feed-in tariffs and energy policy issues

Why have feed-in tariffs?

2.1 During its inquiry into the Save Our Solar (Solar Rebate Protection) Bill 2008 (the SOS inquiry), the committee heard a lot of evidence supporting the adoption of feed-in tariffs (FITs).¹ They were supported by industry manufacturers, retailers and installers, customers, NGOs and governments.² Although virtually all stakeholders participating in both that inquiry and the present one supported a FIT, they often put forward different reasons in support of this type of policy measure.

2.2 Some submitters argued for a FIT because it reflects the full costs and benefits of producing energy. They argued that current energy pricing mechanisms omit benefits such as reduced atmospheric pollution, increased employment and avoided network infrastructure costs.³ Current prices also do not accurately value solar power in particular, which can provide generation capacity at times of peak demand. Existing energy retail customers generally pay a flat retail tariff for power, however 'a flat averaged retail tariff does not reflect the value of supplying energy in the middle of the afternoon when it is at its highest demand'.⁴

1 See Senate Environment, Communications and the Arts Committee, *Save Our Solar (Solar Rebate Protection) Bill 2008 Report*, 25 August 2008.

2 Glen McCarrick, *SOS inquiry submission 57*; Solar Sales (now SunPower Corporation Australia), *SOS inquiry submission 69*; Stuart Watson & Associates, *SOS inquiry submission 75*; Autonomous Energy, *SOS inquiry submission 81*; Beyond Building Energy, *SOS inquiry submission 88*; EcoTasmania, *SOS inquiry submission 137*; Mr Andrew McCarthy, Project Manager, Environment Shop, *SOS inquiry Proof Committee Hansard*, 28 July 2008, p. 15; Mr Peter Bone, Director, Bone Electrical, *SOS inquiry Proof Committee Hansard*, 28 July 2008, p. 83; Mr Troy Ryan, Director, Adelaide Hills Solar and Solar Depot, *SOS inquiry Proof Committee Hansard*, 6 August 2008, p. 2; Mr Brian Jones, Manager, Switched On Solar, *SOS inquiry Proof Committee Hansard*, 7 August 2008, p. 1; Conergy, *Submission 98*, p. 6; Alternative Technology Association, *SOS inquiry submission 52*; ACF, *SOS inquiry submission 82*; Darebin City Council, *SOS inquiry submission 90*; Mr Jon Stanhope MLA, Chief Minister, ACT, *SOS inquiry submission 126*; Professor Michael Christie, *SOS inquiry submission 68*; Professor Andrew Blakers, *SOS inquiry Proof Committee Hansard*, 25 July 2008, p. 12.

3 Electric Biz, *Submission 46*; ATA, *Submission 75*, attachment 2; BP Solar, *Submission 116*, pp 12–13.

4 BP Solar, *Submission 116*, p. 13.

2.3 In addition to correcting market failure, it was argued that a FIT could in fact reduce energy costs to consumers, through 'reduced wholesale electricity prices [and] avoided network augmentation' costs.⁵

2.4 Many submitters argued that a FIT would ensure the growth of Australia's renewable energy generation capacity generally, and photovoltaic capacity in particular. This was often linked to a desire to see greenhouse gas emissions reduced.⁶ The World Future Council described FITs as 'the most effective tool for accelerating the rapid, low-cost, technologically-diverse deployment of renewable energy'.⁷

2.5 Some saw the role of the feed-in tariff as supporting renewable energy industry maturation. SunPower Corporation Australia for example suggested:

It is clear that the lack of a national feed in tariff (net or gross metered) is the key impediment to the development of a large scale renewable energy industry, particularly one using solar photovoltaic technology.⁸

2.6 BP Solar, one of Australia (and the world's) largest solar energy companies, made the argument well:

BP Solar recognises that if least cost carbon saving is the only objective, then Governments would never adopt or introduce renewable energy policies, but rather simply rely on achieving carbon reduction through Emission Trading Schemes.

