6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Section 200.9, Referenced Material

Express Terms Summary

The New York State Department of Environmental Conservation (Department) is proposing to amend 6 NYCRR Part 218 and Section 200.9. Section 200.9 is a list that cites Federal and California codes and regulations that have been referenced by the Department while amending Part 218. The purpose of the amendment is to revise the existing low emission vehicle (LEV) program to incorporate California's Advanced Clean Truck (ACT) medium- and heavy-duty zero emission vehicle (ZEV) standards. The Department is amending Sections 218-1.1, Applicability; 218-2.1, Prohibitions; 218-4.1, ZEV percentages; and adding a new 218-4.2, Large Entity Reporting Requirement. The remaining Sections in Part 218 are unchanged.

Section 218-1.1(a) is amended to include ZEV standards for 2025 and subsequent model year medium- and heavy-duty trucks and to correct miscellaneous typographical errors.

Section 218-2.1(a) is amended to update the sections being incorporated by reference from the California Code of Regulations.

Section 218-4.1 is amended to incorporate California's latest (ZEV) standards for medium- and heavy-duty trucks. The proposed ACT amendments would introduce ZEV sales requirements for all manufacturers that sell vehicles in weight classes 2b through 8 (gross vehicle weight rating (GVWR) > 8,500 lbs.) in New York. The sales requirement would be a percentage, varying by model year, vehicle class, and vehicle type of the manufacturer's annual New York sales volume for that model year. Starting with MY 2025 in New York, manufacturers would incur deficits for each vehicle sold that must be met with credits generated from selling

medium- and heavy-duty ZEVs or near zero emission vehicles (NZEVs).

Medium- and heavy-duty ZEV and NZEV credits may be generated, banked, and traded in New York by manufacturers. Credits would have a limited lifetime to ensure medium and heavy-duty ZEVs are sold in New York. Manufacturers subject to the sales requirement must report sales information and credit trade information annually to the Department to demonstrate compliance.

Section 218-4.2 is being added. The proposed ACT amendments include a one-time large entity reporting requirement that applies to large fleet owners. Subject entities must report information regarding vehicle ownership and operation, as well as company-wide information about their New York locations and how they and their contractors move freight and perform other services. The extent of reporting will vary based on size of the company and truck ownership. State and local government agencies would also be required to report.

6 NYCRR Part 218, Emissions Standards for Motor Vehicles and Motor Vehicle Engines

Express Terms

(Statutory Authority: Environmental Conservation Law Sections 1-0101, 1-0303, 3-0301, 19-0103, 19-0105, 19-0107, 19-0301, 19-0303, 19-0305, 19-1101, 19-1103, 19-1105, 71-2103, 71-2105; Federal Clean Air Act Section 177)

Section 218-1.1(a) is amended to read:

This Part applies to all 1993, 1994, 1996 and subsequent model-year motor vehicles that are passenger cars and light-duty trucks, motor vehicle engines, and air contaminant emission control systems; to all 2004 and subsequent model-year motor vehicles which are medium-duty vehicles, motor vehicle engines, and air contaminant emission control systems; to all 2005 and subsequent model-year motor vehicles which are heavy-duty [o]Otto-cycle engines or vehicles which use such engines; and to all 2005 through 2007 model-year motor vehicles which are heavy-duty [d]Diesel-cycle engines [of] or vehicles which use such engines; and 2025 and subsequent model-year motor vehicles which are heavy-duty on-road zero emission vehicles which use such engines offered for sale or lease, or sold, or leased, for registration in this State. In the 1993 model-year, this regulation will only be effective against those engine families that are first produced more than two years from November 22, 1990.

Sections 218-1.1(b) through 218-1.2(bi) remain unchanged.

Section 218-2.1(a) is amended to read:

It is unlawful for any person to sell or register, offer for sale or lease, import, deliver, purchase, rent, lease, acquire or receive a 1993, 1994, 1996 or subsequent model-year, new or used motor vehicle, new motor vehicle engine or motor vehicle with a new motor vehicle engine in the State of New York which is not certified to California emission standards and meets all other applicable requirements of California Code of Regulations, title 13, sections 1956.8, 1956.9¸1960.1, 1960.1.5, 1960.5, 1961, 1961.1, 1961.2, 1961.3, 1962, 1962.1, 1962.2, 1963, 1963.1, 1963.2, 1963.3, 1963.4, 1963.5, 1964, 1965, 1968.1, 1968.2, 1971.1, 1976, 1978, 2030, 2031, 2047, 2065, 2235 and article 1.5 (see Table 1, section 200.9 of this Title) and is otherwise not in compliance with the Environmental Conservation Law and these departmental regulations[, unless the vehicle is sold to another dealer, sold for the purpose of being wrecked or dismantled, sold exclusively for off-highway use or sold for registration out of state]. Vehicles that have been certified to standards promulgated pursuant to the authority contained in 42 USC 7521 (see Table 1, section 200.9 of this Title) and that are in the possession of a rental agency in New York that are next rented with a final destination outside of New York will not be deemed as being in violation of this prohibition.

Sections 218-2.1(b) through 218-3.3(b) remain unchanged.

Section 218-4.1 is amended to read:

(a) Commencing in model-year 2007, each manufacturer's sales fleet of passenger cars and light-duty trucks, produced and delivered for sale in New York, must, at minimum, contain at least the same percentage of ZEVs subject to the same requirements set forth in California Code of Regulations, title 13, sections, 1962, 1962.1, and 1962.2 (see Table 1, section 200.9 of this Title) using New York specific vehicle numbers.

(b) Commencing in model-year 2025 each manufacturer's sales fleet of medium-duty and heavy-duty vehicles, produced and delivered for sale in New York, must, at minimum, contain at least the same percentage of ZEVs subject to the same requirements set forth in California Code of Regulations, title 13, sections 1963, 1963.1, 1963.2, 1963.3, 1963.4 and 1963.5 (see Table 1, section 200.9 of this Title) using New York specific vehicle numbers.

Section 218-4.2 is amended to read:

Section 218-4.2 Large entity vehicle reporting

The purpose of large entity vehicle reporting is to collect information to assess suitability of zero-emission vehicles in multiple use cases and to inform future strategies on how to accelerate the zero-emission vehicle market in New York. All regulated entities must submit information set forth in California Code of Regulations, title 13, sections 2012, 2012.1, and 2012.2 (see Table 1, section 200.9 of this Title) to the department. Complete information must be reported by April 1, 2022. Vehicle data must be reported as the fleet was comprised on a date of the fleet owner's choosing any time after January 1, 2019. Entities may choose to designate confidential business information in the report as confidential per 6 New York Codes, Rules and Regulations (NYCRR) Part 616. Reports must be submitted online through the department's website.

Subpart 218-5 through Subpart 218-12 remain unchanged.

6 NYCRR Part 200, General Provisions

Express Terms

(Sections 200.1 through 200.8 remain unchanged)

Section 200.9, Table 1 is amended to read as follows:

218-1.2(d)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
218-1.2(e)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
218-1.2(f)	Clean Air Act 42 U.S.C. Section 7543 (1988) as amended by Pub. L. 101-549 (1990)	**
	Clean Air Act 42 U.S.C. Section 7507 (1988) as amended by Pub. L. 101-549 (1990)	**
218-1.2(g)	California Health and Safety Code, Section 39003 (1975)	** †
218-1.2(j)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] <u>(7-25-16)</u>	** ***
218-1.2(l)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
218-1.2(m)	California Vehicle Code, Section 165 (2013)	** †
218-1.2(n)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] <u>(7-25-16)</u>	** ***

218-1.2(q)	California Code of Regulations, Title 13, Section 1962.1 (1-1-16)	** ***
218-1.2(w)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-1.2(y)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-1.2(z)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-1.2(ab)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-1.2(ac)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-1.2(ad)	California Code of Regulations, Title 13, Section 1905 (7-3-96)	** ***
218-1.2(af)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-1.2(aj)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
218-1.2(ak)	California Code of Regulations, Title 13, Section 1960.5 (10-16-02)	** ***
218-1.2(ap)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***

218-1.2(aq)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-1.2(at)	40 CFR Section 86.1827-01 (2-26-07)	*
218-1.2(az)	California Code of Regulations, Title 13, Section 2112 [(12-5-14)] (4-1-19)	** ***
218-1.2(bc)	California Code of Regulations, Title 13, Section 1962 (2-3-10)	** ***
218-1.2(bd)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-1.2(be)	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] (10-1-19)	** ***
218-1.2(bf)	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] (10-1-19)	** ***
218-1.2(bg)	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] (10-1-19)	** ***
218-1.2(bh)	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] (10-1-19)	** ***
218-1.2(bi)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] (7-25-16)	** ***
218-2.1(a)	California Code of Regulations, Title 13, Section 1956.8 [(10-7-06)] (4-1-20)	** ***
	California Code of Regulations, Title 13, Section 1956.9 (3-6-96)	** ***

	California Code of Regulations, Title 13, Section 1960.1 (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1960.1.5 (9-30-91)	** ***
	California Code of Regulations, Title 13, Section 1960.5 (10-16-02)	** ***
	California Code of Regulations, Title 13, Section 1961 (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(10-8-15)] (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 1961.3 (12-12-18)	** ***
	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
	California Code of Regulations, Title 13, Section 1962.1 (1-1-16)	** ***
	California Code of Regulations, Title 13, Section 1962.2 (1-1-16)	** ***
	California Code of Regulations, Title 13, Section 1963 (3-15-21)	** ***

	California Code of Regulations, Title 13, Section 1963.1 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.2 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.3 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.4 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.5 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1964 (2-23-90)	** ***
	California Code of Regulations, Title 13, Section 1965 [(10-8-15)] (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 1968.1 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 1968.2 [(7-31-13)] (10-3-19)	** ***
	California Code of Regulations, Title 13, Section 1971.1 (10-3-19)	** ***
	California Code of Regulations, Title 13, Section 1976 (10-8-15)	** ***

