Chapter 3

Small-Scale Renewable Energy Scheme

Introduction

3.1 As described in Chapter 1, the proposed legislation will separate the Renewable Energy Target (RET) market into the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES). By comparison with the LRET, the establishment of the SRES is a more fundamental change to existing arrangements.

Operation of the SRES

Definition of 'small-scale'

3.2 The small-scale technology category includes renewable electricity generation units under a certain size and solar water heaters or air-sourced heat pump water heaters. Under current regulations, small generation units include:

- Hydroelectric systems with a capacity of 6.4 kW or less and a total annual electricity output of 25 MWh or less;
- Wind systems with a capacity of 10 kW or less and a total annual electricity output of 25 MWh or less; and
- Solar (photovoltaic) systems with a capacity of 100 kW or less and a total annual electricity output of 250 MWh or less.[1]

3.3 Solar water heaters must meet certain standards and have a capacity of 700 L or less. However, in certain circumstances larger systems are permitted.[2]

Small-scale Technology Certificates

3.4 The proposed legislation establishes a new class of Renewable Energy Certificate called 'Small-scale Technology Certificates' (STCs).[3] Owners or installers of the above-mentioned systems will receive a certain number STCs based on the estimated output of the technology. This estimation uses information such as the model installed, the expected lifespan of the unit and the location of the installation.

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1 Renewable Energy (Electricity) Regulations 2001, para. 3(2).

2 Solar Water Heater (SWH) Owners Guide, Fact Sheet, Office of the Renewable Energy Regulator, April 2010, www.orer.gov.au/publications/pubs/swh-owners-guide-0410.pdf (accessed 1 June 2010).

3 See new section 17B and new Part 2A.

3.5 Deeming arrangements that currently apply under the existing RET will continue under the SRES. This means that owners or installers of small-scale technology systems receive STCs for the unit's expected lifetime generation upfront in order to subsidise the cost of installation. For solar water heating systems, STCs can only be created once, using a deeming period of ten years. Owners or installers of small generation units can opt for STCs to be created in batches one, five or 15 year deeming periods.[4]

3.6 In principle, one STC is equivalent to one MWh of renewable energy generation. However, the Solar Credits scheme that is currently in operation will continue under the SRES. This means that owners or installers of small generation units will earn multiple STCs per MWh of generated electricity, with the multiplier reducing over time.

Clearing house

3.7 The proposed legislation establishes a clearing house, to be administered by ORER, which will provide a mechanism for the transfer of STCs. Sellers of STCs can apply to sell them through the clearing house at a fixed price of $40 per STC (GST exclusive).[5]

3.8 When an owner applies to the clearing house to sell an STC, it is added to a list that operates as a queue. The clearing house will then offer the STCs for sale in the order in which they were received. When a buyer requires an STC, the STC at the top of the list (ie the earliest STC registered with the clearing house) is sold and the $40 remitted to the seller.

3.9 If there are no STCs available for sale, the clearing house will be able to create and sell additional STCs (still at the fixed price). The next time an STC is registered for sale, the seller is paid the $40 and the registered STC is cancelled, in lieu of the STC previously created. Conceptually, this simply represents bringing forward future STCs for sale in the present.

3.10 STCs may also be traded outside the clearing house, but the existence of the clearing house will constrain the price to $40 or less.

Liability under the SRES

3.11 There is no set target for renewable energy generation under the SRES. Instead collectively, liable entities are obliged to purchase and surrender all STCs created under the scheme, regardless of how many are created.

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4 *SGU Owners Guide*, Fact Sheet, Office of the Renewable Energy Regulator, April 2010, www.orer.gov.au/publications/pubs/sguowners-guide-0410.pdf (accessed 1 June 2010)

5 New Part 2A, Item 58; The GST amount would be $4; The $40 fixed price is set in nominal terms and is not indexed for inflation.

3.12 Calculating a firm's liability under the SRES is more complicated than under the existing RET, as the liability is calculated based on an estimation of how many STCs will be created in the year ahead.

3.13 The liability is calculated using the Small-scale Technology Percentage (STP) which will be published in regulations on or before 31 March of the relevant year. The STP for 2011 for example, would be:

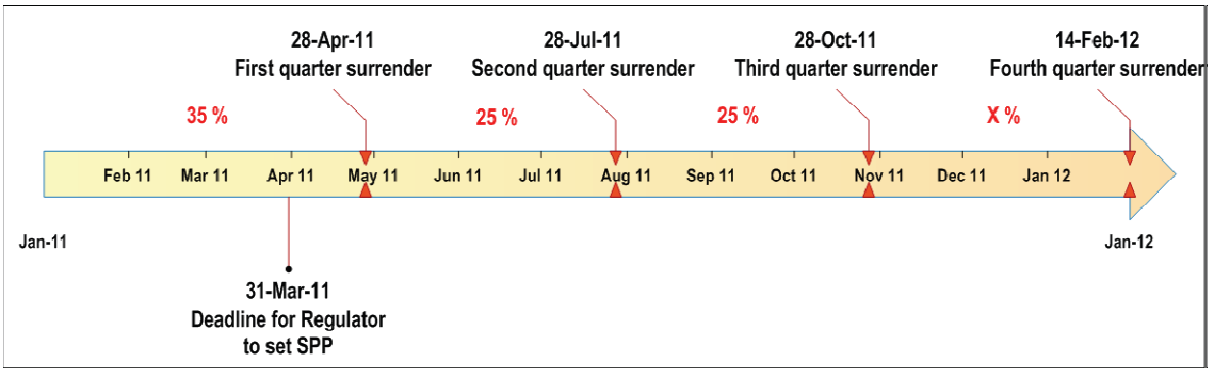
$$\frac{\text{Projection of the number of STCs to be created in 2011 (GWh)}}{\text{Total projected relevant acquisitions in 2011 (GWh)}}$$

3.14 The STP would be used to calculate an individual firm's liability based on its usage of electricity, with the liability payable in four instalments. The publication of the STP by March of the relevant year provides liable entities with some forward notice. Furthermore, ORER will publish estimates of the STP for the following two years. While non-binding, these will provide guidance to liable entities.

Quarterly Surrender of STCs

3.15 The SRES features quarterly rather than annual STC surrender periods. A discussion paper prepared by the Department of Climate Change and Energy Efficiency noted that quarterly surrender periods would provide more regular demand for STCs and hence 'clearing of the pool' on a more regular basis.[6] The dates for surrender are shown in Figure 2.

Figure 2—Quarterly SRES surrender dates



Source: Amended version of Figure 5, *Enhancing the Renewable Energy Target*, Discussion Paper, Department of Climate Change and Energy Efficiency, March 2010.

3.16 Liable entities will need to surrender STCs in four instalments each year to account for their SRES liabilities. This method is similar to the Pay-As-You-Go company tax arrangements. In essence, the liability is calculated with reference to:

6 Department of Climate Change and Energy Efficiency, 'Enhancing the Renewable Energy Target' Discussion Paper, March 2010, p. 15.

- the STP (estimated using projections of STC creation and total electricity acquisition);
- historical electricity acquisition from the previous year; and
- an adjusted fourth quarter liability that takes into account electricity acquisition for the current year once it is known.

3.17 An individual firm's liability in the first three quarters of 2011 is calculated based on the firm's electricity acquisition in 2010 and the STP. For instance, if the firm acquired 100 000 MWh of electricity in 2010, and the 2011 STP is 10 per cent, then the 2011 liability is calculated as 10 000 MWh, or 10 000 STCs, payable in quarterly instalments. As the 2011 STP must be published by 31 March 2011, firms will have at least one month's notice of their first-quarter STC liability, payable on 28 April.

3.18 The quarterly instalments are weighted differently, with 35 per cent of the liability due in the first quarter, 25 per cent in the second quarter and 25 per cent in the third quarter. The fourth quarter features an adjustment taking into account actual electricity acquisitions for that calendar year.

3.19 Rather than using the historical 2010 electricity acquisition data to calculate the 2011 liability (as in the first three quarters), the fourth quarter surrender amount is adjusted to take into account actual 2011 electricity acquisition data. Essentially the fourth quarter becomes a 'true-up' mechanism that ensures the relevant year's liability is calculated using the same year's electricity acquisitions. However, the STP remains unchanged, with any discrepancy between the amount of STCs created in a year versus the number surrendered reflected in the following year's STP.

Issues

Uncapped liability under the SRES

3.20 The explanatory memorandum for the bill notes that the establishment of the SRES represents a:

> …possibly open-ended commitment to small-scale generation with cost impacts for the liable entities. The proposed approach attempts to mitigate this risk by monitoring the uptake in the market and reviewing the fixed price in 2014.

3.21 The possible risk associated with establishing an uncapped SRES liability was an issue commonly raised by witnesses and submitters. With no set target under the SRES, liable entities collectively must purchase and surrender all STCs that are created through the scheme.

3.22 The LRET has been set at 41 000 GWh in recognition that the SRES is expected to result in at least 4000 GWh of renewable energy generation. The

government retains a commitment to delivering at least 45 000 GWh of additional renewable energy generation under the proposed legislation.[7] The government has stated that if the SRES does not deliver the 4000 GWh minimum, the LRET will be revised upwards to compensate. However, the LRET will not be revised down if the SRES exceeds the nominal 4000 GWh target.[8]

3.23 The MMA report predicted an eventual SRES size of 6000 GWh, while other organisations predicted figures as high as 10 000 GWh.[9]

3.24 The Department of Climate Change and Energy Efficiency informed the committee that the MMA modelling suggested that the amount of renewable generation in 2020 would be 22 per cent of total electricity generation.[10]

3.25 Many submissions expressed concern that the uncapped nature of the SRES represents a significant risk to liable entities in the event that household uptake of small generation units and solar water heaters exceeded expectations.