However, if the objective is to create innovation to overcome the market failure that prevents long term carbon saving potential like solar from developing, then there is a justification for targeted intervention to differentiate between technologies – otherwise the cheapest, wind, will predominate.

...

This [is] not about “picking winners” but recognising in the case of solar PV there is a market failure that needs to be overcome with explicit price support which creates growth opportunities and in tandem proves up the technology, drives down costs, diffuses the technology and makes it accepted.⁹

2.7 Dr Prest drew on international experience to suggest that bringing renewable energy technologies to market maturity was an important role for FIT policies:

Australia should have a look at some of the niches that might exist in terms of what a feed-in tariff can do for a whole range of different technologies,

5 Australian Sustainable Built Environment Council, *Submission 97*.

6 Greenpeace Australia Pacific, *Submission 98*.

7 World Future Council, *Submission 30*.

8 SunPower Corporation Australia, *Submission 49*.

9 BP Solar, *Submission 116*, pp 15–16.

and scientists have a lot of interesting ideas that they have been working on. These measures can assist to bring the further-from-market technologies closer to the picture in order to become cost competitive especially under an ETS.¹⁰

2.8 The committee also noted that Garnaut's Climate Change Review was supportive of FITs to counteract market failure in the energy supply and distribution sectors,¹¹ while researcher Miguel Mendonca also identified market failure issues as reasons to introduce FITs.¹²

2.9 While FITs can have a role in counteracting market failures, their primary purpose is as a temporary mechanism (with a duration typically of around two decades) to facilitate the maturation of leading edge renewable energy technologies, assisting their transition to being competitive energy technologies.¹³

Economic efficiency

2.10 While there is widespread support within the renewable energy sector for FITs, some concerns about these policy instruments have also been raised. EnergyAustralia queried how a FIT would interact with other renewable energy policies, particularly the Mandatory Renewable Energy Target (MRET) and an emissions trading scheme. While it emphasised that it supported policies to increase the use of renewable energy, EnergyAustralia suggested that a FIT may be an inefficient means of securing greenhouse gas emissions reductions:

In contrast, under the proposed feed in tariff scheme, a price is set for renewable generation without taking into account the relative cost effectiveness of the technology. Under these circumstances, low cost renewable generators would not be able to gain a competitive advantage over more expensive renewable generation. This would result in a market distortion and higher average prices for consumers, relative to the MRET, for the same level of greenhouse gas reductions. In addition, by setting the price for a period of 20 years, the scheme would lock in this market distortion and would not provide ongoing incentives to reduce the costs of producing renewable energy.¹⁴

2.11 The committee recognises EnergyAustralia's concerns. However, FITs would not normally be set 'without taking into account the relative cost effectiveness of the

10 Dr James Prest, *Proof Committee Hansard*, 8 September 2008, p. 2.

11 Garnaut Climate Change Review, *Final Report*, October 2008, p.452.

12 Miguel Mendonca, 2007, *Feed-in Tariffs: Accelerating the Deployment of Renewable Energy*, Earthscan Publishing.

13 European Photovoltaic Industry Association, *Supporting Solar Photovoltaic Electricity: An Argument for Feed-in Tariffs*, http://www.epia.org/fileadmin/EPIA_docs/publications/epia/An_Argument_for_Feed-in_Tariffs.pdf (accessed 17 October 2008).

14 EnergyAustralia, *Submission 117*, p .2.

technology'. On the contrary, the committee believes that international experience shows that tariffs have been set, and varied, in order to respond to technology costs, deliberately to try and enhance their cost effectiveness.¹⁵ The committee believes the need to carefully set tariffs is the reason for the bill's proposed new sections 34(D)(4) and 34(D)(13), which would facilitate setting tariffs so as to avoid the problems foreshadowed by EnergyAustralia. This is discussed further in chapter 3.

2.12 The committee acknowledges that some of the technologies that would be eligible for a FIT are not the cheapest renewable energy generation options at present. This is agreed by many of the businesses that are developing and selling these technologies.¹⁶ The argument is that this is the very purpose of FITs: to assist in bringing the most advanced renewable energy technologies to a cost-competitive position in energy markets a decade or more from today.

