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Authors

Carleton, Elliot
Lezak, Stephen
Haya, Barbara K

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DEBS in Name Only:
Another Way California's Offset Rule Misses the Mark

Elliot Carleton[1,2], Stephen Lezak[1,3], Barbara K. Haya[1]

[1] *Goldman School of Public Policy, University of California, Berkeley, USA*
[2] *Energy and Resources Group, University of California, Berkeley, USA*
[3] *Smith School of Enterprise & the Environment, University of Oxford, UK*

When the legislature reauthorized California's cap-and-trade program in 2017, lawmakers instituted a new requirement that half of offset credits used must have "direct environmental benefits in the state" (DEBS). Years later, we find a large mismatch between the intent of the law and its on-the-ground outcomes. Two-thirds of offset credits used originate from out-of-state projects with little direct benefits in the state. Most out-of-state credits bearing the DEBS designation are from projects in Arkansas and Ohio that destroy ozone-depleting substances (ODS), which are predominantly used as refrigerants. These projects were awarded the DEBS designation because a small fraction of the ODS destroyed is from California.

The DEBS requirement

In 2017, during the reauthorization of California's cap-and-trade program, environmental justice advocates raised concerns that the program allowed major emitters to keep polluting in disadvantaged communities. Environmental justice groups were particularly concerned with the program's use of carbon offsets, which allows polluters to purchase offset credits (often from outside of the state) instead of reducing their own greenhouse gas (GHG) emissions. Since most activities that emit greenhouse gases also emit toxic air pollutants, offset use allows activities that produce toxic air pollution to continue unabated.[1]

As part of a compromise with environmental justice groups, the state reduced the maximum allowed offset use in the cap-and-trade program by half, from 8% of capped emissions to 4%, and required that half of the remaining offsets have "direct environmental benefits in the state" (DEBS). The goal of the DEBS requirement was to create a more limited pool of offset projects that would bring greater benefits to California communities.

[1] https://ceja.org/wp-content/uploads/2017/04/EJissuesinCAcapandtrade.pdf

ODS and the DEBS requirement

Ozone-depleting substances (ODS) are a class of chemicals once widely used as refrigerants in refrigerators and air conditioning systems that damage the Earth's ozone layer, which blocks the majority of cancer-causing UV rays. To make matters worse, some ODS have a very high global warming potential—pound for pound, many thousands of times greater than that of CO2. In response to these concerns, the production of many ODS in the United States was phased out in 1996 as part of the UN Montreal Protocol.[2] However, existing ODS can still legally be used in legacy refrigeration equipment, where they gradually leak into the atmosphere and impede ozone hole recovery. CARB's ODS offset protocol pays refrigerant owners to destroy ODS rather than continuing their use.

Under Section 95989 of the cap-and-trade regulation "offset projects that are located within, or that avoid GHG emissions within, the State of California are automatically considered to provide direct environmental benefits in the State." Further, projects located outside of the State of California are considered to provide DEBS if they reduce emissions of any air pollution in the state or pollutant that could have an adverse impact on waters of the State. When it comes to ODS, the California Air Resources Board (CARB) determined that any projects that "contain material sourced from within the State" meet the state's DEBS requirement.[3] In practice, this means that ODS projects with any amount of California-sourced ODS are classified as meeting the DEBS requirement (and earn a higher carbon price per credit) regardless of where the destruction occurred and irrespective of the proportion of California-sourced ODS.[4] CARB's justification was that destroying ODS from within California that could otherwise be reclaimed and reused in older refrigeration units would accelerate the conversion to newer, more energy-efficient units, thereby reducing emissions of toxic air pollutants in California communities.[5] We did not evaluate the validity of CARB's argument. Instead, our goal in this brief was to determine whether ODS projects that meet the DEBS requirement do, in fact, demonstrably benefit California communities and businesses.

