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The Cap-and-Trade Program: Issues for Legislative Consideration

PRESENTED TO:

Senate Environmental Quality Committee
Hon. Benjamin Allen, Chair

Senate Budget and Fiscal Review Subcommittee No. 2
On Resources, Environmental Protection and Energy
Hon. Josh Becker, Chair

LEGISLATIVE ANALYST'S OFFICE

Cap-and-Trade Program Overview

Program Sets Cap on Statewide Greenhouse Gas (GHG) Emissions. The cap-and-trade program acts as a market-based mechanism to reduce GHG emissions by creating an annual "cap" on the level of allowable statewide emissions which declines over time. The program was established through Chapter 488 of 2006 (AB 32, Núñez) and renewed from 2020 to 2030 via Chapter 135 of 2017 (AB 398, E. Garcia).

State Both Sells and Gives Away Emission Allowances. The California Air Resources Board (CARB) issues allowances equal to the cap, each of which is essentially a permit to emit one ton of carbon dioxide equivalent. CARB sells some allowances at auctions and gives some allowances away for free to entities such as utilities and certain industries. Entities covered under the program—which include large GHG emitters such as industrial facilities, electricity generators, and gasoline suppliers—can also "trade" allowances by buying and selling them on the open market. Emitters can also purchase "offsets" which are alternative compliance instruments—similar to allowances—that are generated by undertaking certified GHG emission reduction projects from entities not covered under cap-and-trade.

Auction Revenues Deposited Into Greenhouse Gas Reduction Fund (GGRF). CARB hosts four auctions each year where allowances are bought and sold. Revenues from these quarterly auctions are deposited into the GGRF, which the state has primarily used to fund activities intended to reduce emissions. However, because they were authorized with a two-thirds vote of the Legislature, the funds are considered akin to tax revenues—so they can be used for any purpose.

Annual GGRF Revenues Vary. In recent years, cap-and-trade auctions have raised between $3 billion and $4.7 billion annually. Substantial uncertainty exists around how auctions will proceed from year to year, so predicting exactly how much annual GGRF will be available is difficult.

Cap-and-Trade Auction Revenues Support Various Programs

In General, the State Uses Cap-and-Trade Auction Revenues to Support Activities That Further Its Climate Goals. GGRF has supported a wide range of programs. Many of these programs also receive funding from other sources.

Large Portion of Annual GGRF Dedicated to Continuous Appropriations. Under current law, a total of about 65 percent of auction revenue is continuously appropriated from GGRF to the following programs:

- ***High-Speed Rail Project (25 percent).***
- ***Affordable Housing and Sustainable Communities Program (20 percent).***
- ***Transit and Intercity Rail Capital Program (10 percent).***
- ***Low Carbon Transit Operations (5 percent).***
- ***Safe and Affordable Drinking Water Program (5 Percent, up to $130 Million).***
- ***Forest Health and Wildfire Prevention Activities ($200 Million).*** (This funding is in addition to the 65 percent and is taken "off the top" before calculating the other continuous appropriation amounts.)

State Uses Portion of Annual GGRF for Discretionary Expenditures. The remaining revenue is available for appropriation by the Legislature for (1) state administrative costs and (2) discretionary spending programs. Discretionary spending priorities change each year, but past years have typically focused on the following areas (amounts include total funding between 2013 and 2023):

- ***Low Carbon Transportation ($3.2 Billion).***
- ***AB 617 Community Air Protection Program ($1.4 Billion).***
- ***Forest Health ($1.5 Billion).***
- ***Agriculture ($461 Million).***
- ***Organic Waste Diversion and Recycling ($269 Million).***

Cap-and-Trade Auction Revenues Support Various Programs

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Cost-Effectiveness of GGRF-Funded Programs Somewhat Unclear. State agencies—including CARB—estimate both GHG emissions reductions and associated cost per ton of carbon reduced for GGRF-funded programs. These estimates suggest certain programs are more cost-effective than others. However, our office, the State Auditor, and other researchers have found the program reporting data quality to be inconsistent and therefore somewhat unreliable.

Recent Budgets Use GGRF to Backfill General Fund Reductions. To address the state budget problem, the 2023-24 budget package used GGRF funds to offset General Fund reductions for planned spending on activities related to zero-emission vehicles and clean energy. The Governor's 2024 budget proposal proposes a similar approach, using roughly $1.8 billion from GGRF to sustain planned activities while achieving General Fund savings.

Summary of Statewide GHG Emissions Targets

Legislature Has Set Various GHG Goals. The Legislature has adopted three successive statewide GHG emission reduction goals (also known as targets):

- ***2020.*** Assembly Bill 32 established the goal of limiting GHG emissions statewide to the 1990 level by 2020.
- ***2030.*** Chapter 249 of 2016 (SB 32, Pavley) extended the limit to at least 40 percent below the 1990 level by 2030.
- ***2045.*** Chapter 337 of 2022 (AB 1279, Muratsuchi) extended the limit to at least 85 percent below the 1990 level by 2045 and also established a goal of zero net carbon emissions by 2045.

