Environmental Defense Fund

CALIFORNIA'S CAP-AND-TRADE PROGRAM: FREQUENTLY ASKED QUESTIONS

Cap-and-trade has been landmark climate policy for over a decade, and during that time California's economy has grown and emissions have declined.[1] As other states have followed in California's footsteps, the nation's original economy-wide cap-and-trade program has continued to reduce pollution and drive critical climate investments.

Now, California has an opportunity to use this program to drive greater climate ambition, improve affordability and support climate equity.

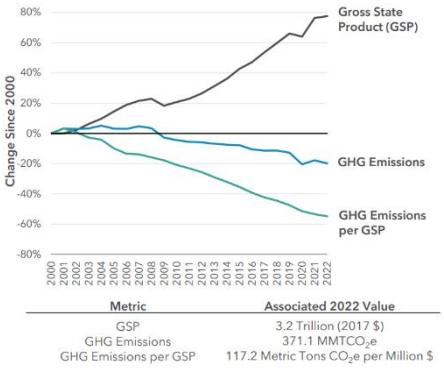

Figure 1: Change in California GDP and GHG Emissions Since 2000

1. What is cap-and-trade, and how does it work?

Cap-and-trade reduces emissions by setting a limit — or **"cap"** — on emissions that declines over time. It is California's only program that actually restricts the tons of pollution going into the atmosphere. The program raises revenue by auctioning a limited and declining number of emissions allowances — equivalent to one ton of emissions each — to polluters in the state.

Polluters must turn in one allowance for each ton of greenhouse gases they emit and, since there are fewer allowances available over time, they must reduce their emissions accordingly. If one entity needs additional allowances to cover their emissions, they can buy or "**trade"** from other entities with excess allowances. When entities buy allowances at quarterly auctions, the revenue goes to the Greenhouse Gas Reduction Fund.

The steady decline of the emissions cap is crucial as this is what provides the greatest possible certainty of California reducing emissions 85% by 2045. **The part of this program that makes it work is the cap**, and to keep California on track to meet its climate targets, it's critical that the emissions cap is actually aligned with the 2045 statutory climate goal.

[1] California Air Resources Board. California Greenhouse Gas Emissions from 2000 to 2022: Trends of Emissions and Other Indicators. September 20, 2024.

2. How does cap-and-trade help California cost-effectively meet its climate goals?

For over a decade with cap-and-trade, California has successfully reduced year-on-year[2] emissions from nearly every sector covered by the program. Emissions across tracked sectors have dropped 8% below pre-pandemic 2019 levels, including a 2.4% decrease[3] from 2021 to 2022. By setting a binding, declining cap on emissions, the **"cap"** in cap-and-trade gives certainty that only a set number of emissions allowances are distributed, with fewer available each year. This is the best insurance policy that emissions will decline, regardless of the performance of other important climate policies.

Cap-and-trade has proven to be a cost-effective tool in California's fight against climate change because it allows for compliance flexibility, meaning each facility decides the most appropriate way to reduce emissions based on their size, production or other factors. At the same time, the program has generated billions in revenue for critical state programs from polluters purchasing allowances. Without cap-and-trade, California would lose its most cost-effective means of ensuring emissions reductions and would see a significant gap in the state budget, jeopardizing funding for utility bill credits, household rebates for clean vehicles and energy efficiency upgrades, critical transportation infrastructure and investments in frontline communities.

Delaying climate action is not an option. The longer we wait, the higher the financial burden becomes from rising temperatures, increased wildfires, droughts and other climate-related disasters. **Lawmakers have the opportunity to strengthen this critical program and set an annually declining cap that enables California to meet its 2045 emissions goal.**

3. What happens to the money raised at auctions?

On top of being a cost-effective backstop on emissions, cap-and-trade generates substantial revenue through quarterly auctions of allowances. Auction proceeds go into the state's Greenhouse Gas Reduction Fund (GGRF), which finances projects that further reduce greenhouse gas emissions, improve public health, strengthen the economy, and deliver benefits to disadvantaged communities.

Over the past ten years, California has delivered $11 billion[4] from the GGRF to more than half a million projects that yield meaningful community and environmental benefits, including 1,248 new or expanded transit projects, 29,800 new jobs and 12,606 affordable housing projects under contract.

The revenue generated by cap-and-trade also makes a difference for Californians concerned about the cost of living and energy affordability. A portion of the auction revenue is returned to residents via the California Climate Credit, applied twice a year to gas and electric bills. In October 2024, Governor Newsom announced that more than 11 million Californian households[5] would automatically see savings on their electricity bill thanks to the California Climate Credit, which is funded by cap-and-trade revenue.

[2] California Air Resources Board. Mandatory Greenhouse Gas Reporting: 2022 Emissions Year FAQs. November 6, 2023.
[3] California Air Resources Board. California greenhouse gas emissions decline across most sectors. September 20, 2024.
[4] California Climate Investments. Annual Report to the Legislature on California Climate Investments Using Cap-and-Trade Auction Proceeds. May 2024.
[5] Governor Gavin Newsom. Millions of Californians to receive average $71 credit on October electric bills. October 2, 2024.

