

Title 26

DEPARTMENT OF THE ENVIRONMENT

Subtitle 11 AIR QUALITY

26.11.43 Advanced Clean Trucks Program

Authority: Environment Article, §§1-404, 2-102, 2-103, 2-301, 2-1102, 2-1103, and 2-1103.1, Annotated Code of Maryland

Notice of Proposed Action

[23-149-P-I]

The Secretary of the Environment proposes to adopt new Regulations .01 — .05 under a new chapter, **COMAR 26.11.43 Advanced Clean Trucks Program**.

Statement of Purpose

The purpose of this action is to adopt regulations implementing California's Advanced Clean Trucks (ACT) regulation under COMAR 26.11.43. The regulations will be submitted to the U.S. Environmental Protection Agency (EPA) for approval as part of Maryland's State Implementation Plan (SIP).

Background

The Clean Air Act established the framework for controlling harmful emissions from mobile sources. At the time, California had already established its own emission standards for mobile sources and was therefore granted the sole authority to continue adopting vehicle emission standards, so long as they were at least as protective as the standards set by EPA. The harmful emissions from Medium- and Heavy-Duty Trucks (MHD) pose a serious threat to both public health and climate change. Recognizing this, California has adopted the ACT regulation that aims to reduce on-road emissions from the MHD truck sector to a greater extent than the current EPA standards. Section 177 of the Clean Air Act authorizes other states to adopt the California standards if they are identical.

The Clean Trucks Act of 2023 (c. 96/c. 97, §1, eff. June 1, 2023) requires the Maryland Department of the Environment (MDE) to adopt regulations implementing the California ACT regulation in Maryland. The Clean Trucks Act of 2023 also reinforces the State's ongoing commitment to reducing climate pollutants in order to reach the nation-leading goal of achieving a 60 percent reduction in greenhouse gas (GHG) emissions by 2031. Transportation accounts for over 40 percent of the GHG emissions in Maryland and MHD trucks account for about a third of those emissions. The emissions from MHD trucks continue to increase even as other sectors decrease. On-road diesel trucks are the largest contributor to nitrogen oxide (NO_x) emissions in Maryland. Maryland has been a California Clean Car state since 2011. Under the Clean Cars Program, Maryland has required light-duty manufacturers to deliver more zero emission vehicles (ZEVs) as a growing percentage of their overall fleet. This rule proposes to adopt California's ZEV emission standards that apply to vehicles greater than 8,500 pounds gross vehicle weight rating (GVWR). This rulemaking will reduce the emissions of carbon dioxide (CO₂) and other climate pollutants from the transportation sector by adopting California's ACT. As required by the Clean Trucks Act of 2023, the Department is proposing to incorporate by reference the portions of the ACT regulation pertaining to the requirements that manufacturers increase their sales of zero-emission MHD vehicles.

Sources Affected and Location

This regulatory program will apply to manufacturers that sell vehicles in Maryland that have a gross vehicle weight rating over 8,500 pounds GVWR.

Documents to Be Incorporated by Reference

A new chapter of COMAR (26.11.43) is being proposed with four sections. Six new Incorporated by Reference documents will be added to COMAR 26.11.43.02

Requirements

Manufacturers of vehicles in weight Classes 2b-8 must meet a sales requirement beginning with the 2027 model year. The sales requirement means that a certain percentage of vehicles in classes 2b-8 must be zero emission. The sales percentage requirement gradually increases through the 2035 model year and varies by vehicle class. Beginning with the 2027 model year, manufacturers subject to this rule would incur deficits for each vehicle sold. These deficits must be met with credits generated from selling MHD ZEV or near zero emission vehicles (NZEVs). Medium- and heavy-duty ZEV and NZEV credits may be generated, banked, and traded in Maryland by manufacturers. Excess credits generated would have a limited lifetime to ensure MHD ZEVs are sold in Maryland. Manufacturers subject to this rule must report sales information and credit trade information annually to MDE to demonstrate compliance. Table 1 shows the ZEV Sales Percentage requirements.

