



Renewable energy such as wind power can reduce California's emissions by 17 million metric tons of CO₂ equivalent

California Is Setting the Pace on Global Warming Solutions

With the landmark California Global Warming Solutions Act of 2006, California once again leapt to the forefront of environmental innovation. Assembly Bill 32 (also known as AB 32), is the most ambitious global warming solutions law in the nation, making California the first state to firmly limit statewide emissions. The state's next step: putting in place the specific measures that will bring emissions levels back to 1990 levels by 2020 to meet AB 32's limit. California's global warming leadership puts the state on track to become the home of the fast-growing clean technology industry and to protect against the serious risks of global warming.

California's Solutions Work for the Economy *and* the Environment

California can meet AB 32's emissions limit using currently available technologies that will boost the state's economy even as it reduces harmful global warming pollution

Today, California sends \$30 billion out of the state every year to buy fossil fuels—the same fossil fuels that are the primary cause of global warming. This represents an average of \$2,500 a year from every household in California. By reducing the state's reliance on these fuels, California can cut its global warming pollution and invest the savings in clean technologies that will provide jobs, energy price stability, and other economic benefits for Californians. Economists have found that meeting AB 32's pollution limit will provide tens of thousands of new jobs for

residents of the Golden State, while saving families and businesses billions of dollars, largely from improved energy efficiency.

And this only scratches the surface. The Global Warming Solutions Act sends a clear signal to the market that California's doors are "open for business" for clean technology companies and developers of innovative new products that cut emissions. Just as California leads the high-tech and biotech industries, the state is now positioned to take the lead in the fast-growing clean energy market. Energy is a \$750 billion a year market in the United States alone, and the world spends *trillions* of dollars on energy every year. As countries around the globe invest in a new clean energy infrastructure to curb global warming, it is creating an enormous market opportunity for clean technologies.



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Rising to the Challenge

The passage of the Global Warming Solutions Act reverberated around the world. But it is just the beginning: The landmark act sets much-needed firm, long-term limits on the state's global warming pollution to return emissions to 1990 levels by 2020, nearly 30 percent below forecasted levels. By 2008, state regulators will set the 2020 pollution limit and establish a program requiring significant emitters to report their emissions annually to the state. And over the next five years, state agencies will put in place a package of policies to meet these limits, which may include both traditional regulatory and market-based approaches to advance pollution-cutting strategies.

These policies are likely to target the eight broad strategies that can provide the majority of greenhouse gas reductions needed:

- **energy efficiency, renewable energy, and cleaner power plants** to reduce emissions from the electricity and natural gas sectors;
- **cleaner cars and trucks, low-carbon fuels, and smart growth** to reduce emissions from the transportation sector;
- **water efficiency**; and
- **afforestation, conservation, and sustainable forestry.**

Energy efficiency—getting more work and better services out of less energy—can significantly reduce the state's emissions and save money. California has a strong record of success with energy efficiency, saving more than \$5 billion over the last decade alone, but substantial opportunities remain. Aggressively investing in cost-effective energy efficiency is the state's top priority for meeting customers' energy service needs. Electric and natural gas utilities in California are already required by law to invest in energy-efficiency whenever it is cheaper than supplying power or gas. Forward-looking policies also include rewarding utilities for investments in efficiency that save customers money, adopting aggressive building- and appliance-efficiency standards, and reducing California's peak energy demand by a goal of 5 percent through technologies that cut back on energy use when the state's power grid is most strained.

Renewable energy is plentiful in California thanks to the state's ample sun, wind, geothermal, and other renewable resources. Renewable resources provide about 11 percent of the state's electricity, compared to just 2 percent nationally, and two state policies intend to increase use of renewables in the next decade. First, the Renewable Portfolio Standard requires investor-owned utilities to provide 20 percent of their power from renewable resources by 2010, and Governor Schwarzenegger and the California Energy Commission have recommended increasing this target to 33 percent by 2020. Second, the California Solar Initiative provides rebates for rooftop solar panels, with the goal of encouraging investment in 3,000 MW by 2017.