	California Code of Regulations, Title 13, Section 1978 (10-8-15)	** ***
	California Code of Regulations, Title 13, Section 2030 (9-5-14)	** ***
	California Code of Regulations, Title 13, Section 2031 (9-5-14)	** ***
	California Code of Regulations, Title 13, Section 2047 (5-31-88)	** ***
	California Code of Regulations, Title 13, Section 2065 [(12-04-03)] (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 2235 [(8-8-12)] (10-1-19)	** ***
	Clean Air Act 42 U.S.C. Section 7521 (1988) as amended by Pub. L. 101-549 (1990)	**
218-2.1(b)(5)	Clean Air Act 42 U.S.C. Section 7401 *et. seq.* (1988) as amended by Pub. L. 101-549 (1990)	**
218-2.1(b)(8)	California Health and Safety Code, Section 43656 (1975)	***
218-2.1(d)	Clean Air Act 42 U.S.C. Section 7507 (1988) as amended by Pub. L. 101-549 (1990)	**
218-2.4	California Health and Safety Code, Section 43014 (1976)	** †

218-3.1	California Code of Regulations, Title 13, Section 1960.1(g)(2) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961(b)(1) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(10-8-15)] (4-1-19)	** ***
218-3.1(a)	California Code of Regulations, Title 13, Section 1960.1(g)(1) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(10-8-15)] (4-1-19)	** ***
218-3.1(b)	California Code of Regulations, Title 13, Section 1960.1(g)(2) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961(b) (12-31-12)	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(10-8-15)] (4-1-19)	** ***
218-4.1(a)	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
	California Code of Regulations, Title 13, Section 1962.1 (1-1-16)	** ***
	California Code of Regulations, Title 13, Section 1962.2 (1-1-16)	** ***

218-4.1(b)	California Code of Regulations, Title 13, Section 1963 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.1 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.2 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.3 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.4 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 1963.5 (3-15-21)	** ***
218-4.2	California Code of Regulations, Title 13, Section 2012 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 2012.1 (3-15-21)	** ***
	California Code of Regulations, Title 13, Section 2012.2 (3-15-21)	** ***
218-5.1(a)	California Code of Regulations, Title 13, Section 2061 (10-23-96)	** ***
	California Code of Regulations, Title 13, Section 2062 (8-7-12)	** ***

	California Code of Regulations, Title 13, Section 2065 [(12-04-03)] (4-1-19)	** ***
218-5.2(a)	California Code of Regulations, Title 13, Section 2065 [(12-04-03)] (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 2109 (12-30-83)	** ***
	California Code of Regulations, Title 13, Section 2110 (11-27-99)	** ***
218-5.2(b)(1)	California Code of Regulations, Title 13, Section 2106 (11-27-99)	** ***
218-5.3(b)	California Code of Regulations, Title 13, Section 2101 (11-27-99)	** ***
218-6.2	Clean Air Act 42 U.S.C. Section 7401 *et. seq*. (1988) as amended by Pub. L. 101-549 (1990)	**
218-7.2(c)(1)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] (1-1-19)	** ***
218-7.2(c)(2)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] (1-1-19)	** ***
218-7.1(c)(8)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] (1-1-19)	** ***
218-7.3(a)(1)	California Code of Regulations, Title 13, Section 2221 (12-30-83)	** ***

	California Code of Regulations, Title 13, Section 2224 (8-16-90)	** ***
218-7.3(a)(2)	California Code of Regulations, Title 13, Section 2224(a) (8-16-90)	** ***
218-7.4(b)(3)(i)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] (1-1-19)	** ***
218-7.4(b)(3)(ii)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] (1-1-19)	** ***
218-7.5(b)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] (1-1-19)	** ***
218-8.1(a)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
218-8.1(b)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
218-8.2	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 [(12-31-12)] (12-12-18)	** ***
218-8.3(a)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 [(12-31-12)] (12-12-18)	** ***

218-8.3(b)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 [(12-31-12)] (12-12-18)	** ***
218-8.3(c)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 [(12-31-12)] (12-12-18)	** ***
218-8.3(d)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 [(12-31-12)] (12-12-18)	** ***
218-8.4(a)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
218-8.4(b)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
218-8.5(c)	California Code of Regulations, Title 13, Section 1961.1 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 1961.3 [(12-31-12)] (12-12-18)	** ***
218-9.1	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] (10-1-19)	** ***

	California Code of Regulations, Title 13, Section 2037 [(12-5-14)] (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 2038 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 2039 (12-26-90)	** ***
	California Code of Regulations, Title 13, Section 2040 [(12-26-90)] (10-1-19)	** ***
	California Code of Regulations, Title 13, Section 2041 (12-26-90)	** ***
	California Code of Regulations, Title 13, Section 2046 (2-16-79)	** ***
218-9.2	California Code of Regulations, Title 13, Section 2140 (12-5-14)	** ***
	California Code of Regulations, Title 13, Section 2141 [(12-8-10)] (4-1-19)	** ***
	California Code of Regulations, Title 13, Section 2142 (2-23-90)	** ***
	California Code of Regulations, Title 13, Section 2143 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2144 (11-27-99)	** ***

	California Code of Regulations, Title 13, Section 2145 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 2146 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2147 (12-5-14)	** ***
	California Code of Regulations, Title 13, Section 2148 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2149 [(2-3-90)] <u>(2-23-90)</u>	** ***
218-10.1	California Code of Regulations, Title 13, Section 2109 (12-30-83)	** ***
	California Code of Regulations, Title 13, Section 2110 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2111 (12-8-10)	** ***
	California Code of Regulations, Title 13, Section 2112 [(12-5-14)] <u>(4-1-19)</u>	** ***
	California Code of Regulations, Title 13, Section 2113 (1-26-95)	** ***
	California Code of Regulations, Title 13, Section 2114 (11-27-99)	** ***

California Code of Regulations, Title 13, Section 2115 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2116 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2117 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2118 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2119 (11-27-99)	** ***
California Code of Regulations, Title 13, Section 2120 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2121 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2122 (12-8-10)	** ***
California Code of Regulations, Title 13, Section 2123 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2124 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2125 (1-26-95)	** ***

California Code of Regulations, Title 13, Section 2126 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2127 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2128 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2129 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2130 (11-27-99)	** ***
California Code of Regulations, Title 13, Section 2131 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2132 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2133 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2134 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2135 (1-26-95)	** ***
California Code of Regulations, Title 13, Section 2136 (12-8-10)	** ***

	California Code of Regulations, Title 13, Section 2137 (12-28-00)	** ***
	California Code of Regulations, Title 13, Section 2138 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2139 (12-5-14)	** ***
	California Code of Regulations, Title 13, Section 2140 (12-5-14)	** ***
218-10.2	California Code of Regulations, Title 13, Section 2141 [(12-8-10)] <u>(4-1-19)</u>	** ***
	California Code of Regulations, Title 13, Section 2142 (2-23-90)	** ***
	California Code of Regulations, Title 13, Section 2143 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2144 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2145 (8-7-12)	** ***
	California Code of Regulations, Title 13, Section 2146 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2147 (12-5-14)	** ***

	California Code of Regulations, Title 13, Section 2148 (11-27-99)	** ***
	California Code of Regulations, Title 13, Section 2149 [(2-3-90)] (2-23-90)	** ***
218-11.1	California Code of Regulations, Title 13, Section 1965 [(10-8-15)] (4-1-19)	** ***
218-11.2	California Code of Regulations, Title 13, Section 1965 [(10-8-15)] (4-1-19)	** ***

Regulatory Impact Statement Summary

6 NYCRR Part 218, Emissions Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

The New York State Department of Environmental Conservation (DEC or the Department) proposes to amend Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 218, "Emissions Standards for Motor Vehicles and Motor Vehicle Engines", and Part 200, "General Provisions". These amendments further the goals of reducing air pollution from motor vehicles, including criteria pollutants and greenhouse gases (GHGs), by incorporating California's medium- and heavy-duty zero emission vehicle (ZEV) regulation, known as "Advanced Clean Trucks" (ACT). The amendments are consistent with the requirements of the Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (CLCPA or Climate Act), to further reduce greenhouse gas (GHG) emissions in the State. The CLCPA emphasizes reducing greenhouse gas emissions and co-pollutants in disadvantaged communities including requiring all state agencies to not disproportionately burden disadvantaged communities when considering and issuing permits, licenses, and other administrative approvals and decisions.

The proposed amendments establish annual ZEV sales requirements in New York State for truck manufacturers. Manufacturers will be required to meet a certain sales percentage of ZEV trucks, which will vary among vehicle weight classes, beginning with model year (MY) 2025, and increasing annually through MY 2035.

The proposed amendments also establish a one-time large entity fleet reporting requirement. Subject entities will be required to submit a one-time report to the Department detailing information that will help identify future strategies to accelerate adoption of zero emission medium- and heavy-duty vehicles.

The United States Environmental Protection Agency (EPA)'s 2017 National Emissions Inventory (NEI) data estimated that on-road medium- and heavy- duty vehicles emitted approximately 13.6 million tons of GHG (when measured in CO_2e GWP100, rather than the GWP20 required by the Climate Act) in New York. The CLCPA defines "carbon dioxide equivalent" (CO_2e) as a measurement of global warming potential (GWP) based on a twenty-year timeframe (GWP20), rather than a one hundred-year timeframe (GWP100). The transportation sector accounts for at least 27 percent of all GHG emissions in New York State when measured pursuant to the Climate Act and Part 496. Diesel fuel and biodiesel, mainly used by medium- and heavy-duty vehicles, accounts for 21.5 percent of all on-road transportation sector GHG emissions, when measured pursuant to the Climate Act and Part 496.

The 2017 NEI data estimated that on-road medium- and heavy- duty vehicles emitted approximately 40,765 tons of nitrogen oxides (NO_x) and 3,345 tons of fine particulate matter ($PM_{2.5}$) in New York. Medium- and heavy-duty vehicles account for approximately 46 percent of total on-road vehicle NO_x emissions while making up a smaller percentage of vehicles.

New York State has a statewide diesel PM_{10} ambient concentration from on-road medium- and heavy duty vehicles of approximately 0.265 micrograms/meter^3 ($\mu g/m^3$) , which is one of the highest in the nation. $PM_{2.5}$ emissions from on-road mobile sources in the New York City region contribute to approximately 320 deaths and 870 hospitalizations and emergency department visits. Of the 320 deaths attributed to $PM_{2.5}$ emissions, 170 deaths can be associated with buses and trucks.

