



Australian CleanTech Index

1Q FY19

Quarterly Performance Report

October 2018

To request further information or to be added to the distribution list for future ACT Australian CleanTech Index reports, please see www.auscleantech.com.au/Pages/cleantech.html

Table of Contents

1. Australian CleanTech Index Overview	3
2. Australian CleanTech Index Performance 1Q FY19	4
3. Index Rebalance	6
4. Component Sub-indices	7
5. Component Companies on 30 September 2018	8
6. China CleanTech Index	9

1. Australian CleanTech Index Overview

The Australian CleanTech Index provides the definitive measure of the performance of Australian listed cleantech stocks. The cleantech industry is split into a number of sub-sectors as detailed in the table below. Each of the sub-sectors contains companies that have both environmental and economic benefits.

Solar Thermal and Photovoltaics	Carbon Sequestration & Trading
Wind Generation	Energy Efficiency & Biomaterials
Biofuels	Resource Efficiency
Wave, Tidal & Hydro	Green Buildings
Biogas	Waste Management & Recycling
Geothermal – Hot dry rocks and conventional	Water
Sustainable Materials	Energy Storage & Fuel Cells
Environmental Services	Low Emissions Vehicle Technologies
Pollution Control	Air Quality Monitoring and Control
Land remediation	

The cleantech sector is fundamentally different to Socially Responsible Investments (SRI) or Environmental, Social and Governance (ESG) performance. SRI and ESG look at incremental improvements in company performance and can be seen as 'operational hygiene' measures that find the best in class. Cleantech focuses on companies whose output positively enhances the communities and ecologies in which they reside. It is about doing 'more good' rather than 'less bad'.

With 94 companies falling under the coverage of the Index and with a combined market capitalisation, after its rebalance, of \$45 billion, the Australian CleanTech Index presents a comprehensive picture of the Australian cleantech industry's growth in a single measure.

The Index is weighted by market capitalisation and is benchmarked against both the ASX200 and the ASX Small Ordinaries. The rules for the formulation and management of the Index have been developed with reference to global best practice. An overview of these rules is provided in the annual performance report.

The ACT Australian Cleantech Index is updated each month and published on the Australian CleanTech website at www.auscleantech.com.au, and in numerous domestic and international publications.

Monthly results can be emailed directly to interested parties by subscribing at <http://www.auscleantech.com.au/Pages/cleantech.html>.

2. Australian CleanTech Index Performance 1Q FY19

Australian CleanTech Index again underperformed the ASX200 for the month of September and the first quarter of FY19.

The Australian CleanTech Index fell from 66.52 to 65.35 over the month recording a 1.76% loss. This compared to the ASX200 loss of 1.77% and the ASX Small Ordinaries loss of 0.93%. The Australian CleanTech 20 recorded a loss of 1.52% for the month.

Over the first quarter of the 2019 fiscal year, the Australian CleanTech Index recorded a loss of 3.2%, behind the 0.2% gain from both the ASX200 and the ASX Small Ordinaries.

The twelve-month figure has also now fallen behind the ASX200 but the **3 year performance has the Australian CleanTech Index over 30% ahead of the ASX200.**

Percentage Change	FY15	FY16	FY17	FY18	SEP'18	1Q FY19	6 Mnths	12 Mnths	3Yrs	5Yrs
Australian CleanTech Index	16.6%	21.3%	13.1%	2.7%	-1.76%	-3.2%	2.6%	8.6%	56.7%	84.6%
Australian CleanTech 20	16.0%	18.4%	14.8%	4.3%	-1.52%	-3.3%	3.9%	9.7%	59.4%	85.2%
ASX200	1.3%	-4.3%	9.4%	2.1%	-1.77%	0.2%	7.8%	9.3%	23.6%	18.9%
ASX Small Ords	-2.8%	10.4%	3.6%	3.2%	-0.93%	0.2%	7.4%	17.1%	45.8%	29.8%

The market capitalisation after its rebalance of the 94 stocks in the Australian CleanTech Index is A\$45.0 billion.