Economic equity

2.13 During development of the ACT's feed-in tariff, the ACT Council of Social Services (ACTCOSS) pointed out that feed-in tariffs have the potential to be socially regressive because:

low-income households spend a higher proportion of their income on energy, meaning that even a proportionate increase in the price of energy will disproportionately disadvantage low income households. We also agree with the statement that low-income households have less capacity to respond to price signals, as their household use of energy is often dictated by the energy efficiency of their home, which are more likely to be rental accommodation, including both private rental and public housing.¹⁷

2.14 When a FIT was introduced in Victoria, the St Vincent de Paul Society expressed concern about the economically regressive nature of the policy. The Society argued that it was regressive in two ways: home renters would be subsidising home owners, and the asset poor would be subsidising the asset rich. In addition, the extent of the subsidisation will increase as carbon pricing raises the cost of power consumed by those without the resources to install renewable energy generating systems in their homes.

2.15 St Vincent de Paul made another point of concern to supporters of renewable energy:

15 See for example Conergy, *Submission* 126, p. 6.

16 Mr Bob Matthews, CEO, Ausra, *Proof Committee Hansard*, 9 September 2008, pp 3–4; BP Solar, *Submission* 116.

17 ACTCOSS, *Comment on the Feed-in Tariff Discussion Paper and the Electricity Feed-in (Solar Tariff) Bill 2007*, February 2008, http://www.actcoss.org.au/publications/Publications_2008/0208CMT-Feed-inTariff.pdf (accessed 25 August 2008).

In addition to introducing a socially regressive tax, the proposed feed-in tariff effectively double-charges those who are already purchasing green-energy products.

This double-charging occurs because the increased energy charges required to fund the tariff will also apply to those households already paying a premium; households that have purchased green energy, such as energy from wind turbines, through their energy retailer.

In effect, the feed-in tariff double-charges this group for green energy.

Not only is there an argument that there is double-charging to this group, there is the potential for this to result in a decline in the take-up of market-initiated green energy. Fewer households may sign up to green products, believing they are already purchasing some form of green product through the feed-in tariff levy.¹⁸

2.16 Advocates of FITs have pointed out that even the world's most extensive FIT program in Germany, which has resulted in the installation of thousands of Megawatts of installed photovoltaic capacity, has resulted in only a small increase in general household power bills of around 2.2 Euros per month.¹⁹ This represents around 3 per cent of household energy bills, and this proportion is falling.²⁰

Feed-in tariffs, energy policy and climate change policy

2.17 Australian governments are taking a range of actions aimed at supporting renewable energy, reducing greenhouse gas emissions, and regulating the energy sector. FITs would sit alongside these policies. The relationship between FITs and other renewable energy and greenhouse emission reduction policies is an important one.

2.18 The committee recognises that it is desirable that the range of policies is coordinated and ensures harmonised action in support of policy objectives. There are several policies that will support the transition to a low-carbon economy. These include: the introduction of an emissions trading system; the maintenance and expansion of a Mandatory Renewable Energy Target; the implementation of measures designed to 'assist Australian households in the transition to the Carbon Pollution

18 St Vincent de Paul Society, *Submission 17*; see also Gavin Duffy, 'Green energy push transforms to tax poorer households', *The Age*, 14 May 2008, <http://business.theage.com.au/business/green-energy-push-transforms-to-tax-poorer-households-20080513-2dtz.html> (accessed 25 August 2008).

19 German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, *EEG – The Renewable Energy Sources Act: The Success Story of Sustainable Policies for Germany*, July 2007, *Submission 41* Attachment 4, p. 24.

