



**Estimating the Uptake of CARB's Proposed Manufacturing Decarbonization Incentive  
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1. Abstract

We provide draft estimates of the maximum annual uptake of CARB's proposed Manufacturing Decarbonization Incentive (MDI). Based on our calculations, we estimate that at maximum 27.05 million Build Up California Allowances (BUCAs) would be allocated in 2028 if all 94 eligible facilities participated and if CARB issued the maximum allowed quantity of BUCAs. We view this as a probable upper bound for 2028 BUCA allocations. Further work will refine our maximum estimate into an expectation of BUCA allocation, which we anticipate will be lower than 27.05 million BUCAs in 2028.

2. Summary of Analysis

Our approach bases calculations on CARB's 2026 allocation summary report (hereafter referred to as the "CARB report").<sup>1</sup> Table 1 provides the starting point with total 2026 allocations of 29.17 million allowances to 131 industrial facilities in 2026.

However, not all facilities or allowances in the report are eligible for BUCAs through the MDI. Therefore, we treat their 2026 allowance allocation values as a starting point and further constrain them in the following ways:

- Removing allowances allocations that are not eligible for MDI;
- Removing facilities that are not eligible for MDI; and,
- Accounting for the expected closure of the Valero refinery in Benicia.

These constraints reduce the universe of eligible facilities to 94. In turn, these constraints result in a 2026 allowance allocation "base" of 21.88 million allowances that could then be used to estimate maximum BUCA allocation in 2028 under several conservative assumptions.

- Assumption 1: Production and emissions in 2026 are the same as in 2028, which could be a conservative assumption, given concerns over falling production in the industrial sector.
- Assumption 2: Every one of the estimated eligible MDI facilities applies for and is granted BUCAs, which is likely conservative for several reasons, including that many eligible emitters are quite small and the process for application seems uncertain and burdensome.
- Assumption 3: The amendments state that MDI allocation applicants can request a CAF modifier of "up to 0.8." For purposes of this analysis, we assume that the applicant requests, and CARB grants, the permissible upper bound modifier of 0.8.

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<sup>1</sup> [nc-v2026 Public Allocation Summary.pdf](#)

- Assumption 4: we assume the oil and gas sector does not access the MDI to build out carbon capture and sequestration projects, leaving any estimation here for further work. This is not a conservative assumption insofar as these projects are allocated BUCAs.

Under this set of assumptions, we can translate the 2026 constrained allocation of 21.88 million allowances into estimated maximum BUCAs allocated in 2028 through two steps.

- To arrive at estimated 2028 allocations, we multiply 21.88 million allowances by ~1.21, which is the ratio of the 2028 cap adjustment factor (0.782) and the 2026 cap adjustment factor (0.647).<sup>2</sup> The result is an estimated ~26.44 million 2028 allowances, under Assumptions 1 and 2 above.
- To estimate maximum BUCAs allocated in 2028, we multiply 2028 allocations by ~1.02, which is the ratio of the modified cap adjustment factor (0.8) and the 2028 cap adjustment factor (0.782). The result is an estimated 27.05 million 2028 BUCAs, under Assumptions 2 and 3 above.<sup>3</sup>

### 3. Methodological Appendix

This section walks through how we adjust 2026 industrial allocations from CARB to (a) remove allowances that are not eligible for MDI, (b) remove facilities that are not eligible for MDI, and (c) account for the expected closure of the Valero refinery in Benicia. Table 1 summarizes our calculations.

Table 1  
Estimating Maximum BUCAs in 2028 Based on 2026 Allocations

Description	Emissions (Million Tons)	Facilities	Calculation
2026 Allocation Levels	29.17	131.00	Sum First 11 Rows in Column Table 1 CARB Allocation Summary
(Remove True Up Allowances)	-1.53	131.00	Subtract Column 3 from Column 2 in Table 1 CARB Allocation Summary
(Remove Oil/Gas Extraction)	-2.94	109.00	Remove Row 2 in Table 1 CARB Allocation Summary
(Remove Dairy Product Manufacturing)	-0.25	101.00	Remove Row 6 in Table 1 CARB Allocation Summary
(Remove ineligible Misc. Facilities)	-0.85	95.00	Adjust miscellaneous category downward by 40 percent
(Adjust for Refinery Closure)	-1.72	94.00	Account for expected closure of Benicia refinery

<sup>2</sup> See Table 9-1 in the proposed 15-day amendments. CAFs selected for “Standard Activities”. Note that a few facilities eligible for MDI are not in the “Standard Activities” column and may therefore receive a slightly lower CAF. For simplicity, we ignore these eligible facilities.

<sup>3</sup> The calculation can be made in one step by multiply 21.88 million allowances by (0.8/0.647) but we broke the calculation into two steps for exposition.

