

## Impact of abolishing the Renewable Energy Target on jobs in the Australian solar industry

### Summary

In 2014, the solar PV industry is expected to employ some 12,300 Australians, across some 4,300 businesses. The solar hot water industry employs around 1,000 Australians.

If the Renewable Energy Target (RET) is abolished – something the Australian Government is considering – up to 6,750 solar PV jobs could be lost and foregone nationwide by 2018. The effect of the RET being abolished would be felt immediately, with over 2,000 solar PV jobs lost in the short term and thousands more new jobs not created.

This report, based on a detailed analysis by industry experts SolarBusinessServices, outlines the future of the Australian solar PV industry and provides projections to 2018 under three scenarios:

- (1) No policy change: business as usual, floating carbon price, slightly higher exchange rate and lower PV prices;
- (2) Cut to the RET: RET adjusted downwards, cuts to residential solar program (SRES) and carbon price abolished.
- (3) Renewable Energy Target abolished.

Under a no policy change scenario, 8,000 additional solar PV jobs are expected to be created between 2014 and 2018. If the RET is cut, 600 jobs could be lost next year.

If the Renewable Energy Target is abolished, more than 2,000 direct and indirect solar PV jobs could go next year, with another thousand jobs to follow over the following three years. A similar 30 per cent decline in solar hot water jobs could lead to the loss of over 300 jobs in that industry. Many solar hot water and PV retailers and installer companies would close down.

The analysis is based on a comprehensive solar forecast under three different scenarios, analysed in January 2014. A number of variables have been modelled to assess their potential impact on the solar market. Abolishing the RET Changes to the RET have the single largest impact on expected market uptake, particularly if it is abolished completely and early.

An SKM report commissioned for the 2012 RET Review found that *“a lower target such as the “Updated 20% Target” is expected to delay the development of renewable generation by approximately 5 to 6 years. With “No RET” the amount of renewable development is lower and the delay is substantially longer (i.e. up to 10 years to reach the same levels).”*<sup>1</sup>

The solar jobs analysis was commissioned by Greenbank Environmental for the REC Agents Association, a national industry body representing companies that create and trade in renewable energy certificates.

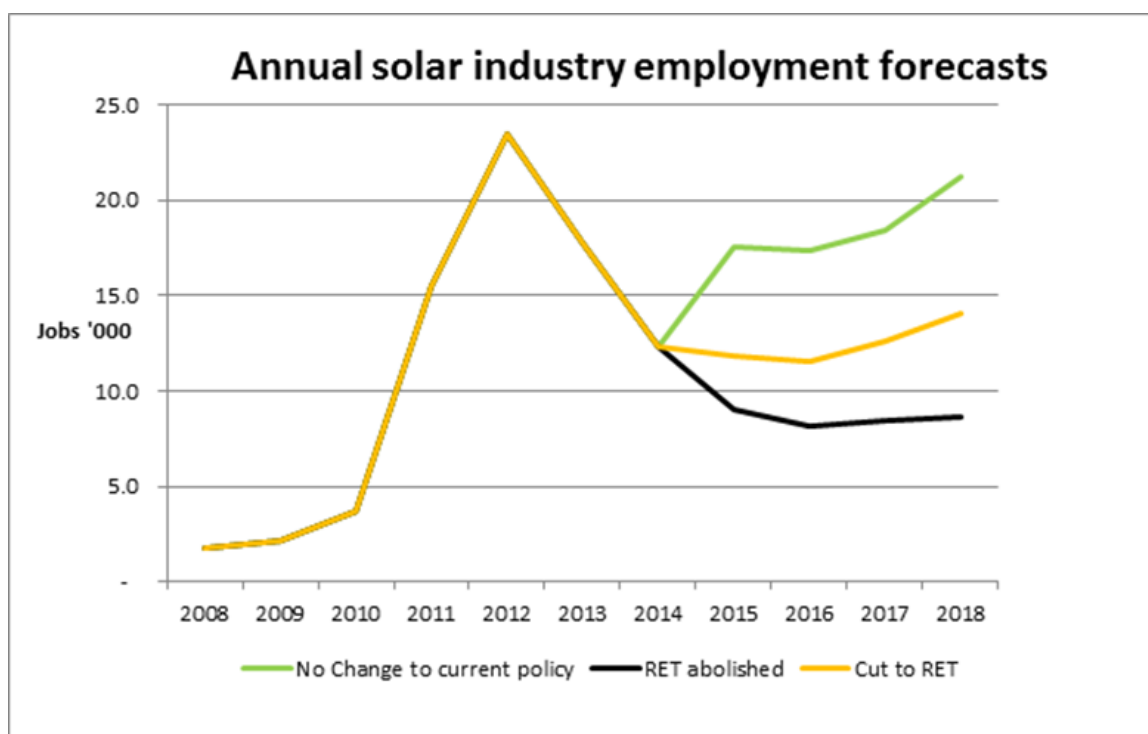
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<sup>1</sup> SKM, *Modelling the Renewable Energy Target Report for the Climate Change Authority*, December 2012.

