



solarpv

The number of Australian households with solar panels has increased more than 35 times over the last three years.

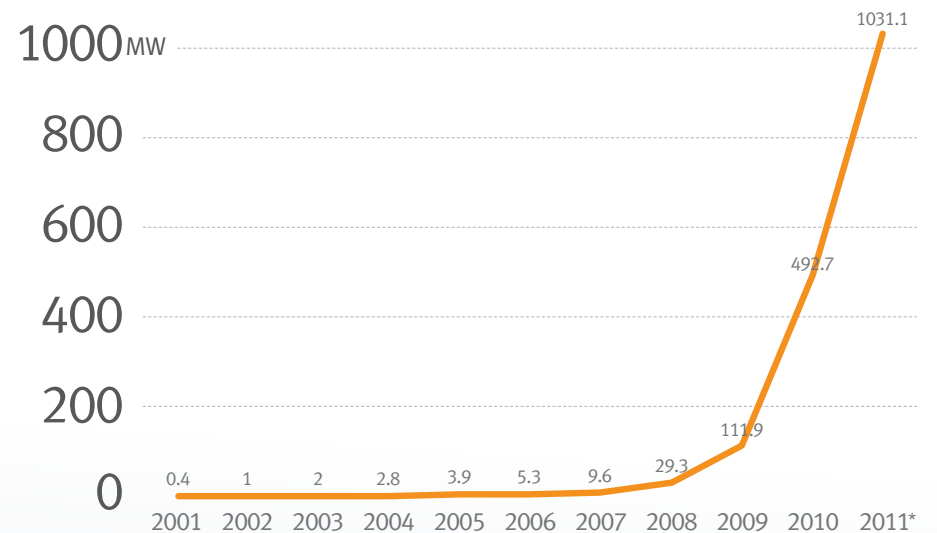
There were 513,585 solar PV systems installed at the end of August 2011. Approximately 430,000 of these were installed during the last two years. More than 6 per cent of Australian houses have now installed solar power and the number of accredited solar installers across the country has increased by six times in the last three years to more than 4000.

Data from the Office of the Renewable Energy Regulator released by the Clean Energy Council in February 2011 showed that Australians from all walks of life were embracing this technology, including those from so called mortgage belt and retirement suburbs across the country.

The cost of solar power continues to fall and many analysts expect it to meet the retail cost of mainstream electricity around the middle of the decade.

2.3% of total clean energy generation

Figure 11. Cumulative installed capacity of solar PV in Australia Source: SunWiz 2011



ACT	0.007	0.010	0.015	0.021	0.026	0.053	0.249	0.724	1.942	6.923	19.428
NSW	0.062	0.236	0.378	0.495	0.671	0.907	2.007	6.104	24.459	173.647	326.556
NT	0.004	0.006	0.006	0.006	0.007	0.009	0.012	0.410	0.919	2.362	2.963
QLD	0.061	0.110	0.178	0.280	0.387	0.488	1.057	5.096	29.109	119.173	254.546
SA	0.126	0.330	0.876	1.269	1.865	2.542	3.705	8.517	20.651	53.008	128.698
TAS	0.002	0.011	0.017	0.022	0.032	0.034	0.072	0.298	1.984	4.841	8.278
VIC	0.113	0.255	0.439	0.616	0.827	1.133	2.099	4.888	15.898	74.667	151.268
WA	0.034	0.055	0.081	0.095	0.116	0.143	0.410	3.282	16.916	58.103	139.313
TOTAL (MW)	0.409	1.013	1.989	2.804	3.931	5.307	9.609	29.319	111.877	492.723	1031.051

*2011 data based on first eight months of year only



“The solar power sector is now part of the mainstream business community. Opportunities exist, the business case is valid, the fundamentals are sound.”

The next chapter hopefully includes more policy certainty, less carbon pollution and no smoke and mirrors. Transparency and cooperation within the solar PV sector and the industry more broadly – including other clean energy technologies, network operators, retailers and regulators – will reaffirm ours as a viable industry that offers employment, security and sustainability.”