Cleaner power plants can also achieve significant global warming pollution reductions. Senate Bill 1368, a groundbreaking law passed in 2006, establishes the first global warming pollution emissions standard in the world for new long-term utility investments in baseload power plants. Conventional coal-fired plants that vent their global warming pollution into the atmosphere will no longer find a long-term market for their power in California. Instead, California is targeting its dollars toward cleaner resources including efficiency, renewables, and advanced technologies that capture and store pollution. In addition, investor-owned utilities are required to explicitly account for the financial risk associated with greenhouse gas emissions in evaluating new long-term resource investments, which helps ensure that utilities are investing in resources with the lowest overall lifecycle costs.

Cleaner cars and trucks can help clean up the transportation sector—the single largest source of global warming emissions in the state. In 2002, California became the first state in the nation to regulate greenhouse gas emissions from new passenger vehicles. Standards adopted in January 2006 are expected to reduce emissions from new cars around 30 percent by 2016, saving consumers more than \$4 billion by 2020. A law requiring better replacement tires stands to reduce California's gas consumption in cars and light trucks by 3 percent by 2015, without sacrificing safety.

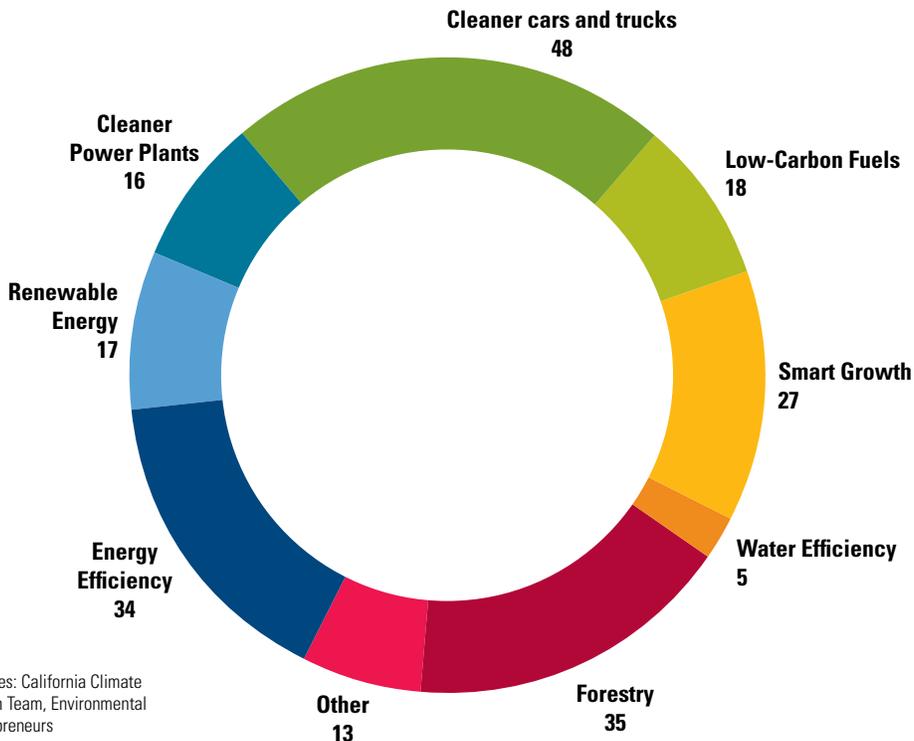
The Cost of Doing Nothing

Inaction could have severe consequences for California:

- **Degraded air quality threatening the health of Californians**, with more than 95 percent of the state's residents already living in areas with unhealthy air.
- **More frequent and severe heat waves**, similar to the one in July 2006 during which more than 100 people died across the state.
- **Loss of snowpack in the Sierra Nevada mountains**, which will threaten the state's water supply and valuable summer peak power generation.
- **Rising sea levels**, which will put additional strain on the state's levee system and further threaten water supplies as saltwater intrudes into aquifers.

Strategies for Reducing California's Emissions

Reductions by 2020, in million metric tons of CO₂ equivalent



Sources: California Climate Action Team, Environmental Entrepreneurs

Low-carbon fuels can reduce emissions while providing consumers with more choices at the pump and protection from increasingly frequent gasoline price spikes. In January 2007, Governor Schwarzenegger called on state regulators to establish a standard, as one of the first policies implemented under AB 32, requiring that all fuel on the California market meets, on average, a declining level of global warming pollution emissions. Companies would be able to comply with the standard by using clean-fuel technologies such as cellulosic ethanol from sustainably managed and renewable plant materials, electricity to charge hybrid plug-in vehicles, and compressed natural gas. Advances in low-carbon fuels will help free California from dependence on oil and carbon-intensive unconventional fuels such as Canadian tar sands oil.