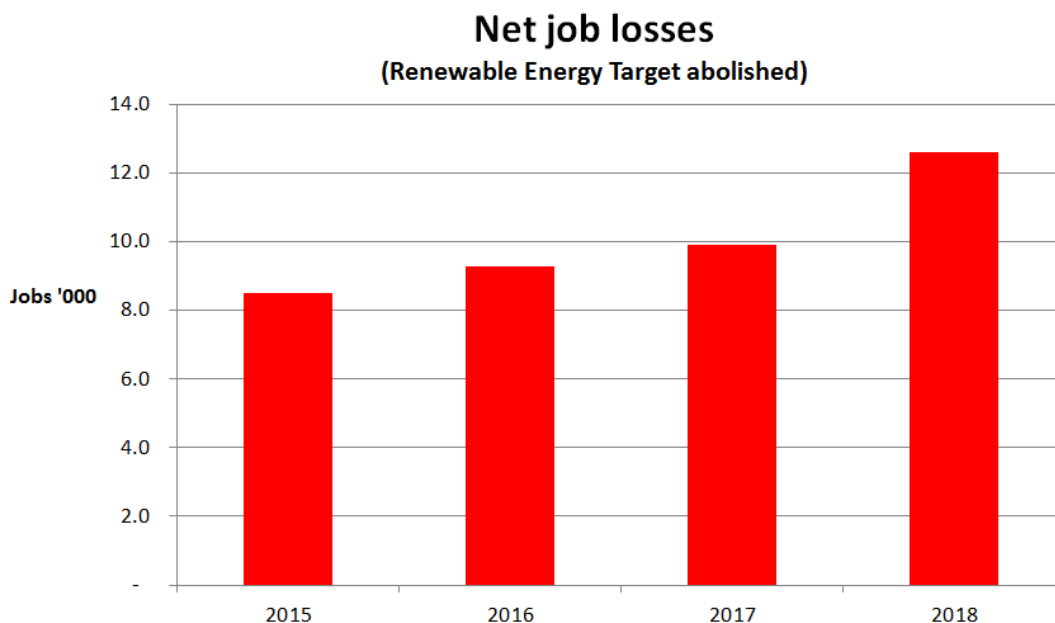
## Solar Job Growth and Decline

Much of the growth of the solar industry was in the period 2011-2012 as the cost of PV fell dramatically and governments encouraged investment in household solar through State feed-in tariffs and the solar multiplier in the RET.

With the removal of State and Federal Government incentives, the solar PV market declined 22 per cent in 2013 and the solar hot water market declined 20 per cent.<sup>2</sup> This led to the loss of 5,800 jobs from a peak of 23,500 direct and indirect jobs in 2012. Similar job losses are expected in 2014. It is estimated there are 4,300 businesses in the solar industry, mostly small to medium sized enterprises. Under the current regulatory environment, the report projects solar industry employment will grow over the next four years as PV prices fall and power prices continue to rise.



