Barbara Haya, PhD
Research Fellow
Center for Environmental Public Policy
University of California, Berkeley
bhaya@berkeley.edu

October 22, 2018

California Air Resources Board
1001 I Street
Sacramento, CA 95814

Submitted electronically

RE: Comments on proposed cap-and-trade regulatory amendments

Dear ARB Board and staff,

Thank you for the opportunity to provide comments on the draft amendments to the cap-and-trade regulation. Please find my comments below on various elements of the proposed amendments.

1. Evaluating whether offset projects have Direct Environmental Benefits in the State (DEBS)

I appreciate ARB's confirmation that reductions in greenhouse gas emissions cannot be considered as meeting the DEBS requirement.

In addition to the comments I submitted jointly with five other researchers today on methods for evaluating DEBS, I wish to raise two more points.

First, I encourage ARB to engage in a transparent process in determining DEBS. I encourage ARB to release the practical criteria it will use to determine if an offset project has DEBS, with opportunity for public comment before the criteria are finalized. I also request that ARB provide an opportunity for public comment on the materials submitted to it by project proponents of out-of-state offset projects making DEBS claims prior to making a determination, as well as publicly release the basis on which it makes its final determination.

Second, I appreciate that ARB previously requested input on the intent of the DEBS provisions in the law, which ARB states it will take into account in determining which projects should be considered to provide DEBS. I raise a few observations on the apparent intent of the law.

First, I raise the context in which the DEBS requirement was proposed. A concern commonly raised about the use of offsets by California regulated entities is that activities that emit GHGs are very often associated with the release of other air and water pollutants. Therefore, by allowing less GHGs to be reduced in the state's capped sectors, offsets effectively increase the release of associated air and water pollutants from those sectors. Offsets without direct environmental benefits in the state means that California loses the co-benefits associated with the reductions that would otherwise have occurred in the state's capped sectors. This has been a particularly concern for disadvantaged communities who have experienced the disproportionate burden of air and water pollution in the state. Offsets lead to increased pollution in vulnerable communities; the DEBS requirement means that the increase in environmental pollution in the capped sectors resulting from the use of offsets is at least partially made up by reduced impacts on air or water quality somewhere in the state.

This understanding of the intent of the law is reflected in the definition of DEBS as a direct reduction of air and water pollutants. It is also reflected in the second time that the phrase "direct environmental benefits in the state" is used in the law. The second place it appears is in the establishment of the Compliance Offsets Protocol Task Force: *"The Compliance Offsets Protocol Task Force is hereby established to provide guidance to the state board in approving new offset protocols for a market-based compliance mechanism for the purposes of increasing offset projects with direct environmental benefits in the state while prioritizing disadvantaged communities, Native American or tribal lands, and rural and agricultural regions."* Again, the emphasis is on creating direct environmental benefits to those experiencing a disproportional burden of environmental harms.

I urge ARB to define the criteria it will use to determine if an offset project meaningfully and directly reduces air and water pollution in fulfillment of the DEBS requirement.

2. Offset usage limits

AB 398 establishes an offset usage limit of 4% for 2021-2025, and 6% for 2026-2030. The usage limits proposed in section § 95854 (c) of ARB's proposed amendments to California's cap-and-trade regulation seems to allow the majority of emissions from 2024 and 2025 to be covered by a 6% usage limit. This interpretation, while allowing for a greater use of offsets, goes against an intuitive understanding of the law.

The opening for ARB's possible reinterpretation of the law comes from the discrepancy between when emissions are emitted, and the deadline by when compliance obligations covering those emissions must be surrendered to ARB. Because of the regulation's three-year compliance periods, compliance obligations covering at least 30% of emissions from 2024 and 2025 must be surrendered in 2025 and 2026. The deadline for submitting the remaining 70% of compliance obligations for emissions in years 2024 and 2025 is in 2027.

Near Zero published a full description of this issue here:
http://www.nearzero.org/wp/2018/03/15/interpreting-ab-398s-carbon-offsets-limits/

The question is whether the 4% and 6% applies to the year the emissions happen, or the deadline for submitting compliance obligations.

