Senate Environmental Quality Committee

Senator Ben Allen, Chair

California's Climate Change Policies: Will the State Achieve the SB 32 Target?

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Testimony of Danny Cullenward, JD, PhD

Policy Director, Near Zero (dcullenward@nearzero.org)

Research Associate, Carnegie Institution for Science

Member, Independent Emissions Market Advisory Committee

1. **The cap-and-trade program is not designed to achieve the state's 2030 emissions limit. Additional effort is required to put the state on track for 2030.** The 2017 Scoping Plan calls for cap-and-trade to deliver almost half of the emission reductions needed to achieve the 2030 limit (ARB 2017a: 30; see Figure 1 here). However, the Air Resources Board's new cap-and-trade regulations are highly unlikely to deliver this outcome (Near Zero 2018). To address the program's shortcomings, policymakers should consider strengthening the cap-and-trade program and/or developing new strategies to increase climate policy ambition.

2. **ARB's cap-and-trade regulations are inconsistent with the Board's assumptions in the 2017 Scoping Plan.** At a December 2018 Board Meeting, ARB staff indicated they expect market prices to remain at or near the price floor through 2030. Yet the 2017 Scoping Plan assumes that prices will need to be significantly higher to achieve the 2030 emissions limit (ARB 2017b: 65). Although the Scoping Plan assumes cap-and-trade will act to guarantee emissions fall below the 2030 limit, the cap-and-trade rulemaking analysis repudiates this critical program function. Instead, ARB describes the program's new goal as supporting an unspecified carbon price signal (ARB 2018: 7).

3. **ARB's analysis of allowance overallocation is conceptually deficient.** The 2017 cap-and-trade extension bill, AB 398, requires ARB to evaluate and address allowance overallocation—that is, the potential for having too many allowances in the program such that emissions fail to fall in line with program caps (Health & Safety Code § 38562(c)(2)(D); see LAO 2017 and Figure 2 here). Instead of analyzing whether this problem might hamper the state's ability to achieve the 2030 emissions limit, ARB looked only at the effect on cumulative emissions, not annual emissions in 2030. Despite AB 398's clear instruction, ARB has not provided any analysis of how the cap-and-trade program will deliver the necessary reductions in 2030 nor how it is consistent with the 2017 Scoping Plan.

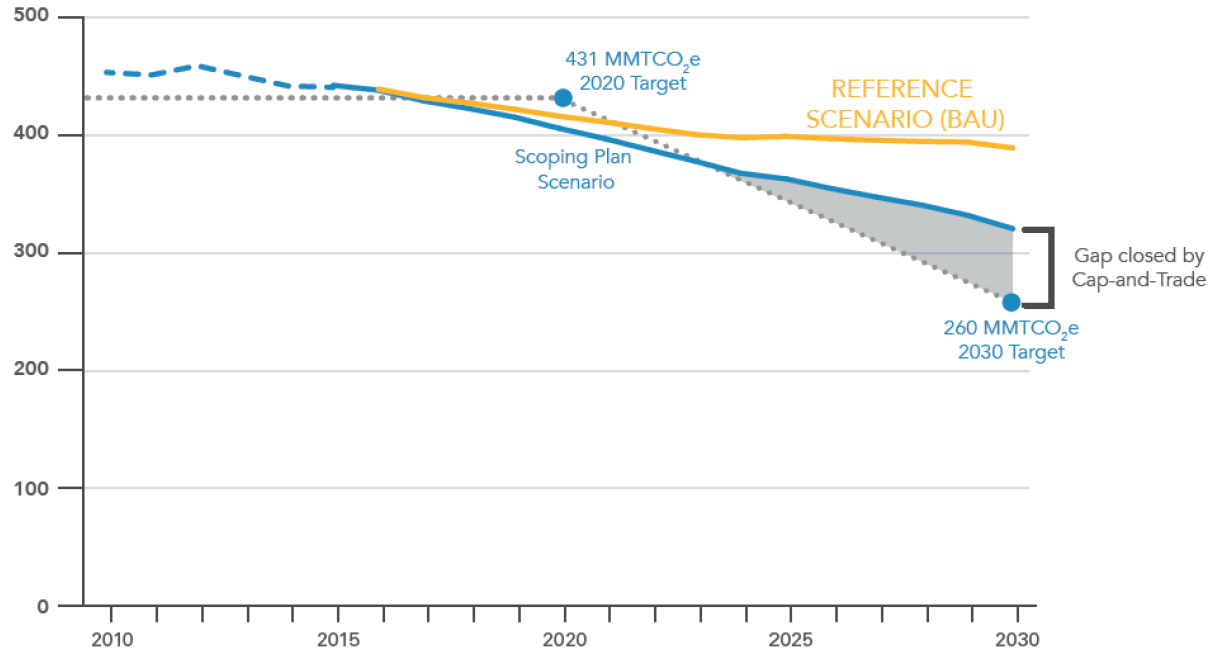
4. **ARB's analysis of allowance overallocation is factually deficient.** My organization, Near Zero, showed that ARB's analysis of cumulative emission reductions rests on a major conceptual error—ironically, one that ARB warned against making when it developed the original cap-and-trade program caps in 2010 (Inman et al. 2018a). The Joint Legislative Committee on Climate Change Policies affirmed this finding (JLCCCP 2018) and the Legislative Analyst's Office expressed similar concerns at a September 2018 meeting of the Independent Emissions Market Advisory Committee. ARB subsequently acknowledged the error Near Zero identified (ARB 2018: 10-11) but disputes its implications.