<sup>2</sup> Green Energy Markets, *Household Solar in Australia: State of the Small-scale Renewable Energy Scheme*, November 2012.



### Methodology

These employment forecasts are derived from historical employment numbers, ABS data and industry analysis by SolarBusinessServices. Forecasts forward assume the current employment ratio (Jobs/MW) remains constant for the forecast period.

Employment ratios are derived from historical solar industry volumes and forecasts under three different scenarios, analysed in January 2014. A wide range of variables have been modelled to assess the potential impact of a variety of changed market conditions and the impacts interpolated into primary economic viability of solar package sizes. In the near term, changes to the RET have the single largest impact on expected market uptake, particularly if it is abolished completely and early.

### Primary assumptions by Scenario

#### RET Abolished

- RET is completely abolished during 2014 (up to 75% of job losses attributed to this)
- Foreign exchange gets marginally worse
- PV prices stay flat
- Electricity prices are flat to declining or changed to non-energy related
- Carbon price removed
- Flagships and CEFC end early

#### RET Cut

- LRET floating percentage of 20%, small-scale Clearinghouse price halved to \$20. (up to 60% of job losses attributed to this)
- Foreign exchange flat
- PV prices marginally decline

- Electricity prices increase at CPI
- Carbon price stays till at least 2015 then lesser impact change, no CEFC or Flagships

#### **No policy change**

- RET stays, floating carbon price
- Foreign exchange improves marginally
- PV prices marginally decline
- Electricity prices increase at 5%
- Carbon price replaced with equivalent ETF and delayed change
- No additional Flagships, CEFC stays, additional large project support

## **Solar industry employment**

The solar industry has become a major employer across a vast array of direct and indirect industries. In 2012, it is estimated that the industry employed more than 23,500 Australians and grew its employment rate by 51% compared to the previous year.

According to an analysis of recent Australian Bureau of Statistics employment data, this growth made the PV industry the fastest employment growth segment of the twenty industry segments described.

This summary report specifically analyses the direct and indirect employment opportunities in the Australian PV industry.

### **Methodology**

The analysis used in the report has been derived through a detailed analysis of data from the ABS' latest report (6291.0.55.003 Labour Force, Australia), the Department of Employment, Education and Workplace Relations (DEEWR), the Clean Energy Council's Accredited Installer database and SolarBusinessServices report (Australian PV – Industry Intelligence 2013).

Together, these sources provide a sound foundation for determining the number of companies active in the solar industry and represent the best available data set for estimating employment.

Explicit employment data for the PV sector is not defined by the ABS or the DEEWR. Hence, we have constructed a model based on extrapolation of the data sources described to provide the best possible estimation of employment levels and compared this to ABS and DEEWR employment data for reference.

We have also conducted logic testing of employment levels by contacting and analysing samples of different companies operating in the PV sector and have extended this analysis to incorporate ratios that take into account changes in operational efficiencies and organic changes in employment brought about by changing industry volumes.

### **Key findings**

Despite being a relatively new industry, in 2012 the Australian Solar Industry was estimated to employ 23,472 Australians through direct and indirect activities.

ABS statistics aggregate many industry sub segments together into 19 primary categories. We have calculated the number of employees in the solar industry and added this to the ABS data in the table below.

