California State Senate, Senate Environmental Quality Committee and Budget Subcommittee No. 2 on Resources, Environmental Protection and Energy

Sens. Catherine Blakespear and Benjamin Allen, Chairs (May 8, 2025)

Danny Cullenward, JD, PhD (dcullenward@ghgpolicy.org)
Senior Fellow, Kleinman Center for Energy Policy, University of Pennsylvania
Vice Chair, Independent Emissions Market Advisory Committee[1]

Summary of testimony

- The total value of California's cap-and-trade allowances is nearly $10 billion a year:[2]
  - About 45% goes to the Greenhouse Gas Reduction Fund (GGRF).
  - About 41% goes to utilities (to the benefit of their ratepayers).
  - About 14% goes to industrial emitters.
- If policymakers reauthorize the program, then allowance prices will increase (likely dominant in the near term) as allowance supplies decrease (dominant in the long run).[3]
- The total value of allowances and the distribution of that value depend on:
  - How carbon prices increase and what limits CARB's market regulations set on those levels, including maximum price ceiling levels (see Figure 1); and
  - How CARB's program regulations allocate allowances to benefit the GGRF, utilities (and their customers), and large industrial emitters.
- Over the next 20 years (2026 through 2045), total allowance value could evolve to between $132 to $311 billion (in constant 2023 USD) (see Figure 2).
- Over the next 5 years (2026 through 2030), total allowance value could evolve to between $41 to $104 billion (in constant 2023 USD) (see Figure 3).
- Depending on market prices and how CARB changes allowance budgets, reauthorization could lead to an increase or decrease in near-term GGRF revenue.
- Historically, market-design decisions have largely been delegated to the California Air Resources Board. Policymakers may wish to consider providing additional guidance on design features that determine the overall size and distribution of allowance values.

---

1 This testimony reflects my individual views and not those of the IEMAC.

2 See Chapter 3 in the 2024 IEMAC Annual Report.

3 Results presented in this handout are based on a report I authored, which is available here: https://www.ghgpolicy.org/california-allowance-value.