5. **ARB has not adopted program reporting disclosures recommended by the Independent Emissions Market Advisory Committee.** The 2018 IEMAC report concluded that "[c]urrent reporting of allowance supplies and associated private account holdings are not sufficiently timely or transparent to facilitate easy analysis of the status of the program" (IEMAC 2018: 54). To address this concern, the IEMAC recommended ARB adopt a metric to track banking of excess compliance instrument holdings in the cap-and-trade program, as is done in the European Union's and northeastern U.S. states' programs (IEMAC 2018: 54). ARB did not adopt this recommendation and has not indicated whether it will do so in the future. In its December 2018 Resolution 18-51, ARB agreed to host an informal workshop in 2019 where, potentially, the Board could consider adopting new reporting metrics and begin a discussion of how to address market overallocation.

6. **Market data show that private banking of excess allowances in 2018 has very likely exceeded regulators' worst-case assumptions for 2020.** Near Zero developed a simple metric based on ARB data to track excess compliance instruments (Inman et al. 2018b). The IEMAC cited this metric as an example for ARB's consideration (IEMAC 2018: 54). The metric now indicates that observed banking in 2018 exceeds ARB's worst-case assumptions for overallocation in 2020 (see Figure 3 here). ARB assumed a worst-case scenario in which 150 million excess pre-2021 allowances are purchased by private parties and banked into the post-2020 program period (ARB 2018). New ARB data show that as of the end of 2018, private parties held about 228 million (±19 million) excess offsets and allowances, significantly exceeding ARB's worst-case scenario for 2020. These findings are consistent with independent projections of market overallocation and indicate the problem is significantly bigger than what ARB has so far acknowledged. Because covered emissions remain far below program caps, the private bank of compliance instruments will very likely grow in the coming years—at least so long as quarterly allowance auctions continue to sell out. Underperforming auctions could slow the growth in overallocation but would also reduce revenue raised for the state's Greenhouse Gas Reduction Fund.

Figure 1: Cap-and-trade in the Scoping Plan (MMtCO$_2$e per year)

