

# Clean Technology Venture Investment Totaled \$5.6 Billion in 2009 Despite Non-Binding Climate Change Accord in Copenhagen, Finds the Cleantech Group and Deloitte

## Strong M&A and IPO activity in Asia and an increased share of VC investment in Europe underscore the global growth of cleantech

SAN FRANCISCO, CA – January 6, 2010 – The Cleantech Group™, providers of leading global market research, events and advisory services for the clean technology ecosystem, along with Deloitte, which provides audit, tax, consulting and financial advisory services to cleantech companies, today announced preliminary 2009 results for clean technology venture investments in North America, Europe, China and India totaling \$5.6 billion in 557 deals.

The preliminary total is expected to increase by 5-10% once investors fully announce their activity (as in previous years), which would make 2009 a record year for number of cleantech VC deals, and approximately equal with 2007 for total amount invested.

"Record levels of activity from investors, governments and corporations in 2009 demonstrated that the market for clean technologies continues to strengthen regardless of any non binding global climate change agreement," said Nicholas Parker, Executive Chairman, Cleantech Group. "In parallel to trying to reach carbon agreements, governments spent the year earmarking hundreds of billions of dollars for clean technology in pursuit of economic growth. And in the private sector, about a quarter of all global venture investment capital was invested in cleantech in 2009—more than software, biotech or any other category."

<b>Historical Clean Technology VC Investment By Year – North America, Europe &amp; Israel, China, India</b>	
2002	\$908,269,409 (164 deals)
2003	\$1,259,665,762 (301 deals)
2004	\$1,321,871,203 (333 deals)
2005	\$1,994,122,434 (381 deals)
2006	\$4,519,108,949 (409 deals)
2007	\$6,053,192,844 (488 deals)
2008	\$8,465,483,542 (567 deals)
2009 preliminary (final to increase)	\$5,640,928,988 (557 deals)

*Source: Cleantech Group (cleantech.com)*

2009 venture investment was down 33% from \$8.5 billion in 2008, paralleling the global economic decline of the same period. However, investment in cleantech declined less than other sectors. While overall venture capital has retreated back to 2003 levels, according to the U.S. NVCA, cleantech venture capital has been reset only to 2007 levels. Preliminary results for 4Q09 indicate venture investment commitments worldwide of \$1.3 billion across 147 disclosed investments, down 27% from 3Q09, consistent with a seasonal 4Q decline of previous years.

Cleantech venture investment was buoyed by increasing corporate and utility investment, amid the financial crunch and economic crisis. Wind energy, which was the sector most heavily invested in by U.S. utilities in 2008, continued to be a significant investment sector for utilities in 2009, trailed by investments in solar thermal and PV. In addition to utilities, among Fortune Global 500 companies, energy and consumer and industrial products companies made significant investments in the cleantech sector.

"Utilities continue to bring their capital and access to credit to the cleantech sector and are playing a key role in getting more projects off the ground. In 2009 we saw a surge in utility Power Purchase Agreement (PPA) announcements with Solar Thermal and Solar PV accounting for 80% of the total PPAs, while Wind saw increased capacity announcements in the second half of the year aided by the extension of the production tax credit," said Scott Smith, U.S. Clean Tech leader for Deloitte. "Additional project financing came from large corporations whose direct investments in cleantech increased by 14% in the second half of 2009 compared to the same period in 2008. Leading global utilities and non-utilities are likely to continue to see cleantech projects as an attractive investment from an economical and regulatory perspective."

The top clean technology sector for venture investment in 2009 was Solar, which accounted for 21% of total clean technology investment, closely followed by Transportation (20%) and Energy Efficiency (18%). Solar investment in 2009 was down 64% from the previous year while investment in 4Q09 (of \$187 million) was a new 3 year low for the sector. Meanwhile, investment in Transportation and Energy Efficiency reached record levels in 2009, and both now rival Solar for amounts invested.

In 2008, the Cleantech Group forecasted 2009's energy efficiency boom. In 2009, it predicted Energy Efficiency investment in 2010 would eclipse that in Solar (see [10 Predictions for 2010](#)).

