

## Interpreting AB 398's carbon offsets limits

AB 398 requires the California Air Resources Board (ARB) to incorporate new limits on the use of carbon offsets in its post-2020 cap-and-trade market design. ARB has released its initial thinking on how to implement these new statutory provisions. We review two key issues here.

First, AB 398 requires ARB to limit the use of offsets to 4% and 6% of an entity's emissions in the periods 2021-25 and 2026-30, respectively. ARB has proposed a novel interpretation of how to calculate the timing of applicable restrictions such that the higher limit would apply to most emissions that take place in calendar years 2024 and 2025, in addition to those that occur in 2026 through 2030. The proposed interpretation would increase the maximum quantity of offset credits that can be used by a total of approximately 8.5 million instruments, relative to a scenario in which AB 398's limits are applied to calendar-year emissions.

Second, AB 398 further limits the total number of offset credits that covered entities can use from projects that do not generate a "direct environmental benefit" (or "DEB") to air or water quality in California. We explore under what conditions an offset project produces a DEB. ARB has proposed a project-by-project evaluation but has not yet offered any bright-line rules to limit acceptable arguments for establishing a DEB. While a project-by-project approach could make sense, we argue that ARB's DEB assessment should exclude greenhouse gas (GHG) emissions from consideration because carbon offsets create no net reduction in GHGs and therefore no net climate benefits that could be said to constitute a DEB to California air or water quality.

### **Background: AB 398 sets new offset limits**

Under California's original climate law, AB 32, the legislature gave ARB broad discretion to determine whether and to what extent covered entities may use carbon offsets to satisfy their compliance obligation under the state's cap-and-trade program. For the period 2013 through the end

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of 2020, ARB eventually selected a limit that enables covered entities to submit ARB-approved carbon offset credits for up to 8% of their covered emissions.<sup>1</sup>

Although 8% might seem small, the original offsets limit is actually quite large compared to the emission reductions expected from the current phase of the cap-and-trade program. Dr. Barbara Haya at UC Berkeley calculated that this limit—which enables covered entities to use more than 200 million offset credits through 2020—could, if fully exploited, generate 100% of net reductions expected under the cap-and-trade program through 2020 (Haya 2013). In the market’s first compliance period (2013-14), however, covered entities submitted allowances equal to 4.4% of their covered emissions in the market’s first compliance period—just over half of the limit.<sup>2</sup> That share rose to 7.9% and 8.3% of compliance obligations submitted in 2015 and 2016, respectively, although it is not possible to say whether offsets usage is changing relative to the first compliance period because only 30% of the total compliance obligations for 2015 and 2016 have come due.<sup>2</sup> Data on the share for the full second compliance period (2015-17) is not yet available, as the compliance obligation will come due later this year.<sup>3</sup>

In contrast to the broad discretion ARB enjoys with respect to carbon offsets under AB 32, AB 398 imposes new offset limits that apply to the state’s post-2020 market design:

(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 of which no more than one-half may be sourced from projects that do not provide direct environmental benefits in state.

(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 of which no more than one-half may be sourced from projects that do not provide direct environmental benefits in the state.<sup>4</sup>

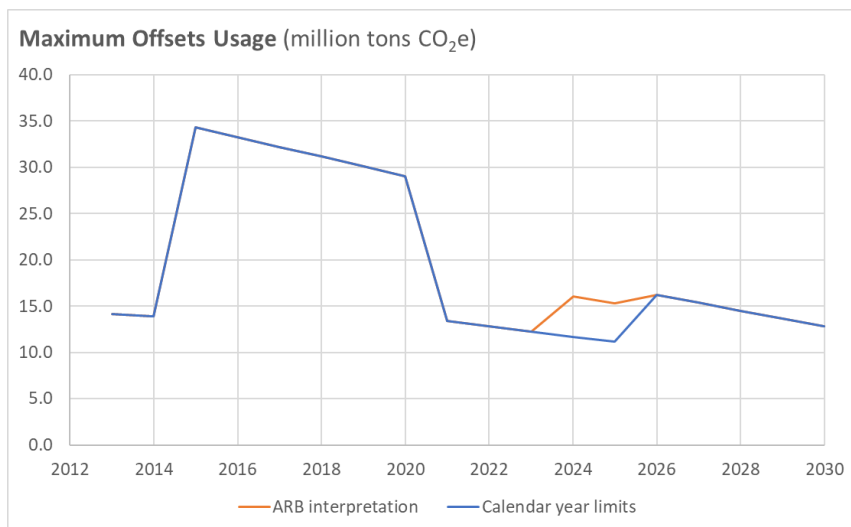
The Board’s attention has turned to developing regulations that implement AB 398’s requirements, including the new offset limits.