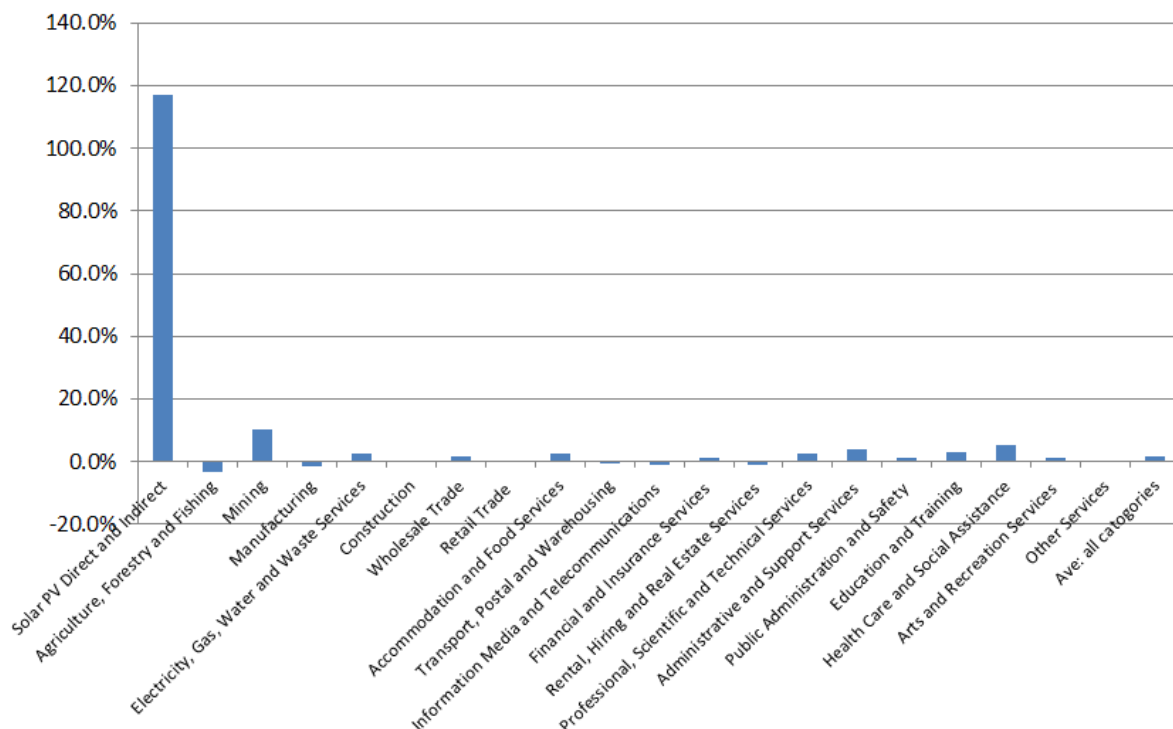
Total (type of employment)	2008 ('000's)	2009 ('000's)	2010 ('000's)	2011 ('000's)	2012 ('000's)
Agriculture, forestry and fishing	364	348	354	328	321
Construction	989	940	1,043	1,034	997
Wholesale trade	379	428	409	445	431
Retail trade	1,187	1,176	1,243	1,205	1,224
Accommodation and food services	684	735	753	752	768
Transport, postal and warehousing	578	555	589	569	600
Information media and telecommunications	221	213	211	199	221
Financial and insurance services	379	385	387	413	413
Rental, hiring and real estate services	205	175	208	188	194
Professional, scientific and technical services	812	827	858	862	898
Administrative and support services	340	355	430	394	395
Public administration and safety	652	657	685	738	690
Education and training	791	821	877	859	912
Health care and social assistance	1,107	1,172	1,286	1,350	1,387
Arts and recreation services	194	189	196	204	205
Other services	453	424	467	457	445
Solar, direct and indirect	1.8	2.2	3.7	15.6	23.5

The average rate of growth across all other categories' between 2008 and 2012 was 1.6%. Solar PV however, experienced an average growth rate of 117.2% in the same period.

Five of the sectors experienced negative growth in the same period (Agriculture, Forestry and Fishing, Manufacturing, Transport, Postal and Warehousing, Information Media and Telecommunications & Rental, Hiring and Real Estate Services). Combined, these sectors shed more than 46,000 jobs in 2012 while solar grew substantially.

