



May 28, 2024

Dallas Burtraw, Chair,
Danny Cullenward, Vice Chair,
and members of the Independent Emissions Market Advisory Committee

Subject: Cap-and-Trade evaluation and planning for the 2024 Annual Report

Dear Dr. Burtraw, Dr. Cullenward, and members of the IEMAC,

We are writing in advance of the upcoming IEMAC meeting to request and recommend that the IEMAC investigate and report to the JLCCCP and CARB on the following topics: (1) Review the history behind California's cap-and-trade regulatory framework and policy choices. (2) Re-evaluate the rationale for those choices in the context of present circumstances. (3) Consider alternatives to California's current regulatory framework for post-2030 regulations. (4) Consider how California's actions could meaningfully influence global action on climate change.

California's regulatory climate policies should not be driven by political inertia; they should be grounded on sound economics, experience, and empirical evidence. The IEMAC's policy guidance could significantly impact state and global efforts to mitigate climate change if the committee has the courage to address difficult questions that challenge the political status quo. We encourage the IEMAC to address seven specific questions, highlighted in the following discussion, in its reporting to the JLCCCP and CARB.

Historical Background

AB 32 was based on emission targets for 2010, 2020, and 2050 established in Governor Schwarzenegger's June 1, 2005 [Executive Order S-3-05](#). (The 2020 target was mandated in [AB 32](#).) The rationale for these targets is discussed in a [March 2006 report](#) from the California EPA's Climate Action Team to Governor Schwarzenegger (Section 3.2). The 2050 target (80% reduction in GHG emissions from 1990) was "based on emission reductions the science indicates will be necessary from all developed nations to ensure protection of the planet in the 100-year time frame." The 2010 and 2020 targets were not specifically science-based, but were intended to reflect "an ambitious estimate of how much the state can reduce emissions with strong top-down leadership and a coordinated effort amongst various state agencies."

CARB's AB-32 regulatory implementation strategy and supporting policy rationale are discussed in the [2011 Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document](#). The basis of the cap-and-trade price floor is explained in the [October, 2011 Final Statement of Reasons for the Cap-and-Trade Program](#) (Comment D-69, pages 361-362), and the price ceiling basis is discussed in the [2018 Initial Statement of Reasons for the Cap-and-Trade Regulation](#) (pages 38-39, "At a 3 percent discount rate ...").

We recommend that the IEMAC review these historical documents to address the following question:

What was the original policy rationale for California's cap-and-trade regulatory framework, and what consideration criteria determined policy design elements such as the price floor, ceiling, and 5% annual inflator?

Cap-and-Trade vs Carbon Tax

The primary "market-based" alternative to cap-and-trade considered in the 2011 Scoping Plan Supplement was a carbon tax (or fee). Cap-and-trade and taxes were considered as mutually exclusive alternatives, with the tax option being rejected in favor of cap-and-trade, but CARB's regulations have since evolved into a hybrid policy incorporating aspects of both approaches.

During the 2014-2020 time frame the cap-and-trade program operated effectively as a carbon tax with [allowances selling](#) at or near the pre-established price floor. However, a tax would not have employed banking, which allowed regulated firms to lock in future (post-2020) emission rights at bargain-basement allowance prices. (With prices at the floor, banking does not "bring emissions reductions forward in time" because regulated firms can buy additional allowances up to the capped supply limit.)

The cap-and-trade system's transition from an emissions-constrained to a price-constrained policy was solidified by [AB 398](#), which abandoned the "firm cap" in favor of a firm price ceiling. (The [current ceiling](#) of \$88 is comparable to recent [carbon prices in the EU-ETS](#).) This hybridized, "worst-of-both-worlds" policy framework lacks both the emissions certainty of cap-and-trade and the price stability of a tax. It does not create an economic environment conducive to long-term investment in decarbonization technologies without the financing risk premium associated with volatile carbon prices.

Based on California’s historical experience with cap-and-trade in the pre-2020 time frame, the IEMAC should address three questions relating to the program’s environmental and economic performance:

Did CARB’s cap-and-trade program achieve the “maximum technologically feasible and cost-effective greenhouse gas emission reductions” required by AB 32, considering the low pre-2020 allowance prices and the [310 million banked and unused allowances](#) in circulation in 2020?

