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## California's Second Carbon Auction Today: An Explainer on Cap-and-Trade

By Robynne Boyd | February 19, 2013

At the beginning of this year, the Golden State officially launched its long-discussed market-based system to reduce greenhouse gas (GHG) emissions. California's GHG [cap-and-trade program](#) is not the first of its type. Carbon trading schemes are popping up around the world. But, it's only the second program to takeoff in the U.S.

The first, the Regional Greenhouse Gas Initiative, or RGGI, opened for business in 2009, and concentrates on the carbon emissions emitted by power plants in 9 northeast states. California expanded its focus to include emissions from power plants and manufacturing, with transportation fuels joining the effort in 2015.

The program is just one of the State's myriad efforts to reduce its GHG emissions to 1990 levels by 2020, a goal set by [AB 32](#), the state's Global Warming Solutions Act of 2006. The California Air Resources Board (CARB) regulates the program – no easy task considering that California is the ninth largest economy in the world.

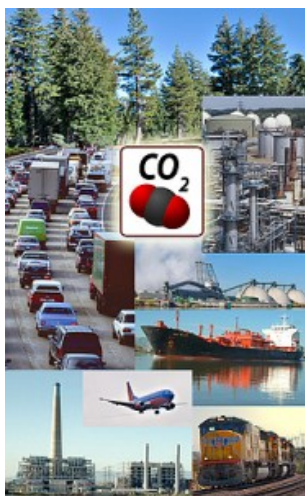


Photo courtesy of CARB

### But what exactly is a cap-and-trade program?

Cap-and-trade systems use the interaction between supply, demand and price to reward companies for reducing pollution below a set level. The level, or "cap" is gradually decreased over to time to minimize the amount of pollutants released, until an established goal is achieved. In California's case, the cap will diminish 2-3% annually until it reaches its goal by 2020.

Until recently, California-based businesses didn't have a roof on their GHGs. The State's total emissions from 2012 were estimated at 470 million metric tons of carbon dioxide (CO<sub>2</sub>). About 40% of these emissions originate from a combination of electric power plants and industrial factories, which are now regulated under the cap-and-trade program.

For the first round of the scheme (2013-14), the 360 businesses involved are limited to emitting 163 million tons of carbon in 2013, or about 34% of the Golden state's overall emissions. This means that from now on refineries, power plants and industrial facilities that emit more than 25,000 tons of CO<sub>2</sub> annually will need to show a permit, or allowance, for every ton of CO<sub>2</sub> they release.

**What's a permit?** A permit is a license to emit GHGs. In the case of the cap-and-trade scheme, one permit enables the owner to emit 1 ton of CO<sub>2</sub> in a year. In 2013, the state of California will offer 10.6 million of allowances for sale by auction.

The first auction took place on November 14, 2012. All the allowances sold. About 90% of the total number of allowances for 2013 was distributed by the CARB for free prior to the auction to help businesses get accustomed to the new scheme. The auction played out that

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one ton of carbon sold for \$10.09, just slightly above the \$10 floor price established by regulators. Another auction is taking place [today](#), where 2.5 million 2013 allowances will be sold on behalf of the state, along with over 10 million allowances consigned by power utilities. The remaining three auctions this year will occur in May, August and November.

As the years go by, the total number of available permits will decrease. In theory, this limit on GHG emissions increases the price of carbon, which in turn increases companies' interest in finding ways to reduce emissions and invest in clean energy projects.

**How does the trade part of the scheme work?** The idea here is to remain within the emission cap. To do this, a company has a few options. The first is finding ways reduce their emissions. Or, they can buy more allowances to emit more CO<sub>2</sub> – either from the government or from other capped companies. Finally, they can “offset” their emissions by investing in projects that reduce GHGs elsewhere, such as a project to destroy refrigerant gases (PFCs) from old refrigerators and A/C units, a forestry projects that involves planting trees, and agricultural methane project that captures effluents from waste ponds in dairy farms. The polluter pays in this regard. The more GHGs a business wants to emit, the more it will cost. Companies that emit less than their given number of permits can sell their extra permits for profit.

**How much do permits cost?** California allowances were trading for \$14 a ton on Friday, February 15 on the Intercontinental Exchange (ICE), where most transactions for the secondary market take place. The prices fluctuate following emissions in the state – slow economic growth would lower emission levels, and bring prices down, for example, while an increase in industrial production would mean a higher demand for emissions permits, and push prices up.

California has set boundaries on what the permits could sell for: the state will not sell permits for less than \$10.71 at today's auction, and will release more permits for sale if prices get in the \$40-\$50 range.

**What gases fit within the program's parameters?** You can think of this list of gases as climate change's heavy hitters:

- Carbon Dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous Oxide (N<sub>2</sub>O)
- Sulfur Hexafluoride (SF<sub>6</sub>)
- Perfluocarbons (PFCs)
- Nitrogen Trifluoride (NF<sub>3</sub>)

**Will California's program link to any others?** Why yes. California is part of the [Western Climate Initiative](#), also involving British Columbia, Manitoba, Ontario and Québec. The vision is to link California and Québec's cap-and-trade programs so that businesses in both jurisdictions can achieve their goals. The first joint auction is supposed to take place this August. The other provinces are still pondering whether to pursue an emission trading program – Ontario is the next most likely to link.

California specifically designed its program so that it could be harmonized with other such schemes. This enables the trading system to become more global in nature.

**Will the program work?** California's program has a lot going for it, explains Emilie Mazzacurati, [a carbon market expert](#). It took about 6 years of thought and work before launching, and California has had time to learn from other programs, which have all run into some issues, with the level of their cap in particular. One of the key benefits of cap-and-trade is that it provides certainty about the amount of emission reductions that will take place over the duration of the program. In practice, implementation can be challenging. California's program has had a fairly smooth beginning, but it's only just getting started...

[Thanks to Emilie Mazzacurati for providing much of the information in this blog]



**About the Author:** Robynne Boyd began writing about people and the planet when living barefoot and by campfire on the North Shore of Kauai, Hawaii. Over a decade later and now fully dependent on electricity, she continues this work as an editor for IISD Reporting Services. When not in search of misplaced commas and terser prose, Robynne writes about environment and energy. She lives in Atlanta, Georgia.

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