Smart growth communities designed so that Californians can walk, bike, or take public transit to reach most destinations have the double value of reducing emissions and improving quality of life. If all of California's new construction for just the next 10 years follows smart-growth precedents already established, consumers would save more than \$2 billion each year in transportation expenses.

Water efficiency is of particular interest in California, which has a uniquely energy-intensive water supply. A large amount of water is pumped over 2,000-foot mountains into Southern California, and additional energy is used to extract, treat, distribute and dispose of water and waste water. An aggressive water-use efficiency program could save California approximately 5 million acre-feet by 2020, which is enough to meet the water supply needs of all the households in Los Angeles County.

Afforestation, conservation and sustainable forestry, done appropriately, have the potential to remove global warming pollution from the atmosphere. While ultimately global warming cannot be prevented without significant reductions in pollution from burning fossil fuels, and issues surrounding forest-based projects (such as the loss of sequestered carbon elsewhere) still need to be addressed, ecologically appropriate afforestation, conservation, and sustainable forestry offer the largest potential for increased sequestration in the state in the near term. These forestry strategies have the potential to provide a significant portion of the emission savings needed to meet the 2020 limit, while at the same time providing biodiversity and water quality benefits for the state.

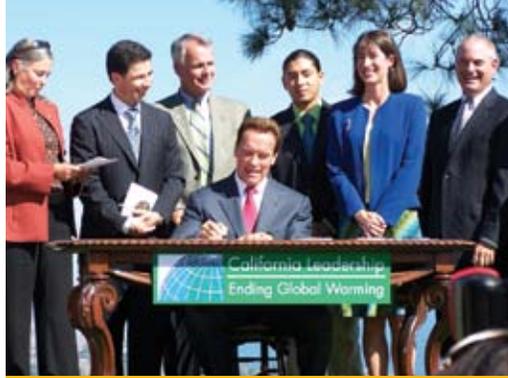


California's History of Pioneering Policy

California's environmental vision can spark change far beyond the state's borders. Time and time again, California has taken the lead on addressing the most important environmental issues of the day:

- **1969:** California adopts the world's first air-quality standards. The federal government followed with national standards two years later.
- **Late 1970s:** California is the first state to adopt energy-efficiency standards for appliances and new buildings. Other states follow this example, and national standards are enacted in 1987. Other countries, including Russia and China, have based their own building-efficiency codes on California's model.
- **2002:** California is the first state to limit global warming pollution from cars. Eleven other states and Canada have followed California's lead, making the Golden State's standards the model for more than one-third of the North American car market.
- **2006:** California enacts the Global Warming Solutions Act, the most ambitious law to limit statewide global warming pollution in the nation.

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The bipartisan effort to enact the Global Warming Solutions Act was led by Speaker Nunez, Assemblymember Pavley, Senate President pro Tem Perata, and Governor Schwarzenegger.

Market Transformation Goes Hand in Hand with Policy Change

Market strategies may also be part of the package of policies California employs to meet the 2020 limit, complementing regulatory programs that advance specific strategies. While the state may pursue a variety of market mechanisms, including incentives and rebates, a program that creates an enforceable cap on emissions from certain sectors and allows covered entities to use certain types of market mechanisms to demonstrate compliance is among the most promising candidates. (This type of program is commonly known as a “cap and trade” program, although trading may be minimal if allowances are auctioned.) Properly designed, this approach can reduce costs, push emissions lower than through the regulatory programs alone, and stimulate innovation by providing companies with an incentive to exceed minimum emission-reduction requirements.

The Time Is Now for Nationwide Action

Scientists agree that global warming is already happening as a result of human activity, primarily burning fossil fuels to power our cars, generate our electricity, and heat our homes. We need to act now—scientists say that unless steps are taken soon to reduce global warming pollution, average temperatures could rise another 4 to 11 degrees Fahrenheit by the end of the century.

Fortunately, we have the solutions at hand to avoid the most severe effects of global warming: Clean energy technologies can reduce global warming pollution, stabilize energy costs, and create new businesses and jobs for the twenty-first century.

California is blazing the trail with AB 32’s firm limits on pollution. Now it’s up to California to take the next step and implement policies to reach the emissions limits. And it’s up to other states and Congress to join California by putting global warming solutions in place on a national level.