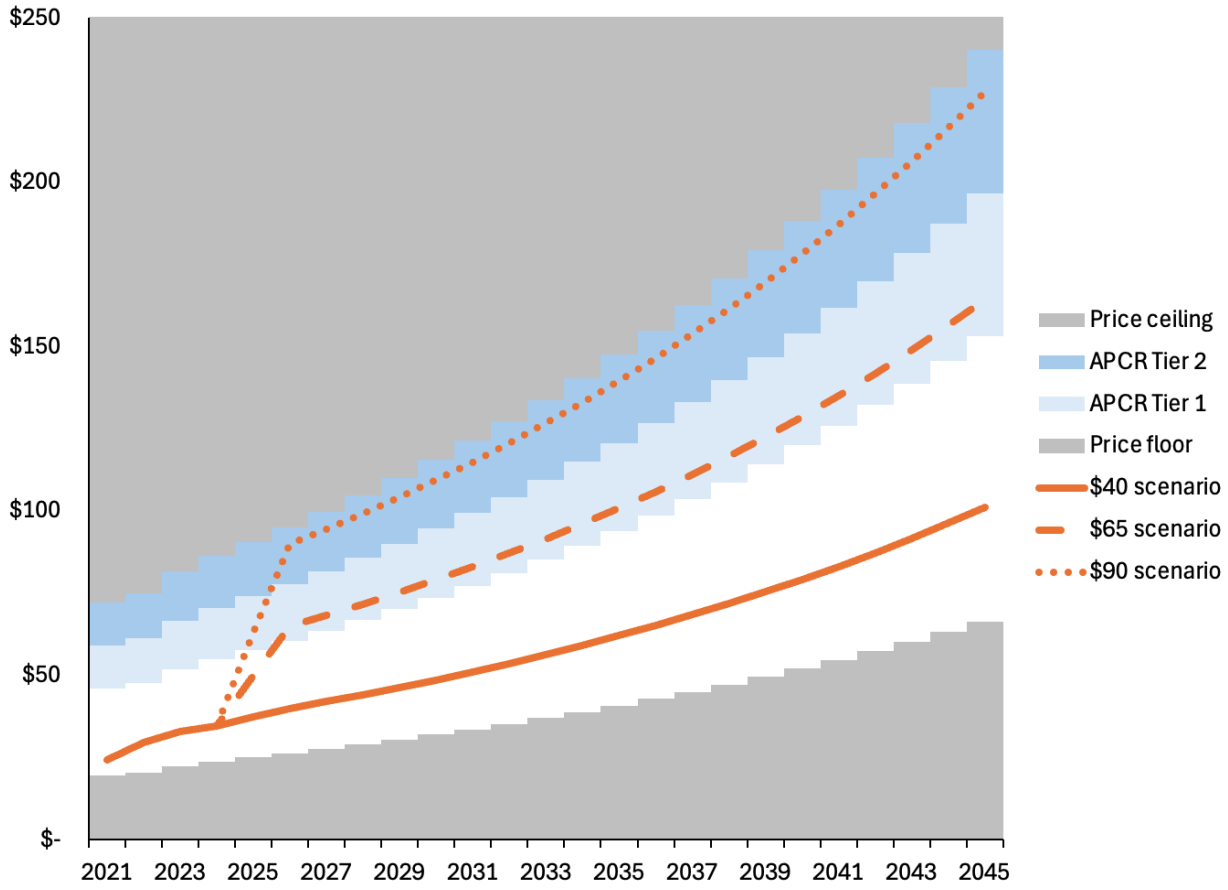

Figure 1. Carbon price scenarios (2023 USD per allowance). *This study considers how cap-and-trade program allowance values might evolve across three carbon price scenarios. Each scenario begins with a price of $40, $65, or $90 per allowance in 2026 that increases annually at 5% in constant 2023 USD.*

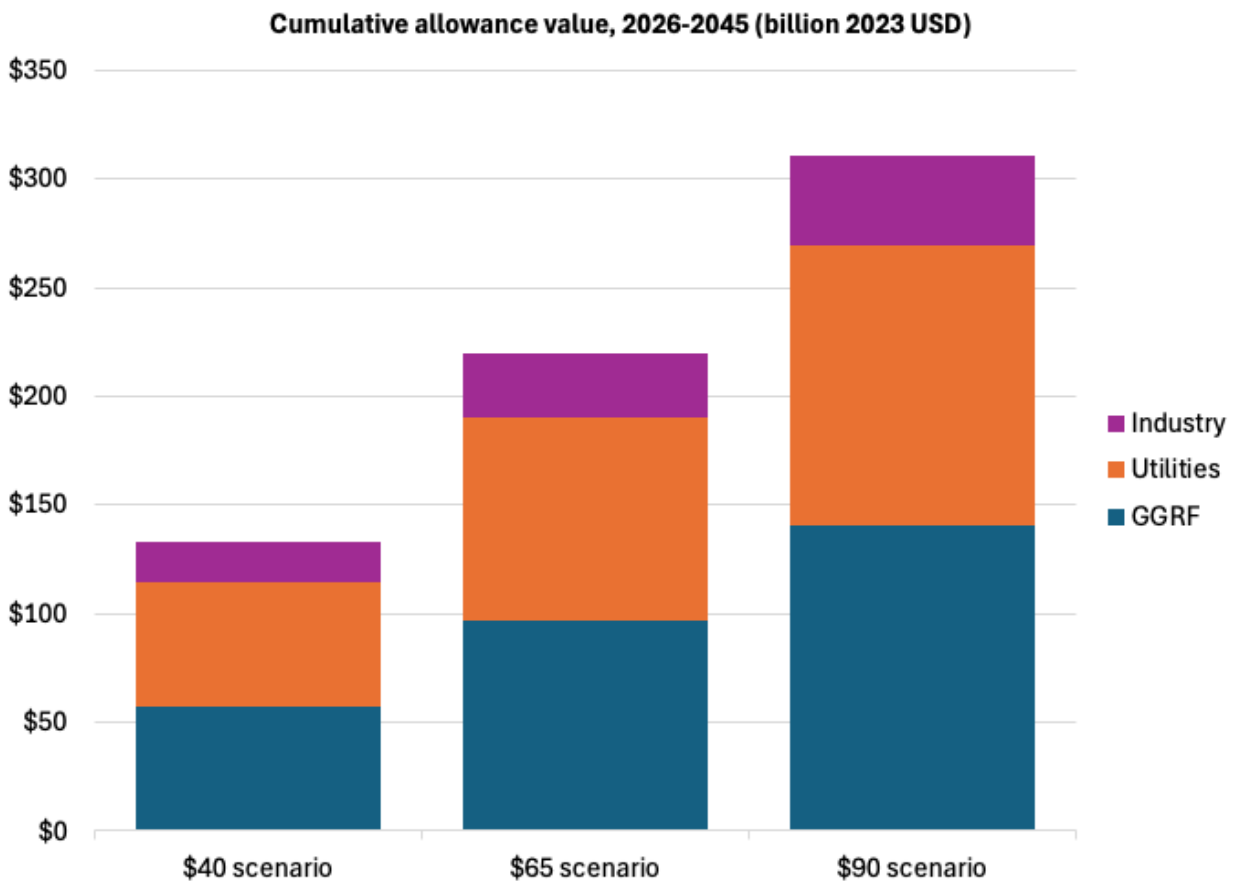

Figure 2. Projected allowance value, 2026 through 2045 (billion 2023 USD). *This figure shows how allowance values could substantially increase with higher market prices. All three scenarios assume that allowances are allocated to fund the GGRF, to benefit utility customers, and to benefit large industrial emitters according to recent historical patterns. In practice, policymakers could designate a different mix of allowance allocations.*