State Met 2020 Target Early, but 2030 and 2045 Goals More Ambitious. Statewide GHG emissions have decreased in recent years—dropping below the 2020 target several years ahead of schedule. However, emissions would need to decline at a much faster rate in order to meet the 2030 and 2045 targets.

CARB's Recent Scoping Plan Lacked Clear Pathway for Meeting 2030 Goal. State law requires CARB to develop a Scoping Plan every five years meant to identify CARB's strategy for achieving the statewide GHG targets. Our office found that CARB's 2022 plan lacked a clear strategy for meeting the 2030 goal.

Summary of Statewide GHG Emissions Targets

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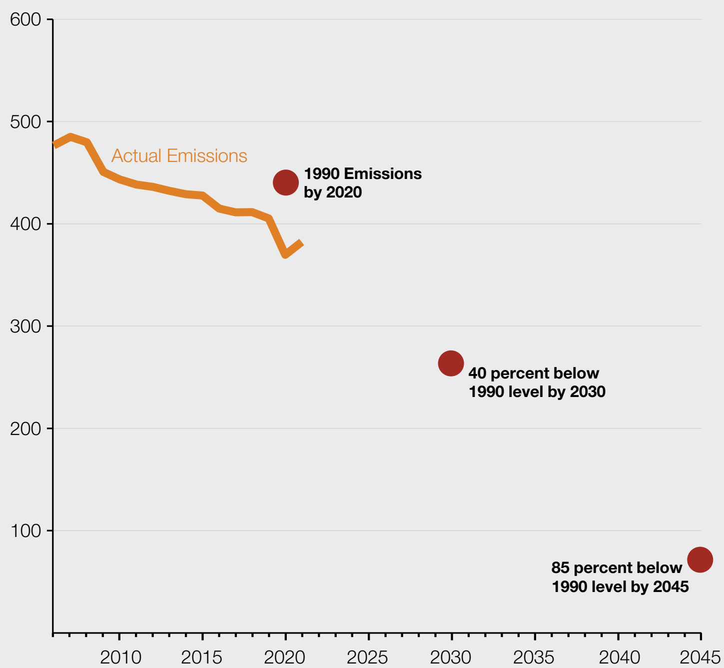
Summary of Statewide GHG Targets

Millions of Metric Tons of Carbon Dioxide Equivalent



GHG = greenhouse gas.

Cap-and-Trade Not Currently Positioned to Close State's 2030 Emissions Gap

2017 Scoping Plan Update Identified Cap-and-Trade as a Policy That Would Ensure the State Meets Its Target. The 2017 plan explicitly stated that to the degree other policies collectively fell short of meeting the state's GHG reduction goals—sometimes referred to as an emissions gap—the cap-and-trade program would reduce emissions further to make up the difference.

2022 Scoping Plan Update Does Not Specify the Expected Role for Cap-and-Trade in Meeting Statewide GHG Targets. Based on our review of the current program, we found the following:

- Cap-and-trade can be a cost-effective way to achieve GHG goals.
- The program is not currently well-positioned to ensure the state meets its 2030 target. Cap-and-trade allows banking of allowances from earlier years, which could hinder the state's ability to rely on the program to achieve its overall emissions reductions goals under the current program cap.
- The cap is set at a level that is insufficiently stringent under a range of future scenarios.
- Lack of program stringency also affects allowance prices and auction revenue.

Cap-and-Trade Not Currently Positioned to Close State's 2030 Emissions Gap

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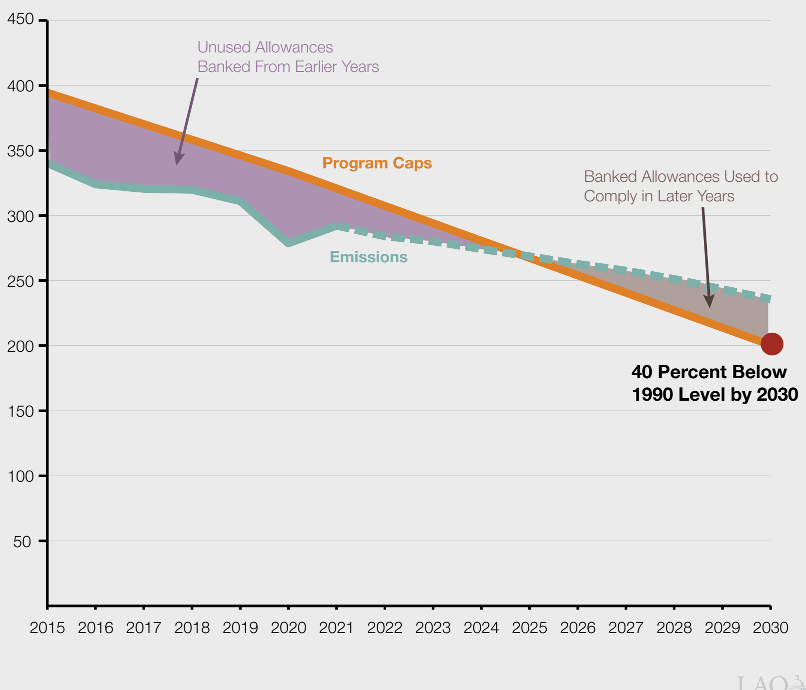
Example of How Cap-and-Trade Allowances Banked in Earlier Years Can Be Used in Later Years