20 Jeffrey Michel, *Submission 29*, Attachment 2.

Reduction Scheme'; and grants and rebates directly supporting the installation of renewable energy sources.²¹

2.19 The Carbon Pollution Reduction Scheme (CPRS) or emissions trading system, has the aim of reducing harmful carbon emissions through introducing a cap on carbon pollution and requiring industries to gain a permit for each tonne of greenhouse gas that they emit. There will be an annual cap on permits each year. At the same time, these permits may be traded, encouraging industry to either pay a high price for a permit or reduce their emissions.²²

Because the carbon pollution reduction scheme will concentrate on the biggest polluters, it will place obligations on around 1000 Australian companies in total – those that produce more than 25000 tonnes of carbon pollution each year.²³

2.20 The term CPRS has been used interchangeably with Emissions Trading Scheme or system (ETS) by participants in this inquiry.

2.21 In 2001, a Mandatory Renewable Energy Target (MRET) scheme was introduced. Its current target is to ensure that 20 per cent of Australia's electricity supply comes from renewable energy sources by 2020. The MRET underpins a market in Renewable Energy Certificates (RECs), which are a form of electronic currency established under the *Renewable Energy (Electricity) Act 2000*. These are currently available to owners or operators of eligible renewable power stations and owners of eligible small generation unit installations. Small generation unit installations include the following technologies:

- photovoltaic systems;
- wind systems;
- small hydro electric systems.²⁴

2.22 RECs play almost no role in the development of photovoltaic or solar thermal power: in 2006 only 0.04 per cent of RECs were for solar electricity, with the majority being issued for wind energy, solar water heaters and landfill gas generation.²⁵ The

21 The Hon Peter Garrett AM, Minister for the Environment, Heritage and the Arts, speech to Appropriate Technology Retailers Association of Australia conference, 2 August 2008, <http://www.petergarrett.com.au/597.aspx> (accessed 15 October 2008).

22 Department of Climate Change, *Carbon Pollution Reduction Scheme – Overview*, <http://www.climatechange.gov.au/greenpaper/factsheets/fs1.html> (accessed 19 September 2008).

23 Department of Climate Change, July 2008, *Carbon Pollution Reduction Scheme Green Paper*, p. iv, <http://www.climatechange.gov.au/greenpaper/report/pubs/greenpaper.pdf> (accessed 15 October 2008).

24 Office of the Renewable Energy Regulator, *Renewable Energy Certificates (RECs)*, <http://www.orer.gov.au/recs/index.html> (accessed 18 September 2008).

25 McLennan Magasanik Associates for the Office of the Renewable Energy Regulator, *Review of REC Markets*, October 2007, p. 17.

Council of Australian Governments (COAG) is currently working towards implementing a renewable energy target (RET), that 'will bring the MRET and existing and proposed state and territory targets into a single national RET scheme'.²⁶ A discussion paper has been released on design of the RET.²⁷ The RET effectively comes under the umbrella of the CPRS.

2.23 The Australian Government currently offers up to an \$8,000 rebate to households with a taxable income under \$100,000 for the installation of a solar photovoltaic system under its Solar Homes and Communities Plan²⁸. A rebate for the installation of solar PV has been available to households since 2000, although the rebate has varied in amount over the period.

2.24 In addition to these measures some state and territory governments have policies and programs that are directed toward reducing greenhouse gas emissions and encouraging renewable energy generation. Most relevant to this inquiry are existing feed-in tariff regimes in the Australian Capital Territory, Queensland, South Australia and Victoria. These were briefly outlined in chapter 1.

2.25 Energy utilities may also have commercial programs to encourage customers to use renewable energy. These programs may or may not rely to some extent on government support for renewable energy. EnergyAustralia for example indicated that it was:

- ...the first utility in the world to mandate interval metering and Time of Use tariffs for all new and replacement meters.
- We have been on the forefront of demand management initiatives, implementing more demand management projects than any other Australian distributor.²⁹

2.26 Considering the diversity of renewable energy policy instruments already in place, there was remarkably little doubt amongst stakeholders that FIT schemes are a valuable addition to the policy mix.

2.27 The Australian Industry Group (AIG) has argued that, with the decision to implement an emissions trading scheme, other renewable energy policy measures should be phased out, not expanded.