Best and Worst Stocks

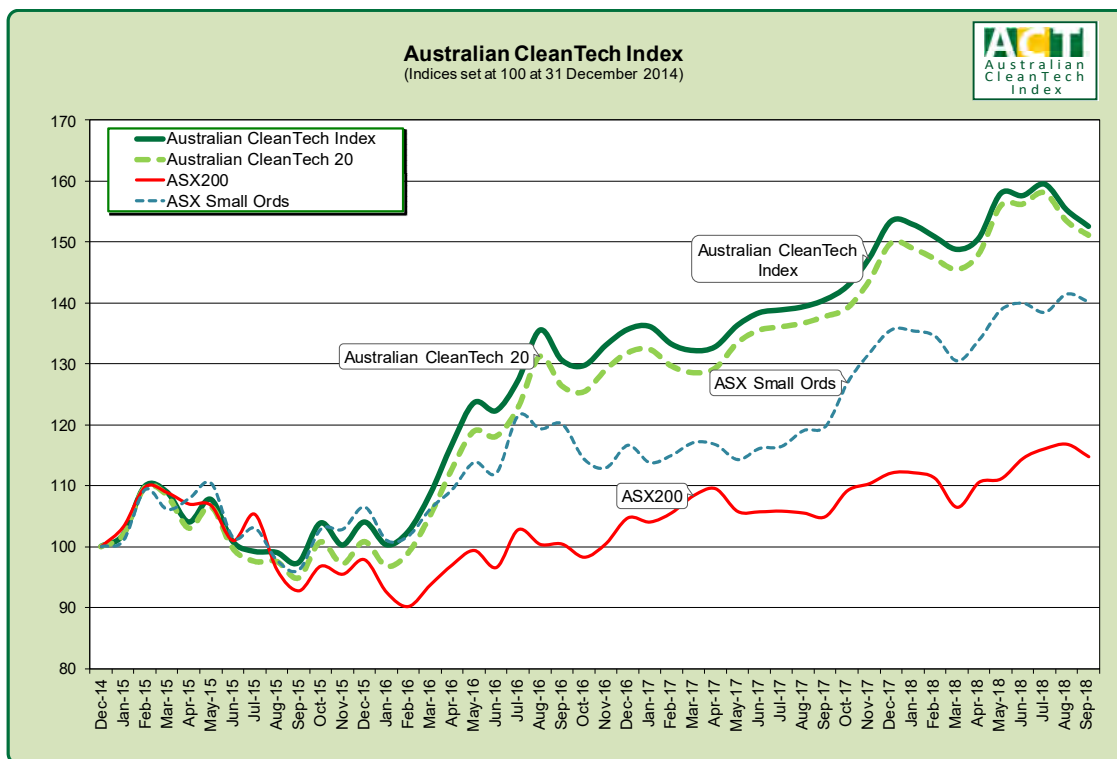
The best and worst performers in terms of share price performance over the month and the quarter are shown in the table below.

The quarter's performance was driven by 16 companies with gains of more than 25%. The greatest percentage gains were recorded by **Clearvue Technologies (CPV)**, **Kalina Power (KPO)** and **Seafarms Group (SFG)**. The greatest gain in market capitalisation over the quarter was from **Cleanaway Waste (CWY)**.

These gains were partially offset by 11 companies recording losses of more than 25% led by **Cobalt Blue Holdings (COB)**, **Carnegie Clean Energy (CCE)** and **Pro-Pac Packaging (PPG)**. The greatest loss in market capitalisation over the quarter was from the ever-volatile **Sims Metal Management (SGM)**.

