

CALIFORNIA LEGISLATURE

STATE CAPITOL
SACRAMENTO, CALIFORNIA
95814

May 8, 2019

The Honorable Jared Blumenfeld, Secretary
California Environmental Protection Agency
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

The Honorable Mary Nichols, Chair
California Air Resources Board
1001 I Street
P.O. Box 2815
Sacramento, CA 95812

Re: Concerns with the environmental integrity of California's carbon offsets program

Dear Secretary Blumenfeld and Chair Nichols,

This letter addresses the role of carbon offsets in California's cap-and-trade program—specifically, the concern that methodological weaknesses in the U.S. Forest Protocol may be undermining its environmental integrity and frustrating California's progress toward its legally binding 2030 greenhouse gas emissions limit, as established by SB 32 (Pavley, Chapter 249, Statutes of 2016).

According to data from the Air Resources Board (ARB), the U.S. Forest Protocol has generated 122 million offset credits as of April 10, 2019. This volume is 80% of the nearly 153 million offset credits that have been issued so far in the state's cap-and-trade program for greenhouse gas emissions. Each offset credit allows its owner to emit one ton of carbon dioxide-equivalent, which means that these 122 million U.S. Forest Protocol offsets enable polluters to emit an additional 122 million tons of carbon dioxide-equivalent beyond their limits under the cap-and-trade program. Beyond enabling higher greenhouse gas emissions in California's capped sectors,

offsets also enable associated criteria and toxic air pollutants, many of which are emitted in disadvantaged communities that already experience disproportionate environmental impacts.

The size of the forest offsets program is significant both in relation to the broader cap-and-trade program and to ARB's strategy for achieving the 2030 statewide greenhouse gas emissions limit. ARB's 2017 Scoping Plan calls on the cap-and-trade program to reduce 236 million tons of carbon dioxide-equivalent on a cumulative basis over the period 2021 through 2030, making it the single largest contributor to the state's post-2020 climate policy portfolio. For comparison, the 122 million U.S. Forest Protocol offsets issued to date represent more than half of the cumulative reductions ARB expects from the cap-and-trade program over the next decade. Due to the size of the forest offsets program, any problem affecting the quality of forest offset credits would also affect the environmental integrity of the entire offsets program, the broader cap-and-trade program, and, potentially, California's ability to achieve the SB 32 limit.

To address these risks, state law requires that offset credits must reflect emission reductions that are "real, permanent, quantifiable, verifiable, and enforceable" (Health & Safety Code § 38562(d)(1)). Offsets may only be awarded to projects that generate emission reductions that are "in addition to any greenhouse gas emission reduction otherwise required by law or regulation, and any other greenhouse gas emission reduction that otherwise would occur" (*Id.* at § 38562(d)(2)). Finally, offset projects' credited emission reductions should "occur[] over the same time period" and be "equivalent in amount to any direct emission reduction" required pursuant to California's climate laws (*Id.* at § 38562(d)(3)).

A number of recent criticisms suggest that the Protocol's standards may not be consistent with these requirements. Because of the forest offset program's prominent role and the substantial criticisms that have been made about its performance, a thorough and independent review of the environmental integrity of the U.S. Forest Protocol is needed to give policymakers confidence that the credits the protocol generates are real and contribute to state climate policy goals.

This letter describes two concerns with the U.S. Forest Protocol's methodology for addressing emissions leakage. In the context of forest offsets, leakage occurs when a landowner increases carbon storage on a particular forest parcel by reducing planned timber harvesting but, as a result, some of the avoided harvest shifts (or "leaks") to another forest parcel to satisfy existing demand for forest products. This effect occurs because markets for forest products, such as timber and paper pulp, are regional and often international in scope. Properly accounting for leakage is necessary to ensure that offset credits comply with state legal standards for environmental integrity because if offset protocols do not properly account for leakage, they will enable a larger increase in pollution within the cap-and-trade program than the reductions they achieve outside the program's capped sectors.

