



FACT SHEET

CALCULATING RENEWABLE ENERGY CERTIFICATES (RECs) FOR SMALL SOLAR (PHOTOVOLTAIC) SYSTEMS¹

Version 3 as updated in March 2009

INTRODUCTION

The *Renewable Energy (Electricity) Act 2000* (the Act) and the *Renewable Energy (Electricity) Regulations 2001* (the Regulations) allow owners of eligible small generation units (SGUs) such as small solar (photovoltaic) systems, to create and trade renewable energy certificates (RECs).² Each REC represents the equivalent of one megawatt hour (MWh) of generated electricity from an accredited renewable energy source. Once RECs are validated and registered by the Office of the Renewable Energy Regulator (ORER), they can be sold in the REC market. Potential buyers of RECs include:

- liable parties, such as electricity retailers, who have an obligation to surrender RECs to the ORER each year or pay a shortfall charge in order to acquit their liability under the Act;
- Registered Agents; and
- traders of RECs.

Owners of SGUs can create RECs themselves through the internet-based REC Registry (www.rec-registry.gov.au), but most find it more convenient to assign their right to create RECs to an Agent in return for a financial benefit such as a discount on the purchase price of the SGU or a cash rebate. Details of these two options, as well as a list of Registered Agents who have agreed to make their contact details publicly available, can be found on the ORER website (www.orer.gov.au/publications/agents.html) or by contacting the ORER.

¹ Note: The information provided in this document may be subject to change with amendments to the *Renewable Energy (Electricity) Act 2000*, the *Renewable Energy (Electricity) Regulations 2001*, and the administrative processes adopted by the Office of the Renewable Energy Regulator.

²It is the owner of the eligible SGU at the time it was installed who has the right to create RECs for their SGU. This right can be assigned to a registered agent.

DEFINITION OF SMALL GENERATION UNIT

The REC calculation method provided below applies to solar (photovoltaic) generation systems that meet the definition of a *small generation unit* (SGU) under the Regulations. The definition of SGU has varied with changes to the Act and Regulations – Table 1 below summarises the definition of SGU according to the installation date. Solar (photovoltaic) generation systems that fall outside the definition may still be entitled to create RECs, however, they can only do so if they become accredited as a renewable energy power station. Information about the power station accreditation process is available from the Power Stations page of the ORER website (www.orer.gov.au/generators/index.html) or by contacting the ORER.

TABLE 1

Installation Dates	Treated as solar (photovoltaic) SGU:
On or after 14 November 2005	If the system's energy source is solar (photovoltaic), has a kW rating (power output) of no more than 100 kW and generates no more than 250 MWh of electricity each year.
Between 1 April 2001 and 13 November 2005 (inclusive)	If the system's energy source is solar (photovoltaic), has a kW rating (power output) of no more than 10 kW and generates no more than 25 MWh of electricity each year.
Before 1 April 2001	Systems installed before 1 April 2001 are treated as renewable energy power stations. See the Renewable Energy Power Stations page of the ORER website.

DEEMING PERIODS

RECs for SGUs are created in batches, known as deeming periods. Owners of solar (photovoltaic) SGUs can choose to create RECs in either 1, 5 or 15 year deeming periods, depending on the particular installation.

RECs may be created for solar (photovoltaic) SGUs either:

- annually, ie. on installation for the first 1 year after installation and then at the start of each subsequent 1 year deeming period; or
- on installation for the first 5 years after installation and then at the start of each subsequent 5 year deeming period; or

- on installation for 15 years – no further RECs may be created. The 15-year deeming option is only available within 12 months of the installation date and only to SGUs installed on or after 31 July 2005*.

*Note: For SGUs installed on or after 6 October 2007 to choose the 15 year deeming option, the unit must have been designed and installed by a person accredited for stand-alone and grid-connected power systems under the Australian Business Council for Sustainable Energy (BCSE) accreditation scheme or the Clean Energy Council accreditation scheme.

REGULATION CHANGES AFFECTING ELIGIBILITY

On 6 October 2007 the Regulations were amended by the *Renewable Energy (Electricity) Amendment Regulations 2007*, which altered some of the eligibility requirements for SGUs. The new provisions of the Regulations apply only to SGUs **installed on or after 6 October 2007**; whereas SGUs **installed before 6 October 2007** must abide by the requirements of the previous version of the Regulations.

Details of earlier versions of the Regulations can be obtained by contacting the ORER.