1Q FY19

Best Performers Share Price Gain > 25%	Worst Performers Share Price Loss > 25%
Clearvue Technologies Quantum Energy Tilt Renewables Sterling Biofuels De.Mem Hazer Group BlackEarth Minerals Graphex Mining Kibaran Resources Technology Metals Australia Orbital Corporation Kalina Power Carbonxt Environmental Group EnviroSuite Seafarms Group	Tag Pacific Algae.Tec CleanTeQ Eden Innovations Pro-Pac Packaging Vivid Technology Volt Power Group Cobalt Blue Holdings First Cobalt Corp Jervois Mining Carnegie Clean Energy



3. Index Rebalance

The Australian CleanTech Index underwent its quarterly rebalancing at the end of September which took account of recent share issues and other corporate activity. No companies were removed from the Index and the following four companies were added to the Index in an ongoing sign that the sector is growing in both breadth and depth:

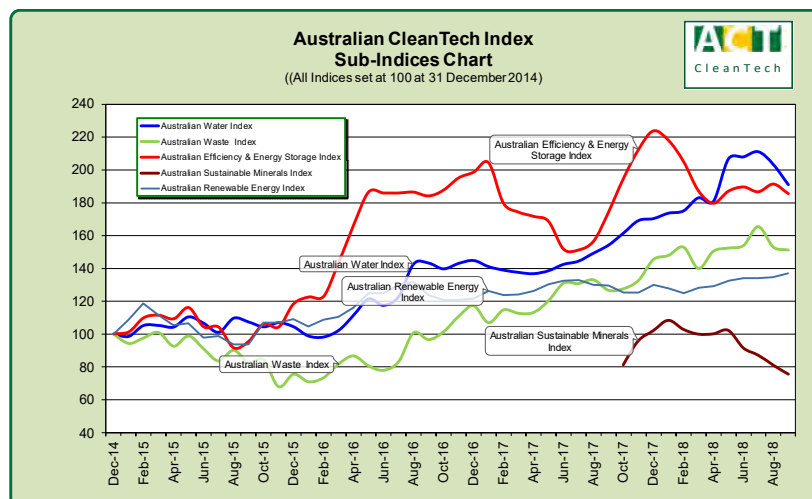
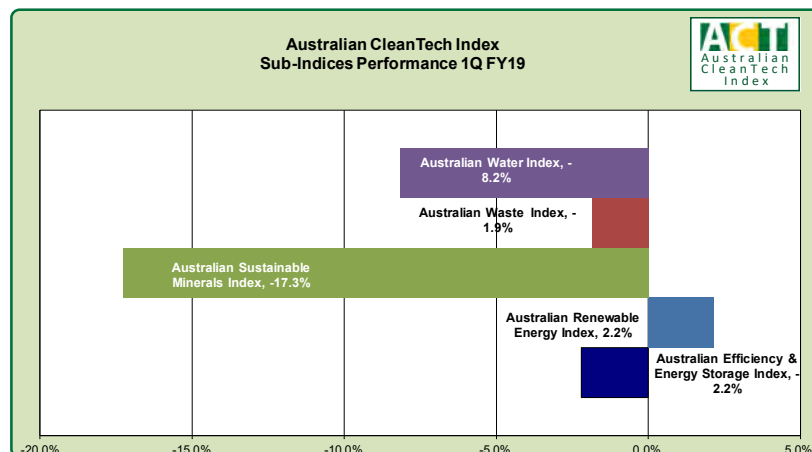
- **1414 Degrees Ltd (ASX:14D)** is developing a thermal energy storage system (TESS) that is highly efficient, clean, scalable and sustainable. It is based on storing energy in molten silicon and is best suited to large scale applications. The company plans to complete its first demonstration unit in South Australia in late 2018. The stock is also added to the new *Australian Efficiency & Energy Storage Index*.
- **Calix Ltd (ASX:CLX)** is a multi-award-winning Australian technology company that is developing new processes and materials to solve global challenges. The core technology is a world-first, patented "kiln" built in Bacchus Marsh, Victoria that produces "mineral honeycomb" that drives very high reactivity in the subsequent products. Calix is using these minerals to improve waste water treatment and phosphate removal, help protect sewer assets from corrosion, and help improve food production from aquaculture and agriculture with reduced anti-biotics, fungicides and pesticides. The stock is also added to the new *Australian Efficiency & Energy Storage Index*.
- **Integrated Green Energy Solutions (ASX:IGE)** converts end-of-life non-recyclable plastics bound for landfill to road ready fuel. The company is building its first project in Amsterdam with first fuel sales scheduled for the end of 2018. The stock has also been added to the *Australian Waste Index*.
- **Wide Open Agriculture (ASX:WOA)** is a vertically integrated, food and agriculture company that regenerates ecosystems and revitalises communities in Western Australia's Wheatbelt. It produces premium vegetables using proven climate smart, shade house technology and has a food brand, Food for Reasons™ to market fresh and processed healthy food products. It purchases land and partners with regenerative farmers to help restore the ecosystem and ensure long-term productivity.