<b>Top Venture Capital Clean Technology Sectors in 2009</b>		
<b>Technology Sector</b>	<b>Amount</b>	<b>% of</b>

	<b>Invested</b>	<b>total</b>
Solar	\$1.2 billion	21%
Transportation (including electric vehicles, advanced batteries, fuel cells)	\$1.1 billion	20%
Energy Efficiency	\$1.0 billion	18%
Biofuels	\$554 million	10%
Smart Grid	\$414 million	7%
Water	\$117 million	2%

*Source: Cleantech Group (cleantech.com)*

Four of the top five largest clean technology funding rounds in 2009 were in U.S.-based companies:

<b>Five Largest Clean Technology Rounds in 2009</b>		
<b>Company</b>	<b>Description</b>	<b>Amount Raised</b>
Solyndra (USA)	Thin-film solar (CIGS)	\$198 million
A123 Systems (USA)	Advanced batteries	\$100 million
Landis+Gyr (Switzerland)	Smart meters	\$100 million
Silver Spring Networks (USA)	Smart grid	\$100 million
V-Vehicle (USA)	Car maker	\$100 million

*Source: Cleantech Group (cleantech.com)*

#### **BY WORLD REGION:**

North America's share of clean technology venture capital was down from 72% in 2008 to 62%, a four year low, while the share for Europe and Israel was up from 22% in 2008 to 29%, a five year high. North America continued to attract the largest percentage of clean technology venture capital in 2009, with Europe and Israel in second place, followed by China (6%) and India (3%).

"A number of factors appear to be at play regarding North America's decline in cleantech investment," said Dallas Kachan, Managing Director of Cleantech Group. "The drop underscores how cleantech innovation has continued to globalize. North America's historic cleantech innovation and capital advantage may grow less distinct over time."

#### **EUROPE AND ISRAEL**

European and Israeli companies raised \$1.6 billion in VC investment in 2009, the second highest year on record. Total investment was down 12% from 2008 but up 30% from 2007. There were a record 214 deals completed, surpassing the 212 deals in 2008.

The leading sector was Energy Efficiency, which more than doubled its share of investment to 19% (\$304 million in 38 deals), moving it ahead of Solar (\$292 million in 35 deals).

Countries which registered an increase in VC investment from 2008 included Norway, France, Switzerland, the Netherlands, Belgium and Denmark. The leading country for investment was the UK (\$291 million in 61 deals, a decrease of 21% from 2008), followed by Norway (\$234 million in 12 deals, an increase of 333% from 2008) and Germany (\$207 million in 17 deals, a decrease of 47% from 2008).

There were a record number of M&A transactions (143, up 12% from 2008), although the total value dropped to \$9.6 billion (down 32% from 2008). The \$74 million raised in four cleantech IPOs represented the lowest total since 2004.

#### **CHINA**

Chinese companies raised \$331 million in VC investment in 2009, approximately equal to 2008 (\$330 million). There were 28 deals, up from 24 in 2008. Investments were spread across a more diverse range of sectors compared to 2008, with companies in eight industry sectors raising capital: Energy Generation, Materials, Transportation, Recycling & Waste, Agriculture, Energy Efficiency, Energy Storage and Water & Wastewater.

M&A activity in China reached a historic high in 2009, with 29 transactions totaling \$5.5 billion. China also accounted for 72% of global IPO proceeds raised (\$3.4 billion raised by 17 companies), spurred by approval of the Mid-to-Small company board on the Shenzhen Stock Exchange. There were eleven IPOs in 4Q09 raising a combined \$3.1 billion, a record quarterly total.

#### **INDIA**

Indian companies raised \$190 million in VC investment in 2009, down 13% from 2008 (\$218 million). There were 17 deals, the same number as in 2008.

The clean technology sector which attracted the most investment was Energy Generation, in particular Biofuels, which accounted for 55% of the total. There was also significant interest in the Manufacturing/Industrial category, in particular the Smart Production segment, as well as Agriculture, with Natural Pesticides in particular. The most active investors were US-based New Enterprise Associates, a venture capital firm which invested in Energy Storage and Recycling companies, and Mumbai-based Avishkaar Venture Capital Fund, which is focused on development in rural and semi-urban India.

In 4Q09, the Government of India also approved the launch of the Nehru National Solar Mission to be deployed at an estimated cost of \$932 million.

#### NORTH AMERICA

North American companies raised \$3.5 billion in VC investment in 2009, down 42% from 2008 and down 17% from 2007. There were 298 deals completed, slightly down from both 2008 (314 deals) and 2007 (317 deals).