## A permissive interpretation of AB 398's total offset limits

ARB has proposed an initial interpretation of AB 398's new offset limits that increases the total number of carbon offsets that can be surrendered by covered entities to account for their emissions in 2024 and 2025, compared to an interpretation in which the AB 398 offset limits are directly applied to calendar-year emissions (ARB 2018a: slide 25).

The proposal is based on the way ARB requires covered entities to submit compliance instruments within three-year compliance periods. For each of the first two years of a compliance period, ARB requires covered entities to submit compliance instruments to account for at least 30% of their annual emissions obligation.<sup>3</sup> In the third and final year, however, covered entities must submit compliance instruments to cover any remaining emissions from those previous years (up to 70% of each year's total) as well as all of the emissions in the final year of the compliance period.<sup>3</sup> Thus, the compliance obligation that comes due for the third year of a compliance period can represent a substantial majority of a covered entity's emissions over the entire three-year compliance period.

This distinction matters because the market's fifth compliance period spans 2024-26, during which time the carbon offsets limits under AB 398 increase from 4% to 6%. Under ARB's proposal the higher limit would apply to all emissions in 2026, as well as up to 70% of emissions in both 2024 and 2025 that covered entities could elect to submit to cover their 2026 compliance obligations.



SOURCE: NEAR ZERO CALCULATIONS, BASED ON ARB (2018a)

In the figure above, the dark blue line (“Calendar year limits”) represents the annual offsets limits that would apply if ARB interpreted the AB 398 limits literally, based on the calendar year of emissions. The orange line (“ARB interpretation”) shows the limits that ARB staff proposed in its March 2018 preliminary discussion draft regulations. For simplicity, both scenarios assume that covered emissions will be equal to annual program budgets for each year plus the maximum number of permissible offsets. Other outcomes would be possible if covered entities bank allowances from year to year. If covered entities’ GHG emissions are higher than program budgets in 2024 and 2025 due to banking of previously unused allowances, then maximum offsets usage would be higher; if covered entities’ GHG emissions are lower than program budgets for 2024 and 2025, then maximum offsets usage would be lower.

	2023	2024	2025	2026	2027
<b>Calendar Year Limits</b>	4%	4%	4%	6%	6%
<b>ARB Interpretation</b>	4%	5.4%	5.4%	6%	6%

SOURCE: NEAR ZERO CALCULATIONS, BASED ON ARB (2018a)

Expressed numerically, the effect of ARB’s proposed interpretation is to increase the effective carbon offsets limit for emissions that occur in 2024 and 2025 from 4% to 5.4%. In total, ARB’s interpretation would allow covered entities to submit approximately 8.5 million more offset credits relative to an interpretation that applies the limits in AB 398 to the emissions by calendar year.

**What constitutes a “direct environmental benefit”?**

AB 398 not only sets a limit on the total number of carbon offset credits that can be surrendered by covered entities in the post-2020 market period, but also on the types of offsets that qualify. Beginning in 2021, additional restrictions apply to projects that do not provide “direct environmental benefits” (or “DEB”) in California. No more than half the total number of allowable offsets may come from such projects. AB 398 defines a DEB as:

[T]he reduction or avoidance of emissions of any air pollutant in the state or the reduction or avoidance of any pollutant that could have an adverse impact on waters of the state.<sup>4</sup>

In its preliminary discussion draft regulations, ARB has proposed a bifurcated approach to interpreting this statutory requirement.

