



Australasian Cleantech Review, 2015

Climbing Political Mountains

Industry Status & Forecast Trends, March 2015



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- Research Database of over 2,000 Australasian and Asian cleantech companies.
- Cleantech Indices - in Australia and China.
- Chinese market entry through our Chinese operation (www.sinocleantech.com).
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- Industry Development for governments through clustering and mentoring.
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Executive Summary

Australian CleanTech provides its annual cleantech review to increase the knowledge and understanding of the cleantech sector in Australia. The report is based on detailed analysis of nearly 1450 Australian companies to understand their activities, location, revenues, profit, employees and their capital transactions.

A comparison is also provided from international researchers including detailed charts and commentary from Bloomberg New Energy Finance, provided specifically for inclusion in this report, showing international activity and investment levels. Finally the report provides a forecast for the regulatory, technology and investment trends that will impact the cleantech industry in Australia in 2015 and identifies the top Cleantech Trends for 2015 including a few wild guesses on how the politics of the environment might play out this year. The data provided in this report will enable those interested in cleantech to more fully understand the activity that is occurring across the sector.

To be able to analyse the cleantech sector, it is first necessary to define the composition of the sector. The definition of cleantech used in this report is that it comprises:

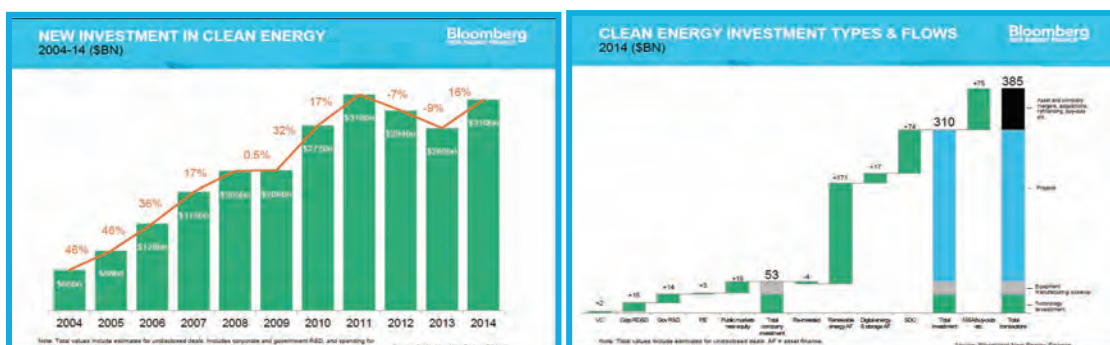
Economically viable products, services and processes that harness renewable materials and energy sources, dramatically reduce the use of natural resources or cut or eliminate emissions and wastes.

The sub-sectors of cleantech include renewable energy, water, waste and recycling, construction materials, energy efficiency, carbon trading and environmental services.

The international market trends section of this report considers comparative policy initiatives that show Australia is lagging compared to Asia. However, this Asian backing of the sector presents a massive growth opportunity for the Australasian industry to increase its investment and trade activities.

International investment data was sourced from public data available from the Cleantech Group, PwC and detailed data provided by Bloomberg New Energy Finance. The data is summarised in a number of charts that show both venture capital investments in cleantech and total global investments in clean energy rose from the lows of 2013 back up to nearly the record levels achieved in 2011. In terms of investment by sector the Solar, Agritech and Bio-products sectors have been most in favour.

The Bloomberg New Energy Finance research shows that the total new investment in clean energy grew 16% from the 2013 level of US\$268bn to US\$310bn in 2014. The result gets close to the all time high of US\$318 billion recorded in 2011. The figure below indicates the sources of this new investment with Renewable Energy Asset Finance and Small Distributed Capacity (SDC) providing the greatest proportions of the total as they did in 2013. The figure also shows that there was an additional amount of US\$75bn, up 29% over 2013, that was spent on M&A and buy-outs to give a global capital transactions total of US\$385bn.



Industry Profile

The analysis of the 1446 Australian cleantech companies that have been reviewed provides some interesting patterns in the sub-sectors with the greatest activity levels and the regions in which they are based. The cleantech companies reviewed as part of this report include manufacturers, service providers, wholesalers, retailers, research organisations and exporters. There has been around 100 companies dropping out of coverage since 2013 due to insolvency or change of activities and replaced by companies entering the sector.

As a sector the companies had a combined revenue of \$30.9 billion (down from \$32.5 billion in 2013) and employed nearly 65,000 people. They were involved in capital transactions totaling \$2.9 billion during 2014 in 82 separate deals giving an average capital transaction of \$35.6 million. The total capital transaction fell 33% from the 2013 figure of \$4.3 billion.

