



Climate Change Draft Scoping Plan

The Climate Change Draft Scoping Plan is the state's roadmap to reach the greenhouse gas reduction goals required in the Global Warming Solution Act of 2006, or AB 32. This Plan calls for an ambitious but achievable reduction in California's carbon footprint – toward a clean energy future. Reducing greenhouse gas emissions to 1990 levels means cutting approximately 30 percent from business-as-usual emissions levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, that means reducing our annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020. This challenge also represents an opportunity to transform California's economy into one that runs on clean and sustainable technologies, so that all Californians are able to enjoy their rights to clean air, clean water, and a healthy and safe environment.

The plan promotes a growing, clean-energy economy and a healthy environment for California at the same time.

- *AB 32 creates favorable economic conditions for a green-tech business boom.* Between 1990 and 2006 green technology businesses in California grew by 84 percent and added more than 10,000 jobs to the state's economy mostly in solar energy, energy efficiency and green transportation. (Source: California Green Innovation Index, 2008 Inaugural Issue)
- *AB 32 will accelerate venture capital investment in California green-tech and clean-tech companies.* California's share of national venture capital investment in innovative energy technologies more than tripled from 1995 to 2007. About half of all cleantech investment is made in California – \$1 Billion in 2006. (Source: Cleantech Venture Capital: How Public Policy Has Stimulated Private Investment)
- *Green technologies produce new jobs faster.* Investments in green technologies produce jobs at a higher rate than investments in comparable conventional technologies. (Source: Putting Renewables to Work: How Many Jobs Can the Clean Energy Industry Generate)
- *Venture capital investment produces thousands of new jobs.* Each \$100 million in venture capital funding helps create 2,700 jobs, \$500 million in annual revenues for two decades and many indirect jobs. (Source: National Venture Capital Association) AB 32 will likely increase that level of venture capital investment.

The plan promotes improved public health, lowers health care costs.

- *Public health benefits save billions.* Preliminary analysis indicates that the total economic value associated with public health benefits is likely to be on the order of \$2 billion in 2020. (Source: Air Resources Board)
- *AB 32 will significantly reduce harmful pollution.* The estimated reduction of combustion-generated soot (PM 2.5) associated with the recommended regulatory measures is 10 tons per day. The estimated reduction of oxides of nitrogen (a precursor to smog) total 50 tons per day. (Source: Air Resources Board)
- *Improved air quality promotes public health.* These reductions in harmful air pollution lead to the following estimated health benefits in 2020: (Source: Air Resources Board)
 - 340 fewer premature deaths
 - 9,400 fewer cases of asthma-related and other lower respiratory symptoms
 - 780 fewer cases of acute bronchitis
 - 57,000 fewer work days lost
 - 330,000 fewer restricted activity days

Table of Recommended Reduction Strategies

<p align="center">How California will cut Greenhouse Gases 30% by 2020 Recommended Strategies</p>	<p align="center">2020 Reductions (MMTCO₂E)</p>
State Government: Reduces state governments' carbon footprint by 30%	1-2
<p align="center"><i>California Cap and Trade Program Linked to Western Climate Initiative: Emissions cap of 365 MMTCO₂E covering, by 2020, electricity, transportation, residential/commercial and industrial sources. These reduction measures contribute to achieving the cap.</i></p>	
Clean Car Standards: Requires clean cars that on average will cost \$30 less each month to drive	31.7
Energy Efficiency: Requires new appliances and new buildings to be more energy efficient	26.4
Renewable Portfolio Standard: Requires utility companies to provide a third of their energy from renewable sources like wind, solar and geothermal	21.2
Low Carbon Fuel Standard: Requires oil companies to make less polluting fuels	16.5
Vehicle Efficiency Measures: Supports tire maintenance and similar items	4.8
Goods Movement: Requires more efficient movement of goods throughout the state including ship electrification at the ports, vessel speed reduction and other efficiency measures	3.7
Heavy/Medium Duty Vehicles: Requires more aerodynamic and hybrid trucks and increases engine efficiency standards.	2.5
California Solar Program	2.1
Local Government Actions and Targets: Encourages improvements to the ways we grow and build our communities to make more livable, walkable cities with shorter commutes	2
High Speed Rail: Encourages the high speed rail as a fast, clean alternative to air travel	1
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	TBD
Additional emission reductions from capped sectors	35.2
<p align="center"><i>Other reduction measures from sources outside of the cap and trade system.</i></p>	
High Global Warming Potential Gas Measures: Safely reduces or recovers potent greenhouse gases (insulation foam and refrigerants) that contribute to global warming at a level many times greater per ton emitted than carbon dioxide	16.2
Sustainable Forests: Manages forests to grow trees and prevent forest fires	5
Water Related Energy Efficiency: Increases water system energy efficiency and conservation in order to reduce the energy to use water in the state	4.8
Landfill Methane Capture: Sets statewide standards for installation and performance of active gas collection and control systems at landfills	1
Methane Capture at Large Dairies: Encourages voluntary action	1
<p align="right">TOTAL</p>	<p align="center">169</p>

The plan expands California's successful track record of saving money through efficiency.

