

May 30, 2018

The Honorable Eduardo Garcia  
Chair, Joint Legislative Committee on Climate Change Policies  
State Capitol, Room 4140  
Sacramento, CA 95814

The Honorable Henry Stern  
Vice Chair, Joint Legislative Committee on Climate Change Policies  
State Capitol, Room 3070  
Sacramento, CA 95814

Dear Chair Garcia and Vice Chair Stern,

I write to address issues discussed in last week's hearing before the Joint Legislative Committee on Climate Change Policies. As noted in the hearing's Committee Report,<sup>1</sup> my organization, Near Zero, released a public research note<sup>2</sup> that criticized the Air Resources Board's April 2018 analysis of market overallocation.<sup>3</sup> Near Zero's work shows that the Board's calculations contain a significant error. Once corrected, the Board's analysis indicates that allowance overallocation will cause the cap-and-trade program to fall short of the emission reductions ARB called for from the program in the 2017 Scoping Plan.

At last week's hearing, ARB Deputy Executive Officer Edie Chang testified that the Board has evaluated Near Zero's criticism and concluded that the Board made no error in its April 2018 analysis. In fact, however, her testimony did not dispute the error Near Zero identified. Rather than address the clear and transparent criticism Near Zero produced, Ms. Chang offered a series of non-

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<sup>1</sup> JLCCCP Background Document: Informational Hearing on Cap and Trade (May 24, 2018), <http://climatechange.policies.legislature.ca.gov/previous-hearings>.

<sup>2</sup> Mason Inman, Michael Mastrandrea, and Danny Cullenward. Ready, fire, aim: ARB's overallocation report misses its target. Near Zero Research Note (May 7, 2018), <http://www.near-zero.org/wp/2018/05/07/ready-fire-aim-arbs-overallocation-report-misses-its-target/>.

<sup>3</sup> ARB, Supporting Material for Assessment of Post-2020 Caps (Apr. 2018), [https://www.arb.ca.gov/cc/capandtrade/meetings/20180426/carb\\_post2020caps.pdf](https://www.arb.ca.gov/cc/capandtrade/meetings/20180426/carb_post2020caps.pdf).

sequiturs that do not affect Near Zero’s conclusion that ARB’s April 2018 report does not provide a reasoned basis for satisfying AB 398’s instruction to “evaluate and address concerns related to overallocation.”<sup>4</sup>

Ms. Chang testified:

I want to note that the Committee Report cites a paper that claims there is an error in our staff analysis. We’ve reviewed the paper and evaluated that claim. Our conclusion is that there is no error in our analysis. Simply put, the paper doesn’t realize that we made an adjustment, and it makes that adjustment again. Now, the specific issue is that the paper claims that our analysis doesn’t adjust the caps to account for the portions of covered sectors that are not covered [by the cap-and-trade program]—for example, fugitive emissions from the industrial sector. So this isn’t true. Our caps in the post-2020 program are set based only on the portion of the inventory that is covered by the program, just like the caps in the pre-2020 program.<sup>5</sup>

Contrary to Ms. Chang’s testimony, Near Zero’s criticism did not address the method by which ARB set its post-2020 program caps. Rather, Near Zero’s analysis demonstrated that ARB erroneously projected greenhouse gas emissions covered by program caps and thereby inflated the emission reductions the Board attributed to the program in its April 2018 staff analysis.

Specifically, Near Zero documented how the Board erroneously projected greenhouse gas emissions on the basis of sector-wide emissions, as opposed to facility-level emissions actually covered under the cap-and-trade program—a distinction the Board properly emphasized as essential to avoiding overallocation in its original 2010 cap-and-trade rulemaking process.<sup>6</sup>

Instead of responding to Near Zero’s criticism, Ms. Chang addressed a separate issue. She testified that the post-2020 program caps were set on the basis of facility-level emissions data, rather than sector-wide emissions. But this simply does not speak to the Board’s serious analytical error. Again, Near Zero showed that the Board’s report erroneously projected post-2020 *emissions*, not post-2020 *program caps*.

The difference can be illustrated by reviewing Table 3 in Near Zero’s report, which is referenced in Table 1 in the Committee Report and reproduced in this letter below. Near Zero showed

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<sup>4</sup> Cal. Health & Safety Code § 38562(c)(2)(D) (as added by AB 398).

<sup>5</sup> Transcribed from video of the JLCCCP hearing on published by The California Channel, [http://cal-channel.granicus.com/MediaPlayer.php?view\\_id=7&clip\\_id=5543](http://cal-channel.granicus.com/MediaPlayer.php?view_id=7&clip_id=5543) (clip begins at 17:25 minutes).

<sup>6</sup> ARB, ISOR Part 1, Volume III, Appendix E: Setting the Program Emissions Cap (Oct. 28, 2010) at E-7 to E-8, <https://www.arb.ca.gov/regact/2010/capandtrade10/capv3appe.pdf>.

that ARB erroneously inflated its projection of covered emissions by projecting sector-wide emissions, rather than the smaller subset of facility-level emissions that are actually subject to the cap-and-trade program. The erroneous calculation is shown on line #1.