Notably, the mining sector grew substantially in 2010 and 2011 by almost 21% and was one of the few sectors to show double digit growth although this has now slowed dramatically.

## Average employment growth rates 2008-2012

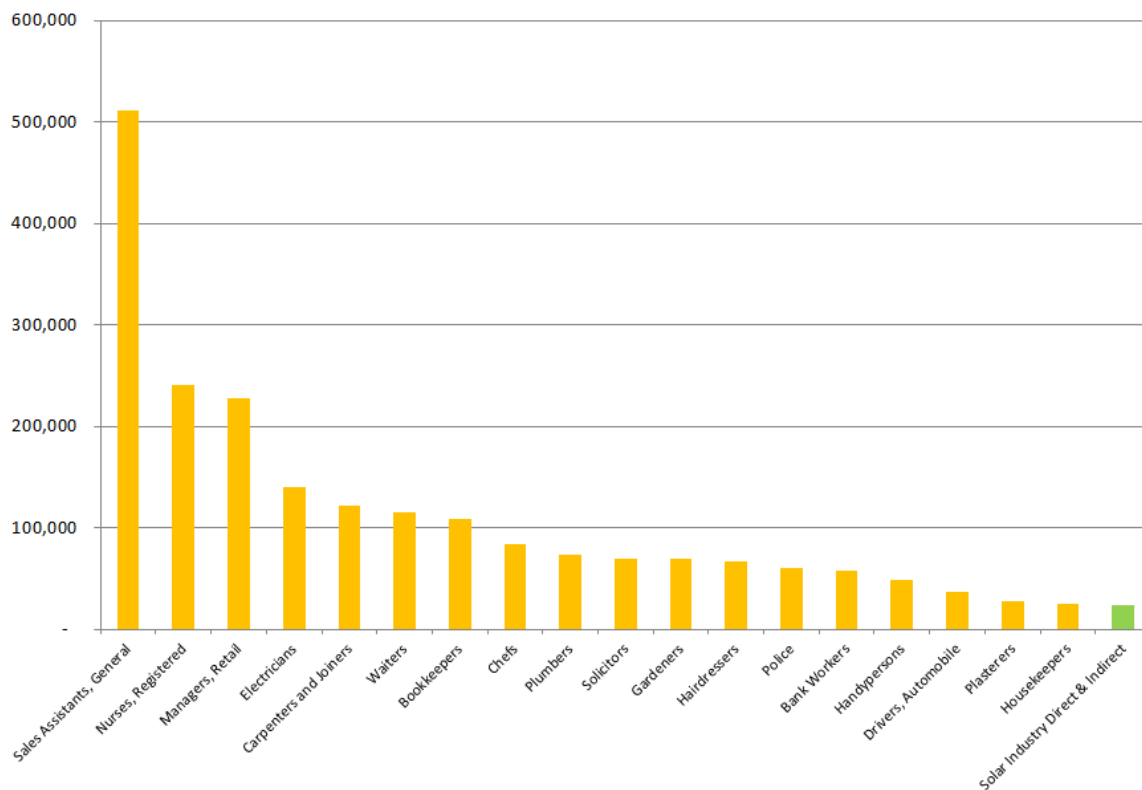


Data from the DEEWR was analysed and segments Australia's employment into more granular detail. Their June report "Australian Jobs 2013 - Occupation Matrix" includes employment data on 376 specific industries.

We separated the direct and indirect solar PV employment data, and added it to the DEEWR database with some fascinating findings. In this analysis, "sales assistants" are the top category with 510,000 employees (full and part time). In this context, direct solar positions employ more Australians than 232 other employment sectors. This positions solar in the top 40% of all employment sectors in Australia.