4. Component Sub-Indices

To provide an analysis of the Australian CleanTech Index, a number of sub-indices have been developed. The performance of each of these sub-indices over the last five financial years and during 1Q of FY19 is shown in the table and charts below.

Australian CleanTech Sub-Indices

	FY14	FY15	FY16	FY17	FY18	1Q FY19
Australian Efficiency & Energy Storage Index	2.9%	31.0%	78.1%	-18.4%	24.9%	-2.2%
Australian Renewable Energy Index	10%	29.5%	27.4%	6.2%	1.3%	2.2%
Australian Sustainable Minerals Index	-	-	-	-	12.5%	-17.3%
Australian Waste Index	18.3%	-7.4%	-14.3%	68.0%	17.6%	-1.9%
Australian Water Index	26.3%	16.1%	10.3%	21.1%	45.9%	-8.2%



5. Component Companies on 30 September 2018

The largest 20 largest Index constituents by market capitalisation on 30 September 2018 are provided in the table below. These companies will form the constituents of the Australian CleanTech 20 until the index is rebalanced again on 31 December 2018.

Market Cap Ranking	Company	Ticker
1	Meridian Energy	MEZ
2	Reece	REH
3	Reliance Worldwide Corp	RWC
4	Mercury NZ	MCY
5	Contact Energy	CEN
6	Cleanaway Waste	CWY
7	Sims Metal Management	SGM
8	Bingo Industries	BIN
9	Orocobre	ORE
10	Nanosonics	NAN
11	Galaxy Resources	GXY
12	Syrah Resources	SYR
13	Tilt Renewables	TLT
14	Infigen Energy	IFN
15	New Energy Solar	NEW
16	CleanTeQ	CLQ
17	Beacon Lighting Corp	BLX
18	Seafarms Group	SFG
19	Pacific Energy	PEA
20	Phoslock Water Solutions	PHK

The two new entrants to the Australian CleanTech 20 at this rebalance are Seafarms Group and Phoslock Water Solutions that have replaced the departing Magnis Resources and Pro-Pac Packaging.

Each of the constituents in the Australian CleanTech 20 has a market capitalisation of more than \$218m with an average market capitalisation of \$2.1 billion.

For a full listing of all companies included in the Australian CleanTech Index, please email your request to index@auscleantech.com.au.

6. China CleanTech Index

Australian CleanTech also publishes the China CleanTech Index. This index tracks all 158 Chinese-based listed cleantech companies with a combined market capitalisation of US\$300 billion and provides the definitive measure of Chinese cleantech stocks for global markets. The charts below show the performance of the China CleanTech Index against its benchmarks and also show the relative performance of the China CleanTech Index against the Australian CleanTech Index.

Full details of the China CleanTech Index can be downloaded from www.sinocleantech.com, where it is also possible to sign up to receive the monthly performance reports.

