



The Economics of Clean Energy in California

Jobs, Savings, Investment, Competitiveness, and the Costs of Inaction

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Jobs

- There were 125,390 clean-energy jobs and 10,209 clean-energy businesses in California as of 2007. This only counts direct jobs and not the many indirect jobs in industries that support the clean energy economy.
- The number of clean-energy jobs in California grew by 7.7 percent between 1998 and 2007, while jobs overall grew by 6.7 percent.
- California will see \$18.5 billion in new public and private investment due to programs and incentives under the American Recovery and Reinvestment Act and American Clean Energy and Security Act. These investments will lead to 174,927 net new clean-energy jobs in California—even assuming some potential job losses in the fossil fuel sector as workers transition into the clean energy economy.
- California needs these good-paying, private sector jobs—the state’s unemployment rate was at 12.2 percent as of August 2009.
- Green jobs in California were distributed among the following sectors in 2008:
 - Conservation and pollution mitigation: 51.7 percent
 - Environmentally friendly production: 10.9 percent
 - Training and support: 7 percent
 - Energy efficiency: 8.4 percent
 - Clean energy: 22.1 percent

Consumer energy bill savings

- The average American family's annual spending on oil, gas, and electricity increased by \$1,100 under the Bush administration's energy policies. But American electricity and fuel bills would go down under the consumer protection provisions in the ACES bill.
- Emissions allowances allocated in the ACES bill for state efficiency programs alone will save Californians \$5.2 billion between 2012 and 2020.
- The average household in California will see a monthly savings of \$4.60 on their electricity bill by 2020 due to ACES' consumer protection and energy-efficiency provisions.
- Households in California will also save \$12.25 on gasoline each month by 2020 due to lower oil prices and more fuel-efficient vehicles under ACES.

Investment and innovation

- The clean energy economy is already growing in California. Private companies in California invested \$6.6 billion in clean energy from 2006 – 2008 through venture capital funds.
- An additional \$18.5 billion of public and private investment would flow into clean energy and energy efficiency in California under the clean-energy investment provisions in the ACES bill and the ARRA stimulus package.
- California's 10,209 clean-energy businesses patented 1,401 new clean-energy technologies in 2007 alone. Passing a strong clean-energy jobs bill this session is the best thing congress can do to unlock even more innovation and entrepreneurship across California and the nation.
- In Camarillo, clean-energy company Zpower, formerly known as Zinc Matrix Power, designs and manufactures silver zinc batteries for next generation cell phones and computers.

American competitiveness and energy independence

- The people of California spent more than \$49.7 billion on imported crude oil in 2007 alone—more than \$1,352 per person.
- Without comprehensive clean-energy reform, California taxpayers will spend \$4.3 billion more over the next 10 years to subsidize wealthy oil and gas companies, and this is on top of their already record profits.

Costs of inaction

- The CBO predicted in May 2009 that climate change would cause decreases in future U.S. gross domestic product of between 3 and 5 percent, and global GDP of as much as 10 percent by the end of the century.
- Wildfires in Southern California in 2003 burned over 743,000 acres of brush and timber, costing over \$2.5 billion in damages and killing 22 people. Dry, hot forests will lead to a 125 percent increase in California wildfires. These forest fires would cause up to \$14 billion of annual damages just to California homes and residences. High-elevation forest in California will decline by 60 to 90 percent. This will cause California timber revenues to fall by up to \$8 billion.
- California's 82,000 farms will lose ground to droughts and agricultural pests. Cotton yields will decline by 29 percent, sunflower by 26 percent, and wheat by 15 percent. Winter chilling days, which are essential for California's orchards, could decrease by up to 80 percent. Conservative estimates project that total losses to California crops would be greater than \$3 billion annually. And California's Central Valley is estimated to lose \$6 billion during forecasted dry years due to the decreased rainfall caused by global warming.
- California will lose 73 to 90 percent of its snowpack, causing reductions in water supply for 85 percent of Californians. The Sacramento River system will spend every other year in drought. And 220,000 Californians along the San Francisco Bay alone will be at risk of a 100-year flood event, putting \$50 billion of property and 1,460 miles of roads and highways at risk.
- Electricity demand in California will increase by 50 percent to cope with rising temperatures. This would cost an extra \$15 billion, while hydropower generation simultaneously falls due to water scarcity, causing replacement costs of \$1 billion.
- Air pollution days in Los Angeles and San Joaquin Valley will increase by 75 to 85 percent. Massive heat waves will cause 825 to 1,155 annual heat-related deaths in Los Angeles.