The main changes relating to SGUs in the 6 October 2007 amendment include:

- RECs for SGUs installed on or after 6 October 2007 must be created within 12 months of the SGU's installation date³ ; and
- in order for the 15 year deeming period to be chosen for solar (photovoltaic) SGUs installed on or after 6 October 2007 the unit must be designed and installed by a person accredited for stand-alone and grid-connected power systems under the BCSE accreditation scheme or the Clean Energy Council accreditation scheme.

CALCULATING REC ENTITLEMENT

Once you have established that a small solar (photovoltaic) system meets the above eligibility requirements, to calculate how many certificates that may be created for it:

1. Establish your Zone by using Table 2, *Ratings and Postcode Zones for Small Solar (Photovoltaic) Systems* on Page 7 of this document.

³ This 12 month limit applies to creating RECs for the first deeming period for a SGU. If the one-year or five-year deeming options are chosen, then the right to create RECs may arise again at the end of each subsequent deeming period (which will not be within 12 months of the installation date). For more details on deeming periods visit the ORER website (www.orer.gov.au/sgu/index.html) or phone on 02 6274 2192.

2. Once you have established your Zone, look up the corresponding Zone Rating in *Table 3, Zone ratings for solar (photovoltaic) Systems* on Page 7 of this document.
3. To calculate your system's annual REC entitlement, multiply the Zone Rating by your SGU's rated power output (in kW). You can find the rated power output of your unit in the specifications provided by the manufacturer – please ensure that you use the exact figure that applies to your particular model.

$$\begin{array}{ccc}
 \boxed{\text{Zone Rating}} & \times & \boxed{\text{Rated power output (kW) of your solar (photovoltaic) system}} & = & \boxed{\text{Annual REC Entitlement}}
 \end{array}$$

If you calculate that you are entitled to less than or equal to 250 RECs per year, proceed to step 4.

If you calculate that you are entitled to more than 250 RECs per year your system is classified as a potential photovoltaic power station and in order to create RECs you must apply to the ORER to become an accredited power station. Application forms for power station accreditation are available on the Forms page of the ORER website (www.orer.gov.au). A registered person with an accredited power station can create RECs for eligible electricity generated above the power station's baseline. REC creation for power stations cannot be assigned to an agent.

4. Choose the deeming period you for which you would like to create RECs: 1-year, 5-years or 15-years, as described in the "Deeming Periods" section above.

Calculate the REC entitlement for each deeming period by multiplying the Annual REC Entitlement (as calculated in step 3) by the number of years in the deeming period you choose, either 1, 5 or 15.

5. If your calculated REC entitlement, over a one-year or five-year period, is not a whole number and is:
 - greater than 1 MWh you must round **down** the calculated number to the nearest whole number of RECs.
 - between 0.5 MWh and 1 MWh you are allowed to round **up** the calculated decimal number to 1 REC.

Example 1

If you wish to create RECs for a 15-year deeming period for a small solar panel (photovoltaic) system installed by a BCSE – accredited installer on 8 October 2007 in the postcode area of 2315, which has a rated power output of 73.8 kW. To determine eligibility:

- *Is the small solar panel (photovoltaic) system installed within the last 12 months?*
Yes
- *Does the system have a rated output of not more than 100 kilowatts (kW) or a total annual output less than 250 MWh?* **Yes**
- *Was the system designed and installed by a person accredited for stand-alone and grid-connected power systems under the Australian Business Council for Sustainable Energy accreditation scheme or the Clean Energy Council accreditation scheme?* **Yes**

The system meets all of the eligibility requirements, so we can now proceed to calculate the number of RECs it is entitled to create.

1. Look up the postcode in Table 2 to establish your Postcode Zone: **3**
2. Look up the Postcode Zone in Table 3 to establish your Zone Rating: **1.382**
3. Multiply your Zone Rating by the kW capacity to get the annual REC entitlement:
$$1.382 \times 73.8\text{kW} = \mathbf{101.9916 \text{ MWh}}$$
4. Multiple by 15 years to get the total REC entitlement:
$$101.9916 \times 15 \text{ years} = \mathbf{1529.874 \text{ MWh}}$$
5. Round down the total amount of electricity taken to be generated to the last whole MWh to determine the number of RECs you are eligible to create:
$$1529.874 \text{ MWh} = \mathbf{1529 \text{ RECs}}$$
6. This system is rated at less than 100 kW and has a total annual output of less than 250 MWh per year, it does not need to be accredited as a power station.