Table 1: ZEV Sales Percentage by Truck Class.

MY	Class 2b-3	Class 4-8	Class 4-8 Tractors
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2027	15%	20%	15%
2028	20%	30%	20%
2029	25%	40%	25%
2030	30%	50%	30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035+	55%	75%	40%

Projected Emission Reductions

Adopting ACT in Maryland will result in a significant reduction of harmful emissions associated with MHD trucks and help Maryland attain its air quality and climate goals. The ACT program will reduce NO_x, PM_{2.5} (fine particles), and GHG emissions from the mobile source sector as cleaner, zero-emission trucks replace older internal combustion powered vehicles. In support of Maryland adopting ACT, the International Council on Clean Transportation (ICCT) developed estimates of emissions benefits associated with Maryland adopting ACT (<https://theicct.org/benefits-ca-multi-state-reg-data/>).

Table 2: Projected Tank-to-Wheel CO₂e Emission Benefits:

Year	CO ₂ e Reductions (million metric tonnes/year)	Percentage Reduction from Baseline per year
2027	.02	.2%
2030	.07	.7%
2035	.4	4.2%
2040	.8	8.0%
2045	1.18	11.3%
2050	1.49	13.6%

Table 3: Projected Tank-to-Wheel NO_x Emission Benefits:

Year	NO _x Reductions (short tons/year)	Percentage Reduction from Baseline per year
2027	30	.2%
2030	120	.8%
2035	550	4.1%
2040	1,010	7.5%
2045	1,440	10.4%
2050	1,810	12.4%

Table 4: Projected Tank-to-Wheel PM_{2.5} Emission Benefits:

Year	PM _{2.5} Reductions (short tons/year)	Percentage Reduction from Baseline per year
2027	1	.2%
2030	2	.7%
2035	7	3.0%
2040	11	5.0%
2045	16	7.1%
2050	20	8.6%

Estimate of Economic Impact

I. Summary of Economic Impact. MDE anticipates the proposed rulemaking will have a fiscal impact. Entities directly affected by the rule, such as MHD truck manufacturers, fleet owners and operators, and government agencies, among others, will experience increased costs related to the purchase of MHD trucks. There are no direct costs anticipated for the public; however, as the rule only applies to truck manufacturers, the additional manufacturing costs may be passed on to those who purchase MHD trucks, truck dealers, and the public.

The upfront costs of ZEVs are higher than those of conventional vehicles due to higher battery costs and charging infrastructure. It is anticipated that the initial purchase price of MHD ZEVs will decrease over time as technology advances, battery costs decline, and economy of scale improves. When taking into account reduced fuel and maintenance costs, MHD ZEVs are expected to have a total cost of ownership less than that of conventionally fueled trucks. The proposed rulemaking will result in increased manufacturing costs; however, incentives on both the state and federal levels can help reduce this cost by lowering the purchase

price, thereby reducing the incremental cost, as well as reducing the cost of charging equipment. For example, the Clean Transportation and Energy Act (c. 98, eff. July 1, 2023) will provide at least \$10 million dollars annually for incentives for both MHD trucks and charging infrastructure.

The proposed rule will result in more MHD ZEVs in use in Maryland. More ZEVs on the road will help Maryland address its climate emission goals as well as reduce criteria pollutants which have harmful health impacts on the citizens of Maryland and Maryland's economy.

The Clean Trucks Act of 2023 requires MDE to adopt the ACT regulations by December 1, 2023. The Clean Trucks Act of 2023 also requires MDE, in consultation with specified State agencies (Maryland Department of Transportation, Department of General Services, Maryland Energy Administration, and the Public Service Commission), to prepare a needs assessment and deployment plan relating to the successful implementation of the regulations and submit the plan to the General Assembly by December 31, 2024. One element of the plan requires MDE to assess the purchase incentives and other mechanisms recommended to successfully implement the regulations, including incentives for recharging and refueling stations and related infrastructure, and the existing and potential sources of funding for those incentives and mechanisms.

