CALIFORNIA
AIR RESOURCES BOARD

Cap-and-Trade Program: Frequently Asked Questions

Environmental Justice Communities and Local Air Pollution

Does the Cap-and-Trade Program lead to increases of air pollution in environmental justice communities burdened with air pollution?

There is no evidence that the Cap-and-Trade Program has exacerbated local air pollution in environmental justice communities. Studies tracking a relationship between implementation of the Cap-and-Trade Program and local air pollution found it difficult to disentangle which programs and other factors, such the economic recovery after the Great Recession, were responsible for any changes in local air pollution. In 2017, the California Air Resources Board (CARB) supported legislation that provides us with additional tools to address local pollution. While CARB has been granted significant legislative authority over the last 50 years, we cannot act on our own. And, seeking additional authority from the Legislature was key in getting new tools. We need good data, and the multitude of programs targeting local pollution, including Assembly Bill (AB) 617, will greatly benefit from CARB's new approach to measuring stationary source emissions to aid local air pollution inventory efforts and efforts to partner with local air districts and communities to reduce exposure to harmful air pollutants for residents in environmental justice communities.

But, what about research papers that are cited to say that cap-and-trade is making air pollution in environmental justice communities worse?

The research paper that has been most commonly cited by those asserting that the Cap-and-Trade Program makes local air pollution worse is inconclusive, at best.[1] It studied the relationship between the Cap-and-Trade Program and air pollution in environmental justice communities from 2011-2015. However, the Program did not begin until 2013. Increases in greenhouse gas (GHG) emissions were observed (as a result of the economy coming back after the 2008 recession and other factors), but the lead study author notes that the study does not actually show the implementation of the Cap-and-Trade Program made local air quality worse. And, that there was no cause and effect demonstrated with the Program.[2]

In addition to the recent comments by the lead study author, there was a technical evaluation of the research paper, which noted that any findings in that paper are heavily dependent on the timeframe selected and power sector trends outside of the program's influence.[3] The evaluation also noted that while there is a long-established relationship between GHGs and co-pollutants, the correlations between GHGs and co-pollutants are not particularly tight and

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1 *Carbon trading, co-pollutants, and environmental equity: Evidence from California's cap-and-trade program 2011–2015 (plos.org).* See also Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target pages 2-4 to 2-11.
2 *The biggest fight over cap and trade isn't about what you think it is (grist.org)*
3 *Part 1: Revisiting the Key Findings of a California Carbon Market and Environmental Equity Study | Low Carbon Prosperity Institute*

include wide variability between and even within sectors and pollution types for the data evaluated.

A study by the Office of Environmental Health Hazard Assessment in 2017, took a look at the issue of Cap-and-Trade and local air pollution and determined that the issue was certainly centrally important, but at this time more data was needed to make a definitive statement, and that the Cap-and-Trade Program needed to be evaluated "in concert with other climate policies to evaluate the entire climate change program in aggregate."[4]

More recently, a 2018 study from the University of California, Santa Barbara found that air quality in environmental justice communities with large cap-and-trade facilities actually improved more than air quality in wealthier neighborhoods since the Cap-and-Trade Program took effect.[5]

We recognize that some large GHG-emitting facilities (such as refineries) have been located in or adjacent to environmental justice communities since well before the Cap-and-Trade Program was adopted. Those facilities are regulated for smog-causing pollution and toxic contaminants by local air districts, with strict permitting and reporting requirements. Contrary to some claims, there has been no change to the districts' decades-old authority to regulate emissions at these stationary sources. Even while we undertook programs to cut GHGs, we redoubled our efforts to directly address the largest sources of local pollution with specific and targeted regulations that were aimed directly at the heart of those local sources in environmental justice communities.

So, what has CARB been doing in environmental justice communities located adjacent to, or near, large GHG-emitting facilities?

We recognized early on that the greatest health risks in these communities were from the massive amount of truck traffic and goods transport, especially at ports. This traffic and equipment generates toxic diesel exhaust. Therefore, CARB took decisive action to address this local air pollution with regulations that target the major sources of diesel exhaust, namely, truck traffic and cargo-related activities.

We cleaned up short-haul port trucks (drayage trucks). And, we required all trucks in California to meet emissions standards that are greater than 90 percent cleaner than unregulated trucks. This has directly helped clean up communities adjacent to ports, railyards, and distribution centers suffering from the greatest exposure to toxic diesel exhaust. Those efforts have delivered significant reductions, cutting health risks and premature deaths in those communities. Between 2009-2015 in West Oakland, where dirty

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4 "The Cap-and-Trade Program is still new, making it difficult to discern trends in how the program over time may be affecting emissions of criteria air pollutants and toxic contaminants. As the program continues to generate data over the next several years, it will be easier to detect and evaluate any such trends. It will also be important to evaluate the Cap-and-Trade Program in concert with other climate policies to evaluate the entire climate change program in aggregate." Bottom of page 49 *Tracking and Evaluation of Benefits and Impacts of Greenhouse Gas Limits in Disadvantaged Communities (ca.gov)*

5 *Do Environmental Markets Cause Environmental Injustice? Evidence from California's Carbon Market (nber.org)*

drayage trucks were banned outright, a Berkeley study indicated that NOx levels dropped 70%, black carbon dropped 73%, and particulate emissions dropped 74%.

