

Cap and trade

The system in California

A market-based approach

Cap-and-trade is now underway as a strategy for reducing greenhouse gas (GHG) emissions in California. It aims to achieve maximum cost-effectiveness through market systems, by allowing large polluters to choose whether they will reduce pollution from their own operations or buy surplus reductions from other businesses that can make the cuts more easily and cheaply (the *trade*). The potential drawback is that “hot spot” communities are created because reductions are not distributed evenly among emitters, and there may be little or no reductions of other pollutants that affect health and quality of life in disadvantaged communities if most GHG reductions are made elsewhere.

California’s system, managed by the California Air Resources Board (CARB), establishes a total statewide limit (the *cap*) for greenhouse gases emitted by all covered operations, which is lowered by 2 or 3 percent every year until reaching 1990 levels by 2020. Each affected business (or *regulated entity*) must surrender one emissions allowance annually to CARB for every ton of carbon dioxide equivalent it produces.

Initially, most businesses will receive 90% of their emissions allowances for free. They can buy additional allowances at quarterly auctions, where both the state and other businesses offer them for sale.

About 350 companies operating 600 facilities will eventually be covered by the cap-and-trade program. Together, these pollution sources represent about 85% of the greenhouse gas emissions in California. Cap-and-trade complements other programs which, together, aim to achieve AB 32’s goal of reducing California’s greenhouse gas emissions to 1990 levels by 2020.

To help offset increases in gas and electricity costs, residential and small business utility customers will receive refunds, or “climate dividends,” on their utility bills. California’s three major investor-owned utilities – Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric – must return 85% of the proceeds from the sale of their allowances to ratepayers as a twice-yearly credit. For the average residential customer, this refund will add up to about \$60 per year.



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ABOUT TRANSFORM

TransForm is a non-profit that promotes policies and runs innovative programs to create world-class public transportation and walkable communities in California.

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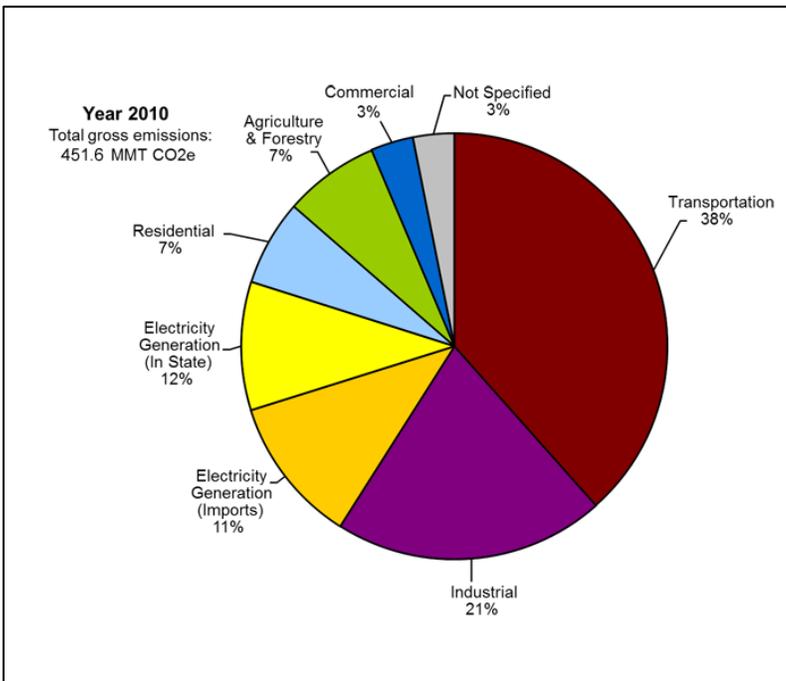
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The cap-and-trade program is one component of AB32, the Greenhouse Gas Reduction Act of 2006. Other components, such as clean energy for utilities, vehicle efficiency standards, and home weatherization programs, are designed to work in harmony to meet AB 32 goals.

In 2015, transportation fuel refiners and importers will begin to be regulated by cap-and-trade. As seen in the chart below, transportation is the source of 38% of California's greenhouse pollution.

38% of California's greenhouse gas emissions come from transportation.



Much of the growth in transportation emissions in the past 20 years has been due to sprawling development that essentially requires a vehicle trip, often made alone, for almost every activity. Experience has shown we cannot simply build our way out of congestion by adding more freeway lanes. The only way for California to significantly reduce emissions from the transportation sector is to build more walkable communities with more and better transportation choices, parks and urban forests, and homes affordable to all.