The overall costs and benefits associated with Maryland's adoption of the ACT regulation below were estimated by applying a scaling factor to California's estimates. MDE compared annual vehicle miles traveled by MHD trucks in Maryland to the annual vehicle miles traveled by MHD trucks in California and calculated a scaling factor of 0.22. Using this scaling factor, the Department was able to estimate the economic impact of this program from 2027—2040. The scaling factor was applied to many other areas impacted by the use of ZEVs, including maintenance facility upgrade costs, midlife service costs, electric vehicle supply equipment infrastructure and maintenance costs, and transition and workforce development costs. Cost savings associated with the regulations include Phase 2 GHG compliance savings, reduced maintenance costs per vehicle, and fuel cost savings.

II. Types of Economic Impact.

Impacted Entity	Revenue (R+/R-) Expenditure (E+/E-)	Magnitude
A. On issuing agency:	(E+)	\$160,000
B. On other State agencies:	(E+)	Indeterminable
C. On local governments:	(E+)	Indeterminable
	Benefit (+) Cost (-)	Magnitude
D. On regulated industries or trade groups:	(-)	\$1.76 billion
E. On other industries or trade groups:		
(1) ZEV Consumers	(+)	\$3.37 billion
(2) Other Industries	(-)	\$129 million
(3) Utilities and fuel providers	(-)	\$2.1 billion
F. Direct and indirect effects on public:		
Public health	(+)	Indeterminable

III. Assumptions. (Identified by Impact Letter and Number from Section II.)

A. MDE will require additional staff resources to administer the ACT Program. The staff will oversee the implementation of the program. Staff are needed to verify compliance reports and oversee the credit, banking, and trading program available for manufacturers to meet compliance.

B and C. The ACT regulation does not require these agencies to purchase ZEV trucks. However, those that do choose to purchase them will incur higher upfront costs as well as costs related to refueling infrastructure. These costs are expected to be partially offset by reduced operating costs due to cheaper fuel and reduced maintenance costs. State and federal incentives have the potential to further reduce the increased upfront costs.

D. The California Air Resources Board (CARB) estimates ten large truck manufacturers are regulated entities and will sell vehicles affected by the rules. There will be additional costs associated with the production of these vehicles (\$1.9 billion). Manufacturers will have some savings since they also have to comply with the federal Phase 2 GHG standards (\$125 million). The incremental cost of requiring MHD ZEV sales in Maryland, factoring in the Phase 2 GHG standards savings, is estimated at \$1.76 billion.

E(1). ZEV consumers are expected to see fuel savings due to the replacement of diesel and gasoline fuels with electricity and hydrogen fuel (\$2.75 billion). Additionally, the maintenance cost of battery electric vehicles is expected to be lower compared to diesel and gasoline fueled vehicles due to fewer moving parts and reduced routine maintenance (\$825 million). MHD vehicles also

often have their main propulsion components rebuilt or replaced about halfway through their lifecycle. This midlife cost includes engine rebuild for diesel vehicles, battery pack replacement for battery electric vehicles, and fuel cell stack refurbishment for hydrogen fuel-cell vehicles (\$199 million). The fuel and maintenance savings combined with the expenditure for midlife costs are estimated to provide savings of \$3.37 billion.

E(2). Other Industries. To accommodate ZEVs, maintenance facilities will require upgrades to safety equipment, diagnostic tools, and other electric vehicle servicing equipment (\$122 million). There are other transitioning and workforce development costs associated with the new technologies (\$7 million). The combined costs for these other impacted industries are estimated at \$129 million.

E(3). Utilities and Fuel Providers. ZEVs require specialty fueling infrastructure. Battery electrics require electric supply equipment, including upgrades to service panels and utility connections that may be required to upgrade their electrical distribution network. Hydrogen fuel cells require high pressure hydrogen fueling stations to refill hydrogen storage tanks. The estimated refueling infrastructure installation and maintenance costs are expected to be \$2.1 billion.