Do the multiple cost-containment and price stabilization measures of cap-and-trade – the price floor and ceiling, APCR, banking and trading – perform any useful function that could not be achieved equally or more effectively with a fixed carbon price?

Would California’s legislative policies and directives be better served by a regulatory policy that caps costs (at an affordable level) and minimizes emissions, rather than capping emissions (at an unsustainable level) and minimizing costs?

Policy Alternatives

The IEMAC should review and reconsider the policy grounds favoring cap-and-trade in the 2011 Scoping Plan Supplement, and should also give consideration to policy options that were not identified in the Supplement but might be applicable to post-2030 regulation. One such option is “feebates”, i.e., emissions taxes with output-based refunding of revenue to regulated sectors (as described, for example, in the February, 2000 RFF report, “[When will business want environmental taxes?](#)”). Also, feed-in tariffs, similar to Germany’s FIT incentive for solar and wind power in the early 2000s, could effectively jump-start nascent renewable technologies such as zero-carbon cement.

Regulated industries might be amenable to a relatively high carbon price – and might be incentivized to invest more in decarbonization – if regulatory policies ensure price stability and predictability, and if the policies also maintain sectoral revenue neutrality. The IEMAC should consider the following question in evaluating regulatory alternatives to cap-and-trade:

How would California’s clean-energy markets have been expected to evolve prior to 2020, and how might they be expected to evolve after 2030, under an alternative price-regulated policy framework?

Global Climate Action

The need for global action and for California's leadership on climate change was clearly recognized by AB 32, as stated in HSC 38501(d):

National and international actions are necessary to fully address the issue of global warming. However, action taken by California to reduce emissions of greenhouse gases will have far-reaching effects by encouraging other states, the federal government, and other countries to act.

The IEMAC's 2023 Annual Report echoes the point:

... California emits only approximately 1% of global greenhouse gas emissions.
... California's leadership in policy design and technology development provides global benefits. To maximize the value of these efforts, California should not remain passive and should indeed encourage the propagation of its climate and technology policies.

However, California's domestic policies have had little motivational impact on national and international action to reduce global emissions. The 2022 Scoping Plan [cites the IPCC](#) in summarizing the global climate situation:

... By the 2030s, and no later than 2040, the world will exceed 1.5°C warming unless there is drastic action. ... at 1.5°C of global warming, we would experience increasing heat waves, longer warm seasons, and shorter cold seasons, but at 2°C of global warming, heat extremes would more often reach critical tolerance thresholds for human health and agriculture. We are already seeing unprecedented climate change impacts, such as continued sea level rise, that are "irreversible" for centuries to millennia, and we are dangerously close to hitting 1.5°C in the near term. To avoid climate catastrophe and remain below 1.5°C with limited or no overshoot of that threshold, global net anthropogenic CO₂ emissions need to reach net zero by 2050.

That goal might already be out of reach. The 1.5°C annual average temperature threshold [was crossed](#) in January this year, and a [recent survey](#) of IPCC climate scientists found that almost 80% of the respondents foresee at least 2.5°C of global heating, while almost half anticipate at least 3°C and only 6% thought the internationally agreed 1.5°C limit would be met. Recent research by the Potsdam Institute for Climate Impact estimates global annual damages from climate change in 2050 at [38 trillion dollars](#), and the National Bureau of Economic Research estimates the true Social Cost

of Carbon at [\\$1056/ton](#) (with a 2% discount rate) based on macroeconomic impacts of global temperature shocks.

In light of these trends, the IMAC should try to address this question:

Based on a plausible, even if speculative, scenario, how might global efforts to mitigate climate change realistically be expected to evolve over the next two decades, and how could California's policies realistically be expected to influence and mobilize such global efforts?

It has been two decades since Governor Schwarzenegger first established California's GHG reduction goals, and we have about two decades remaining to achieve net-zero global anthropogenic CO2 emissions if "climate catastrophe" is to be avoided. One final question:

Based on what we now know, what could we have done differently 20 years ago to avoid climate catastrophe?

Sincerely,

Stephen S. Rosenblum, Ph.D.
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