26 Department of Climate Change, *Australia's Renewable Energy Target*, <http://www.climatechange.gov.au/renewabletarget/index.html> (accessed 19 September 2008).

27 COAG Working Group on Climate Change and Water, 2008, *Design Options for the Expanded National Renewable Energy Target Scheme*, <http://www.climatechange.gov.au/renewabletarget/consultation/pubs/ret-designoptions.pdf> (accessed 15 October 2008).

28 Department of the Environment, Water, Heritage and the Arts, *Solar Homes and Communities Plan*, <http://www.environment.gov.au/settlements/renewable/pv/index.html> (accessed 18 September 2008).

29 EnergyAustralia, *Submission 117*, p. 1.

Ai Group maintains that the Carbon Pollution Reduction Scheme (CPRS) should be designed to meet Australia's emission reduction target. A CPRS that does this will generate incentives that will favour low-emissions energy at the expense of other energy sources... In the context of Australia's overall direction on climate change policy... it would appear that [the] better national approach for the Commonwealth to take would ensure that existing renewable energy initiatives were wound back rather than extended.³⁰

Aside from AIG's reservations, however, the committee's evidence strongly favoured the adoption of a FIT, either to complement other existing policies, or as a more efficient substitute for other policy mechanisms, such as rebates.

2.28 The committee heard expert evidence that a CPRS, while desirable, is not sufficient to meet the need for policies that will create a successful response to the challenge of climate change:

In terms of policies, there are no likely magic technology bullets or some sort of thing that is going to solve all our problems. There are no magic bullets in policy either, and that includes emissions trading. Why would we expect that a price signal on emissions would be able to achieve all the changes in transformation that we need to see in order to address climate change? We do not have the expectation in any other really serious area of policy development that a single price signal can do it.³¹

2.29 A number of submitters argued that existing policy mechanisms are not adequate. The Alternative Technology Association (ATA) argued that MRET and other schemes do not adequately value photovoltaic systems and the energy they produce, and that a FIT was necessary to fill the policy gap left by other government programs.³² Dr Prest argued that ideally a FIT would replace tradeable certificates that result from the MRET, but that a hybrid of the two would also work.³³

2.30 Experts, NGOs and industry representatives all drew on international experience to indicate that policies other than feed-in tariffs would not, on their own, be sufficient. Researcher Dr Iain McGill commented:

With the expanded MRET here, we now have a serious target, and we should not underestimate the challenges for MRET to actually deliver on that target given that we also see changes in the circumstances; our electricity industry infrastructure looks to be getting increasingly stressed

30 Australian Industry Group, 'Ai Group Submission on the National Renewable Energy Target Scheme', Media Release, 18 August 2008, <http://www.aigroup.asn.au/scripts/cgiip.exe/WService=aigroup/ccms.r?pageid=4413> (accessed 26 August 2008).

31 Dr Iain McGill, Joint Director, Centre for Energy and Environmental Markets, *Proof Committee Hansard*, 8 September 2008, p. 18.

32 ATA, *Submission* 100.

33 Dr James Prest, *Submission* 123, p. 31.

and the structure of the players within it is also changing. So the feed-in tariff experience with different feed-in tariffs in Europe for wind—onshore wind and offshore wind—and so on has to be seen in that light. The Europeans have looked at green certificate schemes and they have a lot of questions about them.³⁴

2.31 Greenpeace International's campaign director on renewables, Mr Teske, made a related point:

In the past 10 years, emissions trading did not contribute at all to the acceleration of renewable energy within the EU for two reasons. First, an emissions trading scheme fluctuates, which means that there is no reliable payment for producers of renewable energy. That means that it is a very insecure mechanism and therefore nobody will invest for such a short-term profit—not even a profit. Secondly, the amount of money per tonne is just not high enough to make it interesting for investors. That might change at the time when the industry is competitive, but I would say that for the next 10 years feed-in tariffs are still needed.³⁵

2.32 Representatives of renewable energy producer BP Solar reached similar conclusions using different evidence:

Mr Jackman—A trading system such as the CPRS will support lowest cost technologies. Because of the market failure that exists at the moment for solar PV, the CPRS will not of itself overcome that. I will quote from the Stern report, which is included on page 17 of our submission. Stern actually says:

Comparisons between deployment support through tradable quotas and feed-in tariff price support suggest feed-in mechanisms achieve larger deployment at lower costs.