F. These regulations will have a positive effect on public health due to reduced emissions that contribute to health and respiratory issues.

Economic Impact on Small Businesses

The proposed action has a meaningful economic impact on small businesses. An analysis of this economic impact follows:

Small businesses that choose to purchase ZEV trucks will face the same impacts as other ZEV truck consumers. ZEV trucks have higher initial costs compared to diesel trucks, but reduced fuel and maintenance costs, along with other benefits and incentives, will reduce this initial burden. The ACT regulation does not mandate ZEV purchases; therefore, small businesses will be able to decide for themselves if purchasing a ZEV truck makes financial sense based on their own business model.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

The Department will hold a virtual public hearing and comment period. Comments may be sent to Tim Shepherd, Division Chief, Mobile Sources Control Program, Air and Radiation Administration, 1800 Washington Blvd., Suite 705, Baltimore, MD 21230-1720, or fax 410-537- 4435, or call 410-537-3270, or email to mde.mobilecomments@maryland.gov. Comments will be accepted through October 11, 2023.

The Maryland Department of the Environment will hold a virtual public hearing on the proposed action on October 11, 2023, at 10 a.m.

Please join the meeting from your computer, tablet or smartphone.

<https://meet.goto.com/966883773>

You can also dial in using your phone.

Access Code: 966-883-773

United States (Toll Free): 1 866 899 4679

Interested persons are invited to attend and express their views. Comments must be received by 5 p.m. on October 11, 2023, or submitted at the hearing. For more information contact Mr. Tim Shepherd, Division Chief, Mobile Sources Control Program, at 410-537-3270.

Copies of the proposed action and supporting documents are available for review at the Maryland Department of the Environment's website at <http://www.mde.state.md.us/programs/regulations/air/Pages/reqcomments.aspx>. Persons needing special accommodations at the public hearing should contact the Department's Fair Practices Office at 410-537-3964. TTY users may contact the Department through the Maryland Relay Service at 1-800-735-2258.

Editor's Note on Incorporation by Reference

Pursuant to State Government Article, §7-207, Annotated Code of Maryland, the following have been declared documents generally available to the public and appropriate for incorporation by reference. For this reason, they will not be printed in the Maryland Register or the Code of Maryland Regulations (COMAR).

(1) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963 Advanced Clean Trucks Purpose, Applicability, Definitions, and General Requirements, as effective March 15, 2021.

(2) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.1 Advanced Clean Truck Deficits, as effective March 15, 2021.

(3) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.2 Advanced Clean Trucks Credit Generation, Banking, and Trading, as effective March 15, 2021.

(4) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.3 Advanced Clean Trucks Compliance Determination, as effective March 15, 2021.

(5) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.4 Advanced Clean Trucks Reporting and Recordkeeping, as effective March 15, 2021.

(6) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.5 Advanced Clean Trucks Enforcement, as effective March 15, 2021.

Copies of these documents are filed in special public depositories located throughout the State. A list of these depositories was published in 50:1 Md. R. 7 (January 13, 2023), and is available online at www.dsd.state.md.us. These documents may also be inspected at the office of the Division of State Documents, 16 Francis Street, Annapolis, Maryland 21401.

.01 Purpose.

The purpose of this chapter is to implement the requirements of the Maryland Clean Trucks Act of 2023 by establishing regulations implementing California's Advanced Clean Truck regulation.

.02 Incorporation by Reference.

A. In this chapter, the following documents are incorporated by reference.

B. Documents Incorporated.

(1) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963 Advanced Clean Trucks Purpose, Applicability, Definitions, and General Requirements, as effective March 15, 2021.

(2) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.1 Advanced Clean Truck Deficits, as effective March 15, 2021.

(3) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.2 Advanced Clean Trucks Credit Generation, Banking, and Trading, as effective March 15, 2021.