Source: [California Air Resources Board](#)

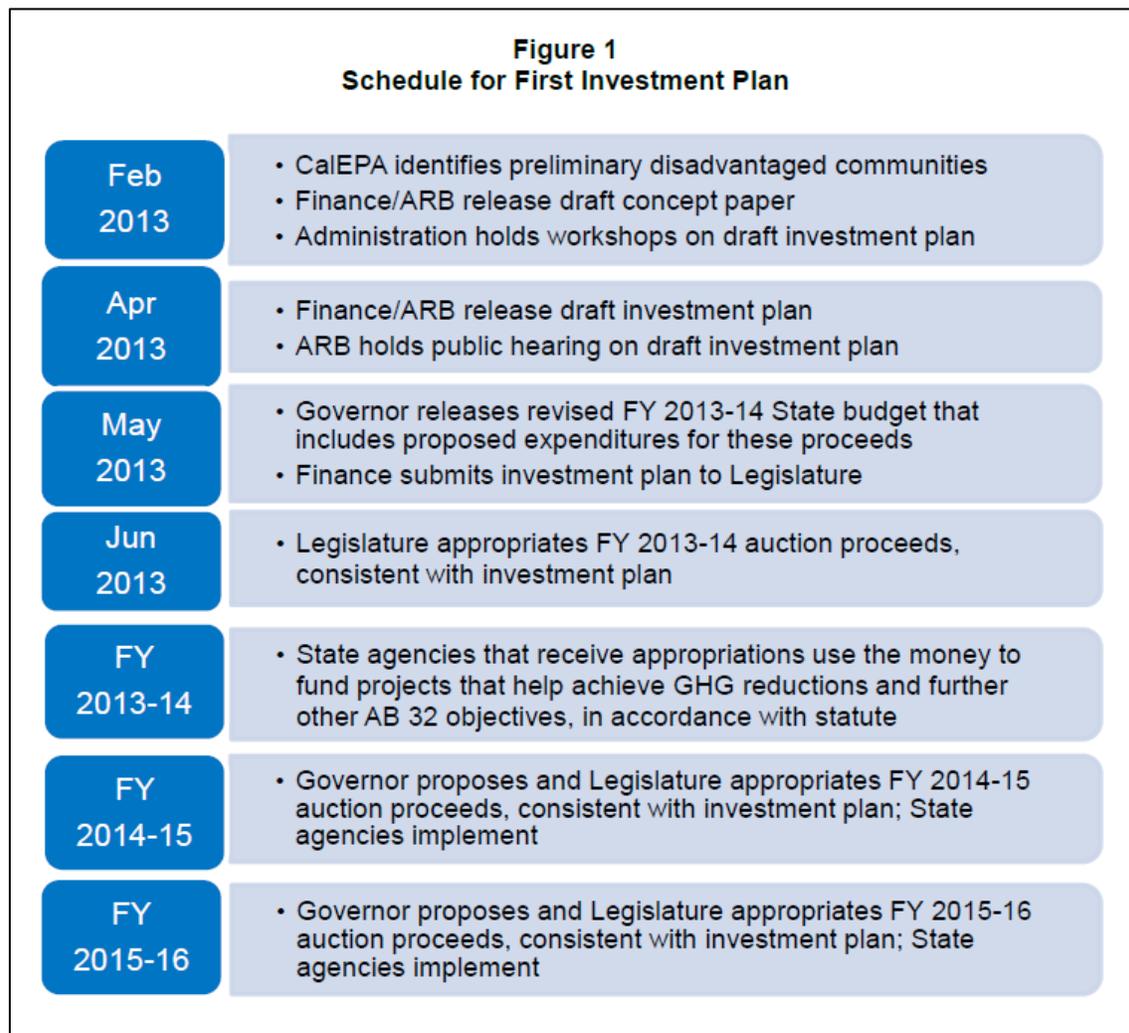
The intimate connection between land use and transport patterns is the reason the Legislature passed SB 375 in 2008.

In CARB's draft investment plan for cap-and-trade auction proceeds, released on April 16, 2013, they recommend that "sustainable communities and clean transportation" receive the largest allocation of these funds. As the report says, "*the transportation sector is the largest contributor of GHGs and criteria air pollutants, and it is clear that California's transportation system will need to be transformed to achieve GHG emissions reduction targets and air quality standards.*"

Timeline: the first cap-and-trade revenue investment plan

The Air Resources Board, the State legislature, the Governor's office and the Department of Finance will now work together over the next three years to approve and implement the first three-year plan for cap-and-trade revenue investments, as required by AB 1532. The timeline for major decisions is reproduced on the next page, from CARB's draft investment plan.

