

Minimum ZEV Sales Requirements

Advanced Clean Cars II

February 29, 2024

1. **ZEV Requirement:** The California Advanced Clean Cars II (ACC II) ZEV regulations ([13 CCR 1962.4](#)) set an increasing mandated percentage of a manufacturer's new vehicle sales that must be zero emission vehicles (ZEVs), which include battery, plug-in hybrid, and fuel cell electric vehicle (BEV, PHEV, and FCEV, respectively). Unlike prior regulations (i.e., ACC I) where ZEVs received multiple credits based on a myriad of factors, the ACC II regulations are based on vehicle sales where each ZEV receives one vehicle value. So the 43% ZEV mandate in 2027 model year (MY), means that 43% of an automakers vehicles must be ZEV. **Figure 1** shows the ACC II ZEV requirements.

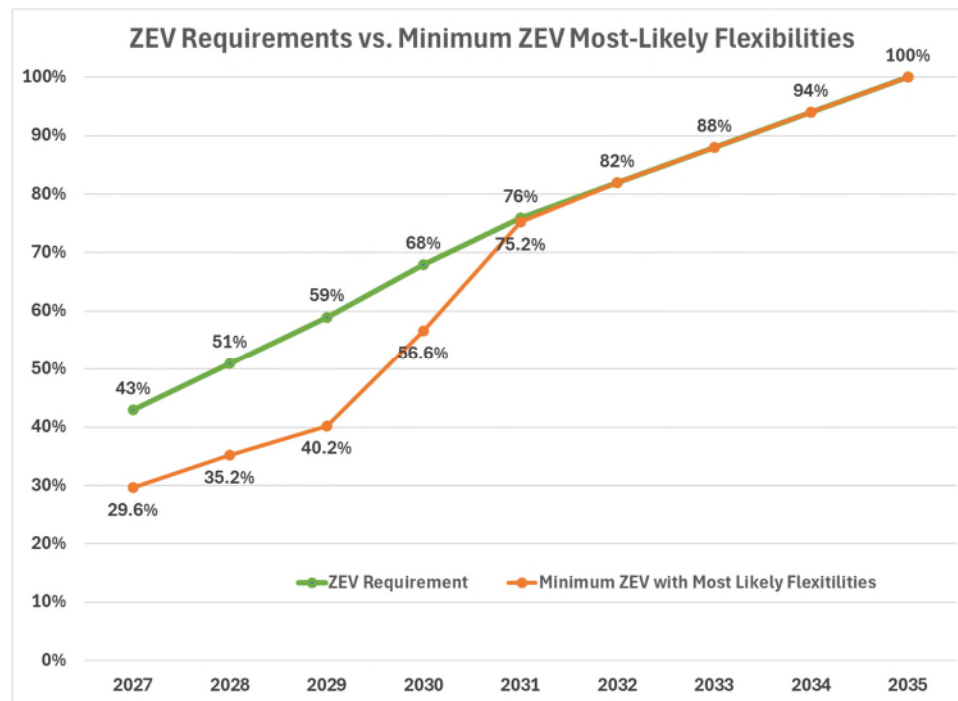


Figure 1: ZEV Requirements

2. **Flexibilities and Caps:** ACC II provides several “flexibilities” that an automaker could use to reduce the ZEV requirements in a specific MY. These flexibilities are capped so that they can make up no more than a specified percentage of the requirement. Moreover, the flexibilities are still based on automakers delivering ZEVs.

Figure 1 also shows the most likely actual minimum ZEV sales that will be required in Maryland under ACC II based on reasonable expectations for the use of flexibilities as discussed in more detail below. While maximum use of flexibilities could further reduce the sales requirement, such scenarios are unrealistic.

The following summarizes the flexibilities, and the assumptions made to generate the most-likely scenario:

- a. Early Compliance Values (15% cap, 2027-2029 §1962.4(e)(3)): ACC II allows manufacturers to sell excess ZEVs in 2025 and 2026MYs and use the excess ZEV sales for compliance in 2027-2029MYs. Automakers can “bank” 2025 and 2026MY ZEV sales that are more than 7% of their sales and use those credits in 2027-2029 to meet up to 15% of the ZEV requirements. Thus, in 2027, 6.45% of the 43% ZEV requirement can be met with Early Compliance Values.

There is no way to know if individual automaker’s sales in 2025-2026MY can generate sufficient credits to maximize the use of this flexibility in 2027-2029.

Nonetheless, for purposes of calculating a most-likely scenario, we assume maximum use of this flexibility 2027-2029MYs.

- b. “Converted Credits” (15% cap, 2027-2030, §1962.4(g)(2)(A)): ACC II allows use of discounted credits from excess ZEVs sold prior to 2026MY. These ZEV credits resulted from automakers selling more ZEVs than required under ACC I. The credits are discounted by 52% and can then be used to meet up to 15% of the ZEV requirement through 2030MY. Thus, in 2027, 6.45% of the 43% ZEV requirement can be met with these Early Compliance Values.

While individual OEM ACC I credit banks vary, it is likely this flexibility can be maximized through 2030MY.

For purposes of calculating a most-likely scenario, we assume maximum use of this flexibility 2027-2029MYs.

