

Study: California green tech investment, patents, jobs jump

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Despite slowing in overall venture capital investment, clean technology investment in California hit an all-time high in 2008 of \$3.3 billion, increasing nearly \$1.5 billion over 2007 and over seven times total clean tech investment in 2005, according to a report issued Monday.

The 2009 “California Green Innovation Index” said green tech venture capital investment nearly doubled in one year, capturing 57 percent of the national total. The Bay Area and Los Angeles together accounted for more than 20 percent of the nation’s hybrid vehicle registrations in 2007, the report added.

“As the country moves quickly to put an economic stimulus package in place, California’s experience with energy efficiency and clean technology is instructive,” said F. Noel Perry, venture capitalist and founder of the nonpartisan, nonprofit Next 10. “If California had not moved as forcefully to decrease energy consumption over the last three decades, we would be in a much more precarious economic position right now. Imagine where the country could be if it were as efficient as California.”

The 2009 California Green Innovation Index, an initiative from Next 10 and authored by Collaborative Economics, is designed to track key economic, energy and environmental indicators.

Other findings in the report:

- From 2002-07, California led all states in patent registrations for green technologies, increasing the state’s total number by 70 percent over a similar period in the early nineties.
- Since 2005, green job growth has grown by 10 percent, while statewide jobs have increased by only 1 percent. By green segment, job growth has been strongest in advanced materials (28 percent) followed by transportation (23 percent), air & environment (22 percent), and green building (20 percent), with 20 percent of those jobs generated in manufacturing.
- More than 1.5 million jobs have been created as a result of energy efficiency policies forged by California over the last 35 years, generating \$45 billion in payroll.
- California’s energy productivity is 68 percent higher than that of the rest of the country. Measured as the ratio of energy consumed (inputs) to GDP (economic output), growth in energy productivity equates to more dollars of GDP generated per unit of energy consumed.
- Nationally, California is the top-ranking state in alternative fuel vehicle registrations (excluding flex fuel vehicles) with the number of newly registered AFVs more than four times higher than any other state. However, according to most recent data, the United States as a whole had a higher average fuel economy of passenger vehicles (20.1 mpg) than California (19.9 mpg) in 2006.

- Power generation from renewable sources increased by 19 percent in California from 2002-2007, while total energy generation grew by only 11 percent. Since 2003, the wind power generated for California increased 95 percent.
- Since 2001, vehicle miles traveled per capita in California dropped 2 percent with half of this progress achieved between 2006 and 2007 alone. During this same time period, VMT per capita in the rest of the nation increased 3 percent. Relative to 2002, while gasoline prices in 2008 climbed 92 percent higher, total California sales dropped back to 2002 levels and gasoline sales per capita dropped 10 percent.
- California increased grid-connected photovoltaic (PV) solar capacity by 41 percent from 2006 to 2007.
- Public transportation expanded 22 percent from 2005-06, adding more than 100.5 million transit service miles.

Trends identified in the 2008 Index that continued in the 2009 Index include:

- Californians, per capita, pay lower utility bills and spend billions less of their state economy as a whole on electricity than the rest of the country due to energy efficiency innovation.
- California's Carbon Economy continues a gradual downward trend in the direction of a carbon-free economy, delinking economic growth from GHG emissions. While GDP per capita has increased by 28 percent in 16 years (1990-2006) gross emission per capita are 10 percent lower than in 1990.
- The average monthly residential electricity bill in California is less than half of the average monthly bill in Texas, representing a total savings for Californians of nearly \$25 billion in 2007. As a fraction of the state economy, Texas' overall electricity bill is almost double California's bill.

According to annual Field Poll results included in the Index, despite bleak economic times, seven in ten registered voters believe global warming poses a serious threat to both the economy (69 percent) and overall quality of life (73 percent). In fact, according to California voters, who were polled during the height of September's bank failures, 74 percent believe it is possible to reduce GHG emissions while creating jobs and building economic prosperity.

Though many of the 2009 Index findings confirm continued progress in economic, energy and environmental indicators, major indices underscore the difficult challenges ahead:

- Even while per capita VMT and emissions have scaled back to 1995 levels, total VMT and total transportation GHG emissions have increased 20 percent since that year.
- While slowing in growth since 2001, total GHG emissions in California continued to rise by 4 percent from 2003-2006.
- Total electricity consumption in California continues to rise, though 2006-2007 represents the smallest annual increase since 2002.
- Commercial electricity consumption continues to rise, increasing overall from 2004-2005 by 3 percent, and per square foot by 1 percent. Large-scale data centers, or server farms, are not included in this number.

- The number of working Californians using alternatives to driving alone has remained fairly static between 26 and 28 percent since 2000.

The Index was produced in partnership with Collaborative Economics, a Mountain View-based research and consulting organization that works with senior executives from business, foundations, government, education and community sectors to identify economic, environmental and social trends and promote regional innovation. For over a decade, Collaborative Economics has prepared the annual Index of Silicon Valley for Joint Venture: Silicon Valley Network.