First, ARB has proposed a set of bright-line rules that, if met, would automatically deem an offset project as producing a DEB. For example, a project located in California that reduces air pollution would qualify; so too would any project that reduces water pollution and is located either in California or adjacent to a body of water that flows into California (ARB 2018: 17-19). If any of these bright-line rules are met, ARB would automatically deem the project to provide a DEB.

Second, if ARB does not deem a project to provide a DEB based on these bright-line rules, ARB staff have proposed a process whereby projects may make individualized applications to ARB to demonstrate their case. ARB has invited comment on what factors, data, and analysis should be considered in this process.

ARB's bifurcated approach offers important advantages, in that it both outlines bright-line rules for inclusion and contemplates a bottom-up process to provide opportunities for projects to justify direct environmental benefits to California air or water quality. However, ARB has not provided any bright-line rules that would foreclose unacceptable arguments for establishing a DEB—that is, ARB has not proposed any limits on arguments that would qualify a project as providing a DEB. As a result, there are several important open questions that will need careful consideration to implement the legislative intent of AB 398 while also ensuring that ARB's regulatory implementation respects constitutional standards that apply to state regulation of interstate commerce.

The most challenging issue concerns the role of GHG emissions. ARB's preliminary discussion draft regulations suggest that ARB believes “a GHG reduction anywhere is a benefit everywhere” (ARB 2018b: 17)—a position the state and its allies successfully took in a landmark dormant commerce challenge to California's Low Carbon Fuel Standard.<sup>4</sup> Furthermore, in response to questions at its March 2018 workshop, ARB staff indicated that they believe GHGs are included in the operative phrase “any air pollutant” used in AB 398's DEB definition, suggesting

that the Board may be open to offset projects demonstrating a DEB by demonstrating a reduction in GHG emissions.

However, recognizing reduced or avoided project-level GHG emissions as the basis for a DEB would raise significant concerns because offset projects by definition produce *zero net* GHG reductions. In return for gross reductions or avoided emissions of GHGs as measured at the offset project, ARB awards an equal number of offset credits to the project developer. Project developers sell these credits to covered entities, which use them to emit additional GHGs equal in quantity to the offset project's reduced or avoided GHG emissions. Thus, there is no net reduction in GHGs attributable to any offset project.

Even though there is a marginal but incontrovertible climate benefit everywhere when GHGs are reduced anywhere, that benefit accrues only when there is a *net* reduction in GHGs. By definition, an offset project produces no net GHG reductions because the gross reduction measured at the project level is counteracted by an increase in GHG emissions by covered entities that acquire the project's offset credits.

### **A more complicated example: ozone depleting substances**

Although no offset project can claim net GHG reductions when its credits are used by covered entities to emit more GHGs, the Ozone-Depleting Substances (ODS) Protocol raises several additional complications.

The ODS Protocol credits the destruction of ODS that would have eventually leaked out of devices such as older air conditioning and refrigeration units. ODS projects take ODS-containing equipment—including some equipment collected in California—and ship this equipment to an out-of-state facility for controlled gas destruction. Does the out-of-state destruction of ODS-containing equipment that was previously located in California constitute a “direct environmental benefit” to California?

To evaluate this question, we consider an ODS offset project that avoids 1 metric ton of carbon dioxide equivalent (tCO<sub>2</sub>e) from ODS-containing equipment that was originally located in California but was subsequently shipped to an out-of-state facility for destruction. As a result of the offset project, in-state ODS emissions are reduced by 1 tCO<sub>2</sub>e. At the same time, however, an in-state entity will be able to use the resulting offset credit to increase its CO<sub>2</sub> emissions by 1 tCO<sub>2</sub>e. Thus, as with other off-

set projects, there is a gross GHG reduction at the project level, but no net change in GHGs on a global level.

The ODS example illustrates additional challenges in interpreting what constitutes a direct environmental benefit under AB 398 because ODS gases are both GHGs and gases that contribute to the destruction of the ozone layer. Although there is no net climate benefit to ODS destruction projects that earn offset credits, the avoidance of ODS emissions that would have occurred in California could be interpreted as an “avoidance of emissions of any air pollutant in the state.” Furthermore, ODS destruction arguably provides a net global benefit to reduced ozone layer destruction that partially accrues to California—although the benefit would more accurately be described as an indirect environmental benefit, rather than a direct environmental benefit to state air or water quality.