(4) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.3 Advanced Clean Trucks Compliance Determination, as effective March 15, 2021.

(5) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.4 Advanced Clean Trucks Reporting and Recordkeeping, as effective March 15, 2021.

(6) Title 13, California Code of Regulations (CCR), Division 3, Chapter 1, Article 2, §1963.5 Advanced Clean Trucks Enforcement, as effective March 15, 2021.

C. In all provisions of CCR Title 13 incorporated by reference, replace the year "2021" with the year "2027," except at 13 CCR §1963.2(g) and 13 CCR §1963.2(e).

D. Unless specifically excluded by this chapter, when a provision of the CCR is incorporated by reference, all notes, comments, appendices, diagrams, tables, forms, figures, publications, and cross-references are also incorporated by reference.

.03 Definitions.

A. In General.

(1) In this chapter, the following terms have the meanings indicated.

(2) Any term that is not defined in this regulation shall be as defined in the California documents incorporated by reference in Regulation .02 of this chapter.

(3) Definitions in the California documents shall prevail in any case of discrepancy.

B. Terms Defined.

(1) "California Air Resources Board" or "CARB" means the agency, or its successor agency, established and empowered to regulate sources of air pollution in the State of California, including motor vehicles, pursuant to the California Health and Safety Code §39003, as amended or supplemented.

(2) "CCR" means the California Code of Regulations.

(3) "Class 2b-3" means an on-road vehicle with a GVWR that is 8,501 pounds up to 14,000 pounds.

(4) "Class 2b-3 group" means the group of all on-road vehicles with a GVWR that is 8,501 pounds up to 14,000 pounds.

(5) "Class 4" means an on-road vehicle with a GVWR that is 14,001 pounds up to 16,000 pounds.

(6) "Class 4-8 group" means the group of all on-road vehicles with a GVWR that is 14,001 pounds and above, including "yard tractors" as defined in 13 CCR §1963(c)(20), except for a "tractor" as defined in 13 CCR §1963(c)(18).

(7) "Class 5" means an on-road vehicle with a GVWR that is 16,001 pounds up to 19,500 pounds.

(8) "Class 6" means an on-road vehicle with a GVWR that is 19,501 pounds up to 26,000 pounds.

(9) "Class 7" means an on-road vehicle with a GVWR that is 26,001 pounds up to 33,000 pounds.

(10) "Class 7-8 tractor group" means a group of on-road vehicles, that have a GVWR 26,001 pounds and above, including all vehicles that meet the definition of "tractor" as defined in 13 CCR §1963(c)(18), except "yard tractors" as defined in 13 CCR §1963(c)(20).

(11) "Class 8" means an on-road vehicle with a GVWR that is 33,001 pounds and above.

(12) "Department" means the Maryland Department of the Environment.

(13) "Executive Officer" means the Executive Officer of the California Air Resources Board as used in California-adopted statutes, regulations, and procedures related to the California Standards. This meaning is extended for purposes of the application of California Standards in Maryland to include the Secretary, who shall act as the agent of the California Executive Officer in Maryland.

(14) "GVWR" means the same as the term "gross vehicle weight rating" as defined at 13 CCR §1963(c).

(15) "Model year (MY)" means the following: For tractors and vocational vehicles with a date of manufacture on or after January 1, 2021, the vehicle's model year is the calendar year corresponding to the date of manufacture; however, the vehicle's model year may be designated to be the year before the calendar year corresponding to the date of manufacture if the engine's model year is also from an earlier year. Note that 40 Code of Federal Regulations (CFR) §1037.601(a)(2), as amended October 25, 2016, limits the extent to which vehicle manufacturers may install engines built in earlier calendar years.

(16) "NZEV" means the same as the term "near-zero-emission vehicle" as defined at 13 CCR §1963(c).

(17) "Ultimate purchaser" means in respect to any vehicle, the first person who in good faith purchases a new motor vehicle for purposes other than resale and registers it with the Maryland Motor Vehicle Administration.