The proposed ACT amendments would introduce ZEV sales requirements for all manufacturers that sell vehicles in weight classes 2b through 8 (gross vehicle weight rating (GVWR) > 8,500 lbs.) in New York. The sales requirement would be a percentage, varying by model year, vehicle class, and vehicle type of the

manufacturer's annual New York sales volume for that model year. Starting with MY 2025 in New York, manufacturers would incur deficits for each vehicle sold that must be met with credits generated from selling medium- and heavy-duty ZEVs or near zero emission vehicles (NZEVs).

Medium- and heavy-duty ZEV and NZEV credits may be generated, banked, and traded in New York by manufacturers. Credits would have a limited lifetime to ensure medium and heavy-duty ZEVs are sold in New York. Manufacturers subject to the sales requirement must report sales information and credit trade information annually to the Department to demonstrate compliance.

Large entities that operate medium and heavy-duty trucks in New York would be required to submit a one-time reporting requirement. Large entities would include, but not be limited to, retailers, manufacturers, refiners, drayage terminal operators, utility providers, refuse companies, and government agencies.

The Department has estimated the emission reduction benefits associated with the proposed adoption of California's ACT regulation from two sources:

1. By comparing the annual vehicle miles traveled (VMT) of medium- and heavy- duty trucks for New York State to California, a scaling factor can be developed. The Department applied the calculated scaling factor of 0.32 to California's ACT Attachment D emission reductions to estimate New York State emission reductions.

2. The International Council on Clean Transportation (ICCT) utilized EPA's Motor Vehicle Emissions Simulator (MOVES3) model at the county scale using 2017 National Emissions

Inventory representative counties to evaluate New York State's adoption of several California medium- and heavy-duty vehicle regulations, including ACT.

Using the first source, the Department estimates that New York's adoption of ACT would achieve emission benefits of 18,635 tons of NO_x, 349 tons of $PM_{2.5,}$ and 5.52 million metric tons of GHG expressed in carbon dioxide equivalents with a global warming potential based on a one hundred-year timeframe (CO_2e, GWP100) from 2025-2040. California's ACT rulemaking estimates emissions reductions using a 100-year GWP which is standard practice. New York's Climate Act requires emissions be calculated using a 20-year GWP. Estimating emissions from internal combustion engines using a 20-year GWP would increase the emissions reductions realized from the proposed ACT.

The second source estimated that New York's adoption of ACT would achieve emission benefits of 16,210 tons of NO_x, 230 tons of $PM_{2.5,}$ and 17.91 million metric tons of CO_2e, GWP100 from 2025-2040.

Where appropriate, costs and benefits associated with New York's proposed adoption of California's ACT regulation were estimated by applying the VMT-based scaling factor to California values. The scaling factor was applied to incremental ZEV cost, Phase 2 GHG compliance savings, large entity reporting costs, sales and excise tax, vehicle maintenance costs, maintenance bay upgrade costs, midlife service costs, electric vehicle supply equipment infrastructure and maintenance costs, and transition and workforce development costs.

The incremental cost of requiring medium- and heavy-duty ZEV sales in New York is estimated at $2.9 billion from 2025-2040. The Department believes there will be no additional certification costs for manufacturers to comply with ACT in New York. The Department estimates Phase 2 GHG compliance savings

of $201 million to New York for 2025-2040.

Large fleet owners and those large companies that contract for transportation services will be required to report vehicle information and how they are operated. The Department estimates the cost of the one-time ACT reporting requirement in New York to be $4.8 million.

Vehicles purchased in New York are subject to state and local sales tax applied to the vehicle purchase price. The Department estimated combined state/local sales tax of 8.45 percent. Class 8 vehicles are subject to an additional 12 percent federal excise tax. The Department estimates sales and excise tax costs in New York to be $295 million from 2025-2040.

An overall total fuel cost savings is expected due to the replacement of diesel and gasoline fuel with the cost of electricity and hydrogen fuel. The Department estimates an overall savings of $4.07 billion considering all fuel costs in New York from 2025-2040.

Vehicle maintenance costs consist of labor and parts for routine maintenance and repairs. The maintenance costs for battery electric vehicles are predicted to be lower compared to diesel fueled vehicles due to fewer moving parts and a simpler design. The Department estimates vehicle maintenance costs to be a net savings of $1.21 billion in New York from 2025-2040.

Maintenance facilities would require upgrades to safety equipment, diagnostic tools, and other equipment to service electric vehicles. New York costs to upgrade maintenance facilities to service medium and heavy-duty ZEVs are estimated at $180 million from 2025-2040.

Midlife costs represent the cost to rebuild or replace the main propulsion components of vehicles due to wear and deterioration. These include engine rebuild for diesel vehicles; battery pack replacement for battery electric vehicles; and fuel cell stack refurbishment for hydrogen fuel-cell vehicles. The Department estimates midlife costs of $305 million in New York from 2025-2040.

Fleets will need to complete significant infrastructure upgrades to provide fuel for battery-electric and hydrogen fuel cell vehicles. The Department estimates electric vehicle fueling infrastructure installation and maintenance costs of $3.10 billion in New York from 2025-2040.

The cost for transitioning to a new technology and its deployment is assumed to be approximately 2.5 percent of the incremental cost between a diesel truck and ZEV truck of the same class. The Department estimates transitional and workforce development costs in New York to be approximately $12 million from 2025-2040.

Commercial vehicles of all fuel types are subject to registration fees, county use taxes, and supplemental fees depending on their fuel and vehicle weight. Diesel-powered commercial vehicles weighing 8,501 pounds GVWR or more are subject to an additional 3.25 percent increase to the listed registration fee, as required by the New York State Heavy-Duty Vehicle Diesel Emissions Reduction Act (DERA). Under ACT, ZEV purchases would not be subject to the DERA fee applicable to similar weight diesel-powered vehicles. DERA savings are estimated to be approximately $3.4 million from 2025-2040.

ACT adoption would reduce state and local tax and fee revenue from gasoline and diesel sales, while increasing revenue from electricity. The Department estimated the fiscal impact on tax and fee revenue for New York State as a -$250 million offset to benefits for 2025-2040.

The Department estimated the health benefits of reduced NO_x and $PM_{2.5}$ emissions derived from ACT adoption in New York from two sources:

1. California Air Resources Board (CARB)'s ACT Health Benefits
2. Northeast States for Coordinated Air Use Management (NESCAUM) sponsored CO-Benefits Risk Assessment (COBRA) modeling based on ICCT MOVES3 modeling of ACT in New York State (2025-2040)

The Department estimated the total number of incidents and estimated health benefits to New York using state population and the proximity of residents to major roadways in accordance with the U.S. Department of Transportation's Transportation and Health Tool. The Department estimates health benefits to New York of $3.3 billion for 2025-2040.

The Department also considered COBRA simulations to examine the health impacts of ACT adoption in New York based on ICCT MOVES3 modeling results. A COBRA simulation estimated $184 to $423 million in monetized health benefits to New York from 2025-2040.

The monetized benefits of GHG reductions are estimated by considering the social cost of carbon. The Climate Act directed the Department to establish a value of carbon for use by state agencies. The Department evaluated the value of carbon in accordance with DEC's Value of Carbon guidance using a two percent discount rate. Scaling California's CO_2e reductions results in an estimated avoided social cost of carbon of $632 million from 2025-2040. Using ICCT MOVES3 modeling results in an estimated avoided social cost of carbon of $2.06 billion from 2025-2040. Since the Department couldn't separate CARB's CO2e value into the component gases we have taken a conservative approach of calculating the value of carbon by applying the

value of CO2 to the CO2e metric. Estimating the value for the individual gases in the CO2e metric would likely result in a higher value.

Fleet owners, however, are not required to purchase ZEV trucks under the proposed ACT adoption. If fleet owners choose to purchase electric trucks, they would incur costs after the point of sale, as well as costs relating to electric vehicle infrastructure. The proposed amendments would reduce overall costs as reduced operational costs significantly outweigh higher upfront vehicle purchase price and infrastructure costs. Battery-electric technologies are expected to reach total cost of ownership parity with diesel-powered vehicles by the 2024 MY for some applications.

New York State has several programs to promote the transition of the transportation sector to cleaner energy including the New York Truck Voucher Incentive Program administered by the New York State Energy and Research Development Authority, the New York City Clean Trucks Program administered by the New York City Department of Transportation, and a medium- and heavy-duty fleet make-ready pilot program pursuant to a New York State Public Service Commission order.

The proposed ACT amendments include a one-time large entity reporting requirement that applies to large fleet owners. Subject entities must report information regarding vehicle ownership and operation, as well as company-wide information about their New York locations and how they and their contractors move freight and perform other services. The extent of reporting will vary based on size of the company and truck ownership. State and local government agencies would also be required to report.

The proposed amendments will affect tax revenue at the state and local level. Sales tax revenues are likely to increase due to the higher purchase costs of zero-emissions trucks. Fuel tax revenue will be reduced as

gasoline and diesel vehicles will be displaced with electric and hydrogen fuel vehicles reducing the amount of gasoline and diesel dispensed in the state.

The proposed amendments are not expected to cause a change in overall employment in New York. Motor vehicle and parts manufacturing represents a small portion of employment in New York. Businesses that sell gasoline and diesel fuel in New York State may be negatively impacted. Businesses involved in the manufacturing of electric vehicle batteries, fuel-cell technologies, and electric vehicle parts are likely to be positively impacted. Businesses involved in installation, maintenance, and repair of electric vehicle charging infrastructure and hydrogen fueling infrastructure are likely to be positively impacted.

The ACT regulation would take effect beginning with MY 2025 for vehicles with GVWR greater than 8,500 lbs. The sales requirements would increase annually until MY 2035. Entities subject to the one-time large entity reporting requirement would be required to report by April 1, 2023.