The leading sector was Solar (\$774 million in 40 deals), which accounted for 22% of total investment, closely followed by Transportation (\$767 million in 46 deals) and Energy Efficiency (\$691 million in 75 deals).

The leading state for investment was California (\$2.1 billion invested in 116 deals, a decrease of 38% from 2008), followed by Massachusetts (\$356 million invested in 27 deals, an increase of 21% from 2008) and Texas (\$170 million invested in 19 deals, an increase of 93% from 2008).

There were a record number of M&A transactions (261, up 40% from 2008), although the total value dropped to \$8.4 billion (down 17% from 2008). The \$1.2 billion raised in seven cleantech IPOs represented the lowest total raised since 2005.

#### TOP GLOBAL INVESTORS:

Leading clean technology investors in 2009, as measured by the number of disclosed financing rounds the fund participated in, were:

<b>Full-Year 2009 Top Five Most Active Clean Technology Venture Funds</b>	
<b>Venture Capital Firm</b>	<b># of rounds</b>
Kleiner Perkins Caufield & Byers	19
SAIL Venture Partners	15
RockPort Capital Partners	14
Khosla Ventures	12
Element Partners	11
Draper Fisher Jurvetson	11

*Source: Cleantech Group (cleantech.com)*

#### GLOBAL M&As and IPOs:

For full-year 2009, there were an estimated 505 clean technology M&A transactions, totaling \$31.8 billion. In 2008, there were fewer transactions (394), but a higher total transaction value (\$32.7 billion). The final total for 2009 is expected to be ahead of 2008 once all deals have been reported, which would make it a record year for M&A transaction value.

4Q09 was the second highest quarter ever for M&A activity, with 129 transactions totaling \$13.9 billion. Panasonic's \$4.6 billion acquisition of Sanyo for its solar and battery businesses is the largest cleantech-motivated transaction yet recorded. Top M&A transactions in 2009 included:

<b>Top 5 Clean Technology M&amp;A Transactions in 2009</b>			
<b>Acquiring Company</b>	<b>Target Company</b>	<b>Amount</b>	<b>Type</b>
Panasonic	SANYO Electric	\$4.6bn	Acquisition
GCL Solar Energy Technology Holdings	Jiangsu Zhongneng Polysilicon Technology Development	\$3.4bn	Acquisition
Mainstream Renewable Power	FPC Services	\$1.7bn	Divesture
Statkraft Development	Sodra Vindcraft	\$1.5bn	Joint Venture
Bunge	Moema	\$1.4bn	Acquisition

*Source: Cleantech Group (cleantech.com)*

In 2009, clean technology public offerings totaled an estimated \$4.7 billion in 32 IPOs. This represents a year-on-year increase of 11% in volume and 2% in amount raised. About 72% of money raised in public markets in 2009 was in Asia, while its average over the three years prior to that was less than 10%. Almost half (47%) of the companies that went public were in China.

<b>Top 5 Clean Technology IPOs in 2009</b>			
<b>Company</b>	<b>IPO Date</b>	<b>Amount Raised</b>	<b>Exchange</b>
China Longyuan Electric Power Group (China)	4Q09	\$2.23bn	Hong Kong
A123 Systems (USA)	3Q09	\$380m	NASDAQ

China Forestry Holdings (China)	4Q09	\$200m	Hong Kong
China Metal Recycling (China)	2Q09	\$186m	Hong Kong
STR Holdings (USA)	4Q09	\$172m	NYSE

*Source: Cleantech Group (cleantech.com)*

"The rise of cleantech in Asia in 2009 was especially evident in the M&A and IPO markets," said Kachan. "Couple this with aggressive clean technology spending by China and South Korea, and record levels of patent registration in Japan, and it's clear 2009 was the year Asia made significant inroads on its cleantech ambitions."

**About the Cleantech Group, LLC**

The Cleantech Group pioneered the clean technology investment category in 2002. Today, it accelerates the development and market adoption of clean technologies globally. The company's worldwide network of investors, entrepreneurs, enterprises, service providers and others—representing trillions of dollars in assets—receives access to capital, investment deal flow, networking, market leading research and data, sales leads and promotional opportunities. The Cleantech Group also provides advisory services for large corporations and governments, publishes leading cleantech sector industry news coverage and produces the premier Cleantech Forum® events worldwide. Details are available at <http://www.cleantech.com>.

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