

Introduction

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The close of the decade provides an important milestone for California's climate policy. Emissions reduction goals for 2020 set out initially in AB 32 in 2006 required the State Air Resources Board to reduce statewide greenhouse gas emissions to be at or below 1990 levels by 2020. The state achieved that emissions target four years ahead of schedule. Sources covered by the cap-and-trade program contributed to that outcome, improving the cost effectiveness of the overall policy. Until the fallout from the pandemic, the state's economy has thrived at the same time emissions cuts occurred. From 2010 to 2018, the California economy grew by 33 percent, outpacing most other states in the nation.

In 2016 the California Legislature and Governor Edmund G. Brown, Jr. passed and signed into law SB 32, which extended the state's climate policy goals through 2030. That legislation increases the stringency of state programs and directs the State Air Resources Board to ensure that the state reduce its greenhouse gas emissions to at least 40 percent below the 2020 statutory limit by the end of the decade.

One substantial challenge to achieving this goal is that the portion of statewide emissions outside the cap-and-trade program, such as emissions from dairies, landfills, refrigerants, and process emissions from industry, has gained importance relative to sources covered by cap and trade, which generally include the emissions associated with combustion of fossil fuels. The state's first [Scoping Plan in 2008](#) identified about 86 percent of the state's [greenhouse gas emissions](#) that would be covered by cap and trade. In 2015 when the cap-and-trade program expanded to include liquid fuels, according to information in the [Mandatory Reporting of Greenhouse Gas Emissions](#), the cap-and-trade program covered only 77 percent of statewide greenhouse gas emissions. By 2018 the share had fallen to 75 percent. Most emissions reductions are attributable to regulations, but the contribution from cap and trade is expected to increase over time. The anticipated emissions reductions attributable to the cap-and-trade program rose from 20 percent in the 2008 Scoping Plan in 2020, to 38 percent *cumulatively* over the next decade through 2030 in the third [Scoping Plan in 2017](#). The growing role of cap and trade in achieving emissions reductions is expected to further improve cost effectiveness, and it also elevates the importance the program design.

In this report, we address a number of challenges and opportunities facing the state as it now implements programs to meet the 2030 goal. We identify changes the state might make to the operation of the cap-and-trade program as well as considerations the state should take into account to reduce transportation emissions in light of effects on driving and vehicle purchases from the pandemic.

First, the number of new emissions allowances that are issued every year under the cap-and-trade program is often described as the "cap" and this number declines every year. However, the potential reintroduction of a large surplus of unused ("banked") allowances currently held in private and public accounts would enable emissions in future years to exceed the annual cap. These banked allowances are likely to lessen the contribution of sources covered by cap and trade to the state's overall emissions target and place even greater requirements on uncapped sources and sectors, where emissions reductions have already been hard to attain. In the chapter on Allowance Supply, we discuss a potential

remedy to this problem through an adjustment to the annual cap, an approach that has been implemented in other programs.

Second, the design of the cap-and-trade program provides additional ways to help address the challenge of achieving increasingly stringent emission goals. At current anticipated allowance prices, the annual asset value of emissions allowances created under the program exceeds five billion dollars. The distribution of this value into the economy provides a mechanism to protect jobs in California industry, help ratepayers, and make contributions to the Greenhouse Gas Reduction Fund that provides revenue to projects that accelerate emissions reductions investments to protect overburdened communities from the costs of reducing emissions and from the impacts of a changing climate. As the chapter on Free Allocation highlights, however, a decision to fund any one of these priorities necessarily means less funding for another one. We describe additional criteria the state could utilize to decide free allocation as well as to prioritize investments from the GGRF, including the preservation and creation of good careers in the emerging green economy.

In the third chapter, on Auctions Rules, we describe the priority given to ratepayer protection over contributions to the Greenhouse Gas Reduction Fund in the design of the auction. We then address two issues with allowance allocation: how and whether the state should respond to volatility in state revenues, both in the overall budget and in the Greenhouse Gas Reduction Fund, by reprioritizing certain funding; and how allowance allocations might be affected by any changes in allowance supply through an automatic adjustment mechanism.

An important component of the state's climate policy portfolio involves many policies that directly regulate sectors of the economy. Emissions reductions from these policies reduce the demand for allowances and are influential in keeping prices in the allowance market relatively modest, but the effect of some of these policies is to achieve emissions reductions at relatively high costs. In the fourth chapter, on Cost Containment, we encourage the Air Resources Board to evaluate the portfolio to improve its cost effectiveness and the overall affordability of the state's climate policy portfolio. And in the fifth chapter, Climate Policy Portfolio, we call for a more explicit conceptual and practical balance between the emissions cap and other policies, and a more transparent understanding of the role that the cap-and-trade program provides in ensuring the overall emissions outcome.

Among sources covered by cap and trade, electricity sector emissions have fallen substantially and are expected to continue do so in compliance with SB100, which establishes a pathway for decarbonizing the sector. In the final chapter, we discuss the fact that emissions reductions from the transportation sector have not kept pace. While the COVID-19 pandemic has shaken up the transportation sector in important ways, leading for the first time in years to declines in vehicle miles traveled, it has also decimated the public transportation sector and led to huge declines in vehicle purchases. The Transportation chapter addresses the challenges and opportunities the pandemic has created and makes suggestions for responding to them.

The end of 2020 marks not only the attainment of the original goals of AB32 and the end of a compliance period for the cap-and-trade program, but also the beginning of a process to develop a new five-year Scoping Plan to meet increasingly stringent goals. Since the last Scoping Plan, the science of climate change has become increasingly clear and widely understood, as made evident for example by the 2018 report of the Intergovernmental Panel on Climate Change. The EU has recently increased the stringency of its targets for 2030 and other jurisdictions importantly strengthened the stringency and

breadth of their climate policies. Further, changes in the economy, including the impact of the pandemic on energy demand and lifestyle patterns have changed the pattern of emissions. And finally, the state has a number of years of experience with its climate policies under its belt. This experience, and changes in science, technology, the policies in other jurisdictions, and in the economy invite a fresh examination of state climate policy.

We are now embarking on a new decade. Cap and trade has functioned to help achieve emissions targets, and now important challenges and opportunities will shape its role in the future. This report is an attempt to address those questions. The 2020 milestone and the Scoping Plan process provide an opportunity to strengthen an already successful program to enable it to meet the challenges of the next decade. We believe to do so will require reforms that will strengthen the cap-and-trade program. In this report we identify several places for the Air Resources Board to look as they begin that process.