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Source: California Air Resources Board, [Draft Cap-and-Trade Auction Proceeds Investment Plan: Fiscal Years 2013-14 through 2015-16](#)

A cap-and-trade example

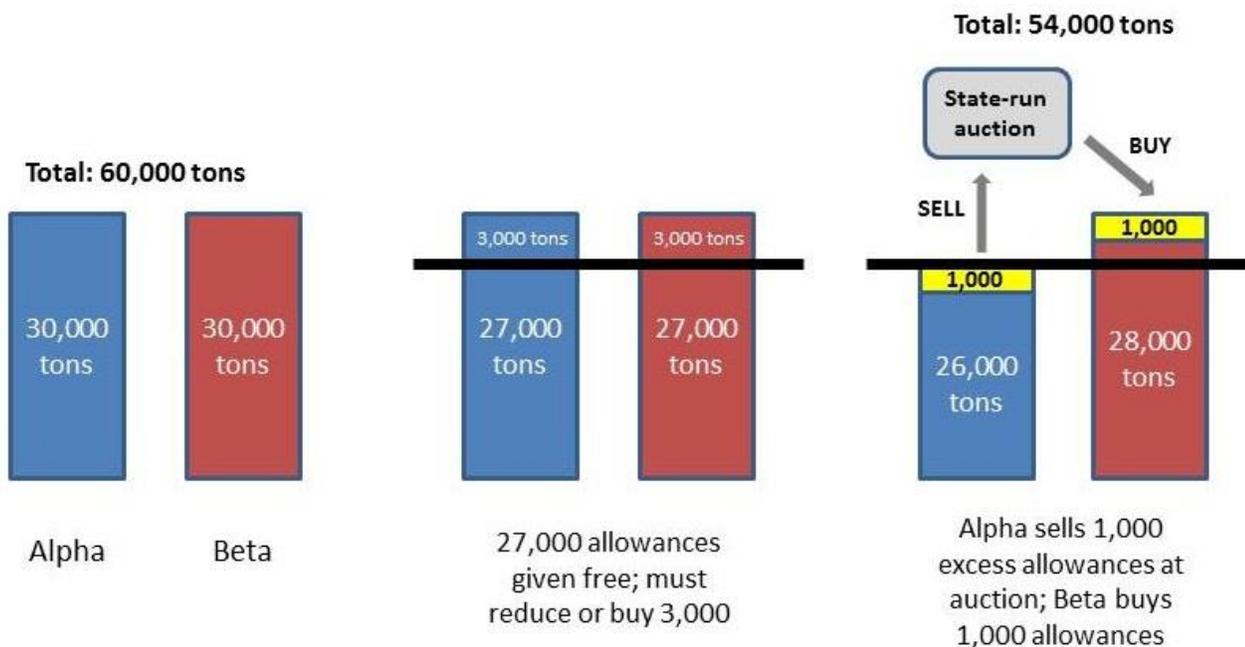
For a ground-level perspective on cap-and-trade, consider Alpha and Beta, two hypothetical California food processors that each emitted 30,000 tons of carbon dioxide equivalent (or CO₂e, the standard unit of measurement for greenhouse gas pollution) in 2012. Under California's system, they are each given free allowances for 2013 totaling 90% of their 2012 emissions: 27,000 tons.

Each company must surrender one allowance annually to the Air Resources Board for every ton of CO₂e emitted, so it has two choices: either reduce emissions by 3,000 tons this year, or purchase additional allowances at auction.

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Alpha finds it can easily improve its factory's efficiency by upgrading equipment, and streamlining some manufacturing procedures to save on energy. With these changes it saves 4,000 tons of emissions and now has more allowances than it needs. Alpha could save the extra 1,000 allowances for a future year, but instead decides to sell them at auction. The company receives \$10.50/ton (the 2013 California floor price) for the allowances, or \$10,500.

Beta, on the other hand, can save 2,000 tons easily and cheaply, but finds it would cost more than \$20 per ton saved to make the remainder of the reductions. So instead it buys 1,000 allowances at auction, also for \$10,500.



Both companies now have one allowance for each ton of CO₂e that their factories emit during 2013, and are able to meet their compliance obligations. Alpha has been able to offset some of the costs of new equipment by selling its excess allowances (as well as through direct energy savings), and Beta has spent less than it would have under a traditional regulatory regime.

The system works well to reduce greenhouse gas emissions at the lowest cost to emitters. However, it is not ideal for dealing with “criteria,” or local, pollution that can sicken people living near industrial facilities. In this example, people living near the Beta plant are exposed to more pollution than those living near Alpha. In a worst-case scenario, plants could be closed in more privileged communities and disadvantaged communities would see little or no reduction, or even an increase, in the pollution that affects their health and daily lives. SB 535 requires a certain percentage of cap-and-trade auction revenues to be invested in communities that suffer the worst impacts of pollution, as one way to mitigate against the potential for the unequal distribution of emission reductions that may take place under cap-and-trade.