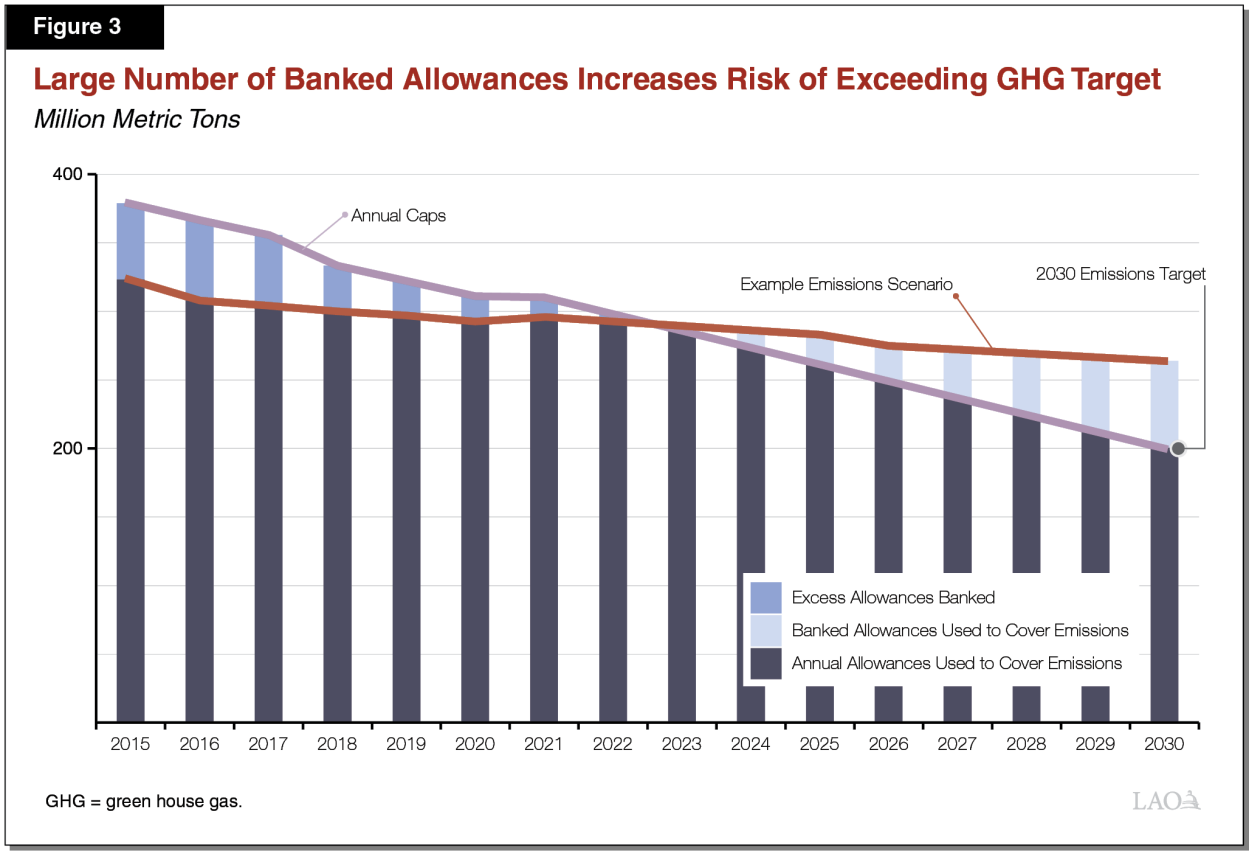
Source: Figure 9 in ARB (2017a: 30)



ARB's 2017 Scoping Plan identifies cap-and-trade as the single largest component of the state's post-2020 climate policy portfolio, accounting for about 47% of the annual emission reductions needed beyond the reference scenario to achieve the 2030 emissions limit (ARB 2017a: 26). In the figure above, the yellow line projects greenhouse gas emissions for ARB's business-as-usual reference scenario, which largely reflects current policy. The blue line projects the modeled emission reductions achieved by the non-cap-and-trade measures ARB selected in the 2017 Scoping Plan. A sizeable "gap" remains between the projected impact of non-cap-and-trade measures and the 2030 emissions limit set by SB 32; the 2017 Scoping Plan assumes, but not does analyze how, the cap-and-trade program will close this gap.