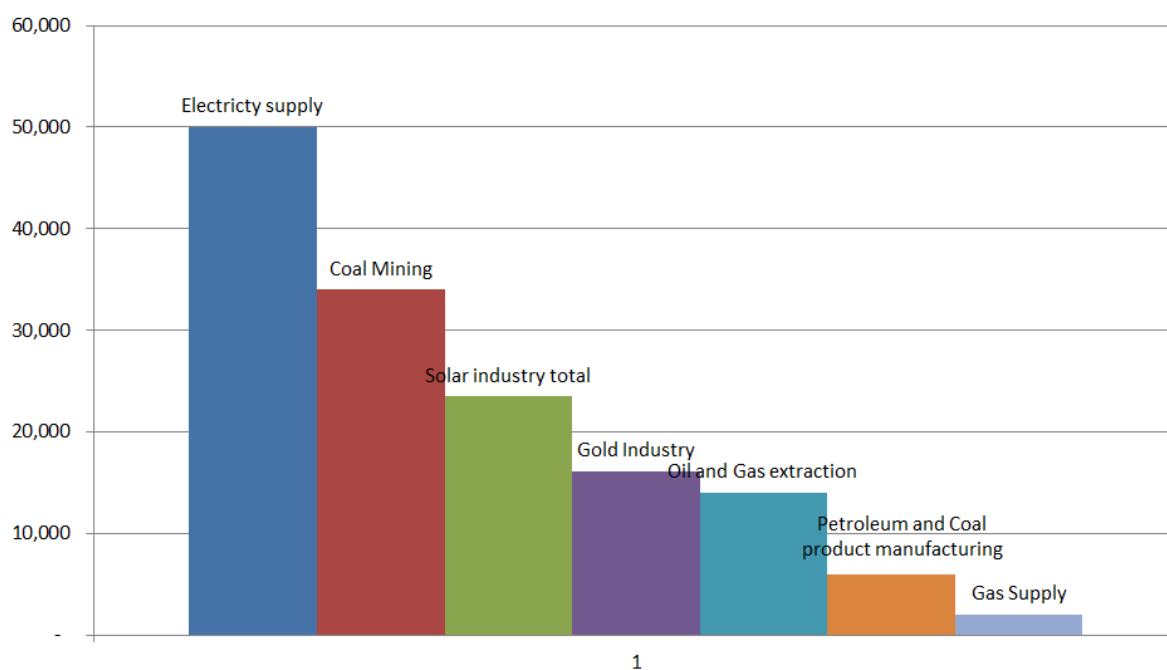
A sample of some of the top, middle and low range employment sectors is included below for context.

### Employment by sub sector in Australia, 2012



Specific employment statistics published by the Bureau of Resources and Energy Economics in its report “Energy in Australia 2012” for an energy industry context, is included below for reference:

### Energy and resources employment





### **Solar Industry specific employment**

Solar Business Services conducted an analysis of the number of companies involved in the solar sector by analysing Clean Energy Council accredited installer data and our own analysis of participating companies. This was followed by a survey of a sample of approximately 150 companies to develop average employment ratios per company and, an indication of the support activities that they outsource.