Still, we understand that much more needs to be done in these communities, and there are several new regulations under development or recently adopted that continue to directly target pollution in environmental justice communities. One *regulation* requires zero-emission delivery trucks and cargo handling equipment by 2035, and all trucks to have zero-emission technology by 2045. A new *regulation* ensures that trucks that still use conventional fuels while zero-emission trucks come online are ultra-clean. And, we continue to work (under our *AB 617 Community Air Protection Program*) with impacted communities throughout the state to develop specific plans to directly reduce local pollution and reduce exposure for community residents.

What are 'offsets'?

Offsets are real, quantifiable, enforceable, permanent, additional, and verified reductions of GHGs generated from projects in economic sectors – like forestry or agriculture – that are not covered by the Cap-and-Trade Program. These projects include activities such as managing forests so they store more carbon, eliminating harmful and powerful GHG refrigerants that also destroy the ozone layer, changing the way rice fields are managed to limit the generation of the super-pollutant methane, and capturing and destroying methane from livestock operations. California has developed the strictest and most rigorous methods in the world to measure and verify the amount of carbon these projects store or reduce. The rigor of our offsets methods was even tested through a lawsuit in 2012, which was litigated all the way to the California Supreme Court. The state prevailed at each step of this litigation. (Some of those involved in the 2012 lawsuit reinitiated similar claims against the Program and forestry offsets in 2018, and CARB's response is the same as it was in 2012.) CARB allows companies in the Cap-and-Trade Program to invest in these projects and use the resulting offset credits towards a small portion of their compliance obligation each year. That portion has been eight percent, and it drops to four percent this year and rises to six percent in 2026.

Why do you allow offsets at all, and why do you allow offsets in other states?

Although they can only be used for a small percentage of a company's overall compliance obligation, offsets serve as important cost-containment in the Cap-and-Trade Program because they are typically slightly cheaper than buying carbon allowances at the State-run quarterly auctions. CARB requires rigorous third-party verification of offset projects to ensure that their reductions are real, quantifiable, permanent (for a minimum of 100 years for forest projects, for example), and additional – that is, above and beyond what is legally required and what normal practices are for any given project. This approach means that offsets deliver multiple benefits even beyond the carbon reductions they generate. For example, better forest management creates improved habitat and watershed health. In some cases, improved management of forests helps reduce the risk of wildfires, along with providing support for tribal nations. This is not only true for California, but other states as well, as the offsets component of the Cap-and-Trade Program has driven climate action in numerous states across the country. Subject to the strict usage limits described above (four percent starting in 2021), these offsets represent real climate benefits and provide cost-savings for California companies.

Does the Cap-and-Trade Program need to be changed to address the critiques?

As with other key regulations (Low Carbon Fuel Standard, mobile source regulations, etc.), the Cap-and-Trade Program continues to draw from implementation experience and new data to inform adjustments to strengthen the Program. All of CARB's programs are monitored on an ongoing basis, subject to periodic reviews, and amended as needed. To date, the Cap-and-Trade Program has been amended seven times since its initial adoption in 2011. The Program was also subject to significant design changes in response to legislative direction in AB 398. All changes to the Program are completed through a public process with workshops, both informal and formal written comment periods, and a Board hearing where oral comments can also be presented. This allows all interested stakeholders to engage with staff as changes to the Program are being considered.[6]

As part of the 2022 Scoping Plan Update, CARB may identify additional opportunities to further strengthen the Program to ensure it continues its role to help the State meet its GHG reduction targets, which is consistent with a letter last year from CalEPA Secretary Blumenfeld. The five- year AB 32 scoping plan update process is the main mechanism for a formal, periodic review and assessment of all programs, or identification of new programs, needed to help achieve our GHG reduction targets. The 2022 Scoping Plan update process will also have its own public process with workshops and Board hearings. All interested stakeholders will have an opportunity to engage during that process.[7] The AB 32 Scoping Plan cannot make changes to any regulation such as the Cap-and-Trade Regulation, which is only possible through a separate process with statutory mandates for specific types of economic and environmental analyses and public process prior to Board consideration.

Putting the Cap-and-Trade Program in Context

What is the history of and authority for the Cap-and-Trade Program?