Note that, on average over the 20-year period, total allowance value would:

- Fall to about $7 billion/year under the $40 scenario
- Grow to about $11 billion/year under the $65 scenario
- Grow to about $16 billion/year under the $90 scenario

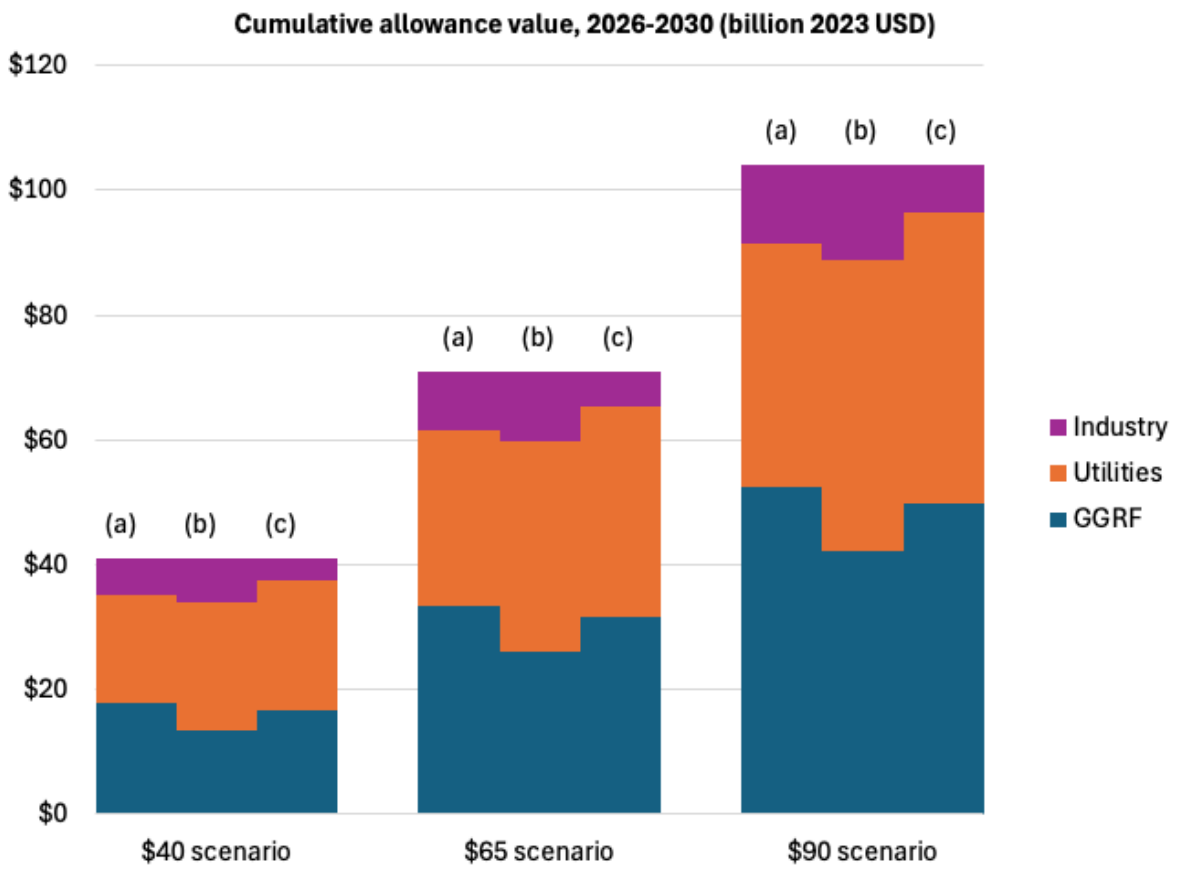

Figure 3. Projected allowance value, 2026 through 2030 (billion 2023 USD). *This figure reports the projected allowance value that benefits the GGRF, utilities (and their customers), and large industrial emitters across three allowance intervention scenarios depicting how CARB would modify total allowance budget years for the same period of time. Column (a) reports results for the proportional reduction scenario, in which all three groups are affected in equal proportion; column (b) reports results assuming that all allowance reductions come from the GGRF; and column (c) reports results assuming that industrial allocations are cut in half and the GGRF bears the remaining required reductions. All three scenarios result in the same total allowance value, but depict different choices as to the distribution of program benefits.*

Note that, on average over the 5-year period, total allowance value would:

- Fall to about $8 billion/year under the $40 scenario
- Grow to about $14 billion/year under the $65 scenario
- Grow to about $21 billion/year under the $90 scenario