3.26 For example, A3P noted that:

> Capping the price but not the quantity of small-scale renewable electricity certificates introduces uncertainty into the electricity price for consumers. This problem is compounded in the case of electricity-intensive processes for which electricity makes up a significant proportion of their operating costs. The small-scale portion of the RET should be capped, or removed from the RET altogether.[11]

3.27 Alcoa noted that the design of the SRES reflected a transfer of risk to the liable entity sector. Previously, the influx of RECs from small-scale installations had reduced REC prices and jeopardised investment in large scale renewable energy generators. Under the proposed scheme, the risk posed by the uptake of small-scale technologies would be transferred to liable entities in the form of the uncapped obligation to purchase all STCs that were created.[12]

3.28 The Australian Industry Greenhouse Network were of a similar opinion, stating:

> The effect of the SRES proposal is to remove all price risk from SRES suppliers and to substantially reduce the price risk faced by LRET

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7 Second Reading Speech, p.15.

8 Mr Geoff Leeper, Deputy Secretary, Department of Climate Change and Energy Efficiency, *Proof Committee Hansard*, 28 May 2010, p. 50.

9 Australian Industry Greenhouse Network, *Submission 43*, p. 2.

10 Mr Geoff Leeper, Deputy Secretary, Department of Climate Change and Energy Efficiency, *Proof Committee Hansard*, 28 May 2010, p. 47.

11 A3P, *Submission 42*, p. 2.

12 Alcoa, *Submission 18*, p. 5.

> suppliers. However, these risks have not been removed from the renewables markets — rather, they have been transferred to liable parties and electricity consumers.[13]

3.29 The Energy Supply Association of Australia felt that the scheme could be simplified by the government instead providing a subsidy for small-scale technologies through a budgetary measure:

> On the other hand, the resultant Small-scale Renewable Energy Scheme (SRES) has the same effect as an upfront capital subsidy for households, community groups and businesses to install small-scale renewable generators and solar water heaters, but with considerable complexity in the administration and delivery due to the Government's reluctance to take fiscal responsibility for its own policy initiatives.[14]

3.30 Mr Brad Page, CEO of the Energy Supply Association of Australia noted that the risk associated with the uncapped liability of the SRES would add to existing risks in the electricity market:

> One of the issues that the industry I represent faces very substantially, right now, on every front is an enormous amount of risk. It is being put at risk because of delays, because of changes and because of open-ended schemes and, quite frankly, it is very hard to make efficient investment decisions when there is uncontrollable risk.[15]

3.31 Following consultation with stakeholders by the Department of Climate Change and Energy Efficiency, the proposed model seeks to provide certainty about the SRES liability at least one year in advance, with guidance provided on the liability in the subsequent two years. As noted in the first half of this chapter, a firm's annual liability will be calculated using the STP which will be based on projected STC creation and would be published at least by March of the year in question. This would give liable entities up to a year's forward notice of their SRES liability. In addition, ORER would publish estimates of the STP for the subsequent two years as a future guide for liable entities.

3.32 Origin Energy noted that the proposed SRES is overly complex, but felt that the inclusion of a projected annual target and the publication of an estimate of the STP in the following two years was useful. Origin Energy was concerned that the notification of the annual STP, permitted to be as late as 31March, would mean that liable entities received only one months notice of their first quarter liability. This was compounded by the fact that first quarter liability represented 35 per cent of the annual total.[16]

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13 Australian Industry Greenhouse Network, *Submission 43*, p. 1.

14 Energy Supply Association of Australia, *Submission 41*, p. 1.

15 Mr Brad Page, Energy Supply Association of Australia, *Proof Committee Hansard*, 28 May 2010, p. 11.

16 Origin Energy, *Submission 30*, p. 3.

3.33 Mr Andrew Livingston, the Renewable Energy Regulator, noted that while the deadline for prescribing the STP each year would be 31 March, in practice ORER would endeavour to publish the STP as early as January.

> For the very first year of the system there could be a tight timeframe, but after that with the way it is organised we will give a year in advance as well.[17]

3.34 Greenbank Environmental noted that, in most cases, liable entities would be able to pass any extra costs resulting from high uptake of small-scale technologies to the consumer. The majority of the liability would therefore be borne by consumers of electricity.[18]

3.35 The exception to this would be industries that traded goods at world prices and therefore competed with overseas firms not subject to an overall SRES liability. For this reason, Emissions Intensive Trade Exposed (EITEs) industries were particularly concerned about the SRES liability and the degree to which they were exempt from the scheme. This issue is discussed in chapter 4.