Diane Howard

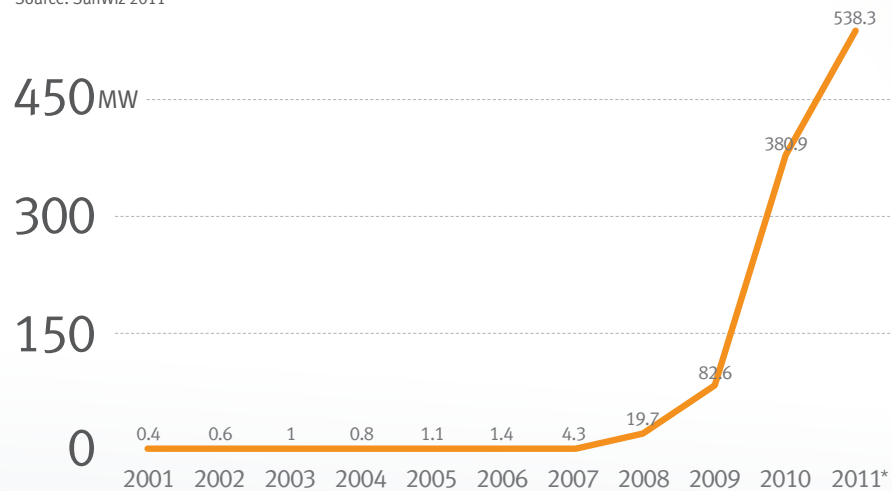
*Business Development Manager, Solar Power Specialists
Chair, Clean Energy Council Solar Photovoltaic Directorate*



solarpv

Figure 12. Annual capacity of solar PV installed in Australia (2001–2011)

Source: SunWiz 2011



ACT	0.01	0	0	0.01	0	0.03	0.2	0.48	1.22	4.98	12.51
NSW	0.06	0.17	0.14	0.12	0.18	0.24	1.1	4.1	18.36	149.19	152.91
NT	0	0	0	0	0	0	0	0.4	0.51	1.44	0.6
QLD	0.06	0.05	0.07	0.1	0.11	0.1	0.57	4.04	24.01	90.06	135.37
SA	0.13	0.2	0.55	0.39	0.6	0.68	1.16	4.81	12.13	32.36	75.69
TAS	0	0.01	0.01	0.01	0.01	0	0.04	0.23	1.69	2.86	3.44
VIC	0.11	0.14	0.18	0.18	0.21	0.31	0.97	2.79	11.01	58.77	76.6
WA	0.03	0.02	0.03	0.01	0.02	0.03	0.27	2.87	13.63	41.19	81.21
TOTAL (MW)	0.41	0.6	0.98	0.81	1.13	1.38	4.3	19.71	82.56	380.85	538.33

*2011 data based on first eight months of year only



Table 12. Percentage of solar PV capacity by state

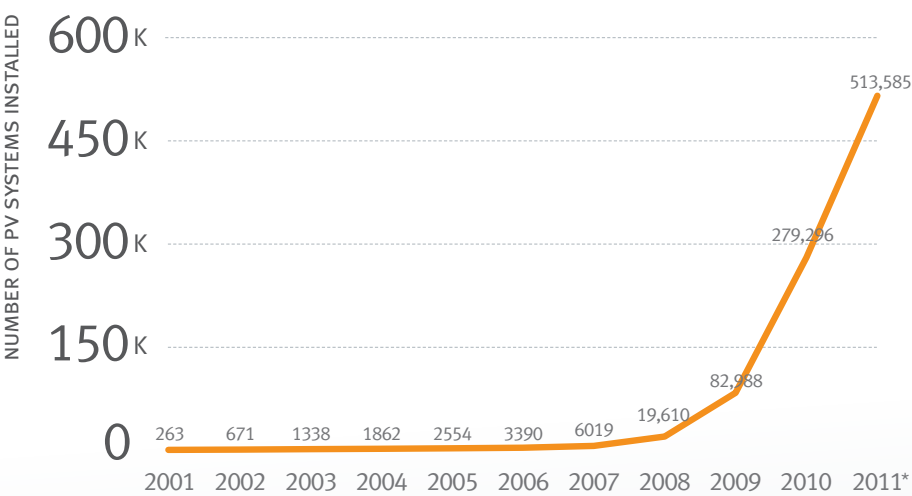
Source: SunWiz 2011

Due to rounding, totals may not add up to 100 per cent.

ACT	NSW	NT	QLD	SA	TAS	VIC	WA
2%	32%	0.3%	25%	12%	1%	15%	14%

Figure 13. Cumulative number of solar PV system installations in Australia

Source: SunWiz 2011



The number of Australian households with solar panels has increased more than 35 times over the last three years.

