SUSTAINABLE ENERGY ASSOCIATION OF AUSTRALIA

SEA Solar Industry Survey

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Prepared by
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HAC

Smart Solutions for a
Carbon Constrained Future

Executive Summary

The residential solar PV industry has experienced a rapid growth cycle and is now facing dramatic changes in government subsidies which threaten the stability of businesses operating in the sector.

SEA, in conjunction with HAC, distributed a brief survey to gather information on the status of the industry, and where the industry is heading. Over a two week survey period, 33 responses were received from various sized companies operating in the solar PV industry.

Key Findings

- *The solar PV industry is young, small and not yet diversified.*
- *Recent rapid growth in the residential PV market has stalled.*
- *Solar panels are becoming increasingly commoditised.*
- *There are large variances in the price per kW of PV systems.*
- *More needs to be done to bridge the gap to grid parity*
- *The solar industry is facing significant losses and uncertainty.*

About SEA

SEA is the peak body for sustainable energy in Australia.

The Sustainable Energy Association of Australia (SEA) was officially incorporated in July, 2002 as the Western Australian Sustainable Energy Association Inc. The Association was established in response to an identified need for representation of the sustainable energy industry in Western Australia.

The aim of the association is to give voice to those with an interest in sustainable energy and to promote the development and adoption of sustainable energy technologies and practices.

About HAC

HAC delivers practical commercial solutions to energy and carbon issues. We work with corporate, government and non-profit organisations of all sizes. We have the systems, tools and experience to design and implement simple solutions to complex challenges.

The HAC team delivers a unique combination of consultants with a diverse range of expertise, with a powerful network of global industry and government contacts, delivering excellent value for money on high-impact projects.

The solar PV industry is young, small and not yet diversified

In recent years, the emerging solar PV industry has experienced rapid growth, partly due to financial incentives provided through government subsidies which have now been reduced.

- ***58.2% of respondents have been operating for 5 years or less.***
- ***The majority of companies are small/medium enterprises – 55% turned over less than $20 million in 2010-11.***
- ***Of the respondents who are involved in PV installation, 56% install domestic and commercial systems, 36% install domestic systems only, and 8% install commercial systems only.***
- ***In 2010-11, 58.1% of solar companies who answered the survey made a profit but 29% declined to answer.***
- ***Only 24.2% of companies surveyed operate in areas beyond PV systems (areas of diversification can be seen in the breakout box to the right).***

Common Areas of Diversification

Solar Hot water

LED lighting

Solar Passive Heating & Cooling

Consulting

Diesel Generator

Hybrid Systems

Manufacture & Project Development

Wind

Hydro

Water Pumping

General Electrical

Energy & Carbon Advisory

Build, Own, Operate Solar Farms

Companies are operating in a number of states and territories. Of the companies surveyed: 97% operate in WA, 30% in Victoria, 30% in SA, 24% in NSW, 21% in Queensland, 15% in the NT and 12% in Tasmania.

Table 1: WA workforce size of responding companies.

Respondents in employment category	Number of employees
20%	1-5
16.7%	5-10
26.7%	10-20
10%	20-50
20%	50-100
6.7%	100+

The number of staff, including sub-contractors, employed by companies in WA varies greatly, as indicated in Table 1.

While focusing on making PV technology competitive, many firms have not diversified their product and service portfolio, resulting in extreme vulnerability to changes in government policy and market conditions that can have long term impacts on the business.

Recent rapid growth in the residential PV market has stalled

Survey responses have indicated the vast majority of PV industry growth has occurred in the residential sector, driven by feed-in tariffs, small-scale technology certificates and an influx of market participants. However, rapid growth has now stalled with 73% of respondents stating that sales and inquiries either peaked or fell immediately after reductions to the WA feed-in tariff were announced.

Additionally, commercial installations have been relatively stagnant, suggesting the potential for significant growth and innovation in this area. Table 2 illustrates the stark difference in growth rates between the residential and commercial sectors.

Table 2: Comparison of residential and commercial PV installations, 2008-2011.

	Number of solar PV systems installed	
Year	*Residential Systems*	*Commercial Systems*
2008-09	1,072	85
2009-10	2,735	108
2010-11	16,843	119

Solar PV panels are becoming increasingly commoditised

Respondents indicated that product quality is the main consideration when choosing a PV panel, with 60% stating that quality is the most important aspect and 32% stating that it is very important. Thoughts were split on PV panel prices, with 40% suggesting that it is very important and 40% stating that it is somewhat important.

Figure 1 indicates that there is a wide spread of panel brands used by respondents.

The brand-name of solar panels is not seen as a primary differentiator, with 50% of respondents offering three or more brands simultaneously.

The data clearly shows that quality and cost are the key considerations in the selection of a PV panel supplier.

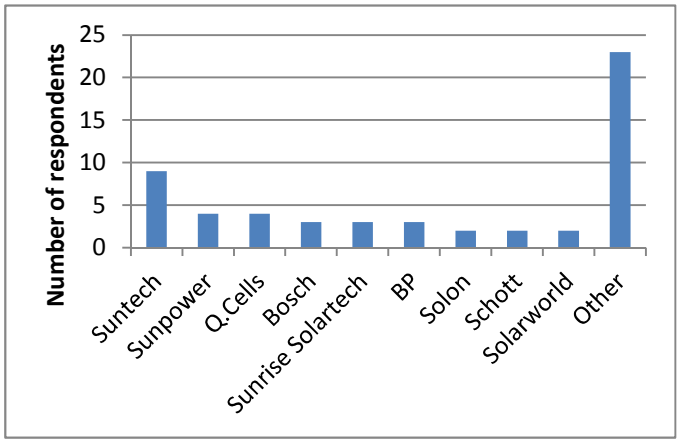

Figure 1: PV panel brands used by respondents.