3.36 The Energy Retailers Association of Australia supported the proposed legislation, but suggested that the number of STCs created each year should be limited to the number forecast by ORER, effectively capping the scheme:

> Further certainty could be given to retailers by placing a cap on the number of STCs produced in any given period, for example the length of time the [STP] is projected. This could be capped to the projected [STPs] and then this would ensure that there will not be the need to reconcile unpurchased [STCs] into future [STPs].[19]

3.37 TRUenergy, while generally supportive of the bill, felt that the SRES, including the provision for annual forecasting of the SRES liability was overly complex and inefficient. TRUenergy therefore recommended adopting a fixed target approach to the SRES.[20]

3.38 Rio Tinto noted that the risk associated with the open-ended commitment to small-scale technologies could undermine certainty in the operation of the scheme, particularly given the planned 2014 review.[21]

3.39 The Australian PV Association was concerned that the uncapped nature of the SRES may lead to uncertainty about the scheme's long term viability:

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17 Mr Andrew Livingston, Office of the Renewable Energy Regulator, *Proof Committee Hansard*, 28 May 2010, p. 55.

18 Greenbank Environmental, *Submission 15*, p. 1.

19 Energy Retailers Association of Australia, *Submission 26*, p. 1.

20 TRUenergy, *Submission 28*, p. 2.

21 Rio Tinto, *Submission 9*, p. 1.

> The SRES market appears likely to very rapidly reach the nominal 4000 GWh by which the RET target has been reduced. Liable parties will strongly oppose any continued requirement to purchase RECs from small-scale generators at that stage. Hence the scene is set for another sudden policy change, and a boom-bust cycle for the industry.[22]

3.40 The issue of an overheated SRES market industry is discussed below.

Impact of state and territory policies

3.41 Many submitters noted that state and territory government policies strongly influence demand for small-scale technologies and hence could significantly impact on the overall size of the liability under the SRES.

3.42 Rheem Australia noted that there was a high likelihood that ORER may underestimate uptake of small-scale technologies and hence set the annual STC liability too low. This was in part because alternate Commonwealth, state and territory policies introduced subsequent to the estimation of the STP may drive demand in unforseen ways:

> For example, changes to the Federal Government's Solar Water Rebate scheme have reduced demand for heat pumps by 70% in the last 9 months. Similarly, the NSW Government's introduction of a gross feed in tariff for PV installations has substantially increased the uptake of solar PV. Neither of these changes could have been foreseen and therefore could not have been included in the annual target setting.[23]

3.43 Peter Sachs Industries shared this opinion, stating:

> Since September 2009 there have been two Federal Government solar hot water rebate reductions, a NSW Government solar hot water rebate reduction, a QLD Government Solar Hot Water Program scrapped and a new QLD Solar Hot Water Rebate introduced. The NSW Government introduced a gross feed in tariff for PV installations dramatically increasing uptake of photovoltaic solar panels and the Federal Government Home Insulation Program has been halted. Each one of these program adjustments or policy changes has had, or will have, a profound effect on the solar hot water and solar photovoltaic markets.[24]

3.44 The Cement Industry Federation (CIF) also noted that state and territory policies concerning renewable energy would operate in concert with the SRES to drive up demand. The CIF was of the opinion that, in the absence of a cap on the size

22 Australian PV Association, *Submission 20*, p. 2.

23 Rheem Australia, *Submission 31*, p. 2.

24 Peter Sachs Industries, *Submission 46*, p. 2.

of the SRES, there was a need for 'adequate policy levers available to the Australian Government to control a blow out in the uptake of the SRES.'[25]

Solar Credits

3.45 The SRES will continue the Solar Credits multiplier arrangements that currently exist under the RET legislation. The Solar Credits scheme will continue to provide multiple certificates per MWh of electricity generation from small generation units. The Solar Credit multiplier operates as follows:

Table 2—Solar Credits Multiplier

Installation Period	Multiplier: STC per MWh
9 June 2009–30 June 2012	5
1 July 2012–30 June 2013	4
1 July 2013–30 June 2014	3
1 July 2014–30 June 2015	2

Source: Renewable Energy (Electricity) Regulations 2001, 27 March 2010.