Regulatory Impact Statement

6 NYCRR Part 218, Emissions Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

I. INTRODUCTION

The New York State Department of Environmental Conservation (DEC or the Department) proposes to amend Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 218, "Emissions Standards for Motor Vehicles and Motor Vehicle Engines", and Part 200, "General Provisions" (collectively, Part 218). These amendments will further the goals of reducing air pollution from motor vehicles, including criteria pollutants and greenhouse gases (GHGs), by incorporating the State of California's medium- and heavy-duty zero emission vehicle (ZEV) sales requirement and large entity reporting requirement, also referred to as the "Advanced Clean Trucks" (ACT) regulation. The amendments are also consistent with the requirements of the Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019 (CLCPA or Climate Act), to further reduce GHG emissions in the State.

The proposed amendments establish annual ZEV sales requirements for truck manufacturers requiring them to certify incomplete chassis or complete vehicles greater than 8,500 pounds gross vehicle weight rating (GVWR), beginning with model year (MY) 2025 in New York State. The truck manufacturer will be required to meet a certain sales percentage of zero emission trucks, which will vary among vehicle weight classes, and increase annually through model year 2035 at an increasing percentage of their annual New York sales.

The proposed amendments also establish a one-time fleet reporting requirement, which requires large fleet owners (those that operate 50 or more medium- and heavy-duty trucks in New York, including government

entities) to submit a one-time ZEV report to the Department detailing information that will help the Department identify future strategies to ensure that New York fleet owners will purchase available zero-emission trucks and place them in service where suitable.

Following adoption, the Department is required to incorporate the revisions to Part 218 and the attendant revisions to Part 200 into New York's State Implementation Plan (SIP) and provide the revised SIP to the United States Environmental Protection Agency (EPA) for review and approval.

II. STATUTORY AUTHORITY

The statutory authority for this amendment is found in the New York State Environmental Conservation Law (ECL), sections 1-0101, 1-0303, 3-0301, 19-0103, 19-0105, 19-0107, 19-0301, 19-0303, 19-0305, 19-1101, 19-1103, 19-1105, 71-2103, 71-2105 and section 177 of the federal Clean Air Act (42 U.S.C. section 7507).

ECL section 1-0101(1) outlines the policy declaration for the Department of Environmental Conservation (Department) regarding the protection of New York State's environment and natural resources including the control of "air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social wellbeing." Section 1-0101(3)(e) states:

> It shall . . . be the policy of the state to foster, promote, create and maintain conditions under which man and nature can thrive in harmony with each other, and achieve social, economic and technological progress for present and future generations by . . . [p]roviding that care is taken for the air . . . and other resources that are shared with the other states of the United States and with Canada in the manner of a good neighbor.

ECL section 1-0303(19) defines "pollution" as:

> the presence in the environment of conditions and or contaminants in quantities of characteristics which are or may be injurious to human, plant or animal life or to property or which unreasonably interfere with the comfortable enjoyment of life and property throughout such areas of the state as shall be affected thereby.

ECL section 3-0301(1)(a) gives the Commissioner authority to "[c]oordinate and develop policies, planning and programs related to the environment of the state and regions thereof . . . ." Pursuant to section 3-0301(1)(b) of the ECL, the Commissioner is charged with promoting and protecting the air resources of New York, including providing for the prevention and abatement of air pollution.

ECL section 3-0301(2)(a) authorizes the Commissioner to adopt rules and regulations to carry out the purposes and provisions of the ECL. Section 3-0301(2)(g) allows the Commissioner to enter and inspect sources of air pollution and to verify compliance. Section 3-0301(2)(m) gives the Commissioner authority to "adopt rules, regulations, and procedures as may be necessary, convenient, or desirable to effectuate the purposes of this chapter." Under Section 3-0301(2)(n) of the ECL, the Commissioner has the authority to "study, monitor, control and regulate pollution from motor vehicle exhaust emissions." The Commissioner's authority under Section 3-0301(2)(n) is expressly granted to further the State's policy to "[c]onserve, improve and protect its natural resources and environment and control . . . air pollution, in order to enhance the health, safety and welfare of the people of the state . . . ."

ECL section 19-0103 is a declaration of the State's policy with specific reference to air pollution. ECL

section 19-0103 states that " . . . it is declared to be the policy of the State of New York to maintain a reasonable degree of purity of the air resources of the State . . . and to that end to require the use of all available practical and reasonable methods to prevent and control air pollution."

ECL section 19-0105 sets forth that the purpose of Article 19 is ". . . to safeguard the air resources of the State from pollution" in manner that is consistent with the policy expressed in section 19-0103 and in accordance with other provisions of Article 19.

ECL section 19-0107(2) defines "air contaminant" as "a dust, fume, gas, mist, odor, smoke, vapor, pollen, noise or any combination thereof." ECL Section 19-0107(4) defines "air contamination" as "the presence in the outdoor atmosphere of one or more air contaminants which contribute [to] or which are likely to contribute to a condition of air pollution." ECL Section 19-0107(3) defines "air pollution" as:

> the presence in the outdoor atmosphere of one or more air contaminants in quantities, of characteristics and of a duration which are injurious to human, plant or animal life or to property or which unreasonably interfere with the comfortable enjoyment of life and property throughout the state or throughout such areas of the state as shall be affected thereby . . .

ECL section 19-0107(5) defines "air contamination source" and specifically includes motor vehicles in the definition.

ECL section 19-0301(1)(a) states that consistent with the policy of the state, as it is declared in section

19-0103, the Department shall have power to formulate, adopt and promulgate, amend and repeal codes and rules and regulations for preventing, controlling or prohibiting air pollution in such areas of the state as shall or may be affected by air pollution. ECL section 19-0301(1)(b) further authorizes the Department to include in any such codes and rules and regulations provisions establishing areas of the state and prescribing for such areas: the degree of air pollution or air contamination that may be permitted therein and the extent to which air contaminants may be emitted to the air by any air contamination source.

ECL section 19-0301(2)(a) provides that it shall be the duty and responsibility of the Department to prepare and develop a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of any new air pollution recognizing various requirements for different areas of the state.

ECL section 19-0303 provides that the terms of any air pollution control regulation promulgated by the Department may differentiate between particular types and conditions of air pollution and air contamination sources, and the Department may recognize the difference in the State's air quality areas in its rulemaking. This section also provides that a code, rule or regulation or any amendment or repeal thereof will not be adopted until after a public hearing is held and may not become effective until filed with the Secretary of State. Finally, this section prescribes procedures for adopting any code, rule or regulation which contains a requirement that is more stringent than the federal Clean Air Act (CAA or Act) or regulations issued pursuant to the Act by the EPA.

ECL section 19-0305 provides the Commissioner with enforcement power. Section 19-0305(1) states, "[t]he commissioner is hereby authorized to enforce the codes, rules and regulations of the departments established in accordance with this article." Additionally, pursuant to section 19-0305(2)(l), the Commissioner may "do such other things as he may deem necessary, proper or desirable in order that he may enforce codes,

rules or regulations which have been promulgated under this article."

ECL sections 19-1101, 19-1103, and 19-1105 set forth the provisions for environmental performance labels and authorizes the Commissioner to promulgate rules and regulations specifying labeling requirements and implementing such requirements.

ECL sections 71-2103 and 71-2105 set forth the civil and criminal penalty structures for violations of Article 19 and regulations promulgated pursuant to Article 19.

In addition to the above New York State authority, section 177 of the federal Clean Air Act (42 U.S.C. 7507) authorizes states other than California to adopt and enforce standards for motor vehicle emissions, provided that such standards are identical to California's standards.

III. LEGISLATIVE OJECTIVES

Articles 1 and 3 of the ECL set out the overall State policy goal of reducing air pollution and providing clean, healthy air for the citizens of New York. They provide the Department and Commissioner the general authority to adopt and enforce measures to accomplish those goals, including the regulation of mobile sources of air pollution.

In addition to the general powers and duties of the Department and Commissioner to prevent and control air pollution found in Articles 1 and 3 of the ECL, Article 19 of the ECL was specifically adopted for the purpose of safeguarding the air resources of New York from pollution. To facilitate this purpose, the Legislature bestowed specific powers and duties on the Department, including the power to formulate, adopt, promulgate, amend, repeal

and enforce regulations for preventing, controlling and prohibiting air pollution. The Department is "expressly authorized to promulgate extensive regulations limiting exhaust emissions from motor vehicles including adoption of California certification standards."[1] This authority also specifically includes promulgating rules and regulations for preventing, controlling or prohibiting air pollution in such areas of the State that shall or may be affected by air pollution, and provisions establishing areas of the State and prescribing for such areas (1) the degree of air pollution or air contamination that may be permitted therein, and (2) the extent to which air contaminants may be emitted to the air by any air contamination source. In addition, this authority also includes the preparation of a general comprehensive plan or the control or abatement of existing air pollution and for the control or prevention of any new air pollution recognizing various requirements for different areas of the State.

Based on the above, the Commissioner has very broad authority to regulate air pollution, including emissions from motor vehicles. The Department is proposing to adopt California's ACT regulation for medium- and heavy-duty vehicles. This regulation package will further the goals of reducing air pollution from motor vehicles by requiring zero emission vehicle sales requirements and stricter emissions standards and emissions-related requirements for medium- and heavy-duty vehicles.

In choosing to adopt and implement California standards, Section 177 states are limited to adopting identical emission standards and may not create an undue burden on the manufacturer by either preventing the sale of a car certified to California standards, or by requiring the creation of a "third vehicle." Since the early 1990's, New York has chosen to adopt California's more stringent motor vehicle standards in order to obtain emission reductions from new motor vehicles not provided by federal new motor vehicle standards, in furtherance of the Department's mission and obligation to control air pollution.

[1] MVMA v. Jorling, 152 Misc.2d 405 (N.Y. Sup. September 3, 1991.