In 2004, a cap-and-trade program was under consideration in the West Coast Governors' Global Warming Initiative,[8] which included California, Oregon, and Washington. In 2006, the California Legislature approved Assembly Bill 32[9] (AB 32), which established the State's 2020 GHG Reduction Target, required CARB to adopt a Scoping Plan for achieving the target, and authorized CARB to include a cap-and-trade program as a mechanism to help achieve the target. AB 32 also mandated that the policies to reduce GHGs avoid businesses and jobs leaving the state, be cost-effective and technologically feasible, and not disproportionately impact residents in environmental justice communities. Californians overwhelmingly voted to defeat a ballot initiative (Proposition 23)[10] in 2010 that would have delayed implementation of AB 32. Proposition 23 was almost entirely supported by the oil industry. In 2016, Senate

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6 *Cap-and-Trade Regulation | California Air Resources Board*
7 *Scoping Plan Meetings & Workshops | California Air Resources Board*
8 *West Coast Governors' Global Warming Initiative Staff Recommendations to the Governors (wrapair.org)*
9 *Bill Text - AB-32 Air pollution: greenhouse gases: California Global Warming Solutions Act of 2006*
10 *California's Proposition 23 | Union of Concerned Scientists (ucsusa.org)*

Bill 32[11] set a target of achieving 40% below the 2020 GHG Reduction Target by 2030. In 2017, AB 398[12] reaffirmed legislative support for a cap-and-trade program with a bipartisan and super majority vote.

How did the First AB 32 Scoping Plan incorporate recommendations from the Environmental Justice Advisory Committee?

In 2008, CARB adopted the first AB 32 Scoping Plan,[13] which charted the State's path to achieving the 2020 GHG Reduction Target. It included a mix of incentives, regulations, and an economy-wide cap-and-trade program. The AB 32 Environmental Justice Advisory Committee recommendations from 2007 asked for a three-pronged approach of incentives, regulations, and a *carbon fee*.[14] The only form of a *carbon fee* authorized by the Legislature in AB 32 was a cap-and-trade program. As demonstrated in the initial AB 32 Scoping Plan and subsequent updates,[15] the Cap-and-Trade Program is just one of a suite of policies to help the State achieve its GHG reduction targets.

Does California have other credit trading programs?

The State implements three other credit-trading programs in addition to the economy-wide Cap-and-Trade Program. The Low Carbon Fuel Standard[16] (LCFS) allows for trading of LCFS credits and requires a reduction in carbon intensity across transportation fuels consumed in California. The Renewables Portfolio Standard[17] (RPS) allows for trading of renewable energy credits and applies an increasing renewable power standard for each utility's procurement of electricity consumed in California. In addition, the Zero-Emission Vehicle[18] (ZEV) Program allows for trading of ZEV credits and applies an increasing fleet-wide efficiency standard.

What other policies help the State reduce its GHGs?

There are several key policies authorized through legislation to help the State reduce its GHGs in addition to the Cap-and-Trade Program. The 2017 Scoping Plan[19] includes Advanced Clean Cars,[20] LCFS, RPS, the Short-lived Climate Pollutant Strategy,[21] and increasing Energy Efficiency, among others. The Cap-and-Trade Program is designed to send a steadily increasing carbon price signal to incentivize actions to reduce GHG emissions and enable a smooth transition to a cleaner economy. Our analyses in developing the 2017 Scoping Plan found no cost-effective or technologically feasible alternative to help achieve the State's 2030 GHG Reduction Target without adverse impacts to jobs, households, or the

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11 *Bill Text - SB-32 California Global Warming Solutions Act of 2006: emissions limit*
12 *Bill Text - AB-398 California Global Warming Solutions Act of 2006: market-based compliance mechanisms: fire prevention fees: sales and use tax manufacturing exemption.*
13 *https://ww3.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf*
14 *https://ww2.arb.ca.gov/sites/default/files/2021-01/proposedplan-ejaccommentsfinaldec10.pdf*
15 *AB 32 Climate Change Scoping Plan | California Air Resources Board*
16 *Low Carbon Fuel Standard | California Air Resources Board*
17 *RPS Program Overview (ca.gov)*
18 *Zero-Emission Vehicle Program | California Air Resources Board*
19 *California's 2017 Climate Change Scoping Plan*
20 *Advanced Clean Cars Program | California Air Resources Board*
21 *Short-Lived Climate Pollutants | California Air Resources Board*

economy. In the development of the 2017 Scoping Plan, an uncertainty analysis found a higher than 90% chance of achieving the 2030 GHG Reduction Target through a suite of policies that included the Cap-and-Trade Program.

The Design and Implementation of the Cap-and-Trade Program

How does the Cap-and-Trade Program work?