3.46 The multiplier only operates with respect to certificates related to the first 1.5 kW of the rated power output of the unit.[26]

3.47 Mr Adrian Ferraretto, Solar Shop Australia, noted that in practice this limited consumer demand to smaller systems, stating:

> If you look back at data from the department of climate change to see what happened 10 years ago when the government had a 1.5 kilowatt rebate, the average system size installed was 1.5 kilowatts. When they changed it in 2003 to a one kilowatt rebate, the average system size installed was around one kilowatt. The reason for this behaviour is that it goes to the value proposition. When you buy to the cap of the rebate, I suppose you are getting the best value for money. If you are buying more panels after the rebate has been capped you are pretty much buying unsubsidised solar panels, which costs you a lot of money and offers poor value for money, relatively speaking, compared to getting fully subsidised solar panels.[27]

3.48 In addition to receiving multiple certificates per MWh of generation, owners or installers of SGUs such as PV and solar hot water, are also able to receive the estimated life-time generation of RECs 'up front' in order to subsidise the cost of installation through a process called 'deeming'.[28]

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25 Cement Industry Federation, *Submission 14*, p. 3.

26 Renewable Energy (Electricity) Regulations 2001, para. (3)(c)

27 Mr Adrian Ferraretto, Solar Shop Australia, *Proof Committee Hansard*, 28 May 2010, p. 40.

28 Under the deeming arrangements, the expected lifetime generation of RECs is granted up-front. For instance, a rooftop PV system is expected to last 15 years, so 15 years worth of expected generation for each type PV model is provided up front.

3.49 The resulting subsidy for example, for a Sydney household that installs a 1.5 kW solar panel system in 2011 is an upfront discount of $6,200 through STCs.[29]

Overheating the SRES market

3.50 Representatives of six solar photovoltaic (PV) businesses noted that costs of solar PV had declined significantly over time and that the Solar Credits scheme had failed to keep pace with the price of installing a PV system.[30] For example Mr Adrian Ferraretto of Solar Shop Australia told the committee:

> In the past 18 months, we have witnessed a dramatic drop of more than 50 per cent in the price of solar panels. This is because dedicated photovoltaic polysilicon plants have become extensively commercialised throughout the world following the silicon shortage that we experienced five years ago. Ninety-nine per cent of the world's solar panels are made from silicon. It is the single biggest cost of goods in the manufacture of solar panels. Even with these record low prices over the past 18 months, solar panel manufacturers are still making good margins—good profits—and they are also forecasting further cost reductions in the price of solar panels.[31]

3.51 The businesses' joint submission noted that this had led to the emergence of installers offering minimal or no cost PV systems under certain circumstances:

> Combining these market changes [lower PV wholesale prices] with the current Solar Credits multiplier, in Zone 3 (Sydney, Perth, Brisbane, Adelaide) the actual cost to the consumer to install a 1.5kW solar power system is minimal. In fact, we are already seeing suppliers offering systems at no cost to the consumer in Zone 2, (Alice Springs, Broken Hill, Broome).
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> It is unsustainable for the industry to have solar power systems available at no cost to consumers. Solar power systems offered at no or low cost encourage low standards in materials, poor returns on financial and environment investments, and could cause long term damage to the entire industry.[32]

3.52 Greenbank Environmental noted a similar concern:

> As the economies of scale drive future price reductions in the deemed category, it could cause those underlying technologies to become cost

29 Department of Climate Change and Energy Efficiency, 'Enhancing the Renewable Energy Target' Discussion Paper, March 2010, p. 8.

30 Solar Shop Australia, Silex Solar, Sunpower Corporation Australia, Suntech Power Australia, Conergy Australia and SMA Australia, *Submission 24*, p. 1.

31 Mr Adrian Ferraretto, Solar Shop Australia, *Proof Committee Hansard*, 28 May 2010, pp 40–41.

32 SolarShop Australia et. al, *Submission 24*, p. 1.

> neutral in a short space of time, especially if the deemed sector is to be uncapped.[33]

3.53 The Department of Climate Change and Energy Efficiency informed the committee that it was not aware of offers of 'free' solar PV systems in the industry. Ms Shayleen Thompson informed the committee that:

> …claims of solar panels being installed for free have been made from time to time over the last year or so. The department has repeatedly sought evidence that these claims are in fact correct, and to my knowledge we have not been provided with any evidence that demonstrates the veracity of those claims.[34]

3.54 Ms Thompson noted that the department's own modelling indicated that the uptake of small-scale technologies would most likely decline over time:

> We understand and talk to those in the industry that feel that other scenarios may unfold, but as I said, the modelling examines the forms of support that are around for these systems and draws the conclusion that those forms of support are winding back. As Mr Leeper has said, the outcome of that in the modelling report is that the number of certificates created by the small-scale units declines quite significantly from its height in the early years of the scheme.[35]

3.55 During the course of the inquiry, the committee became aware of current advertisements for 'free' rooftop PV systems, but was unable to assess how widespread the offers were or how stringent were the conditions attached to the offer.[36] Nevertheless, given the available evidence, the committee considers that declining PV costs combined with existing state and territory rebates and current Solar Credits arrangements could feasibly result in free or extremely low-cost PV systems to households.