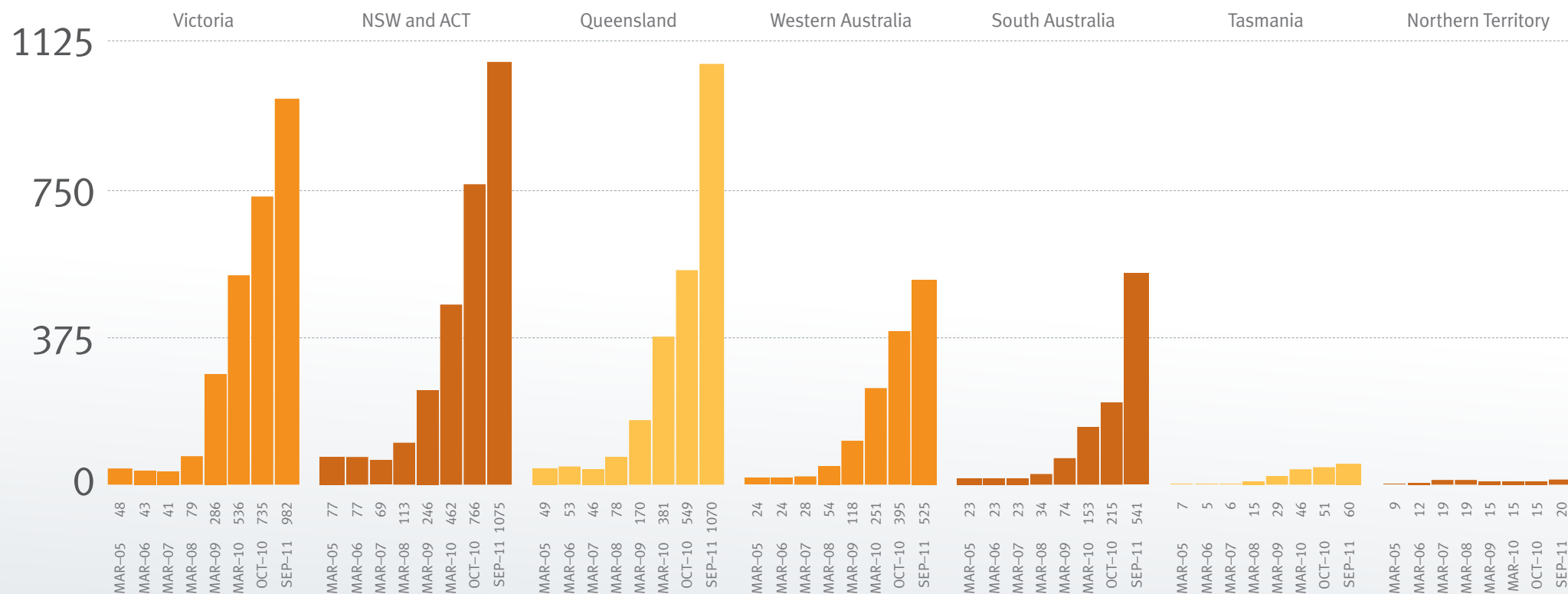
Table 13. Annual number of solar PV system installations in Australia

Source: SunWiz 2011

YEAR INSTALLED	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	NATIONAL TOTAL
2001	5	40	2	35	84	1	73	23	263
2002	2	136	1	29	122	6	100	12	408
2003	3	111	0	44	357	4	134	14	667
2004	3	74	0	58	245	4	130	10	524
2005	3	105	1	65	355	8	139	16	692
2006	13	145	1	57	403	1	198	18	836
2007	102	670	2	348	719	26	606	156	2629
2008	277	2822	82	2867	3437	149	1945	2012	13591
2009	803	14026	225	18377	8592	1454	8735	11166	63378
2010	2305	69073	612	48301	16552	1866	35376	22223	196308
*2011	4988	64630	184	61363	32829	1548	34235	34512	234289
GRAND TOTAL	8504	151832	1110	131544	63695	5067	81671	70162	513585

*2011 data based on first eight months of year only

Figure 14. Number of accredited solar panel installers and designers in Australia – by state Source: Clean Energy Council Accredited Installer Database, 2011



Australians from all walks of life are embracing solar PV, including those from so called mortgage belt and retirement suburbs across the country.





largescalesolar

Australia has the highest average solar radiation per square metre of any continent in the world. The International Energy Agency (IEA) forecasts that concentrated solar power could provide Australia with 40 per cent of its energy by 2050.