- *Energy efficiency is the greatest energy resource.* The state's energy efficiency policies have saved Californians more than \$50 billion, and are expected to save another \$23 billion over the next five years – money that is reinvested back into the California economy. (Source: Energy Efficiency: California's Highest-Priority Resource)
- *Investment in greening existing buildings is good for business.* By upgrading existing facilities to improve energy efficiency, businesses can save approximately \$0.60 per square foot, reducing per-square-foot energy costs (currently \$1.50 to \$2.50) by as much as 40 percent. (Source: Cool-companies.org/profits)
- *Energy efficiency saves consumers money.* Under AB 32, homeowners can save about \$200 per year through energy efficiency – savings between 1,500 and 1,800 kWh per year and over 300 therms of natural gas per year by improving energy efficiency by 25 percent. (Source: Options for Energy Efficiency in Existing Buildings)
- *Energy efficiency helps reduce the need for new power plants.* For every dollar invested in improving energy efficiency, two dollars are saved by not having to build additional power plants and transmission facilities. (Source: International Energy Agency)
- *Clean cars cost less to drive.* Under California's cleaner car law (the Pavley greenhouse gas standards), consumers save on operating costs through reduced fuel use – an extra \$30 each month for other expenditures. (Source: Air Resources Board)
- *Californians already save on energy bills.* If California's annual statewide electricity bill were the same fraction of the gross state product as Texas', Californians would be paying almost \$25 billion more for electricity each year. (Source: California Green Innovation Index)

The plan helps reduce risks that could be costly to California.

- *Climate change threatens California's water resources.* A 12-inch sea level rise by 2050 would translate into \$1.2 billion in levee improvements needed in the San Francisco Bay Delta and the San Joaquin Valley. (Source: Jeffrey Mount, professor of geology at UC Davis)
- *Scarce water supplies could cost millions annually.* Water Supply costs due to scarcity and increased operating costs would increase as much as \$689 million per year by 2050. (Source: Climate Warming and Water Supply Management in California)
- *California's tourism industry could be hit hard.* Due to snow pack loss, California's snow sports sector could lose \$1.4 billion annually by 2050 and 14,500 jobs. Other tourism sectors will also be significantly adversely affected (Source: Air Resources Board)

The plan relies on a strong network of climate partnerships – so California is not going it alone.

- *Local government will play an essential role in fighting climate change.* More than 100 California cities and counties have signed the U.S. Conference of Mayors Climate Protection Agreement and many have established offices of climate change and are developing comprehensive plans to reduce their carbon footprint. (Source: usmayors.org/climateprotection/agreement.htm)
- *Many are participating in voluntary programs.* Well over 300 companies, municipalities, organizations and corporations are members of the California Climate Action Registry, reporting their greenhouse gas emissions on an annual basis. Californians have also been on the leading edge of purchasing offsets to mitigate their own personal emissions and the state intends to ensure our citizens can be assured of the credibility of these offsets. (Source: California Climate Action Registry)

- *Western states are building strong regional program.* Seven American states and three Canadian provinces make up the Western Climate Initiative. The WCI is an historic effort to collaborate climate action policies of the western United States, Canada and Mexico. (Source: Air Resources Board)
- *State government will lead by example.* As an employer of more than 350,000 Californians, state government is uniquely situated to adopt and implement policies that give worker the ability to decrease their individual carbon impact, including encouraging transit use, telecommuting and use of alternative work schedules.

Projected 2020 Emissions, under a Business-as-Usual Approach:	596 MMT
1990 Emissions Inventory Baseline	<u>427 MMT</u>
Total Reductions Needed to meet AB32 requirements:	169 MMT

Timeline:

By Jan 1, 2009	ARB adopts plan indicating how emission reductions will be achieved from significant sources of GHGs via regulations, market mechanisms and other actions.
During 2009	ARB staff drafts rule language to implement its plan and holds a series of public workshop on each measure (including market mechanisms).
By Jan 1, 2010	Early action measures take effect.
During 2010	ARB conducts series of rulemakings, after workshops and public hearings, to adopt GHG regulations including rules governing market mechanisms.
By Jan 1, 2011	ARB completes major rulemakings for reducing GHGs including market mechanisms. ARB may revise the rules and adopt new ones after 1/1/2011 in furtherance of the 2020 cap.
By Jan 1, 2012	GHG rules and market mechanisms adopted by ARB take effect and are legally enforceable.
Dec 31, 2020	Deadline for achieving 2020 GHG emissions cap.