3.56 Several businesses that appeared at the public hearing were concerned that the availability of free systems and an associated spike in demand could result in significant risks to the industry. Mr Ferraretto noted that such a spike in demand had already occurred under the former Solar Homes and Communities Plan (SHCP) rebate:

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33 Greenbank Environmental, *Submission 15*, p. 1.

34 Ms Shayleen Thompson, First Assistant Secretary, Department of Climate Change and Energy Efficiency, *Proof Committee Hansard*, 28 May 2010, p. 50.

35 Ms Shayleen Thompson, First Assistant Secretary, Department of Climate Change and Energy Efficiency, *Proof Committee Hansard*, 28 May 2010, p. 50.

36 Solar Shop Australia, response to question on notice, 28 May 2010 (received 1 June 2010) and Greenbank Environmental, Supplementary submission to *Submission 14*.

> In the dying days of the old $8,000 rebate, or the SHCP, we saw 60,000 systems given away for free in just a few weeks at a cost of $480 million to the taxpayer.[37]

3.57 Mr Ferraretto informed the committee that 60 000 of these systems could generate up to 11 million certificates, of which 80 per cent would be as a result of the 5-times Solar Credits multiplier.[38] The committee notes that this would be close to the total number of certificates required for surrender in 2010 under the existing RET scheme.

3.58 PV businesses that appeared before the committee were concerned that an overheated market may result in a decline in quality, harming the long-term reputation of the industry:

> The only way to offer a free system is by using really cheap products and the really cheap installation and maybe frames that are made out of galvanised steel instead of aluminium, that will not last as long as what the solar panel guarantee is and things like that. To offer a free system you have to cut corners.[39]

3.59 Mr David McCallum from Conenergy, was of the opinion that if PV installation was provided for free, the subsequent swift upswing in demand could lead to a greater use of unskilled or poorly trained labour:

> …when the system is free, [with] installation capacity where they may be installing a couple of hundred systems a week in suburbs and towns, you have mass deployment of unskilled labour carrying out the vast majority of those installations, with the electrician connecting the system to the grid. So, the electrician turns up at the end of the day.[40]

3.60 Industry participants noted that currently the sector was well regulated, including accreditation requirements for both equipment and installers:

> There is a lot more rigour in the installation of solar panels. You need to not just be an electrician to receive the solar credits multiplied but also do an extra course on top of that to receive Clean Energy Council accreditation.[41]

3.61 As the Department of Climate Change and Energy Efficiency noted, despite a spike in solar panel installations in 2009, they were not aware of any resulting safety concerns.

> One of the things that should be observed about solar panel installations is that, even though we had 50,000 installations in the last year, there have

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37 Mr Adrian Ferraretto, Solar Shop Australia, *Proof Committee Hansard*, 28 May 2010, p. 40.

38 Mr Adrian Ferraretto, Solar Shop Australia, *Proof Committee Hansard*, 28 May 2010, p. 45.

39 Mr Adrian Ferraretto, Solar Shop Australia, *Proof Committee Hansard*, 28 May 2010, p. 44.

40 Mr David McCallum, Conenergy Australia, *Proof Committee Hansard*, 28 May 2010, p. 45.

41 Mr Adrian Ferraretto, Solar Shop Australia, *Proof Committee Hansard*, 28 May 2010, p. 43.

> been no reports of serious safety outcomes. As far as we are aware, there have been no reports of fire or electrocution resulting from those installations, despite the very significant increase. You would have to say, from any perspective, that the incidence of very adverse outcomes from solar panels in Australia is very low.[42]

3.62 The department noted that it was seeking to further improve the already robust safety regulations. Ms Thompson stated:

> The current regulatory framework requires that installers of solar panels are in fact accredited through appropriate TAFE-type training arrangements. The CEC accreditation rules require that they be licensed electricians, and the CEC accreditation arrangement also requires that they use panels that meet Australian and international standards, both for the panels themselves, other modules of equipment that go on the roof and also with respect to the panel design or layout on the roof…
>
> In addition, as well as extending, the deeming arrangement will also be extending the scope to cover other small-scale technologies, so we will be extending those arrangements to cover small-scale hydro and micro wind. We are also preparing regulations that will directly require that the installer be a licensed electrician. We are strengthening those arrangements through the regulatory framework[43]

3.63 Mr Ferraretto, Solar Shop Australia, recommended that the Solar Credits multiplier should be reduced but cover larger capacity and more expensive systems. In the opinion of small-scale PV installers that appeared before the committee, this would ensure that systems would not be offered for free, but would provide a reasonable subsidy for a greater range of systems.[44]

3.64 Mr David McCallum, ConEnergy, noted that by ensuring consumers had to spend some of their own money in order to purchase a solar PV system, they would have an incentive to pursue quality:

> As soon as you can convert the consumer from a free system and they now have to put their hand in their pocket to acquire a product, their motives change. They start looking for the quality of the supplier, the quality of product and the performance of the system rather than the issue of, 'It doesn't matter. I don't care because I am not paying for it.'[45]

3.65 Subsequent to the hearing, another solar PV market participant, Nu Energy, provided a submission to the committee that disagreed with the views of the PV

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42 Ms Shayleen Thompson, Department of Climate Change and Energy Efficiency, *Proof Committee Hansard*, 28 May 2010, p. 54.