The Cap-and-Trade Program establishes, through Regulation,[22] a declining limit on major sources of GHG emissions throughout California, and it creates a powerful economic incentive for significant investment in cleaner, more efficient technologies. The Program covers approximately 80 percent of the State's GHG emissions. CARB creates allowances equal to the total amount of permissible emissions (i.e., the "cap"). One allowance equals one metric ton of carbon dioxide equivalent emissions (using the 100-year global warming potential). Each year, fewer allowances are created and the annual cap declines. Covered entities may acquire allowances through auction, limited free allocation (for eligible entities), and by trading with other entities in the Program (i.e., the "trade"). A majority of allowances are made available through quarterly allowance auctions. Regulated entities must surrender allowances, and a limited number of offset credits, to cover their emissions. The increasing annual auction reserve (or floor) price for allowances, along with the reduction in annual allowances creates a steady and sustained carbon price signal to prompt action to reduce GHG emissions.[23]

Is the Cap-and-Trade Program working?

Yes. The Program is working as designed and has been adjusted to double in stringency beginning in 2021 to help the State achieve the 2030 GHG Reduction Target of at least 40% below 1990 levels. The annual caps in the Program are based on economy-wide emissions modeling while taking into account the reductions from other climate policies (LCFS, Advanced Clean Cars, RPS, etc.) that will be achieved during the same time period. We know that the inclusion of the carbon price signal from the Program ensures that lowest carbon electricity is dispatched first to meet California's power needs. In addition, through working with industrial sources, we know that regulated entities are implementing process and efficiency changes to increase or maintain current output while reducing their GHG emissions as evidenced by reductions in emissions per Gross Domestic Product for the State and an overall decline in GHG emissions across the industrial sector since the adoption of the Cap-and-Trade Program.[24]

Are there too many allowances?

California achieved its 2020 GHG Reduction Target four years earlier than mandated in AB 32. This means GHG emissions have fallen faster than anticipated and there are unused allowances in the system. The Program includes design features to address situations for both low and high demand for allowances. If demand for allowances is low, the State does

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22 *Cap-and-Trade Regulation (Unofficial Electronic Version)*
23 *Cap-and-Trade Program | California Air Resources Board*
24 *Current California GHG Emission Inventory Data | California Air Resources Board*

not sell allowances at its quarterly auctions below the annually increasing auction floor price and allowances are removed from circulation until there is sustained demand for allowances at auction. If allowance demand does not exceed supply for 24 months, allowances unsold at auctions are permanently removed from auction and only sold in the Reserve Sales at much higher prices. If demand for allowances is high, the State has Reserve Tiers of allowances it can sell to avoid price shocks in the Program, related energy markets, and to consumers and rate payers. Per direction in AB 398, CARB publicly evaluated and answered this question in 2018.[25]

What has been the compliance rate under the Cap-and-Trade Program?

The Program just marked its seventh compliance event in November 2020. There has been near 100% compliance rates at each compliance event. There are also significant penalties assessed for misreporting data[26] that serve as deterrents to misreporting annual GHG emissions. In addition, the Cap-and-Trade Program includes a 4 to 1 requirement for surrendering additional compliance instruments if entities do not meet their emissions obligation at the time of a regulatory compliance deadline.[27]

Has the Cap-and-Trade Program fostered climate partnerships?

AB 32 requires CARB to "facilitate the development of integrated and cost-effective regional, national, and international greenhouse gas reduction programs." The Cap-and-Trade Program was designed with the potential to foster partnerships for this type of integrated approach. Importantly, California linked with the cap-and-trade system of Québec in 2014.[28] Linking Cap-and-Trade Programs helps further the climate ambition of any one jurisdiction, enhance liquidity and provide cost containment for covered entities and consumers, and sets a model for other jurisdictions to reduce emissions. Linkages must be approved by the Governor prior to CARB voting to add any new partner jurisdiction into the Cap-and-Trade Regulation. In addition, CARB has assessed and issued offset credits to eligible projects throughout the United States, including partnering with multiple Tribes and Alaska Native Corporations who have developed forest offset projects.[29]

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25 *https://www.arb.ca.gov/regact/2018/capandtrade18/ct18398.pdf*
26 *MRR Enforcement | California Air Resources Board*
27 If an emitting entity covered by the Cap-and-Trade Program fails to surrender sufficient compliance instruments (allowances, or allowances plus a limited number of offset credits) to cover its emissions, that entity is automatically assessed an "untimely surrender obligation" of four times whatever is still owed. Failure to surrender this full untimely surrender obligation will trigger an enforcement action wherein each un-surrendered instrument constitutes a separate violation. To date, only one entity has been subjected to this untimely surrender obligation, which it ultimately submitted as required by the Regulation.
See *2013-2014 Compliance Report*.
28 *Program Linkage | California Air Resources Board*
29 *https://webmaps.arb.ca.gov/ARBOCIssuanceMap/*