Once corrected (line #2) using the same method ARB adopted in its original 2010 cap-and-trade rulemaking—which specifically warned against making this very error—projected emissions subject to the cap-and-trade program are significantly lower (line #3). In turn, this lowers the emission reductions ARB attributes to the cap-and-trade program (line #8) well below the 236 MMtCO<sub>2</sub>e reduction called for in the 2017 Scoping Plan.<sup>7</sup>

**Table 1: Correction to ARB’s cumulative overallocation analysis, 2021-2030 (MMtCO<sub>2</sub>e)**

#	Series	Case A (No overallocation)	Case B (150 M overallocation)
1	Erroneous covered emissions w/o cap-and-trade program (demand)	3,054	3,054
2	Correction to covered emissions (Near Zero calculation)	-277	-277
3	Corrected covered emissions (demand) (#1 + #2)	2,777	2,777
4	Post-2020 allowances (w/o Post-2020 Reserve)	2,532	2,532
5	Unused allowances at end of 2020	0	150
6	Offset credits	96	103
7	Total compliance instruments (supply) (#4 + #5 + #6)	2,628	2,785
8	Cumulative reductions from cap-and-trade (#3 – #7)	149	0 (*)

In response, Ms. Chang testified that ARB’s post-2020 program caps were set using facility-level emissions data, referring to the number of post-2020 allowances in the program (line #4). This statement has no bearing on the error Near Zero identified. Near Zero made no adjustment

<sup>7</sup> ARB, California’s 2017 Climate Change Scoping Plan (Nov. 2017) at 28, <https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>.

whatsoever to the number of allowances available in the post-2020 market period. The only correction Near Zero made was to adjust the Board’s erroneous emissions projections (line #2).

Notably, Ms. Chang did not refute Near Zero’s claim by testifying, for example, that ARB’s projected emissions (line #1) are actually based on facility-level data. Nor did she specifically address whether or not the Board agrees that its emissions projections were made in error. Instead, Ms. Chang misconstrued Near Zero’s clear criticism, providing a non-sequitur response that fails to address the problem Near Zero identified.

It bears repeating that the thrust of Ms. Chang’s remarks—that ARB properly accounted for the difference between sector-wide emissions and facility-level emissions actually subject to the cap-and-trade program—is explicitly contradicted by the Board’s own report. The April 2018 overallocation report specifically states that it projects emissions on a sector-wide basis:

Covered Emissions w/out Cap-and-Trade Program refers to the estimates of the GHG emissions **in the Cap-and-Trade covered sectors** while reflecting the impact of the complimentary policies only and not including any changes in GHG emissions due to the impact of a Cap-and-Trade Program. **This number may also include some limited fugitive emissions not covered by the Cap-and-Trade Program.** [Emphasis added.]<sup>8</sup>

Indeed, no other outcome is plausible because the PATHWAYS model that generated this projection only analyzes sector-wide emissions, not facility-level emissions. As ARB recognized in its official description of the 2017 Scoping Plan scenario, the PATHWAYS model does not analyze the cap-and-trade program at all:

The PATHWAYS scenario does not model the impacts of cap-and-trade, but this policy is assumed to deliver GHG emissions reductions through a declining cap to help meet the 2030 GHG target.<sup>9</sup>

If Board staff believe the emissions projections in their April 2018 overallocation report are appropriately based on facility-level emissions data, rather than erroneously on sector-wide emissions, they should explain why their report says the exact opposite.

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<sup>8</sup> ARB, *supra* note 3 at 11 (see Table 3, note ###).

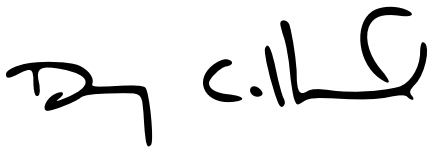
<sup>9</sup> ARB, California’s 2017 Climate Change Scoping Plan, Appendix D: PATHWAYS (Nov. 2017) at 1, [https://www.arb.ca.gov/cc/scopingplan/2030sp\\_appd\\_pathways\\_final.pdf](https://www.arb.ca.gov/cc/scopingplan/2030sp_appd_pathways_final.pdf).

As I reflect on this exchange, I am equally troubled and saddened by the Board's discussion of overallocation in the AB 398 process. California policymakers—both at the Board and in the Legislature—face significant policy decisions that should be informed by clear, objective data and high-quality analysis. But until all parties can agree on a shared set of basic facts, it will be difficult to balance the many competing objectives that are reasonably part of state climate policy discussions. In these difficult times for climate policy, we in California can and should meet a higher standard.

The experience of other leading climate policy systems may offer a path forward. All major carbon markets have experienced overallocation conditions in the wake of the great recession, including the northeastern states' Regional Greenhouse Gas Initiative (RGGI) and the European Union's Emissions Trading System (EU ETS). California is no exception. But unlike California, RGGI and the EU ETS have implemented policy reforms designed to dynamically adjust program stringency in response to the actual bank of allowances held by private entities. Beyond showing that reform is possible, these particular interventions illustrate how overallocation adjustments can be managed dynamically on the basis of objective market data—and thus, that policymakers do not need to agree on a precise *ex ante* estimate of market overallocation in order to take effective action.

I remain convinced that ARB's April 2018 overallocation report is fundamentally flawed and therefore fails to meet AB 398's requirement to evaluate and address overallocation. This in no way prejudices any new efforts the Board makes to improve its analysis, which I hope are forthcoming. I am personally agnostic as to how ARB ensures that the cap-and-trade program delivers on the 2017 Scoping Plan and the 2030 climate target. As a professional matter, however, I remain committed to ensuring that the analysis supporting ARB's policy decisions is consistent with state law, including the requirements outlined in AB 32, SB 32, AB 197, and AB 398. I look forward to working with you and the Board on these important matters.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Cullenward'.

Danny Cullenward JD, PHD

Member, Independent Emissions Market Advisory Committee

cc: Ms. Edie Chang, Deputy Executive Officer, Air Resources Board  
Prof. Ann Carlson, Member, Independent Emissions Market Advisory Committee  
Dr. Ross Brown, Legislative Analyst's Office