First, as the Independent Emissions Market Advisory Committee (IEMAC) observed in its 2018 Report, ARB applies a leakage factor of 20% in the U.S. Forest Protocol, meaning that 20% of the reduction in timber harvesting attributable to an offset project is assumed to be displaced and therefore expected to occur somewhere else. ARB's U.S. Forest Protocol is based on a voluntary protocol developed by the Climate Action Reserve, however, and the voluntary protocol

currently uses a leakage factor of 80% for projects of this type—four times higher than the number used in ARB’s protocol. As the IEMAC wrote in its 2018 offsets chapter:

Given that the U.S. Forest protocol is the largest of the protocols in terms of credits issued, it would be helpful to have a better understanding of the scientific basis for leakage factors and the temporal accounting between reductions that are credited, emissions that leak, and actual physical emissions reductions or avoided emissions that take place. It would also be helpful to know if [ARB] is considering revising the protocol to reflect the Climate Action Reserve changes. The subcommittee recognizes, however, that leakage factors may be highly contextual to each individual project and therefore empirically difficult to estimate. Nevertheless, if reliance on the protocol continues to be large, additional information would be useful to understand whether and to what degree leakage is occurring, as well as to evaluate whether or not credits under this protocol can be reliably deemed “quantifiable” pursuant to state law.¹

The IEMAC went on to make two related recommendations:

- 2) We ... recommend that [ARB] either conduct or solicit research to determine whether the leakage rate for avoided conversion projects in the forestry protocol is appropriate.
- 3) We further recommend that [ARB] consider whether it should amend the U.S. Forest Offset Protocol to change the leakage factor for Improved Forestry Practices to be consistent with recent changes to the Climate Action Reserve Forestry Protocol.²

Beyond the discrepancies between leakage rates used in ARB’s U.S. Forest Protocol and the voluntary Climate Action Reserve standard on which it was based, a 2018 report from the Environmental Commissioner of Ontario found that ARB never cited any studies nor presented any other affirmative evidence supporting its selection of a 20% leakage factor.³

Second, new research suggests that there may be significant issues with the protocol that speak to the IEMAC’s interest in the “temporal accounting between reductions that are credited, emissions that leak, and actual physical emissions reductions or avoided emissions that take place.” According to a UC Berkeley study, the U.S. Forest Protocol significantly over-credits forest offset projects due to an inconsistency between the way the Protocol awards credits for avoided timber harvests and the way the it accounts for leakage.⁴ Offset projects that claim to avoid timber harvests are given a lump-sum, upfront payment in the form of offset credits. These credits are intended to reflect climate benefits based on the assumption that, under a business-as-usual scenario, the forest would be harvested immediately. Although the Protocol assumes that such projects avoid timber harvesting in their first year of crediting, it accounts for leakage as

¹ 2018 Report of the Independent Emissions Market Advisory Committee (Oct. 2018) at 45.

² *Id.* at 47.

³ Environmental Commissioner of Ontario, Ontario’s Climate Act: From Plan to Progress (2018) at 144-45.

⁴ Dr. Barbara Haya, Policy Brief: The California Air Resources Board’s U.S. Forest Projects offset protocol underestimates leakage. Berkeley Carbon Trading Project Policy Brief, Center for Environmental Public Policy, Goldman School of Public Policy, UC Berkeley (May 2019).

though modest harvesting were expected to occur in every year for 100 years in the business-as-usual scenario. This approach appears to be fundamentally inconsistent because a forest is either harvested in one large event in one year, or continuously in smaller events over many years—but not both. Furthermore, the choice to mix assumptions appears structured to generate the maximum number of credits awarded to the project in its first year, despite the physical inconsistencies implied by the assumptions necessary to enable this outcome.

The UC Berkeley study concludes that the effect of this temporal disconnect is large and concerning. In spreading out leakage impacts over 100 years, rather than accounting for leakage contemporaneously with the timber harvest that is purportedly avoided in an offset project's first year, the Protocol awards significantly more credits to projects than the emissions they have actually avoided, net of leakage, until the end of the 100-year period. As a result, many of the credits issued today reflect an environmental debt that will only be paid off over the course of 100 years. Even if ARB's current leakage factor of 20% is accurate, the UC Berkeley study finds that 35% of the 122 million U.S. Forest Protocol offsets represent emission reductions that have not yet occurred. If a higher leakage factor of 80% is justified, then 82% of the 122 million existing credits represent reductions that have not yet occurred. Nevertheless, all of these credits can be used to increase in-state emissions today.