	Before offset (*)	After offset	Net change
<b>In-state ODS</b> (tCO <sub>2</sub> e)	10	9	-1
<b>In-state GHGs</b> (tCO <sub>2</sub> e)	100	101	+1
<b>Total GHGs</b> (tCO <sub>2</sub> e)	110	110	0
<b>In-state co-pollutants</b>	Lower	Higher	Higher
<b>Indirect ozone layer impacts</b>	Higher	Lower	Lower

\* VALUE IS ARBITRARY; NET CHANGE IS NOT

As this example illustrates:

- Like all offset projects, an ODS offset project produces a gross GHG reduction but zero net GHG benefits. As a result, there is no net climate benefit to California air or water quality.
- Like all offset projects, ODS projects can also lead to higher net in-state co-pollutants if covered entities that emit GHGs and co-pollutants increase emissions of both local and global air pollutants relative to a scenario in which no ODS offset credit is available.

- Nevertheless, ODS credits awarded for destruction of ODS-containing equipment in California—which would have eventually emitted ODS in California—could plausibly be said to involve the “reduction or avoidance of any air pollutant in the state.”<sup>4</sup>
- ODS projects also provide a net reduction in impacts to the ozone layer, although the corresponding environmental benefit to California air or water quality would better be described as indirect—not a direct environmental benefit to California air or water quality.

## **Conclusions**

In this note we evaluated two key issues related to implementing AB 398’s new offset requirements.

First, ARB must implement AB 398’s overall limits on offset usage. We show that ARB’s proposed interpretation of AB 398’s limits increases the quantity of offset credits that can be used in 2024 and 2025 by a total of approximately 8.5 million, relative to a scenario in which the statutory limits apply to calendar year emissions and assuming that emissions in those years are equal to the annual program budget plus the maximum allowable offsets usage. Under ARB’s proposed interpretation, covered entities could submit offset credits equal to 5.4% of their 2024 and 2025 emissions, rather than 4%.

Second, ARB must determine what constitutes a “direct environmental benefit” to California air or water quality. We show that if ARB interprets the “reduction or avoidance of any emissions of any air pollutant” by looking only at the gross reduction of greenhouse gas emissions from offset projects, local air pollution could actually increase without producing any climate benefits. We recommend that ARB be explicit and consistent in its analysis of the gross vs. net impacts on local environmental pollution, greenhouse gas emissions, and any other environmental issues (such as reduced ozone layer depletion). Once emissions from offset credit use are taken into account, no offset projects reduce net greenhouse gas emissions and therefore no offset projects provide net climate benefits to California air or water quality—whether direct or indirect.



## References

ARB (2018a), Cap-and-Trade Workshop. Staff Presentation (Mar. 1, 2018), <https://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>.

ARB (2018b), Preliminary discussion draft regulations (Feb. 2018), <https://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>.

Barbara Haya (2013), California's Carbon Offsets Program – The Offsets Limit Explained, <http://beci.berkeley.edu/barbara-haya/>.

## Notes

1. Cal. Code Regs., tit. 19, § 95854(b).
2. Compliance obligations for 2015 and 2016 represent 30% of emissions by covered entities in the respective year. Compliance reports are available at <https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>.
3. Cal. Code Regs., tit. 19, §§ 95855–95856.
4. Cal. Health & Safety Code § 38562(c)(2)(E) (as added by AB 398).
5. Rocky Mountain Farmers Union v. Corey, 730 F.3d 1070 (9th Cir. 2013). Full disclosure: Dr. Cullenward represented environmental scientists who made this argument in support of ARB's position in the case.

## About Near Zero

Near Zero is a non-profit environmental research organization based at the Carnegie Institution for Science on the Stanford University campus. Near Zero provides credible, impartial, and actionable assessment with the goal of cutting greenhouse gas emissions to near zero. This research note is for informational purposes only and does not constitute investment advice.

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