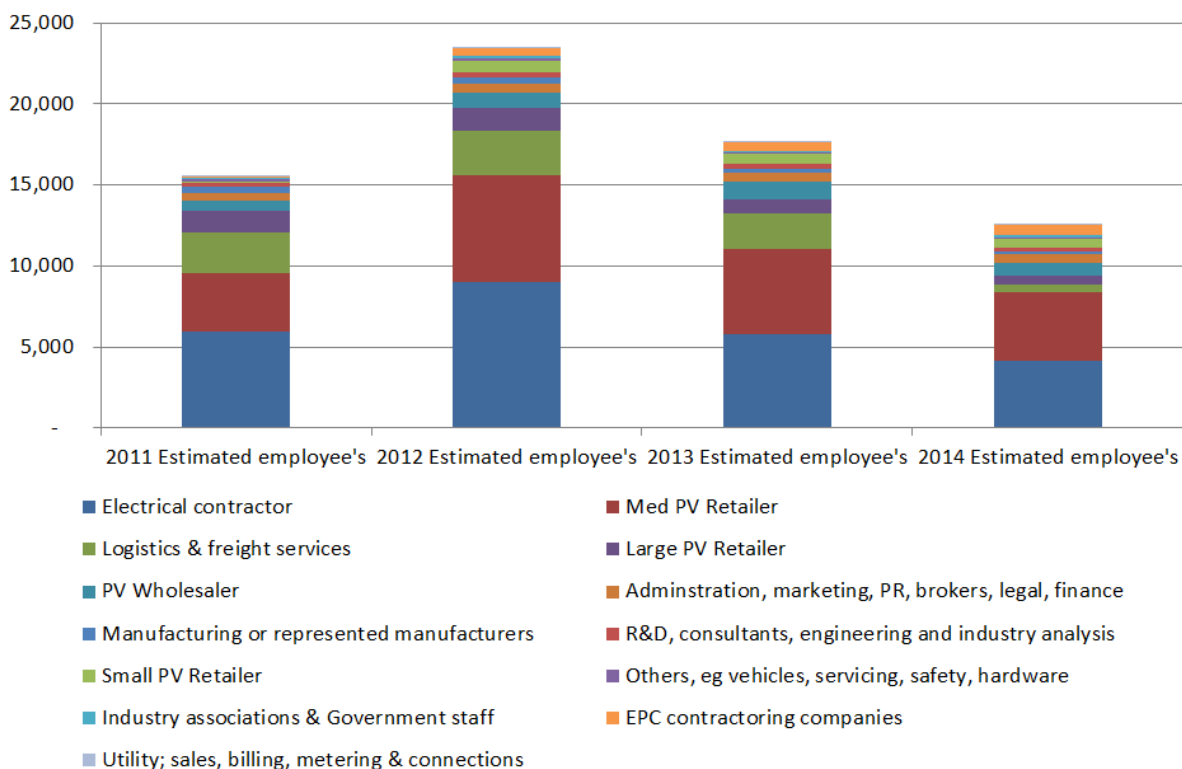
Solar Business Services also compared our results to a study conducted in 2009 by Greenpeace on European solar employment statistics, which found that 39 jobs per MW of solar was their average employment rate. Taking into account changes in operational efficiency, technology advancements and differences between Australian and European industries we were able to benchmark and compare our results, adapting them over time.

According to this analysis, SolarBusinessServices have broken down the direct and indirect employment in the solar industry since 2011 and have recently forecast forward to 2014. Importantly, the forecast shows two important factors. Firstly, that (logically) employment numbers are directly related to industry volume and with lower forward forecast in the near term, jobs are at risk. It is important however to note that many employees move between the solar sector and other industries (eg electrical contracting, sales and marketing).

However, the report also factors in improved efficiency, which is intrinsic in such a rapidly advancing industry growing from a small base. Although not represented, as the industry evolves it is expected new roles will be created as new segments emerge and it is also important to note that solar has a beneficial effect of creating work and employment in the electricity sector for sales, billing, data analysis and in some cases network augmentation.



## Solar industry employees by sub segment



### Conclusions

The solar sector is a significant employer in Australia and in relative terms delivers almost double the GDP per employee of the average industry return (\$235,991 per employee) due to the relatively high value of the goods and services it provides, according to ABS and solar industry data.

The solar industry employs more Australians than the majority of other energy and resource related industries.

The abolition of the Renewable Energy Target would lead to substantial job losses and a move from a growth forecast to a significant decline, at a time when our leading trading partners are investing heavily in solar and renewable energy.

If the Renewable Energy Target is abolished, 2,000 direct and indirect solar PV jobs could go next year, with another thousand jobs to follow over the following three years. A similar 30 per cent decline in solar hot water jobs could lead to the loss of over 300 jobs in that industry.

The axing of the Renewable Energy Target would also see many solar hot water and PV retailers and installer companies close down. These are small and medium sized enterprises, the sorts of businesses the Australian Government is saying it wants to promote.