In addition, the Climate Act contains numerous requirements regarding climate change and the reduction of GHG emissions. For example, the Climate Act contains a new ECL Article 75, which among other things requires a 40 percent reduction in Statewide GHG emissions from 1990 levels by 2030, and an 85 percent reduction from 1990 levels from 2050. See also 6 NYCRR Part 496 (Part 496). The CLCPA emphasizes reducing greenhouse gas emissions and co-pollutants in disadvantaged communities including requiring all state agencies to avoid disproportionately burdening disadvantaged communities when considering and issuing permits, licenses, and other administrative approvals and decisions. By January 1, 2024, the CLCPA requires the Department to promulgate regulations to ensure compliance with the Statewide GHG emission limits. ECL § 75-0109. The amendments are consistent with the CLCPA because they will further reduce GHG emissions from motor vehicles.

I. NEEDS AND BENEFITS

Given that the proposed amendments will further reduce GHG emissions, they are consistent with the requirements of the Climate Act. New York has made considerable progress in improving its air quality and addressing climate change, with GHG emissions falling 12 percent since 1990, when measured per the requirements of the CLCPA and Part 496. Most of New York's GHG reductions have come from the electricity sector, which have decreased more than 45 percent since 1990.[2] However, GHG emissions from the transportation sector have risen 9 percent from 1990 levels.

The CLCPA defines "carbon dioxide equivalent" (CO_2e) as a measurement of global warming potential (GWP) based on a twenty-year timeframe (GWP20), rather than a one hundred-year timeframe (GWP100). The

[2] NYS Statewide GHG Emissions Report, 1990-2019, in progress, developed under ECL sec. 75-0105, see https://www.dec.ny.gov/energy/99223.html

USEPA estimates that on-road medium- and heavy- duty vehicles emitted approximately 13.6 million tons of GHG (when measured in CO_2e GWP100, rather than the GWP20 required by the Climate Act).[3] Using a GWP20 as required by the Climate Act would likely result in these emissions being greater. The transportation sector accounts for approximately 27 percent, and growing, of all GHG emissions in New York State when measured pursuant to the Climate Act and Part 496.[4] Diesel fuel and biodiesel, mainly used by medium- and heavy duty vehicles, accounts for 21.5 percent of all on-road transportation sector GHG emissions, when measured pursuant to the Climate Act and Part 496.[5]

The Department is also tasked with mitigating the effects of criteria pollutants. A portion of New York State still does not meet federal health based national ambient air quality standards (NAAQS) for ozone and has been categorized as a non-attainment area.[6] Motor vehicles are responsible for a significant portion of urban air pollution by emitting carbon dioxide, carbon monoxide, hydrocarbons, nitrogen oxides, particulate matter, as well as mobile source air toxics such as benzene, formaldehyde, acetaldehyde, 1,3-butadiene and lead.[7] Some of these emissions are ozone precursors that lead to ground level ozone formation. Ground-level ozone is formed by photochemical reactions when emissions of nitrogen oxides (NO_x) and volatile organic compounds mix under sunny, hot conditions. Medium- and heavy-duty vehicles, vehicles greater than 8,500 pounds GVWR, are a major contributor of ozone precursors.[8] The USEPA estimates that on-road medium- and heavy-

[3] EPA, 2017 National Emissions Inventory (NEI) Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
[4] NYS Statewide GHG Emissions Report, 1990-2019, in progress, developed under ECL sec. 75-0105, see https://www.dec.ny.gov/energy/99223.html
[5] NYS Statewide GHG Emissions Report, 1990-2019, in progress, developed under ECL sec. 75-0105, see https://www.dec.ny.gov/energy/99223.html
[6] U.S. Environmental Protection Agency, Nonattainment Areas for Criteria Pollutants (Green Book), May 31, 2021, https://www3.epa.gov/airquality/greenbook/hbstateb.html
[7] See Health Effects Inst., Special Report 17, Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects at vii (2010), https://www.healtheffects.org/system/files/SR17TrafficReview.pdf
[8] OTC, Statement of the Ozone Transport Commission Regarding the Need to Accelerate Electrification of Medium- and Heavy-Duty Vehicles (adopted June 2, 2020), https://otcair.org/upload/Documents/Formal%20Actions/OTC%20Statement%20on%20MHD%20ZEVs_20200602.pdf.

duty vehicles emitted approximately 40,765 tons of NO_x and 3,345 tons of particulate matter ($PM_{2.5}$) in New York State in 2017.[9] Medium- and heavy-duty vehicles account for approximately 46 percent[10] of the total on-road vehicle NO_x emissions while making up a smaller percentage of on-road vehicles. Diesel exhaust emissions are especially hazardous as a number of chemical components are currently deemed to be known, probable or possible carcinogens by the International Agency for Research on Cancer carcinogens.[11] In some urban settings, the number of medium- and heavy- duty vehicles has the biggest impact on localized NOx and $PM_{2.5}$ concentrations.[12]

It is essential that the Department continue to adopt stringent mobile sources emissions standards and regulations to protect human health and the environment. The Ozone Transport Commission (OTC), established under the Clean Air Act, supports accelerating the adoption of medium- and heavy-duty ZEVs as a regional air quality strategy.

Tailpipe emissions resulting from fossil fuel combustion pose a major threat to children's health and wellbeing with impacts such as "impairment of cognitive and behavioral development, respiratory illnesses, and other chronic diseases."[13] Ground-level ozone can also impair lung function in otherwise healthy people. This can result in significant hospitalization costs and mortality rates, both of which are higher in New York State than the

[9] U.S. Environmental Protection Agency, 2017 National Emissions Inventory (NEI) Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
[10] EPA, 2017 National Emissions Inventory (NEI) Data, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data
[11] International Agency for Research on Cancer, World Health Organization, IARC: Diesel Engine Exhaust Carcinogenic (June 12, 2012), https://templatelab.com/iarc_press_release_213_E/.
[12] Jonathan M. Wang et al., *Near-Road Air Pollutant Measurements: Accounting for Inter-Site Variability Using Emission Factors*, 52 Env. Sci. Tech. 9495, 9502 (2018).
[13] Frederica Perera, Pollution from Fossil-Fuel Combustion is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist,15 Int'l J. Envtl. Res. & Public Health 1, 1 (2018), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5800116/

national average.[14] Research indicates that "ambient air pollution is the leading environmental health risk factor globally" and New York City ranks eleventh among major cities for deaths attributable to transportation emissions, with 24.4 percent of PM and ozone related deaths being transport-attributable.[15] Based on EPA's National Air Toxic Assessment, New York State has a statewide diesel PM_{10} ambient concentration from on-road medium- and heavy duty vehicles of approximately 0.265 micrograms/meter^3 ($\mu g/m^3$), which is one of the highest in the United States.[16] $PM_{2.5}$ emissions from on-road mobile sources in the New York City region contribute to approximately 320 deaths and 870 hospitalizations and emergency department visits annually. Of the 320 deaths attributed to $PM_{2.5}$ emissions, 170 deaths can be associated with buses and trucks .[17]

The effects of motor vehicle emissions also disproportionately affect those who live, work, or attend school near major roads resulting in increased incidence rate and severity of health issues associated with air pollution from vehicle emissions such as "higher rates of asthma onset and aggravation, cardiovascular disease, impaired lung development in children, pre-term and low-birthweight infants, childhood leukemia, and premature death."[18] Those included in this higher risk group include children, older adults, people with pre-existing pulmonary disease, and people of low socioeconomic status.

Climate change is already having adverse impacts on human health and the environment. These impacts

[14] New York State Department of Health, New York State Asthma Surveillance Summary Report, October 2013, Pg 16, http://www.health.ny.gov/statistics/ny_asthma/
[15] Susan Anenberg et al., Int'l Council on Clean Transportation, A Global Snapshot of the Air Pollution-Related Health Impacts of Transportation Sector Emissions in 2010 and 2015 at i (2019), https://theicct.org/sites/default/files/publications/Global_health_impacts_transport_emissions_2010-2015_20190226.pdf
[16] EPA, National Air Toxics Assessment, 2014 NATA: Assessment Results, https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results
[17] Iyad Kheirbeck et al., The Contribution of Motor Vehicle Emissions to Ambient Fine Particulate Matter Public Health Impacts in New York City: a Health Burden Assessment, 15 Envtl. Health 1, 5-8 (2016), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5002106/pdf/12940_2016_Article_172.pdf
[18] EPA, Near Roadway Air Pollution and Health: Frequently Asked Questions, Pg. 2, https://www.epa.gov/sites/production/files/2015-11/documents/420f14044_0.pdf

include increased heat illnesses and mortality, respiratory illnesses from increased formation of ground-level ozone, and the introduction or spread of vector-borne illnesses. Climate change is adversely impacting New York State's shoreline, drinking water sources, agriculture, forests, and wildlife diversity. Climate change trends such as rising temperatures, rising sea levels, and increased frequency of intense precipitation events have already been observed.[19] These trends are expected to continue throughout the century.

On July 14, 2020, fifteen states, including New York, signed a Multi-State Medium-and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding agreeing to strive to make sales of all new medium-and heavy-duty vehicles zero emission vehicles by no later than 2050. In order to ensure adequate progress toward the 2050 goal, the Signatory States committed to the goal of at least 30 percent of all new medium-and heavy-duty vehicle sales to be zero emission vehicles by no later than 2030. The Signatory States will further seek to accelerate the deployment of zero-emission medium-and heavy-duty trucks and buses to benefit disadvantaged communities that have been historically burdened with higher levels of air pollution. The signatories agreed to consider adoption of California's Advanced Clean Trucks rule under Section 177 of the Clean Air Act.

On April 21, 2021, a bipartisan group of the governors from twelve states, including New York Governor Andrew Cuomo, expressed their support for President Biden's efforts to improve public health, tackle the climate crisis, and advancement of environmental justice. The governors respectfully requested that the Biden administration set standards for medium-duty and heavy-duty vehicles and supporting complementary policies that establish a path towards 100 percent zero-emission sales by no later than 2045 with significant milestones along the way to monitor progress.

[19] Horton, R., D. Bader, C. Rosenzweig, A. DeGaetano, and W.Solecki. 2014. Climate Change in New York State: Updating the 2011 ClimAID Climate Risk Information. New York State Energy Research and Development Authority (NYSERDA), Albany, New York.