Source: Technology Roadmap: Concentrating Solar Power, IEA 2010

Large-scale solar projects of up to 500 MW are being constructed in places like Spain, Germany and the United States. This year Torresol Energy's 19 MW Gemasolar plant in Spain's Andalusia region was the first to produce 24-hour baseload power due to improved storage technology.

Australia's large-scale solar industry is still in its infancy, despite having access to some of the world's best solar resources. The Federal Government announced the successful applicants to the first round of its \$1.5 billion Solar Flagships program in June 2011. The program will deliver the first truly large-scale projects in Australia, building valuable local expertise that will help in the development of future projects.



Image source: The University of Queensland

Table 14. Examples of existing commercial solar plants

Source: Clean Energy Council Renewable Energy Database

FUEL SOURCE	LOCATION	OWNER	STATE	YEAR	INSTALLED CAPACITY
Solar thermal concentrator	Liddell	Areva/Macquarie Generation	NSW	2009	3 MW
Solar PV	St Lucia Campus	University of QLD/ Ingenero	QLD	2011	1.2 MW
Solar PV	Adelaide Showgrounds	First Solar	SA	2009	1 MW
Solar PV	Uterne	Alice Springs Consortium	NT	2011	0.97 MW
Solar PV	Marble Bar	Horizon Power	WA	2010	0.58 MW
Solar PV	Singleton	Energy Australia	NSW	1998	0.39 MW
Solar PV	Alice Springs	Alice Crown Plaza	NT	2009	0.3 MW
Solar PV	Ballarat	Central Victoria Solar City Consortium	VIC	2009	0.3 MW
Solar PV	Bendigo	Central Victoria Solar City Consortium	VIC	2009	0.3 MW
Solar PV	Gold Coast	Carrara Stadium	QLD	2011	0.25 MW
Solar PV	Alice Springs	Alice Springs Airport	NT	2010	0.24 MW
Solar PV	Carnarvon	EMC Solar	WA	2011 under construction	0.3 MW



“The past year has seen solid progress in the evolution of solar thermal as a credible and viable source of large-scale renewable power generation.

The capability of solar thermal to deliver firm, dispatchable power is an essential attribute if we are to transform our electricity supply. Facilitated by a range of public policies, particularly in the United States and Spain, we have witnessed a number of new technology solar power projects advanced in 2010–11.

In Australia, new policy measures linked to the recent clean energy legislation set the stage for our country to participate in the deployment and improvement of solar thermal generation. For the coming year, it will be critical that at least one project of large scale be financed for deployment by 2015. This will enable large-scale solar power to finally be considered as an integral component of the Australian generation portfolio for 2020 and beyond.”

Andrew Dyer

Director, BrightSource Energy Australia

Participant on the Clean Energy Council Solar Thermal Directorate



largescalesolar

Australia's largest solar plant is a 3 MW facility at Liddell in NSW that utilises solar thermal concentrators.

Table 15. Projects successful under Solar Flagships Program

Source: Clean Energy Council Renewable Energy Database

OWNER	TECHNOLOGY	NAME/LOCATION	EXPECTED COMMISSION YEAR	PROPOSED CAPACITY
Areva, Wind Prospect CWP & CS Energy	Solar thermal compact linear fresnel	Solar Dawn Project, Chincilla, QLD	2015	250 MW
BP Solar, Pacific Hydro & Fotowatio Renewable Ventures	Single axis tracking solar PV	Moree Solar Farm, Moree, NSW	2015	150 MW

The nation's largest solar photovoltaic plant is a 1.2 MW facility at the University of Queensland's St Lucia campus.



Image source: Horizon Power



Image source: Alice Springs Airport, Ingenieero



Large-scale solar plants over 100 kW

	PLANTS OPERATING	UNDER DEVELOPMENT
NSW	6	9
SA	4	0
VIC	5	0
WA	2	2
TAS	0	0
QLD	3	2
NT	7	0
ACT	0	0
TOTAL	27	13

Source: Clean Energy Council Renewable Energy Database



Solar PV



Solar thermal