Adjusted 2026 Allocations	21.88		Summing preceding rows
Estimated Maximum BUCAs in 2028	27.05		Multiplying by two ratios: 2028 to 2026 CAF and 2028 modified CAF to 2028 CAF.

a. Remove Allowance Allocations Not Eligible for the MDI

The proposed 15-day amendments specify that true-up allowance allocations are not eligible for receiving a modified cap adjustment per Section 95891(g). We therefore subtract true-up allowance allocations from total industrial allocations in 2026.<sup>4</sup> This adjusts allocations eligible for BUCAs through the MDI downward by 1.53 million allowances.

b. Remove Facilities Not Eligible for the MDI

- Downward adjustment for oil and gas extraction: The proposed 15-day amendments specify that the oil and gas sectors are not eligible for utilizing the MDI (Section 95891(g)(1)(B))<sup>5</sup>. We therefore eliminate that sector from total industrial allocations in 2026 by removing the second row of Table 1 in CARB's report. This adjusts allocations eligible for BUCAs through the MDI downward by 2.94 million allowances and downward by 22 facilities.
- Downward adjustment for ineligible sectors: The CARB report includes the "dairy product manufacturing" category, which is not eligible for MDI because the corresponding NAICS codes are not listed in Table 8-1 per Section 95891(g)(1)(B) in the proposed 15-day amendments. We therefore eliminate that sector from total industrial allocations in 2026 by removing the sixth row of Table 1 in CARB's report. This adjusts allocations eligible for BUCAs through the MDI downward by 0.25 million allowances and downward by 8 facilities.
- Downward adjustment estimation for ineligible facilities: The CARB report includes the "miscellaneous industrial facilities and legacy contract generators" category which includes certain facilities that are not eligible for MDI because their corresponding NAICS codes are not listed in Table 8-1 per Section 95891(g)(1)(B) in the proposed 15-day amendments. We identify six such facilities: Crockett Cogeneration Project, Panoche Energy Center, Matchmaster Dyeing and Finishing, The P&G Paper Products Company, Northrop Grumman Marine Systems in Sunnyvale, and Los Angeles International Airport.

Rather than estimating allocations based on historical emissions for these facilities<sup>6</sup>, we instead adjust 2026 allocations listed in row ten of Table 1 in CARB's report proportionately downward by 40 percent (6 ineligible facilities divided by 15 total facilities). This adjusts allocations eligible for BUCAs downward by 0.85 million allowances (1.41 million allowances multiplied by 0.6) and downward by 6 facilities.

<sup>4</sup> By subtracting column 3 from column 2 for remaining and adjusted rows.

<sup>5</sup> The only exception is if these facilities pursue a CCUS project.

<sup>6</sup> This provide unreliable because historical emissions are significantly greater than 2026 allocations.

c. Account for Expected Refinery Closure

The Valero refinery in Benicia is expected to close this year. If that occurs, then this refinery would obviously not be involved in the MDI. Therefore, we estimate allocations for this refinery in 2026 by multiplying reported GHG emissions in 2024 via CARB's MRR by the 2026 cap adjustment factor (1.72 million allowances = 2.67 million emissions \* 0.647 cap adjustment factor in 2026). This adjusts allocations eligible for BUCAs downward by 1.72 million allowances and downward by one facility.

d. Estimate Maximum BUCAs through MDI in 2028

We estimate allowance allocations in 2028 by conservatively assuming that all eligible facilities participate in the MDI, facilities maintain their production and emissions at 2026 levels, and each facility gets a 0.8 cap adjustment factor modifier.

Given these assumptions, we first convert 2026 allocation levels into estimated 2028 allocation levels by multiplying 2026 allocation levels by ~1.21 (the ratio of the 2028 cap adjustment factor of 0.782 and the 2026 cap adjustment factor of 0.647).<sup>7</sup> From there, we can multiply the result by the ~1.02 (the ratio of the modified cap adjustment factor granted by the MDI of 0.8 and the 2028 cap adjustment factor of 0.782) to obtain an estimate of maximum BUCAs received in 2028.

In aggregate, this methodology estimates the total quantity of BUCAs to equal 27.05 million allowances in 2028 (21.88 million allowances \* ~1.21 \* ~1.02). Note that a small selection of facilities would receive a slightly smaller modified cap adjustment factor, so this estimate is biased upwards.

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<sup>7</sup> Note that CAFs typically decrease over time rather than increase. The reason the 2028 CAF is higher than the 2026 CAF is because CARB proposes to make a one-time adjustment to increase the CAF followed by an annual decline. For this reason, our calculations for years beyond 2028 would result in lower estimates of maximum BUCA issuances.