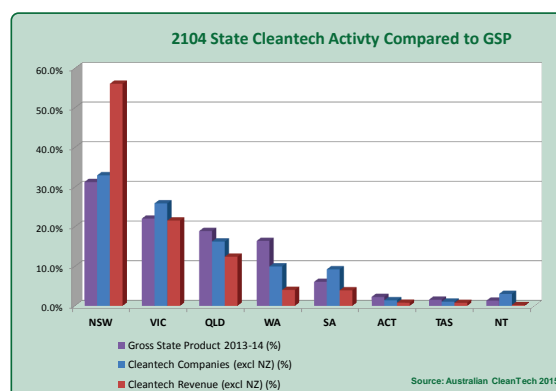
	Listed	Unlisted	TOTAL
Number of Companies	70	1376	1446
Market Capitalisation (\$m)	\$17,384	N/a	N/a
Revenue (\$m)	\$17,515	\$13,430*	\$30,945
NPAT (\$m)	\$ 57.40	N/a	N/a
Employees	28,561*	35,982*	64,543*
Average Employees per Company	408	26	45
New Capital Transactions (\$m)	\$497	\$480	\$976
Total Capital Transactions (incl M&A) (\$m)	\$2,205	\$718	\$2,923
Total No. of Capital Transactions (incl M&A)	53	29	82
Average Total Capital Transaction (\$m)	\$41.6	\$24.8	\$35.6

*: Australian CleanTech estimates based on company analysis.

With 65,000 employees, the sector is larger than the direct employment of the declining automotive manufacturing industry in Australia and the \$30.9 billion of revenue makes it equal in value to a quarter of the entire manufacturing sector. The sector contributes more than 2% of Australian GDP. Furthermore, employees in cleantech create on average about five times the revenue per employee compared to both automotive and general manufacturing.

Each of the categories in the 2014 summary table above has been analysed in terms of the sub-sectors and geography to provide a comprehensive national profile of the industry. This also includes a detailed assessment of State strengths and weaknesses and enables investors and policy makers to understand the extent and locations of current activity.

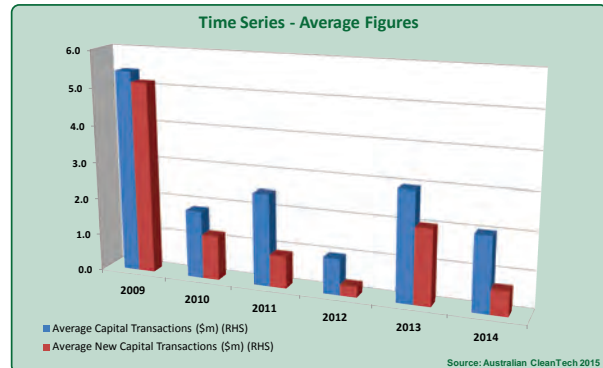
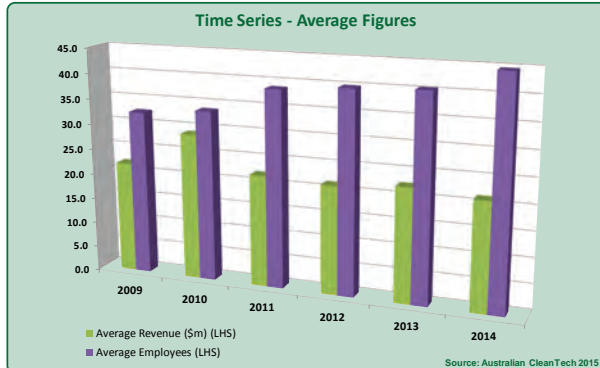
New South Wales with 452 cleantech companies and Victoria with 355 currently dominate the distribution of cleantech companies with more than 55% of the 1446 companies. A comparison with FY14 Gross State Products (GSP) shows that Queensland and Western Australia are relatively under-represented in cleantech companies and South Australia has a greater share of the total than its GSP would indicate. The reduced activity in Western Australia and Queensland is due to the higher focus on mining in those states which inflates their GSP in areas where cleantech solutions are not yet being recognised.



In terms of the sector distribution of cleantech companies, the Water, Waste and Solar sectors are the only ones with greater than 10% of the companies. Water has the most companies with 267 companies, followed by Solar with 240 companies and Waste with 189 companies.

Revenue numbers show a strong dominance by New South Wales and the Waste sector. This is primarily because the figures for companies are allocated to the state of the head office and

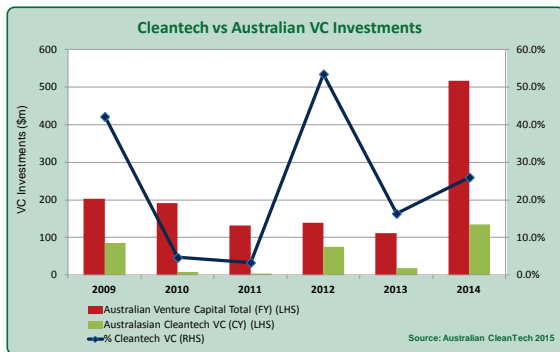
there are a number of large waste industry companies. New South Wales, Victoria and Queensland generated the largest amounts of revenue. The Waste, Water, Hydro, Environmental Services, Solar and Wind sub-sectors all generated more than \$1 billion of revenue over 2014.



The average numbers per company show revenue increasing in 2010, decreasing in 2011 and fairly stable since 2012. The average number of employees per company has however steadily increased from 32.5 in 2009 to 45.0 in 2014.