Example 2

If you wished to create RECs on a 5-year basis for a photovoltaic unit installed on 22 July 2002 that has a rated output or kW capacity of 5.7 kW in the postcode area of 2315. To determine eligibility:

- *For a photovoltaic system installed before 14 November 2005 RECs can only be created if the system has a rated output of less than 10 kilowatts (kW), or a total annual output of less than 25 MWh. Does the system have a rated output of not more than 10 kilowatts or a total annual output less than 25 MWh?* **Yes**

The system meets all of the eligibility requirements, so we can now proceed to calculate the number of RECs it is entitled to create.

1. Look up the postcode in Table 2 to establish your Postcode Zone: **3**

2. Look up the Postcode Zone in Table 3 to establish your Zone Rating: **1.382**
3. Multiply your Zone Rating by the kW capacity:
$$1.382 \times 5.7\text{kW} = \mathbf{7.8774 \text{ MWh}}$$
4. Multiple by 5 years:
$$7.8774 \times 5 \text{ years} = \mathbf{39.387 \text{ MWh}}$$
5. Round down the total amount of electricity taken to be generated to the last whole MWh to determine the number of RECs you are eligible to create:
$$39.387 \text{ MWh} = \mathbf{39 \text{ RECs}}$$
6. This system is rated at less than 10 kW and has a total annual output of less than 25 MWh, it does not need to be accredited as a power station.

TABLE 2**Ratings and Postcode Zones for Small Solar (Photovoltaic) Systems**

Postcode range			Postcode range			Postcode range			Postcode range		
from	to	zone	from	To	Zone	from	to	zone	from	to	zone
0	799	3	2900	2999	3	4474	4476	1	6251	6254	3
800	869	2	3000	3390	4	4477	4478	2	6255	6270	4
870	879	1	3391	3398	3	4479	4485	1	6271	6315	3
880	1000	2	3399	3413	4	4486	4490	2	6316	6357	4
1001	2356	3	3414	3426	3	4491	4492	1	6358	6393	3
2357	2357	2	3427	3474	4	4493	4499	2	6394	6400	4
2358	2384	3	3475	3514	3	4500	4721	3	6401	6430	3
2385	2393	2	3515	3516	4	4722	4722	2	6431	6431	2
2394	2395	3	3517	3520	3	4723	4723	3	6432	6433	3
2396	2398	2	3521	3524	4	4724	4735	2	6434	6439	2
2399	2399	3	3525	3538	3	4736	4736	1	6440	6441	1
2400	2400	2	3539	3539	4	4737	4824	3	6442	6444	3
2401	2404	3	3540	3549	3	4825	4827	2	6445	6459	4
2405	2407	2	3550	3560	4	4828	4828	3	6460	6467	3
2408	2410	3	3561	3569	3	4829	4829	2	6468	6469	2
2411	2414	2	3570	3570	4	4830	5261	3	6470	6471	3
2415	2536	3	3571	3606	3	5262	5263	4	6472	6474	2
2537	2537	4	3607	3617	4	5264	5270	3	6475	6506	3
2538	2544	3	3618	3622	3	5271	5300	4	6507	6555	2
2545	2557	4	3623	3628	4	5301	5429	3	6556	6573	3
2558	2626	3	3629	3657	3	5430	5450	2	6574	6602	2
2627	2629	4	3658	3684	4	5451	5653	3	6603	6607	3
2630	2630	3	3685	3687	3	5654	5669	2	6608	6641	2
2631	2639	4	3688	3724	4	5670	5679	3	6642	6724	1
2640	2820	3	3725	3731	3	5680	5699	2	6725	6750	2
2821	2842	2	3732	3999	4	5700	5709	3	6751	6797	1
2843	2872	3	4000	4416	3	5710	5722	2	6798	6799	2
2873	2874	2	4417	4417	2	5723	5724	1	6800	6999	3
2875	2876	3	4418	4422	3	5725	5733	2	7000	8999	4
2877	2889	2	4423	4423	2	5734	5799	1	9000	9999	3
2890	2897	3	4424	4426	3	5800	6243	3	-	-	-
2898	2899	4	4427	4473	2	6244	6250	4	-	-	-

TABLE 3**Zone Ratings for Solar (Photovoltaic) Systems**

Zone Rating	
1	1.622
2	1.536
3	1.382
4	1.185