(18) "ZEV" means the same as the term "zero-emission vehicle" as defined at 13 CCR §1963(c).

.04 Applicability and Exemptions.

A. Applicability.

(1) Except as provided in §B of this regulation, this chapter applies to all manufacturers that produce 2027 and subsequent model year on-road vehicles over 8,500 pounds GVWR for sale in Maryland that are subject to the California Advanced Clean Truck regulation.

(2) Beginning with model year 2026, any manufacturer that produces on-road vehicles over 8,500 pounds GVWR may generate, bank, and trade ZEV and NZEV credits pursuant to 13 CCR §1963.2, as incorporated by reference in this chapter.

(3) In the event that there are inconsistencies or duplications in the requirements of the provisions incorporated by reference from the CCR and the rules set forth in this chapter, the provisions incorporated by reference from the CCR shall prevail.

B. Exemptions. This chapter does not apply to the following vehicles:

(1) An emergency vehicle;

(2) A vehicle defined as an "excluded bus" pursuant to 13 CCR §1963(c)(11); and

(3) A vehicle designed exclusively for off-highway use.

.05 Advanced Clean Trucks Reporting and Recordkeeping.

A. Sales Reporting. Beginning with the 2027 model year, and no later than 90 days following the end of each model year, a manufacturer shall report the following information to the Department for each on-road vehicle produced and delivered for sale in Maryland for each model year, except as provided in 13 CCR §1963.4(e):

(1) Vehicle Identification Number (VIN) for each vehicle;

(2) Vehicle weight class;

(3) Whether the vehicle type is a tractor, yard tractor, or is another vehicle type;

(4) Fuel and drivetrain type;

(5) Volume produced and delivered for sale in Maryland for the vehicle type; and

(6) If the vehicle is a NZEV, the tested all-electric range of the vehicle.

B. Credit Transfer Reporting.

(1) A manufacturer that transfers to or receives ZEV or NZEV added credits from another manufacturer shall submit to the Executive Officer an annual report of all credit trades, transfers, and transactions.

(2) The Department will not recognize any credit transfers until the report is received.

(3) Reports shall be submitted no later than 90 days following the end of each model year to demonstrate compliance.

(4) Manufacturers that transfer or receive ZEV or NZEV credits shall submit a letter or document signed by authorized agents of both parties to the transaction summarizing the transfer, which shall include the following:

(a) Corporate name of credit transferor;

(b) Corporate name of credit transferee;

(c) Number of ZEV credits transferred for each model year, rounded to the nearest tenth according to 13 CCR §1963.2(c);

(d) Number of NZEV credits transferred for each model year, rounded to the nearest tenth according to 13 CCR §1963.2(c); and

(e) Indication of whether the ZEV or NZEV credits are Class 7-8 Tractor credits, or other credits.

C. Class 2b-3 Credit Declaration. A manufacturer that generates ZEV or NZEV credits from the Class 2b-3 group shall submit no later than 90 days following the end of each model year a declaration to the Executive Officer which includes:

(1) The number of on-road vehicles produced and delivered for sale in Maryland to generate credits according to 13 CCR §1963.2; and

(2) The number of on-road vehicles produced and delivered for sale in Maryland to generate credits according to 13 CCR §1962.2.

D. Retention of Records. Records of reported information required in 13 CCR §1963.4 and documentation showing vehicle delivery to the ultimate purchaser at a location in Maryland shall be kept by manufacturers for the Department to audit for a period of 8 years from the end of the model year the vehicles were produced.

E. Grouped Sales Reporting.

(1) Manufacturers may optionally submit information required in 13 CCR §1963.4(a) grouped by categories for vehicles that are not ZEVs or NZEVs without providing individual VINs.

(2) If exercising the option in §E(1) of this regulation, manufacturers shall still retain records available for the Department to audit, including the individual VINs according to 13 CCR §1963.4(d).

SERENA McILWAIN
Secretary of the Environment