Average new and total capital transactions per company decreased significantly until 2012, reflecting the reduced investor interest in the sector during that period. There was then a significant increase in 2013 and a reduction again in 2014 demonstrating the reducing investor confidence in the sector probably as a result of the unstable political climate.

Average figures for Revenue, Employees and Capital Transactions for each State and Sector show significant variations. The full analysis is included in the full report that sets out strengths and weaknesses of each State.



A key issue for funding of cleantech is the lack of available venture capital in Australia in general and particularly for cleantech. An analysis has been undertaken plotting the total VC spend against the cleantech VC spend. There is significant variation over the six years covered by this report, ranging from 3% in 2011 up to 53% in 2012. 2014 saw a large increase in both total VC investments and amounts spent on cleantech. The proportion spent on cleantech over the six years averages at 25.2%.

Listed cleantech companies in Australia had a combined market capitalisation of \$17.4 billion at 31 December 2014, up from \$15.3 billion 12 months earlier, and raised a total of \$430 million in new capital in the 12 months to 31 December 2014. The sector's size compared to the overall market is shown in the table below. The table shows that whilst the sector comprises 3.2% of the listed companies, it holds only 1.1% of the market capitalisation of the total market and raised only 0.7% of the new equity.

	Cleantech Sector (CY14)	Total ASX (CY14)	%
Number of Companies	70	2,208	3.2%
Market Capitalisation	\$17.4 bn	\$1,575 bn	1.1%
New Equity	\$430m	\$63,628m	0.7%
New Equity/Market Cap	2.5%	4.0%	N/a

A full listing of all the identified capital transactions for both listed and unlisted companies is provided in Appendix 1 of the report.

Cleantech Trends for 2015

From all of the trends discussed above, there are only a few that will have an over-riding impact on the shape of the cleantech industry in 2015. These are summarised in the table below along with a few fairly wild guesses as to how the politics may play out!

Cleantech Trends for 2015	
1. International Embarrassment Continues	2015 and the lead up to the Paris Climate Conference will provide plenty of opportunities for Australia to appear out of step with Europe, the US, China, Japan, Korea and many others. The embarrassment will peak with a disastrous performance at the Paris conference itself.
2. Cleantech Emerges from Stealth Mode	Cleantech was a 'bad' word in Australia in 2014 for political reasons. The focus on cleantech in Asia and Europe is however growing quickly and 2015 will see its use become acceptable again in Australia as it leads to jobs, investment and trade.
3. Final Result: ERF 0 - 2 CEFC	2015 will see a review comparing the relative performance of the ERF and CEFC. The CEFC will be shown to have achieved a significantly better performance in terms of both financial performance and emissions reduction. By year end, discussions will commence on the merging of the two schemes under the management of the CEFC
4. RET Result	The RET Review debacle will finally come to an end with the passing of revised legislation in June stipulating a target of 36,000 GWh by 2020 and 44,000 GWh by 2024. The investment drought will however not end as international investors decide to wait until after the 2016 election before re-entering the market.
5. Big Business Backs Action	After years of mixed messages from big business, those companies with international connections and their industry groups, finally swing behind decisive action on climate and support for cleantech in 2015 causing further political pressure.
6. States Step up	With a growing number of Labor State Governments, 2015 will see the re-emergence of actions led at the State level to fill the national vacuum. Other States will join SA and Tasmania in the global States and Regions Alliance and by year end discussions will have started on a State backed ETS.
7. Political 'U' Turns	All this pressure will finally led the Coalition Government into a dramatic U-turn shortly after its embarrassing performance in Paris. The justification for the u-turn will be global pressure and a need to keep up with our trading partners.
8. China Comes Calling	As the Chinese Government increases its focus on attracting the world's best technologies to solve its environmental challenges, it will proactively approach suitable Australian technologies in 2015 to bring them to China.
9. The Best Tech Companies Emigrate	Some of the best cleantech companies will decide to abandon Australia and move all of their operation and IP to more supportive jurisdictions with the permanent loss of the consequent jobs, investment and trade opportunities.
10. Green Bonds become Mainstream	The Green Bond market will continue to grow and back mature project finance type projects. In 2015, this will extend from backing large projects into backing the growing solar and storage leasing programs.
11. New Ownership Models also Mainstream	The ownership of cleantech assets will continue to change and become more mainstream. Community and corporates will accept these new models of ownership in 2015 and just see it is the same way a leasing a vehicle fleet.
12. EVs Get Boring	Pulled along by Tesla's publicity, there will strong growth in the roll out of EVs and EV charging infrastructure in 2015. The growth will attract some attention in the first part of the year but will be seen as boring old news by the media by year end!
13. Solar & Storage Disrupt	Solar and energy storage technologies will see continued growth and roll out in 2015 causing ongoing tension regarding antiquated distribution network regulatory models.
14. Data is King	Finally, the cleantech companies pursuing data management and analysis for utilities and industry will make strong progress in 2015. The year will see at least one major acquisition of an Australian company by a big US IT companies, such as Amazon or Google, driving massive valuation increases across the sector.