Figure 2: Conceptual illustration of market overallocation

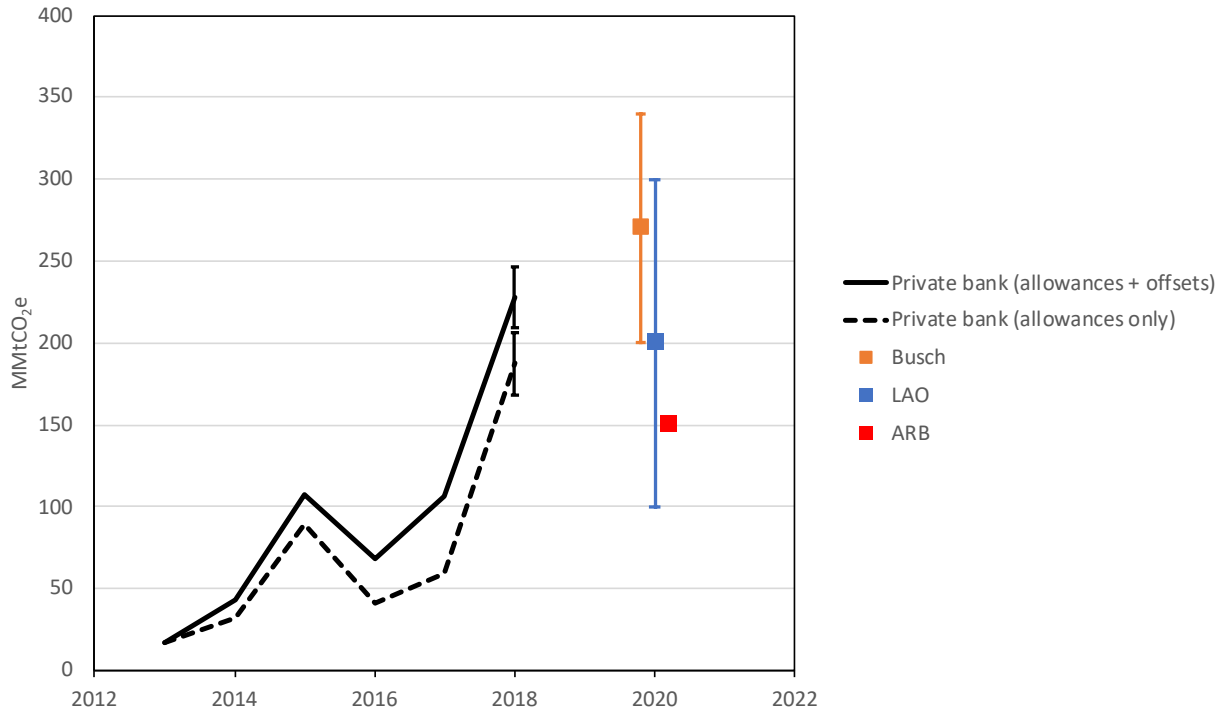
Source: Figure 3 in LAO (2017: 8)



Overallocation—also called oversupply—"refers to a market condition where the supply of compliance instruments persistently exceeds emissions" (IEMAC 2018: 49). The figure above illustrates the basic concern. Cap-and-trade programs that feature allowance banking, like California's, enable companies to acquire any excess compliance instruments and hold on to them for use in future years. This is possible when the supply of compliance instruments exceeds emissions subject to the program, which has been true in every year of the California program's existence. If market participants purchase and hold enough excess compliance instruments, they may build up a sufficiently large bank such that regulated parties can emit more than annual program caps in later years—potentially putting at risk the program's ability to limit emissions. In the figure above, excess allowances (medium blue bars)—purchased when actual emissions (red line) are below annual program caps (purple line)—are sufficient to enable emissions that exceed program caps in later years (light blue bars). In this example, emissions in 2030 are significantly higher than program caps as a result of overallocation.

Figure 3: Observed and projected private compliance instrument banking

Source: Observed banking through 2018 based on Inman et al. (2018b), with updated ARB data; projected banking in 2020 from Bush (2017), LAO (2017), and ARB (2018)



In responding to AB 398's instruction to analyze the problem of allowance overallocation, ARB assumed that no more than 150 million allowances would be banked by the end of 2020 (ARB 2018: 10). In contrast, independent projections suggest allowance banking in 2020 will be much higher (IEMAC 2018: 50-53). Dr. Chris Busch of the think tank Energy Innovation LLC projected that market participants will hold 270 million (±70 million) allowances by the end of 2020 (Busch 2017); LAO projected 200 million (±100 million) (LAO 2017). Near Zero developed a metric that tracks the annual bank of excess compliance instruments held in private accounts, based on public ARB data (Inman et al. 2018b). We updated our calculations using the most recent data from January 2019 and assume that 2018 emissions will decline at the same percentage rate they did in 2017, with an uncertainty range of ±5% around this emissions projection. Our metric indicates that at the end of 2018, private entities were holding 228 million (±19 million) allowances and offsets in excess of outstanding program compliance obligations. Although a complete measure of market supply/demand balance must include both allowances and offsets, excess allowance holdings alone at the end of 2018 were at least 187 million (±19 million)—higher still than ARB's worst-cast scenario for 2020.

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