New York State has established ambitious climate change goals and requirements intended to mitigate or avoid the adverse impacts of climate change. The Climate Act puts New York on the path to carbon neutrality with the nation's most aggressive GHG reduction requirements. CLCPA's statutory requirements include 70 percent renewable energy by 2030; 100 percent zero emission energy by 2040;[20] a 40 percent reduction in Statewide GHG emissions from 1990 levels by 2030; and an 85 percent reduction in Statewide GHG emissions from 1990 levels by 2050.[21] New York's Climate Act established a 22-member Climate Action Council (CAC) charged with the development of a Scoping Plan to provide recommendations for achieving the State's bold clean energy and climate agenda. Transportation is New York's second largest source of GHG emissions. Meeting CLCPA requirements will require substantial reductions in GHG emissions from the transportation sector and will require the adoption of electric technologies in the transportation sector, such as electric passenger vehicles, trucks, and buses. On May 3, 2021, the Transportation Advisory Panel (TAP) provided the CAC with a list of recommended strategies that included the adoption of California zero-emission vehicle sales regulations for passenger vehicles, trucks, buses, and heavy equipment.[22] Beyond the obvious emissions benefits from the transition from internal combustion engines to electric drive trains, electric drive trains also provide a tremendous efficiency benefit in terms of vehicle miles traveled per unit of fuel consumed.[23]

The Department is proposing to amend Subpart 218-4 to incorporate California's medium- and heavy-duty ZEV sales requirement and large entity reporting requirement, also referred to as the "Advanced Clean Trucks Regulation". The proposed amendment establishes annual ZEV sales requirements for original equipment

[20] Public Service Law Section 66-p.
[21] ECL Section 75-0107.
[22] Climate Action Council, Transportation Advisory Panel, Recommended Strategies, May 3, 2021, https://climate.ny.gov/-/media/CLCPA/Files/2021-05-03-Transportation-Recommendations.pdf
[23] Energy and Environmental Economics, Inc., Pathways to Deep Decarbonization in New York State, June 24, 2020, Pg. 21, https://climate.ny.gov/-/media/CLCPA/Files/2020-06-24-NYS-Decarbonization-Pathways-Report.pdf

manufacturers (OEMs) that certify incomplete chassis or complete vehicles greater than 8,500 pounds GVWR. Beginning with model year (MY) 2025 in New York State, sales percentage requirements will vary among vehicle weight classes and increase annually through model year 2035.

Advanced Clean Truck Regulation

The proposed ACT amendments would introduce ZEV sales requirements for all manufacturers that certify on-road vehicles for sale in New York in weight classes 2b through 8 (GVWR > 8,500 lbs.). Small manufacturers with annual sales of fewer than 500 vehicles in New York would be exempt from the requirement but may opt-in to claim ZEV credits. The sales requirement would be a percentage, varying by model year, vehicle class, and vehicle type of the manufacturer's annual sales volume for that model year in New York. Starting with the 2025 model year in New York, manufacturers would incur deficits for each vehicle sold that must be met with credits generated from producing and selling medium- and heavy-duty ZEVs or near zero emission vehicles (NZEVs). Manufacturers may earn early compliance credits in New York starting in model year 2022. The requirements would increase annually through model year 2035 as shown in the following table.

Proposed ZEV Sales Percentage Schedule[24]

Model Year	Class 2b – 3 Group	Class 4 – 8 Group	Class 7 – 8 Tractors Group
2025	7%	11%	7%
2026	10%	13%	10%

[24] CARB. Proposed amendments to the proposed Advanced Clean Trucks Regulation, Modifications to the proposed order. May 1, 2020. Page 6. Table A-1

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 and subsequent	55%	75%	40%

Credit values are based on weight class to account for the higher emissions associated with heavier and larger vehicles. ACT's credit accounting provides manufacturers with flexibility to achieve their fleet average compliance requirements as they can produce more ZEVs in one group to avoid producing a small number of ZEVs for another group. To ensure emission reductions in ports and other areas with high tractor concentration, only Class 7 and 8 tractor credits may be used to satisfy the Class 7 and 8 tractor ZEV deficit. Weight class credit modifiers are shown in the following table.

Weight Class Modifiers[25]

	Vehicles in Class 2b – 3	Class 4 – 5 Vehicles in the Class 4 – 8 Group	Class 6 – 7 Vehicles in the Class 4 – 8 Group	Class 8 Vehicles in the Class 4 – 8 Group	Vehicles in the Class 7 and 8 Tractor Group

[25] CARB. Proposed Amendments to the Proposed Advanced Clean Trucks Regulation, Modifications to the Proposed Order. May 1, 2020. Table A-2, p. 6.

Weight Class Modifier	0.8	1	1.5	2	2.5

NZEVs would earn partial credits based on their all-electric range, up to 75 percent of an equivalent ZEV. NZEV credits may only be used to account for up to one half of the total annual weighted deficits to ensure that ZEVs are being sold in New York. The all-electric range of NZEVs would be determined by the California Air Resources Board (CARB) based on test procedures as outlined in California Phase 2 GHG rules. NZEV credits may be earned through the 2035 model year.

Medium- and heavy-duty ZEV credits may be generated, banked, and traded in New York by manufacturers starting with the 2022 model year. Credits would have a limited lifetime to ensure medium and heavy-duty ZEVs are produced and sold in New York. Beginning with the 2025 model year, manufacturers would have to certify using the zero-emission powertrain (ZEP) certification procedure, where applicable, to continue to earn ZEV credits. Class 2b – 3 ZEV sales may not be used to claim credits in the ACT regulation if the same ZEV sales are used to claim credits in the existing Advanced Clean Cars (ACC) regulation. Manufacturers subject to the sales requirement who sell ZEVs in New York, and wish to earn credits, must report sales information and credit trade information annually to the Department to demonstrate compliance. Manufacturers must also report credit trade transactions to the Department.

Under the proposed amendments, large entities that operate medium and heavy-duty trucks in New York would be required to submit a one-time reporting requirement. The data collected would be used to inform future regulatory decisions to ensure ZEV sales are made where they are appropriate, assess infrastructure

needs, and ensure a level playing field for all vehicle owners and operators. Affected entities would be required to complete a one-time submittal of aggregated and binned data for representative facilities. Entities would also be able to report binned, representative information about the vehicle types owned. A large entity is defined as any of the following:

- Any entity with annual revenue greater than $50 million in the U.S. and does business in New York including all subsidiaries, subdivisions, or branches.
- Any entity that owns more than 50 vehicles with a GVWR greater than 8,500 lbs. and operated at least one of those vehicles in New York in 2019.
- Any entity that dispatched more than 50 vehicles with a GVWR greater than 8,500 lbs. in New York in 2019.
- Any New York government entity, including all state agencies and authorities and local municipalities.
- Any Federal government agency operating in New York.

Large entities would include, but not be limited to, retailers, manufacturers, refiners, hotels, drayage terminal operators, utility providers, refuse companies, federal, state, and local government agencies, and other types of large employers. The information submitted in the report would include information regarding types of facilities operated in New York, contracting practices, and vehicle usage information for entities that own trucks. Regulated entities would also be required to report information for a single representative facility for each facility category. Entities that own vehicles would be required to report vehicle usage information for vehicles domiciled at each facility, grouped by vehicle body type.

Estimated Emission Reductions by Adopting ACT

The proposed adoption of California's ACT regulation is expected to significantly reduce NOx, $PM_{2.5}$, and GHG emissions as internal combustion engine vehicles will be replaced with zero-emission vehicles. Zero-emission vehicles produce no tailpipe emissions, reduce particulate matter emissions from brake wear, and have lower upstream emissions. The Department has estimated the emission reduction benefits associated with the proposed adoption of California's ACT regulation from two sources:

1. Attachment D[26] to California's ACT rulemaking provides estimated emission reductions in California for NOx, PM 2.5 and CO2e By comparing the annual vehicle miles traveled (VMT) of medium- and heavy- duty trucks for New York State to California, a scaling factor can be developed. This methodology was proposed to the Northeast States for Coordinated Air Use Management (NESCAUM) Mobile Source Committee. The Department determined the annual medium- and heavy-duty vehicle VMT for California and New York using Federal Highway Administration reporting data.[27] The Department applied the calculated scaling factor of 0.32 to California's ACT Attachment D emission reductions to estimate New York State emission reductions.

2. The International Council on Clean Transportation (ICCT) evaluated the benefits of New York State's adoption of several California medium- and heavy-duty vehicle regulations, including ACT. The ICCT analysis utilized EPA's Motor Vehicle Emissions Simulator (MOVES3) model at the county scale using 2017 National Emissions Inventory (NEI) representative counties.[28]

[26] CARB, ACT 15-Day Notice Attachment D, Emissions Inventory Methods and Results for the Proposed Advanced Clean Trucks Regulation Proposed Modifications. https://ww3.arb.ca.gov/regact/2019/act2019/30dayattd.pdf
[27] Federal Highway Administration. Highway Statistics 2019, Tables Ps-1, VM-2, and VM-4. https://www.fhwa.dot.gov/policyinformation/statistics/2019/.
[28] The International Council on Clean Transportation, Benefits of adopting California medium- and heavy-duty vehicle regulations in New York State, May 27, 2021, https://theicct.org/publications/nys-hdv-regulation-benefits-may2021

Using the first source (California, Attachment D), the Department estimates that New York's adoption and implementation of ACT would result in emission reduction benefits of 18,635 short tons of NOx, 349 short tons of $PM_{2.5,}$ and 5.52 million metric tons of GHGs expressed in carbon dioxide equivalents (CO_2e, GWP100) in New York State from 2025 to 2040 after applying the VMT-based scaling factor. California's ACT rulemaking estimates emissions reductions using a 100-year GWP which is standard practice. New York's Climate Act requires emissions be calculated using a 20-year GWP. Estimating emissions from internal combustion engines using a 20-year GWP would increase the emissions reductions realized from the proposed ACT.