43 Ms Shayleen Thompson, Department of Climate Change and Energy Efficiency, *Proof Committee Hansard*, 28 May 2010, p. 53.

44 SolarShop Australia et. al, *Submission 24*, p. 2.

45 Mr David McCallum, Conenergy Australia, *Proof Committee Hansard*, 28 May 2010, p. 43.

installers that were present at the committee hearing. Nu Energy noted that the average price of a 1.5 kW system across Australia after rebates was approximately $2500.[46] Nu Energy were of the view that exchange rate volatility, equipment availability and the phase out of Solar Credits and other rebates may act to increase this price. It therefore did not support the proposal outlined by Solar Shop Australia to reduce the Solar Credits multiplier and increase the system size to which it applied, on the grounds that it would raise the price of a 1.5 kW system and 'disadvantage working families, the elderly and rural communities.'[47]

Committee view

3.66 The committee is concerned by the potential risks posed by demand in the household solar PV market. Notwithstanding the strength of the existing accreditation process, the regulatory improvements foreshadowed by the Department of Climate Change and Energy Efficiency, and claims that risks will be mitigated 'by monitoring the uptake in the market and reviewing the fixed price in 2014'[48] the committee is of the view that additional mechanisms could be considered for the SRES.

3.67 The explanatory memoranda notes that a full statutory review of the RET scheme is planned for 2014. The government will also commission a review in 2012 including possible mechanisms for setting the fixed price for small-scale RECs under the scheme that could apply from 1 January 2014.[49] In particular, the 2012 STC pricing review would be an opportunity to review the fixed price of STCs including considerations such as:

- the development of a framework in which REC prices in the future are set by an independent regulator;
- options to ensure consistent national assistance by incorporating consideration of state and territory assistance in setting small-scale REC prices;
- changes in the costs of the technologies; and
- the impact of the small-scale REC price and levels of small-scale technology deployment on the electricity market, including electricity prices.[50]

3.68 The committee notes that this review may not occur in time to prevent a possible upsurge in demand under the SRES, particularly in relation to household PV systems.

3.69 The SRES component of the enhanced RET is uncapped and set at a fixed price in order to deliver certainty to both householders seeking to install solar panels

46 Nu Energy, *Submission 51*, p. 2.

47 Nu Energy, *Submission 51*, pp 2–3.

48 Explanatory Memorandum, p. 8.

49 Explanatory Memorandum, p. 8.

50 Explanatory Memorandum, p. 8.

and other renewable technologies, and to the installers of such systems. However, it is also the case that state and territory policies such as preferential feed-in tariffs are an important driver of demand for such systems and these policies are beyond the control of the Commonwealth.

Recommendation 1

3.70 The committee recommends that the government consider mechanisms to manage potentially high demand under the Small-scale Renewable Energy Scheme.

Cost-of-carry and cash-flow implications for small-scale installers

3.71 The operation of the clearing house and the method by which STC liability is calculated is described above. The main concern raised by solar hot water manufacturers and installers relates to length of time it may take to redeem the value of STCs through the clearing house.[51] This was said to be important as it impacted on the ability of an installer to maintain adequate cash flow and the price it would receive for STCs if it chose to sell them through the private market instead.

3.72 The length of time it would take for an STC to sell through the clearing house relates directly to the STP, which is calculated based on (amongst other things) the expected uptake of small-scale technologies in that year.

3.73 Peter Sachs Industries, a manufacturer of solar water heating systems, noted the difficulty the Renewable Energy Regulator would likely have in estimating the STP accurately:

> It is impossible for any manufacturer to forecast 12 month demand in the current market and we believe that the regulator would have an impossible job estimating demand across all deemed technology types.[52]

3.74 Rheem Australia was concerned that in the event that uptake of small-scale technologies exceeded ORER's expectations, and hence led to an underestimate of the STP, there would be a surplus of STCs created relative to the amount required each quarter. This would mean that the clearing house may take longer than a quarter to sell an STC. This was an issue because of the 'cost-of-carry' associated with holding STCs.[53]

3.75 The cost-of-carry refers to the time value of money. Put simply, $40 in the future is worth less than $40 today in real terms due to inflation. Similarly, holding an STC incurs an opportunity cost, as the funds used to purchase or acquire an STC could

51 See for example submissions by Rheem Australia, GWA Heating and Cooling and Peter Sachs Industries.

52 Peter Sachs Industries, *Submission 46*, p. 2.

53 Rheem Australia, *Submission 31*, p. 3.

have been invested in assets that appreciate in value or provide return on the investment. This means that STCs lose relative value over time.