Furthermore, the time horizon over which forest offset projects' emission reductions are credited appears to be inconsistent with the purposes and objectives of state law. As mentioned above, state law indicates that when ARB chooses to authorize market-based programs like carbon offsets, these programs should reflect emission reductions that occur "over the same time period" as the direct reductions required under AB 32 and SB 32 (Health & Safety Code § 38562(d)(3)). As you know, the only statewide greenhouse gas emission reductions targets codified in statute are for the years 2020 and 2030 (*Id.* at §§ 38550, 38566). Similarly, the cap-and-trade program itself, which ARB designated as a direct emission reduction measure in its 2017 Scoping Plan,⁵ is authorized only through the end of 2030 (*Id.* at § 38562(c)(2)). Yet forest offset credits are being used under the cap-and-trade program to justify higher in-state emissions today on promise of avoided emissions over the course of the next 100 years—a timeframe that extends well beyond the cap-and-trade program's statutory authorization.

Finally, it is worth noting that forest carbon offsets do not help California achieve its statewide emission limits for 2020 and 2030. This is because ARB's statewide greenhouse gas emissions inventory does not count emissions from the natural and working lands sector, which includes forestry, toward the statewide limits. Therefore, any reduced or avoided emissions in this sector—whether from projects located in California, or, as authorized by and common under the U.S. Forest Protocol, elsewhere in the United States—do not actually contribute to the statewide emission limits ARB is charged with achieving. Instead, the primary rationale for offsets should be seen as a mechanism to reduce compliance costs for polluters regulated under the cap-and-trade program. That rationale is strained, however, in the presence of significant allowance

⁵ ARB, California's 2017 Climate Change Scoping Plan (Nov. 2017) at 6 (describing the Scoping Plan's policies that "require direct emission reductions" as including the cap-and-trade program); *id.* at 34, Table 4 (listing the cap-and-trade program as a regulation that "Prioritize[s] ... Direct GHG Reductions").

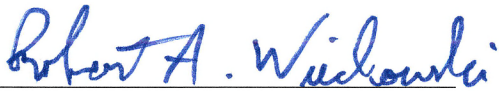
overall allocation conditions that are described in a March 1, 2019, letter from legislative leaders to your offices and confirmed in the data disclosure attached to your April 22, 2019, response.

In light of the concerns outlined here, ARB should undertake an independent review of the U.S. Forest Protocol that is conducted by technical experts who lack financial conflicts of interest with both buyers and sellers in the state's forest offsets program. Such a review should include a careful analysis of leakage issues as well as whether projects under the protocol are producing reductions that are additional to what would be expected under business-as-usual conditions in the absence of the offsets program.

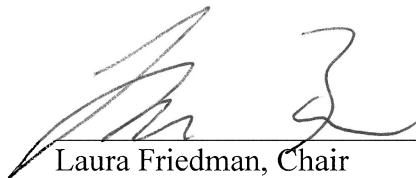
The case for offsets as a viable climate policy strategy rests on the assertion that offset protocols are sufficiently rigorous to ensure that credited reductions are "real, permanent, quantifiable, verifiable, and enforceable" as well as additional with respect to any greenhouse gas emission reductions that would have occurred in the absence of the offset project. Fundamentally, offset credits allow higher in-state emissions under the cap-and-trade program today, on promise of reduced or avoided emissions somewhere else. An independent evaluation of the technical concerns outlined here is essential if policymakers are to be confident that the offsets program is operating pursuant to the requirements of state law.

Thank you for your continued leadership on climate policy and your diligence to ensure that California achieves the 2030 SB 32 target for greenhouse gas emission reductions. We look forward to working together in the coming months and years.

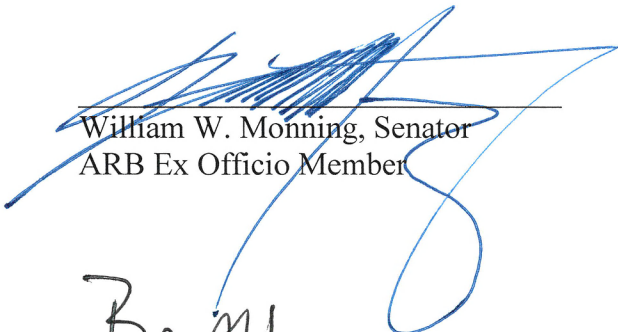
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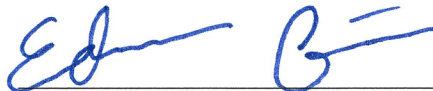
Bob Wieckowski, Chair
Senate Budget and Fiscal Review
Subcommittee #2



Laura Friedman, Chair
Assembly Natural Resources Committee



William W. Monning, Senator
ARB Ex Officio Member



Eduardo Garcia, Assemblymember
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