Total New York Scaled Emission Benefit Estimates from 2025 to 2040 from Proposed Adoption of ACT (ACT Attachment D)

	Tank to Wheel NOx (short tons)	Tank to Wheel $PM_{2.5}$ (short tons)	Well to Wheel GHG (CO_2e, GWP100 MMT)	Medium- and Heavy- Duty VMT (billion miles)
California	58,236	1,092	17.24	23.99
New York	18,635	349	5.52	7.76

The second source (ICCT) through MOVES3 modeling estimated that New York's adoption of ACT would result in emission reduction benefits of 16,210 short tons of NOx, 230 short tons of $PM_{2.5,}$ and 17.91 million metric tons of GHGs expressed in carbon dioxide equivalents (CO_2e, GWP100) in New York from 2025 to 2040. It was not necessary for the Department to apply any adjustments to these results. The ICCT modeling also included the estimated emissions benefits for the period of 2025-2040.

Total New York Emission Benefit Estimates from 2025 to 2040 from Proposed Adoption of ACT (ICCT)

	Tank to Wheel NOx (short tons)	Tank to Wheel PM2.5 (short tons)	Well to Wheel CO2e (million metric tons)
New York	16,210	230	17.91

II. COSTS

ACT Costs

The Department structured its review of costs and benefits associated with ACT adoption following the accounting format presented by California's Attachment C[29].

Cost to Manufacturers

The proposed ACT would require medium- and heavy-duty manufacturers to comply with the ZEV sales percentage requirement by producing and selling zero-emissions trucks in New York. ACT does provide manufacturers with compliance flexibility options. The cost of producing ZEVs is currently greater than the cost of producing traditional internal combustion engine (ICE) vehicles due to increased component and manufacturing costs. Manufacturing ZEVs requires large upfront costs related to research and development, prototyping, assembly line upgrades and tooling, and other categories. Any cost that is not passed through the sale of the ZEV may be added to the cost of the ICE fleet or absorbed by the manufacturer.

CARB estimated the cost of ZEVs for battery-electric and fuel cell powered vehicles by adding electric component costs, fuel cell component costs, and energy storage costs to a conventional glider vehicle, with the total adjusted by an additional 10 percent multiplier to account for other upfront costs.[30] The battery storage

[29] CARB, Attachment C, Updated Costs and Benefits Analysis for the Proposed Advanced Clean Trucks Regulation Tables IV-8, IV-9, IV-10, and V-18. https://ww3.arb.ca.gov/regact/2019/act2019/30dayattc.pdf

[30] CARB, Advanced Clean Trucks Staff Report: Initial Statement of Reasons (ACT ISOR), October 19, 2019, Pg. IX-9. https://ww3.arb.ca.gov/regact/2019/act2019/isor.pdf

cost is the largest component of the incremental cost of a battery-electric truck. Of note, battery costs have declined by almost 80 percent since 2010 and are expected to continue to drop.[31] Battery pack costs for medium- and heavy-duty vehicles are greater than light-duty applications due to the different volume and packaging requirements.[32] Based on an estimated five-year delay compared to light duty battery costs, heavy-duty battery costs are expected to drop from approximately $350/kWh in 2020 to $100/kWh in 2030. The Department believes these cost estimates would similarly apply to vehicles sold in New York.

Where appropriate, costs and benefits associated with New York's proposed adoption of California's ACT regulation were estimated by applying the VMT-based scaling factor of 0.32 to California values.[33] Specifically, the VMT-based scaling factor was applied to incremental ZEV cost, Phase 2 GHG compliance savings, large entity reporting costs, sales and excise tax, vehicle maintenance costs, maintenance bay upgrade costs, midlife service costs, electric vehicle supply equipment (EVSE) infrastructure and maintenance costs, and transition and workforce development costs.

Incremental ZEV Cost

The total incremental cost of ZEVs (2025-2040) was estimated by multiplying the expected incremental ZEV cost by the number of expected ZEV sales for each group by model year. The Department adopted California's assumed medium- and heavy-duty vehicle sales growth rate of 1 percent. The Department applied the VMT-based scaling factor of 0.32 to California's estimated incremental ZEV purchase costs. The incremental cost of ZEVs in New York is estimated at $2.9 billion from 2025 to 2040.

[31]Chris Martin, Bloomberg QuickTake, Better Batteries, October 11, 2019, https://www.bloomberg.com/quicktake/batteries
[32] CARB, ACT ISOR, October 19, 2019, Pg. IX-9
[33] CARB, Attachment C, Table IV-8

Incremental Cost of ZEVs in New York by Calendar Year

Calendar Year	Total Incremental Cost (millions 2018$)
2025	40.96
2026	51.52
2027	72.96
2028	94.72
2029	118.08
2030	133.76
2031	155.20
2032	193.28
2033	214.08
2034	236.16
2035	257.28
2036	259.52
2037	261.44
2038	263.36
2039	265.28
2040	267.52
TOTAL 2025-2040	2,885.12

Zero Emission Powertrain Certification

ACT requires applicable manufacturers to certify their medium- and heavy-duty vehicles under California's Zero-emissions Powertrain (ZEP) Certification procedure to earn ZEV credits. The ZEP

certification requirement applies to complete vehicles over 14,000 lbs. GVWR as well as incomplete vehicles above 10,000 lbs. GVWR. CARB estimates that only 10 manufacturers would be subject to the ZEP certification procedure[34]. The Department believes there will be no additional ZEP certification costs for manufacturers to comply with ACT adoption in New York.

Phase 2 GHG Compliance

Medium- and heavy-duty ZEVs manufactured to comply with the ACT ZEV sales requirements can also be used for manufacturer compliance with Phase 2 GHG requirements providing a benefit to manufacturers.[35] While the cost of producing ZEVs would be greater for manufacturers than the cost of producing lower emitting ICE vehicles, manufacturers can build ZEVs to comply with the proposed medium- and heavy-duty ZEV sales requirement and Phase 2 GHG regulation simultaneously. This scenario would effectively reduce the number of ICE vehicles that need to be upgraded to meet Phase 2 GHG standards. As the ZEV sales requirement increases with subsequent ACT model years, the number of lower emitting ICE trucks that must be upgraded to meet Phase 2 GHG compliance decreases. The Department applied the VMT-based scaling factor of 0.32 to California's Phase 2 GHG compliance savings for an estimated savings of $201 million to New York for 2025-2040.

Cost to New York Businesses

Large Entity Reporting

Under the ACT regulation, large fleet owners and those large companies that contract for transportation

[34] CARB, ACT ISOR, October 19, 2019, Pg. IX-12
[35] CARB, California Phase 2 Greenhouse Gas Standards, https://ww2.arb.ca.gov/our-work/programs/greenhouse-gas-standards-medium-and-heavy-duty-engines-and-vehicles/phase2

services will be required to report vehicle information and how they are operated, as well as various other information. The amount of time necessary to compile and report the required information will vary from company to company. CARB estimates that the cost to comply with the one-time reporting requirement in California is $15 million. The Department applied the VMT-based scaling factor of 0.32 to estimate the one-time ACT reporting requirement (2022) in New York as $4.8 million.

Sales and Excise Tax

Vehicles purchased in New York are subject to state and local sales tax. These taxes are applied to the purchase price of the vehicle. As a consequence, sales and excise taxes are higher for ZEVs compared to ICE vehicles due to greater ZEV purchase prices. The New York State sales tax is 4 percent, and the local sales tax varies from 3 percent to 4.875 percent. The Department applied an estimated combined state/local sales tax of 8.45 percent.[36] Class 8 vehicles are subject to an additional 12 percent federal excise tax.

While local government sales tax rates vary in both California and New York, the combined state and local government sales tax rates in New York and California are very similar. The Department applied the VMT-based scaling factor of 0.32 to California's sales and excise tax costs to estimate New York's increased sales and excise tax costs as $295 million from 2025 to 2040.

Fuel Costs

The total fuel costs analysis completed by CARB evaluated the costs and savings associated with diesel, gasoline, electricity, and hydrogen use due to ACT adoption. An overall total fuel cost savings is expected due

[36] Office of the New York State Comptroller, Understanding Local Government Sales Tax in New York State 2020 Update, October 2020, https://www.osc.state.ny.us/files/local-government/publications/pdf/understanding-local-government-sales-tax-in-nys-2020-update.pdf

to the savings realized from the replacement of diesel and gasoline fuel with the cost of electricity and hydrogen fuel.

Fuel economy data for each vehicle group and technology was based on CARB's estimates.[37] Fuel cell efficiency was estimated based on California's Low Carbon Fuel Standard Program's Energy Efficiency Ratio (EER) of 1.9 compared to the diesel fuel economy. These estimates may be conservatively biased as battery-electric and fuel cell technologies are showing improvements at a rapid pace.

Based on historical weekly retail gasoline and diesel prices data from the U.S. Energy Information Administration, the average retail price of gasoline and diesel fuel in 2020 in PADD 1B[38], which includes New York and adjacent mid-Atlantic states, was $2.354 per gallon and $2.806 per gallon, respectively. The average retail price of gasoline and diesel fuel in 2020 in California was $3.132 per gallon and $3.377 per gallon respectively.[39] As such, the Department applied additional scaling factors for gasoline and diesel fuel costs of 0.75 and 0.83, respectively, in addition to the VMT-based scaling factor 0.32 to California's estimates.

Electricity rates vary based on the utility region, time of charging, demand charges, and other factors. The increasing number of electric vehicles may shift the increasing overall demand on the electric grid to off-peak hours, which creates a more efficient and highly utilized grid. The increased efficiency and utilization

[37] CARB. ACT ISOR. October 19, 2019. Table IX-11
[38] PADD stands for Petroleum Area Defense District. The Continental United States is divided into five geographic regions, originally for World War 2 petroleum allocation purposes. These regions are used to organize petroleum product data collection and reporting. PADD 1 covers the entire east coast and is sometimes broken into three sub-regions: New England, Mid-Atlantic (including New York) and South Atlantic).
[39] U.S Energy Information Administration, Petroleum & Other Liquids, Weekly Retail Gasoline and Diesel Prices, https://www.eia.gov/petroleum/

may even lead to reduced costs for all utility customers. Cost estimates are based solely on the estimated electricity cost for the given year.

Based on electric sales, revenue, and average price data for electricity from the U.S. Energy Information Administration, the average retail price of electricity in New York in 2020 was 14.90 cents per kilowatt-hour. The average retail price of electricity in California in 2020 was 18.15 cents per kilowatt-hour.[40] The ratio of retail prices of electricity for all sectors in New York to California is approximately 0.82. As such, the Department applied an additional scaling factor for electricity of 0.82 in addition to the VMT-based scaling factor 0.32.