AB 398 defines the offsets usage limit thus:

> *(I) From January 1, 2021, to December 31, 2025, inclusive, a total of 4 percent of a covered entity's compliance obligation may be met by surrendering offset credits… (II) From January 1, 2026, to December 31, 2030, inclusive, a total of 6 percent of a covered entity's compliance obligation may be met by surrendering offset credits…*

Intuitively, the law applies to years, not the three-year commitment periods; half of the years are covered by a 4% limit, and half by a 6% limit. The language of the law and regulation also supports the application of the 4% limit to the years when the emissions occurred, not when the compliance obligations must be surrendered to ARB. In AB 398, the 4% limit applies to a covered entity's *compliance obligation*. The *compliance obligation* is defined in the regulation by the emissions they cover, not the timing of when they are surrendered:

> *"Compliance Obligation" means the quantity of verified reported emissions or assigned emissions for which an entity must submit compliance instruments to ARB. (California Code of Regulations. title 17, § 95802)*

Instead of reflecting this interpretation of the current regulation, the proposed new regulation interprets the limit as applying to the surrender of "compliance instruments" rather than release of "emissions." This more lenient interpretation of the law allows regulated entities to use offsets to cover 5.4% of their 2024 and 2025 emissions rather than 4%.

ARB should clarify that the 4% offset limit applies to all covered emissions emitted during 2021-2025.

3. Ceiling price

The ceiling price proposed by ARB could easily be below the level needed to drive the state's emissions down to 40% below 1990 levels by 2030. It is also far below the actual social cost of carbon in California.

Social cost of carbon

The actual social cost of carbon in California is substantially higher than most values of the social cost of carbon derived from integrated assessment models and the ceiling price proposed by ARB in its draft regulatory amendments, for three reasons.

First, these models only include a subset of total damages that were monetizable. Important damages are left out of the models (effectively treating these damages has having zero cost). Examples of damages left out of the models are the effect of climate change on conflict, the effect of ocean acidification (Anthoff & Tol, 2013) and the reduction in wellbeing caused by seeing others' suffering around the world and by knowing that we are responsible for this suffering and loss.

Second, the value of life and wellbeing of a poor person are considered by these models to be less than the value of a wealthy person's life, while the social cost of carbon is estimated as a single global figure. The different valuation is because sickness and mortality of a poor person has less absolute impact on global GDP than that of a wealthy person. To be ethically consistent, the social cost of carbon should also be varied across regions, reflecting that a dollar has more value to a poor person than to a wealthy person.

Third, these models put a greater value on the wellbeing of a person today than on the wellbeing of people in the future through the use of a discount rate.

One study attempts to correct for the second concern using an equity-weighted model. Under and equity-weighted model the social cost of carbon is higher for countries with greater per capita wealth. The study runs one integrated assessment model (FUND) with equity weighting, and finds that the social cost of carbon in the United States is two to eight times higher than the non-equity weighted estimate, depending on the equity principle used (Anthoff & Tol, 2010).

Another study attempting to address points two and three together applies an equity weighting and no discount rate. This study finds that the social cost of carbon in the United States is on the order of $2000 to $5000 per tCO_2 (Adler et al., 2017, figure 4).

This discussion does not necessarily suggest implementing a ceiling price of $2000 or higher, but instead notes that any ceiling price chosen will be less than California's social cost of carbon. It also suggests that the ceiling price should be set at a level that is high enough to drive the reductions needed to meet the state's 2030 target with a high degree of certainty.

Price of carbon needed to drive reductions

Before finalizing the ceiling price, I urge ARB to consult with researchers who have performed bottom up technical analyses of the costs of reducing emissions in California in the major emitting sectors, including transportation, buildings, and major industries like cement, as well as various forms of carbon sequestration that could be incentivized with climate funds. Given the uncertainties in economy-wide models, and how dependent model results are on the assumptions used, bottom-up engineering analyses of key sectors provides important information to establish whether the proposed carbon price ceiling is confidently above the carbon price needed to achieve the 2030 target.

Thank you for considering these comments.

Sincerely,

Barbara Haya

Cited material:

Adler, M., Anthoff, D., Bosetti, V., Garner, G., Keller, K., & Treich, N. (2017). Priority for the worse-off and the social cost of carbon. *Nature Climate Change, 7*, 443.

Anthoff, D., & Tol, R. S. J. (2010). On international equity weights and national decision making on climate change. *Journal of Environmental Economics and Management, 60*(1), 14-20.

Anthoff, D., & Tol, R. S. J. (2013). The uncertainty about the social cost of carbon: A decomposition analysis using fund. *Climatic Change, 117*(3), 515-530.