Millions of Metric Tons of Carbon Dioxide Equivalent



CARB Considering Changes to Cap-and-Trade Program

Potential Changes Under Consideration. CARB is considering making changes to cap-and-trade to make the program more consistent with meeting the state's 2030 and 2045 goals. When such changes would be proposed or adopted is unclear. Below are some of the primary program amendments and issues CARB is considering:

- ***Emissions Cap and Allowance Supply.*** CARB has discussed updating the emissions cap in order for the program to better support the state meeting its 2030 and 2045 emissions goals. As part of this process, it would decrease the supply of allowances to reflect a new emissions trajectory.
- ***Adjusting Allocation of Free Allowances.*** As part of the program, CARB gives some allowances away to certain covered entities for free. This is intended to help reduce costs for consumers (for example, the state's investor-owned utilities sell their free allowances and use the revenue to provide a bill credit for electricity customers). In its workshops, CARB has identified adjusting the allocation of these free allowances as another potential amendment.

Key Legislative Considerations

What Is the Legislature's Preferred Involvement in Making Program Changes? This is a key time for the Legislature to weigh in if it wants to influence the direction of the cap-and-trade program. While CARB is overseeing the rulemaking process and has authority to make programmatic changes, the Legislature could direct the board to make certain program amendments or consider different issues through statute, as it did with AB 398.

No Annual Forecast of Emissions Trajectory. Modeling presented at CARB workshops is done on a *cumulative* basis, tracking the total anticipated emissions and allowances through 2030 or 2040. CARB has not presented a forecast of *annual* emissions over this same time period. This gap makes it difficult for the Legislature to track both its expected and actual progress in meeting its statutory goals. The Legislature could consider directing CARB to forecast and publish more refined data that considers annual emissions.

How Should the State Balance Pursuing Emissions Reductions With Potential Cost Impacts? A more stringent program will lead to greater emissions reductions and likely is needed to better align the program with the state's GHG goals. However, such a change presents a trade-off with higher consumer costs. The types of adjustments to the allowance supply that CARB is considering—including reducing the overall supply—will lead to higher allowance prices, which likely will increase consumer costs (such as for retail gasoline and diesel). Despite this potential impact, this option likely still would be less costly than some other programs or policies the state might have to employ to meet its GHG reduction goals.

Estimated Relationship Between Cap-and-Trade Allowance Prices and Fuel Cost Increases

	Cost Increase	
Per-Allowance Price	**Retail Gasoline**	**Retail Diesel**
$38.73[a]	$0.30	$0.27
$50	0.39	0.38
$100	0.78	0.76
$150	1.16	1.15
$200	1.55	1.53

[a] November 2023 allowance price.

Key Legislative Considerations

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How Should the State Allocate Allowances to Balance Different Program Goals and Impacts? Decisions about how to allocate allowances have important effects on the amount of state revenue for climate programs, utility revenue for consumer bill credits, and the amount of financial support provided to certain industries. Reducing the overall allowance supply to increase program stringency likely will raise allowance prices. However, the ultimate effect on state programs, household budgets, and business activities will depend on the way in which the allowance supply is reduced.

- For example, if the state reduces the number of allowances it sells at auctions, this could decrease overall GGRF revenue going to climate programs. Alternatively, if it reduces the number of free allowances it allocates to electric utilities, this would decrease the amount of financial assistance going to households to offset costs associated with higher fuel prices.

Should the State Take Steps to Mitigate Potential Cost Impacts? The state has different tools available to limit or offset consumer cost increases that might result from higher allowance prices, including:

- ***Allowance Price Ceiling.*** Depending on where the allowance price ceiling is set, it can help avoid prices from getting too high and thereby mitigate associated costs for consumers.
- ***Allowance Allocation.*** The state could consider altering its current allowance allocation to certain covered entities. For example, it could increase the number of free allowances it provides to electric utilities to sell on the market, enabling them to generate more revenue for customer bill credits.
- ***Use of GGRF Revenue.*** The state could consider using additional GGRF revenues to support rebates to low- and middle-income consumers for energy cost growth that might result from program changes.

Key Legislative Considerations

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Does the Legislature Want to Take Action to Extend the Program Beyond 2030? A statutory extension would provide more certainty around the program's future. Should the Legislature want to continue with the program beyond 2030, providing such certainty sooner rather than later could provide more assurance to covered entities considering longer-term investments, buffer against potential drops in allowance prices, and aid in the state's planning for achieving its long-term emissions reductions goals.

What Are the Legislature's Expenditure Priorities for GGRF Revenues? Program changes likely will affect GGRF revenue, although the net effect will depend on the details of those changes. In preparation, the Legislature may want to start thinking about its highest priorities for these revenues, including continued support for existing programs, new initiatives, or other ways of distributing the revenue to relieve cost impacts on consumers through rebates or tax credits. As part of this process, the Legislature could reconsider whether existing continuous appropriations continue to reflect its current priorities.