Other important factors in considering PV panel choice include:

- *Ability of sellers to meet warranty obligations.*
- *Sales and service experience.*
- *Trust.*
- *Availability and ease of use.*
- *Output performance.*
- *Yield/production.*

There are large variances in the price per kW of PV systems

Table 3 indicates that the cost per kW of on-grid systems varies greatly throughout the industry. This is despite increased competition in the industry, suggesting the presence of a wide range of supply costs and/or margins within the market. The majority of respondents stated that the price per kW of off-grid systems is not relevant to their firm, indicating that they do not service the off-grid segment. The average size of residential PV systems installed is reported to be in the range of 3 – 4 kW.

Table 3: Per kW cost of PV systems.

	% of respondents by supply sector	
$/kW	**On-grid systems**	**Off-grid systems**
$2-3	17.4%	0%
$3-4	21.7%	4.8%
$4-5	21.7%	0%
$5+	21.7%	42.9%

While the off-grid installation costs remain high (typically due to their remote nature), generation costs from conventional technologies are also high in remote areas, which should result in PV reaching price parity in the off-grid market earlier than the on-grid market.

More needs to be done to bridge the gap to grid parity

Grid parity is generally defined as the point where the cost of rooftop PV systems is equivalent to the cost of electricity purchased from the grid. There is a wide range of speculation on when grid parity will occur, and the specific definition of grid parity is subject to many variables. The range of views, presented in Figure 2, indicates a lack of certainty and differing expectations on when and how grid parity will occur.

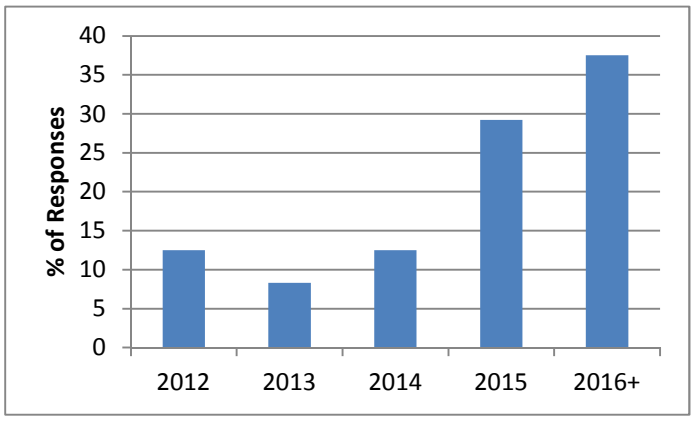

Figure 2: Estimated time when grid parity will be achieved.

While the majority of firms believe grid parity will be reached no later than 2015, the largest cohort believes that parity will not be reached until 2016 or beyond. In the intervening years, the industry will need government support if it is to continue to grow.

The government has the ability to restore confidence, secure jobs and promote growth in the solar industry. This can be achieved through a policy approach that can bridge the gap to grid parity, and include the flexibility to reduce the level of support in a controlled and predictable way as grid parity approaches.

Factors affecting when grid parity occurs:

- ***The cost of capital.***
- ***The cost of grid electricity.***
- ***The installed cost of solar PV systems.***
- ***Return on investment or payback period expectations of PV system buyers***

The solar industry is facing significant losses and uncertainty

The suspension of the WA feed-in tariff has eroded the confidence of the solar industry with significant losses in revenue and jobs expected. The impact of policy changes in Western Australia have been immediate, with 42.9% of respondents expecting the bulk of staff cuts to occur in September 2011. On average, companies expect to lay-off 49.3% of their employees.

Additionally, 57% of respondents indicated that the low price of Small-scale Technology Certificates (STC) is another strong contributor to the downturn.

Most firms believe that falling panel prices have had a small positive impact on the industry. However, this positive influence has been heavily outweighed by government subsidy cuts and falling STC prices. Expectations of a recovery are also low, with 41.7% of respondents believing that the industry will not recover without a change in energy policy.

Small-scale Technology Certificates:

An STC is equivalent to 1 MWh of renewable electricity deemed to be generated by small generation units.

The price of STC's has dropped dramatically from over $36 in Jan to less than $25 at the time of writing.

There has also been a lack of government engagement with the solar PV industry. Almost half of surveyed firms had some degree of consultation with government during the introduction of the WA feed-in tariff. However, 75% of firms were not consulted by the government when the WA feed-in tariff was suspended.

Key indicators of declining confidence, revenue and jobs:

- ***96% of surveyed firms believe that the WA PV market is faltering.***
- ***72% of respondents are anticipating job cuts in the short term.***
- ***On average, firms expect to lose almost half their staff (49.33%).***

If we consider the investment in solar PV in WA, and assume an 'averaged' price of $4 per Watt installed, the 140MW of solar PV installations created an industry worth approximately $580 million. As most businesses in the sector built for the peak, the subsequent slump in sales have a longer term impact in the industry's turnover and employment.

"As a panel manufacturer, we see our partner network (retailers and installers) experiencing a massive reduction in enquiries and sales. Most have a backlog that is keeping them going at present but this is quickly eroding as installations take place leaving them exposed and in danger of insolvency. It is a matter of time before we see business closures from the FiT reduction and no clear succession planning displayed by the WA government. The lack of consultation and clarity around the FiT has presented the entire industry with a massive problem. How can a business survive if it hasn't been allowed to plan for a major shift in the market climate purely driven by knee jerk policy change and no support provided to the industry, there are a lot of livelihoods pending on the state government?"

- Quote from a survey participant.