

California's Green Innovations: Steady Momentum, Plenty Work to Do

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LOS ANGELES, Calif. -- California has a long way to go and a lot more work to do to reach its greenhouse gas reduction goals, but the latest California Green Innovation Index shows the state has momentum on its side on a number of topics.

The 2009 Index, the second annual report of its kind by Next 10, shows the progress California has made on a number of fronts related to cutting its greenhouse gas emissions: renewable energy, transportation, clean tech investments and more.

The report looks not only at California's emissions reductions, but how it relates to its economy.

The state's economy is growing as emissions per capita are going down, and it's all happening faster in California than the rest of the country. From 2004-2005, the state reduced its GHG emissions by about 2 percent and its economy grew 5 percent.

And while total emissions are still going up, in recent years that growth has slowed, compared to the large leap in emissions between 1996 and 2001. Also, while the state's population and energy demand both rise, the state has kept electricity consumption per person under 1990 levels, except in 1998, 2000 and 2001.

California's energy productivity – the amount of gross domestic product it produces per unit of energy – is 68 percent more productive than the rest of the country. In 2006, California produced \$2.17 of GDP for every 10,000 British thermal units (BTUs) of energy consumed, while the rest of U.S. produced \$1.29 for the same amount of energy.

A number of other trends outlined by the report are encouraging. The amount of investment in clean tech in the state nearly doubled from 2007 to 2008, reaching as high as \$3.3 billion, and accounting for 57 percent of nationwide clean tech venture capital investments. The state also holds 38 percent of the nationwide solar energy patent registrations made in recent years.

The report looks at transportation and renewable energy more deeply than other topics.

Transportation emissions account for 39 percent of California's total GHG emissions, and most of that is due to passenger vehicles. The total number of vehicles miles driven has increased, though per capita the number of miles has dropped 2 percent since 2001. The number of miles of available public transit

has expanded along with ridership, though the share of commuters using public transportation has remained about the same.

One area that the state leads in is registration of alternative fuel vehicles. From 2006-2007 the registration of new and used alternative fuel vehicles jumped 36 percent, topping 100,000 for the first time ever in a year.

In the realm of renewable energy, California is again the leader in many areas. In 2007, 11.8 percent of California's energy came from renewable sources, compared to 2.5 percent for the country as a whole.

Most of California's energy comes from natural gas and coal plants. The long-range goal proposed in the report is to replace coal power, which is almost entirely generated outside of the state, with renewable energy that can be produced within the state, bringing more investment, jobs and money into California's borders.

Wind, solar and small hydroelectric generation have seen the quickest and largest jumps, with solar projects mostly driven by state-sponsored incentive programs. Geothermal, which accounts for the largest chunk of the state's renewable energy, has remained steady in recent years.

Solar energy seems poised to continue to ramp up, due to the work of companies like Nanosolar, a Silicon Valley-based company that is applying nanotechnology to print thin-film solar panels on various materials, an effort that could bring the cost of solar down to 99 cents per watt.