Climate goals: inside California's effort to overhaul its ambitious emissions plan

In the wake of Trump's Paris withdrawal, California is taking the lead to fight emissions - and it's rethinking how to get more out of its cap-and-trade program
California has collected more than $4bn that is set aside for programs that reduce carbon pollution. Photograph: Alamy

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California has one of the world’s most sophisticated and ambitious cap-and-trade programs, which are designed to provide financial incentives to big polluters, such as electricity providers and oil refineries, to lower their greenhouse gas emissions.
The complex program, which began only in 2013, is a signature component of California’s plan to cut emissions in the midst of a controversial makeover by state policymakers, after they passed a landmark bill last year that created one of the world’s most aggressive climate change goals: to lower carbon emissions to 40% below the 1990 levels by 2030.

Fierce debates over how to achieve the new, ambitious goals began before President Trump’s decision earlier this month to withdraw the US from the Paris agreement. That decision will likely put a greater spotlight on how California - considered a leader in fighting climate change - will redesign its cap-and-trade program, which many say needs better market mechanisms and metrics to measure its successes and failures.

“It’s important to have the right architecture in place to make cap-and-trade succeed, and have it as a model for folks,” explains Senator Bob Wieckowski, a Democrat from Fremont and chair of the Senate environmental quality committee. Wieckowski, a bankruptcy attorney, is co-sponsoring a bill, SB 775, which seeks to set new parameters for the cap-and-trade program after 2020.

California’s cap-and-trade program sets limits on the amount of emissions businesses can emit, and it doles out, or auctions, allowances that determine how many tons of emissions businesses can vent into the atmosphere each year. Over time, the state tightens the emissions cap, forcing polluters to either spend money to buy allowances, also called credits, or find ways to cut their emissions. Companies that emit less can sell their unused credits to those that exceed their allowances - or keep their credits to be used later on.

The California program hasn’t been around that long, and it’s been difficult to demonstrate how it has directly pushed big industrial companies to lower their emissions. The state collects and releases basic emissions data for the businesses that operate under the cap and trade system (the latest verified data is from 2015), and the state’s Air Resources Board says that it expects cap-and-trade will deliver between 15% to 17% of the reductions needed to reach California’s 2020 goal.

Using emissions data from the state, the Environmental Defense Fund (EDF), an advocacy group, calculated that the industries covered by the program saw their collective emissions fell by 4% between 2013 and 2015.

But whether the cap-and-trade program was largely responsible for that drop remains unclear. The state has a myriad of environmental regulations and clean energy programs in place to help lower its carbon footprint, and greater economic trends, such as a recession, can also play a role.

“It seems crazy, right?” says Parin Shah, a senior strategist at the Asian Pacific Environmental Network, an environmental group, about the lack of analyses from the state and other researchers on the effectiveness of the cap-and-trade program. In response, lawmakers have proposed bills to require more data collection and studies.

More detailed research would surely help a program that’s been pretty lucrative for the state. California has collected more
than $4bn that is set aside for programs that reduce carbon pollution, and more than $5bn has gone to dividends to utility customers (as credits on utility bills), according to the EDF.

Like any large and complicated program, California’s cap-and-trade system has had its detractors. The California chamber of commerce filed a lawsuit close to four years ago contending that the state is imposing an illegal tax through the program. Recently, a state appeals court upheld the program, but the chamber of commerce is appealing that decision.

The tricky part about designing functioning cap-and-trade systems, also called emissions trading schemes, is the complexity of incorporating climate science, financial incentives and effective solutions to reduce emissions from many different types of industrial sources. Politics, naturally, is also a key ingredient.

“I can draw you the perfect cap-and-trade system that would be meaningless for the world if it’s politically impossible,” says Gernot Wagner, a research associate at Harvard University and contributor to the World Bank’s manual on how to design an emissions trading scheme.

More than a billion people live in countries and regions that have emissions trading programs, says Nat Keohane, vice-president of global climate at the EDF. The European Union launched one in 2005, followed by Quebec and Ontario. China is trialling its program in several regions.

“People don’t appreciate the extent that trading programs are in place and working. They’re here for the long haul,” Keohane
Some of the proposed changes to the California program are hot-button issues, such as eliminating the use of offsets by companies to meet the emission caps.

Offsets are credits earned by putting money into projects, such as preserving forests or turning methane from livestock waste into electricity, that are intended to reduce greenhouse gases. The state currently allows offset projects to take place outside of the state.

Some environmental justice groups have long opposed the use of offsets, which they say give companies a choice to pay to pollute rather than directly lowering their greenhouse gas emissions.

Other environmental groups that support using offsets would like to require a certain portion of projects take place within the state. Creating this new rule, they say, will help improve the air quality and create economic benefits in some of California’s disadvantaged communities.

Offsets are “a huge loophole for corporations to utilize,” Shah says. The Pacific Environmental Network supports the elimination of offsets as proposed by the SB 775 bill.

A 2016 report from researchers at the University of Southern California found that companies that prefer to use offsets, not surprisingly, also tend to have larger quantities of greenhouse gas emissions. Oil and power companies such as Chevron, Calpine Energy Services, Tesoro and Southern California Edison account for 60% of the offsets used, the report finds.

The Western States Petroleum Association, an oil industry trade group, supports keeping the current offset program, including out-of-state offsets. The existing offset rule helps to support “reasonable allowance prices and expands greenhouse gas reductions in sectors outside of our cap”, says Adam Smith, manager of air and climate at utility Southern California Edison.

Brown has proposed a new annual budget that plans to use $2.2bn in revenue from the cap-and-trade program to fund carbon reduction programs. Brown has said he wants the legislature to agree on a bill to extend or modify the program on June 15, the deadline for passing the state budget, but that deadline passed without a deal in place.

But decisions on a controversial policy like this might not be able to be crunched into such a short timeframe. At the end of the day, it’ll be politics, not an economist’s design, that determines what the state’s new cap-and-trade program ultimately looks like.

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