- c. Pooled Credits (Declining cap, 2027-2030, §1962.4(g)(1)(D)): ACC II allows automakers to over-comply in one ZEV state and transfer those credits to another ZEV state. However, the way this flexibility is implemented automakers must sell vastly more ZEVs than required in one state, just to transfer a few credits to another state. Consequently, this flexibility is of no value to automakers beyond possibly EV-only automakers, but their credits will likely be used in the state they were generated. During the ACC II rulemaking process, automakers recommended changes that would have made this a useful flexibility. However, those changes were not accepted.

For purposes of calculating a most-likely scenario, we assume ZERO use of this flexibility 2027-2030MYs.

- d. Proportional FCEV Credit (10% cap, 2027-2030, §1962.4(g)(4)): This flexibility applies only to FCEVs sold in a ZEV State. Only two automakers currently sell FCEVs, so this is a very limited flexibility on an industrywide basis. The flexibility transfers ZEV values to all ZEV states for FCEVs sold in California. This transfer is capped at the lesser of:
- i. The percentage of the ZEV sales requirement that is met by FCEVs.
 - ii. 10% of the ZEV requirement (e.g., 4.3% of the 43% requirement in 2027MY).

For example, if the highest seller of FCEVs increased FCEV sales by 231% between 2021 and 2027MY, this flexibility would cap the Proportional FCEV credit at 2.8% of the 2027 ZEV requirement. Thus, for that automakers 1.2% of the 43% ZEV requirement in 2027MY could be met with FCEV proportional ZEV credits. However, that is just one automaker, no others can use this flexibility.

For purposes of calculating a most-likely scenario, we assume use of this flexibility is capped at 1% of the ZEV requirement for 2027-2030MYs.

- e. Environmental Justice (EJ) credits (5% Cap, 2026-2031MY§1962.4(e)(2)): EJ credits can make up 5% of the ZEV requirement in a given MY through 2031MY (e.g., in 2028, an automaker could meet 2.55% of the 51% ZEV requirement ($5\% \times 51\% = 2.55\%$) using EJ credits). ACC II provides three ways to generate EJ credits:

- i. *Community-based clean mobility programs (CBCMP)*: The automaker must sell the 2024+MY ZEV into a qualifying CBCMP at a price at least 25% below the MSRP. ACC II contains several requirements to determine whether a CBCMP qualifies.

California provides substantial funding and vetting of CBCMPs. For example, California allocated \$59.5 million to the Sustainable Transportation Equity Project (STEP) as of November 2022 and \$92.9 million to its Clean Mobility Options program. These are just two of the many California programs directed at CBCMP.

To our knowledge, Maryland has nothing similar in scope or scale.

- ii. *Sold at End of Lease to Participating Dealership*: A leased 2026+MY ZEV sold to a dealership “participating in a dealer financial assistance program” qualifies for 1/10th of a vehicle credit. This only applies to leased ZEVs, not purchased ZEVs.

California has allocated \$436 million to its Clean Cars for All (CC4A) program that provides up to \$12,000 for replacing an older gas with a new ZEV. Dealerships that participate in this program are considered “participating in a dealer financial assistance program” under ACC II.

Again, it is not clear that Maryland has dealerships “participating in a financial assistance program.” However, we assume this could be addressed before 2029 when most 2026MY ZEVs will start coming off lease.

- iii. *Low-Cost ZEVs*: ACC II also provides 1/10th of a vehicle credit for 2026+MY ZEVs with an MSRP < \$20,275 for passenger car ZEVs and with an MSRP < \$26,670 for light-duty truck ZEVs. The lowest priced passenger BEV in 2023 was over \$26,000, and the lowest priced light-truck ZEV was over \$35,000.

While automakers participate in and support equity and environmental justice programs, it is unlikely manufacturers will be able to utilize this provision in Maryland beyond perhaps the End of Lease provision. Maximizing the use of this credit is uncertain even in California despite years of dedicated programs, substantial investments in the \$100s of millions, and work across multiple agencies (CARB, Energy Commission, Pollution Control Districts, Governor’s office, etc.) with established community-based organizations to develop these programs. In Maryland, none of this exists.

For purposes of calculating a reasonable flexibility, we assume automakers can meet 1% of the ZEV requirement in 2029, 2030, and 2031MYs.

- 3. Summary Table:** Figure 2 shows a summary table of requirements, most-likely flexibility usage, and minimum total requirement by MY.

Requirement/Flexibility*	Model Year									
	2027	2028	2029	2030	2031	2032	2033	2034	2035	
ZEV Mandate 1962.4(c)(1)(B)	43%	51%	59%	68%	76%	82%	88%	94%	100%	
- EJ Values (e)(2) - 5% Cap**	0.0%	0.0%	0.6%	0.7%	0.8%	NA	NA	NA	NA	
- Early Compliance Values (e)(3) - 15% Cap**	6.5%	7.7%	8.9%	NA	NA	NA	NA	NA	NA	
- Pooled Credits (g)(1)(D) - Declining cap (20/15/10/5%)	0.0%	0.0%	0.0%	0.0%	NA	NA	NA	NA	NA	
- Converted Credits (g)(2)(A) - 15% Cap**	6.5%	7.7%	8.9%	10.2%	NA	NA	NA	NA	NA	
- Proportional FCEV (g)(4) - ***	0.5%	0.5%	0.5%	0.5%	NA	NA	NA	NA	NA	
Minimum Actual ZEV Requirement	29.6%	35.2%	40.2%	56.6%	75.2%	82.0%	88.0%	94.0%	100.0%	

Figure 2: Summary Table