He goes on to say:

Central to this is the assurance of long-term guarantees.

That is a useful summary from Stern.

Mr Vigneswaran—We certainly think that in the early years of an emissions trading or carbon pollution reduction scheme that carbon prices will not be high enough to drive the investment required for solar at the large scale that is required to reduce the cost and to build the level that is required in the industry.³⁶

34 Dr Iain MacGill, Joint Director, Centre for Energy and Environmental Markets, *Committee Hansard*, 8 September 2008, p. 23.

35 Mr Sven Teske, Director, Renewable Energy Campaign, Greenpeace International, *Committee Hansard*, 8 September 2008, p. 39.

36 Mr Gavin Jackman, Director Government Affairs and Mr Chandran Vigneswaran, Media Manager, BP Solar Australia Pty Ltd, *Committee Hansard*, 9 September 2008, p. 33.

2.33 Moreland Energy Foundation argued that a FIT would help rather than hinder other policies, again through the targeting of particular sectors:

by creating an incentive for households, small-medium businesses and community enterprises to participate in the shift to a decentralised, low carbon energy network.³⁷

2.34 The committee is aware of a range of views about the cost, and cost-effectiveness, of different policies targeted at carbon emissions reduction and renewable energy generation. EnergyAustralia thought that a FIT would not be cost effective.³⁸

2.35 Other recent studies however suggest that FITs can be cost effective compared to tradable permits or certificates. A recent analysis comparing German and UK renewable energy support mechanisms suggested that Germany's feed-in tariff was delivering renewable energy at a lower cost per kilowatt-hour than the UK's tradeable certificates.³⁹

2.36 Professor Blakers argued that FITs are better than capital subsidies (such as rebates):

A FiT is a far better method of supporting the PV industry than a capital subsidy such as [Photovoltaic Rebate Programme] PVRP.

Large capital subsidies for PV fail to discourage the use of cheap, short-lived PV modules. Such modules could out-compete more reputable brands if there was a capital subsidy, but would fail to develop an improved PV industry.

Large capital subsidies for PV fail to discourage poor installation (eg partially shaded) by shonky installers

In contrast, a FiT provides a strong incentive for households to purchase and maintain quality systems in order to reap on-going financial benefits from a long-lived system.⁴⁰

Committee view

2.37 The committee believes that the evidence internationally indicates that FITs can be an effective means of driving industry cost reduction and increasing installed renewable energy generation capacity, through offsetting of installation costs of renewable energy generators. It did not receive evidence that FITs cause significant regressive effects through higher energy costs: even large-scale FIT schemes appear to have minimal price effects on all consumers' energy bills.

37 Moreland Energy Foundation, *Submission 99*, p. 3.

38 EnergyAustralia, *Submission 117*.

39 Ernst & Young, *Report to DEFRA / BERR – Renewable Heat Support Mechanisms*, October 2007, <http://www.berr.gov.uk/files/file42043.pdf>, retrieved October 2008, p. 15.

40 Professor Andrew Blakers, *Submission 1*.

2.38 However, while there was wide support for FITs in general, there are a number of issues, outlined in chapter 1, that have to be addressed if a FIT scheme is to be effective. This is particularly important to achieving national consistency, given that some states and territories already have schemes in place.

2.39 Given the complexities involved, the committee believes that the current process of negotiation through COAG to achieve a nationally consistent FIT framework is the appropriate one.

Recommendation 1

2.40 Noting strong industry, consumer and government support for FIT schemes, the committee recommends that the Commonwealth government, through COAG, work as quickly as practicable to implement a FIT framework that is as far as possible nationally uniform and consistent.