As the state grapples with the second-highest electricity rates in the nation and bills that have surged by as much as 110% over the past decade,[6] this credit provides welcomed relief to Californians. **Lawmakers now have the chance to further improve energy affordability by allocating more cap-and-trade revenue back to consumers** through these bill credits, point-of-sale rebates or direct install programs that put money back into household budgets.

4. How does cap-and-trade impact local air pollution?

Cap-and-trade is designed to reduce greenhouse gas emissions like carbon dioxide. These are global pollutants, meaning no matter where a ton is reduced or emitted, it has the same impact on the climate. Other pollutants like particulate matter or nitrogen oxide are local air pollutants — meaning it very much matters where they are emitted because they have a direct impact on nearby communities. There is a correlation between these types of pollution, but it varies based on facility. Cap-and-trade was not designed to address local air pollution, but local impacts must be considered and addressed.

This is important to consider with respect to the "trade" part of cap-and-trade, which gives covered entities flexibility in their compliance strategies, but could have air quality impacts. If Facility A sells extra allowances to Facility B, it is possible that climate pollution from Facility B could increase, even as overall greenhouse gases continue to decrease. Depending on the correlation between greenhouse gas emissions and local air pollutants, this trade could result in increased local pollution. However, the most robust research into local air pollution impacts from cap-and-trade has not observed this outcome.[7]

Nonetheless, **Legislators have the opportunity to address local air quality issues** by considering certain restrictions on compliance flexibility for facilities who are not reducing their greenhouse gas emissions fast enough or are in significantly overburdened communities.

5. What is the role of free allowances?

Free allowances are designed to minimize emissions "leakage", which is when covered entities shift their operations elsewhere to avoid regulation and protect consumers from price increases, and to insulate consumers from the costs of compliance for covered entities.

Free allowances are distributed to electric utilities and natural gas suppliers to offset the costs associated with cap-and-trade that might otherwise be passed on to ratepayers. However, if free allowances are distributed too generously, it could delay the transition away from fossil fuels, with covered entities using free allowances instead of reducing emissions. This may also reduce local air pollution benefits in overburdened communities. Free allocation is necessary to insulate consumers from price shocks and to minimize leakage, but **the way the state allocates free allowances should be updated to more accurately reflect the risk of leakage**, which would in turn reduce the number of allowances given away for free.

[6] The Public Advocates Office at the California Public Utilities Commission. Q2 2024 Electric Rates Report. July 22, 2024.
[7] Danae Hernandez-Cortes and Kyle C. Meng, Do environmental markets cause environmental injustice? Evidence from California's carbon market. Journal of Public Economics. January 2023.

California uses a method called Output-Based Allocation (OBA) to calculate the amount of free allowances to distribute to a covered industrial facility.[8] OBA rewards industrial facilities based on how much they produce, how efficiently they do it, how much leakage risk they have, and how fast the emissions cap is declining. Two options to reduce the amount of free allowances while still minimizing leakage and reducing consumer impacts is to **update the efficiency benchmarks and the leakage risk** for covered sectors. Best practices for efficiency have changed and improved since the OBA efficiency benchmarks were developed. The Legislature needs to direct CARB to change the leakage risk for different sectors as those assumptions were established in the 2017 cap-and-trade bill (AB 398).

6. What is the role of offsets?

Offsets are another type of compliance instrument in California's program that represent a reduction or removal of one metric ton of emissions from a sector not covered by the program, such as forestry. Using offsets allows covered entities to meet a small part of their emissions reduction obligations by investing in emission reduction projects beyond their emitting facility. There are limits to the percentage of an entity's compliance obligation that can be met using offsets (4% in 2025 and 6% after 2025) to ensure the focus of covered entities is still on reducing emissions from their operations. Offsets are an essential tool to drive investment in nature-based climate solutions and represent critical funding streams for Tribes.

At the same time, the protocols that California relies on to ensure the environmental integrity of these projects must be updated to reflect the latest science and technology. Legislators and regulators should also consider mechanisms to ensure local benefits from these projects such as preferencing Tribal or local offsets. California can also help ensure the environmental integrity of the offset program through steps like removing allowances from the program equal to the offsets used.

Removing allowances from the program when offsets are used instead **would ensure greater integrity and climate ambition**. This is the approach taken by Washington's cap-and-invest program and is one that lawmakers should consider for California.

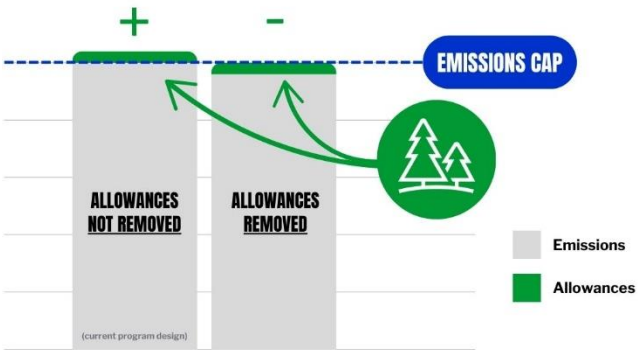

Figure 2: Current Program Design vs. Proposed

[8] California Air Resources Board. Allowance Allocation to Industrial Facilities.

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