3.76 Because STCs lose value over time, liable entities are likely to wait until STCs are required for surrender before purchasing them at the fixed price through the clearing house. In order to induce a sale prior to this time, small-scale installers would need to offer a discounted price reflecting the cost-of-carry. The committee was informed that, assuming an interest rate of seven per cent and an average time of six weeks for an STC to sell through the clearing house, the cost-of-carry would be approximately 30 cents per STC.[54] This would suggest a market value for STCs of $39.70.

3.77 However, as the cost-of-carry would be directly related to the length of time it took for an STC to sell through the clearing house, any delay caused by an underestimated STP would result in a lower spot market price.

3.78 Rheem Australia noted the need for small-scale installers to maintain sufficient cash flow would necessitate them to sell STCs in the private market rather than waiting for a sale through the clearing house. As small-scale installers tended to offer discounted systems in return for receiving STCs from an installation, they held a large proportion of their revenue from installations in the form of STCs.[55]

3.79 Similarly, Mr Michael Sachs of Peter Sachs Industries provided an illustration of the cash flow issue for small-sized businesses that install small-scale systems:

> What would happen is you have a small operation like that installing, say, 40 water heaters a month and they are going to generate $50,000 or $60,000 worth of [STCs] resulting from those…
>
> …just in a business that size you are going to have $50,000 to $60,000 a month accruing in money that is going to be taken out of circulation because those businesses have given those as point-of-sale discounts. So at the end of your three-month period you are going to have $150,000 to $180,000, which for any business, but particularly for a small business like that, is a significant amount of money. Add on to that the fact that, if you then have the risk that those certificates, or a portion of them may not be, may not actually be paid back out by the clearing house to that business at the end of that quarter and they may carry over, I think you have a system there that a lot of people will avoid, because there is not enough certainty involved in getting payment from it…[56]

54 Department of Climate Change and Energy Efficiency, answer to question on notice, 28 May 2010 (received 2 June 2010).

55 Rheem Australia, *Submission 31*, p. 3.

56 Mr Michael Sachs, Peter Sachs Industries, *Proof Committee Hansard*, 28 May 2010, p. 16.

3.80 As such, many small-scale installers would be forced to sell STCs at less than the fixed price to reflect the cost-of-carry. GWA Heating and Cooling expressed a similar concern, stating:

> We believe setting an annual target [through the estimation of the STP] could lead to a situation that if more [STCs] are generated than is estimated for the target to be taken up by the liable parties, it will result in a collapse of the [STC] value as smaller operators in the market will not be able to deal with the delay in their cash flow and sell [STCs] at unsustainable values.[57]

3.81 Mr Matthew Sexton of Rheem Australia, noted that the solar water heater market was volatile, making accurate estimation of the STP difficult.

> We believe there is a very high likelihood that there would be an underestimation of the [STCs] that would be created, given very frequent changes to federal and state policies on rebates and incentives…
>
> …in 2009 the peak monthly volume of certificates generated for water heaters was just over one million in July, down to a low of about 300,000, most recently, in April [2010]. So there has been a great deal of volatility and the acceleration of demand for certificates we believe will conflict with the target setting on an annual basis. So, what we would recommend is that the regulator be given discretion to amend [the STP] on a much more frequent basis, and that should be at least quarterly.[58]

3.82 The Department of Climate Change and Energy Efficiency recognised the issue raised by the small-scale installers, noting that it had been considered in the department's March 2010 discussion paper.

3.83 The department noted that the scheme incorporated a number of mechanisms to minimise the possibility of delays in selling STCs through the clearing house. These include:

- allowing system installers to continue to give householders an upfront discount at the point of sale;
- ensuring the clearing house transfers STCs on a 'first in, first out' basis;
- front-end loading (35 per cent in the first period) the required small-scale REC liability to encourage purchase of STCs by liable parties early each year; and
- ensuring the STC projection each year takes account of any excess STCs from the previous year.[59]

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57 GWA Heating and Cooling, *Submission 23*, p. 2.

58 Mr Matthew Sexton, Rheem Australia, *Proof Committee Hansard*, 28 May 2010, p. 15.

59 Department of Climate Change and Energy Efficiency, Answer to question on notice, 28 May 2010 (received 1 June 2010).

3.84 While recognising that STCs will trade slightly below the fixed $40 figure in the spot market, the committee is of the opinion that the arrangements for transferring STCs through the clearing house are adequate. While presenting some risk to small-scale installers in terms of the cost-of-carry, the scheme also represents an open-ended commitment supporting small-scale technologies at a relatively stable price.