Gaps between policy intent and implementation

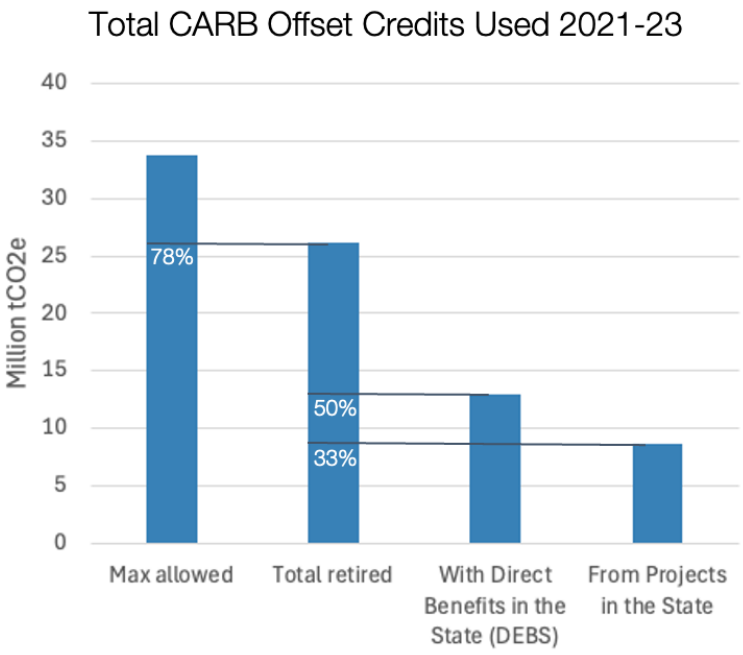
Data from California's 2021-2023 compliance period reveals that the original intent behind the DEBS requirement, which was to have more benefits from carbon offsets go to California's environmental justice communities, has not been achieved in practice. Despite California's requirement that one-half of all offset credits used to meet the state's cap-and-trade program obligations have DEBS, only one-third of credits used since the start of 2021 when the DEBS requirement went into effect were actually generated within the state (see figure). One-third of

[2] https://www.epa.gov/archive/epa/aboutepa/epa-announces-full-phaseout-cfcs-and-other-ozone-depleters.html
[3] https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/direct-environmental-benefits
[4] https://climateactionreserve.org/blog/2020/07/22/california-air-resources-board-provides-additional-information-on-criteria-for-direct-environmental-benefits/
[5] https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program/direct-environmental-benefits

California's DEBS credits are still being generated from out-of-state projects that claim some connection to California air or water pollution.[6]

65% of the out-of-state offset credits receiving the DEBS designation are generated by ODS projects.[7] All 44 ODS projects registered since 2021 have received the DEBS designation, despite the specialized destruction facilities for ODS being located in places like Arkansas and Ohio. We analyzed the publicly available project documents for every California ODS project that has received the DEBS designation, which include information about the ODS "points of origin".[8]

Based on the available point of origin data, we found that the average ODS DEBS project includes refrigerants from 14 different points of origin across 10 states. Of those 14 points of origin, on average, only 1.3 are located within California. It is clear that California communities remain underrepresented as beneficiaries of these ODS projects, violating the original intent of the DEBS requirement.



Source: The Fourth Compliance Period (CP4) Compliance Detail Report for CARB's Cap-and-Trade Program [9]

Conclusion

California's DEBS requirement was enacted to facilitate a higher quality pool of credits to ensure more benefits from the offset program go to California communities. Our findings reveal a large and concerning mismatch between the original intent of the law and its on-the-ground impact. We find that California's offset program is still dominated by projects with no or minimal in-state benefits.

[6] https://gspp.berkeley.edu/assets/uploads/page/California-sends-money-out-of-state-for-carbon-offsets--May-2025--BCTP-Policy-Brief.pdf

[7] Calculated from: California Air Resources Board (2025, August 13) ARB offset credit issuance table. Accessed August 13, 2025 from https://ww2.arb.ca.gov/our-work/programs/compliance-offset-program

[8] CARB defines "points of origin" as "the site at which greater than or equal to 500 pounds of ODS is first aggregated into a single or multiple containers". CARB does not require project developers to make information about the individual sources of refrigerant that are less than 500 pounds and that together make up these points of origin publicly available. We requested information from CARB on the individual sources of ODS used in DEBS projects, but they were not willing to share the data.

[9] https://ww2.arb.ca.gov/resources/documents/fourth-compliance-period-cp4-compliance-report