Hydrogen costs are based on estimates provided by Trilium CNG to CARB based on low, intermediate, and high-volume production. The low-volume cost is used in 2018, intermediate-volume in 2030, and the high-volume in 2050 with intermediate years being interpolated. Hydrogen costs in New York were assumed to be similar to hydrogen costs in California. The Department applied the VMT based scaling factor of 0.32 to CARB's hydrogen cost estimate.

The Department estimates an overall savings of $4.07 billion considering all fuel costs in New York from 2025-2040.

Low Carbon Fuel Standard

[40] U.S. Energy Information Administration, Electricity Data. Electricity Data Browser, Average retail price of electricity, annual, https://www.eia.gov/electricity/data/browser/#/topic/7?agg=0,1&geo=g00200000004&endsec=vg&freq=A&start=2001&end=2020&ctype=linechart&ltype=pin&rtype=s&maptype=0&rse=0&pin=

CARB's cost analysis included savings from California's Low Carbon Fuel Standard (LCFS). New York has not adopted a LCFS program so the Department has not considered these savings within the cost analysis for New York.

Vehicle Maintenance Costs

Vehicle maintenance costs consist of labor and parts for routine maintenance, preventative maintenance, and repairing broken components. The maintenance costs for battery electric vehicles are predicted to be lower compared to diesel fueled vehicles due to the lower number of moving parts and a simpler design.[41] Fuel cell vehicles show comparable maintenance costs to diesel vehicles. Based on data aggregated by CARB[42], battery-electric vehicles maintenance costs are 25 percent lower compared to gasoline and diesel.

The Department applied the VMT based scaling factor of 0.32 to California's estimates for vehicle maintenance costs for a savings of $1.21 billion in New York from 2025- 2040.

Maintenance Bay Upgrade Costs

Maintenance facilities would require upgrades to service electric vehicles as they require separate safety equipment, diagnostic tools, and other equipment. Based on California transit agency data, upgrading a 15-bus maintenance bay to service battery-electric buses would cost $25,000 and upgrading to service fuel cell electric buses would cost $750,000. It was assumed that a 15-transit bus maintenance bay could accommodate 25 trucks due to their smaller size. The Department applied the VMT based scaling factor of 0.32 to the California cost estimate to upgrade maintenance facilities to service medium and heavy-duty ZEVs. New York costs to

[41] CARB, ACT ISOR, October 19, 2019, Pg. IX-22
[42] CARB, ACT ISOR, October 19, 2019, Table IX-14

upgrade maintenance facilities to service medium and heavy-duty ZEVs are estimated at $180 million from 2025- 2040.

Midlife Costs

Midlife costs represent the cost to rebuild or replace the main propulsion components of vehicles due to wear and deterioration. For diesel vehicles, this would be a midlife engine rebuild; for battery electric vehicles, this would be a battery pack replacement; and for hydrogen fuel-cell vehicles, this would be a fuel cell stack refurbishment. A diesel engine rebuild cost was estimated at 25 percent of the total vehicle price[43]. Battery replacement costs were assumed to be the size of the battery in kWh multiplied by the price per kWh at the time of replacement. Fuel cell stack refurbishments are estimated to be a third of the cost of a new fuel cell stack at the time of refurbishment. The Department applied the VMT based scaling factor of 0.32 to California midlife costs and estimates costs of $305 million in New York from 2025- 2040.

Electric Vehicle Supply Equipment (EVSE) & Infrastructure Installation & Maintenance Costs

With ACT implementation, fleets will need to complete significant infrastructure upgrades to provide fuel for battery-electric and hydrogen fuel cell vehicles. For battery-electric vehicles, the two main cost components are the charging equipment hardware and the cost of upgrading the site to deliver the necessary power to the charger. Site upgrades can include trenching, cabling, laying conduit, transformer upgrades and more. Some sites will not require electrical service upgrades. CARB aggregated charging infrastructure costs from several California sources.[44] Charger maintenance costs are estimated to be approximately $500/year per charger.[45] Maintenance costs for the other fueling infrastructures are assumed to be reflected in the fuel price.

[43] CARB, ACT ISOR, October 19, 2019, Pg. IX-23
[44] CARB. ACT ISOR, October 19, 2019. Table IX-17
[45] CARB. ACT ISOR, October 19, 2019. Pg. IX-25

The Department applied the VMT based scaling factor of 0.32 to California's EVSE & fueling infrastructure & maintenance costs and estimates a cost of $3.10 billion in New York from 2025-2040.

Transitional Costs and Workforce Development

CARB assumed the cost for transitioning to a new technology and its deployment would be approximately 2.5 percent of the incremental cost between a diesel truck and ZEV truck of the same class.[46] These costs are assumed until 2030, at which point the technology will have developed to where the transitional costs become the cost of business for trucking fleets. The Department applied the VMT scaling factor to California's transitional and workforce development costs in New York are estimated to be approximately $12 million from 2025- 2040.

Registration Fees

Commercial vehicles of all fuel types are subject to registration fees, county use taxes, and supplemental fees depending on their fuel and vehicle weight. As examples, all original vehicle registrations are subject to the fee for vehicle plates of $25, the title certificate fee of $50, and sales tax. In New York, vehicles weighing below 18,000 lbs. GVWR are subject to a two-year registration period. Vehicles weighing between 18,000 lbs. and 80,000 lbs. GVWR are subject to a one-year registration period with registration fees being no more than $576. All commercial vehicles are subject to an annual fee calculated by multiplying $3.60 per 500 lbs. or any fraction of 500 lbs. and then rounding to the nearest 25 cents.[47]

[46] CARB, ACT ISOR, October 19, 2019, Pg. IX-25
[47] NYS Department of Motor Vehicles, Commercial Vehicle Registration Fee Schedule, September 1, 2009, https://dmv.ny.gov/forms/mv202c.pdf

Unlike California, there are no significant registration fee differences based on fuel type for medium- and heavy-duty vehicles in New York State. Diesel-powered commercial vehicles weighing 8,501 pounds GVWR or more are, however, subject to an additional 3.25 percent increase to the listed registration fee, as required by the New York State Heavy-Duty Vehicle Diesel Emissions Reduction Act (DERA).

A cost savings from the proposed ACT regulation would be realized as ZEV purchases would not be subject to the DERA fee applicable as would similar weight diesel-powered vehicles. The Department calculated registration fees on an annual basis regardless of GVWR to avoid separate tracking of vehicles produced in a certain model year and sold into the next calendar year. The difference between using two-year registration period and one-year registration period registration fees for 10,000 to 18,000 lbs. GVWR vehicles should be minimal as the fees for both periods are equivalent on an annual basis.

Savings from DERA Fees by Calendar Year

Calendar Year	DERA Fee Savings ($)
2025	11,053
2026	19,421
2027	32,171
2028	50,314
2029	72,628
2030	99,560
2031	130,220
2032	164,657
2033	202,349
2034	243,645
2035	287,782
2036	332,043
2037	375,990
2038	419,527
2039	462,543
2040	498,058
TOTAL	3,406,908

State and Local Tax and Fee Revenue

California's Costs and Benefits Analysis considered tax and fee revenue fiscal impacts to state and local governments resulting from ACT adoption.[48] CARB estimated a reduced benefit of $3.6 billion from 2020 to 2040[49]. ACT adoption would reduce current gasoline and diesel volumes for medium and heavy-duty vehicles while increasing the demand for electricity and hydrogen. As a consequence, state and local revenue through tax and fee collection would decrease for gasoline and diesel, while increasing for electricity. The Department evaluated the New York State relevant items within California's Attachment C, Tables IV-9 and IV-10, as they relate to the "Tax & Fee Revenue" category in Table V-18. In summary, the Department estimated the fiscal impact of New York State's state and local fuel taxes, state and local sales taxes, omitted California fees not applicable to New York, and included other fees unique to New York. As noted in Tables IV-9 and IV-10, the greatest fiscal impacts were attributed to the loss of revenue associated with State and local gasoline and diesel fuel taxes.

Fuel tax specific scaling factors were developed based on applicable taxes and 2020 retail fuel prices.[50,51,52,53] The Department applied the fuel tax scaling factors as well as the VMT scaling factor to California's estimated state and local fuel tax revenue to estimate the same in New York. The Department applied applicable New York electric utility taxes on estimated electricity costs in New York to estimate electric utility tax revenue in New York. State and local sales tax on vehicles were scaled from CARB estimates by

[48] CARB, ACT Attachment C, Tables IV-9, IV-10, and V-18,
[49] CARB, ACT Attachment C, Table V-18
[50] New York State Department of Taxation and Finance Publication 718-F (8/19)
[51] New York State Department of Taxation and Finance Publication 908 (1/21) Fuel Tax Rates
[52] California Department of Tax and Fee Administration Special Notice L-739. Excise tax rates appear to change annually. The current rates are in effect from July 1, 2020 through June 30, 2021.
[53] California Department of Tax and Fee Administration publication CDTFA-105 DISTRICT SALES AND USE TAX RATES REV. 21 (4-21).

applying the VMT based scaling factor. The combined state and local tax rates in New York and California are similar.

The Department estimates the corresponding "Tax & Fee Revenue" category for New York State as a -$250 million offset to benefits for 2025-2040.

Monetized Health Benefits

The proposed adoption of ACT would reduce NOx and $PM_{2.5}$ emissions, resulting in health benefits for New Yorkers, especially those who operate medium- and heavy-duty vehicles or live in close proximity to where medium- and heavy-duty vehicles operate. These health benefits include fewer instances of premature mortality, fewer hospital and emergency room visits, and fewer missed days at school and work. CARB relied on the National Ambient Air Quality Standard for PM as well as various EPA studies to quantify the health risk from exposure to PM. The Department estimated the health benefits derived from ACT adoption in New York from two sources:

1. CARB's ACT Health Benefits[54]
2. NESCAUM sponsored CO-Benefits Risk Assessment (COBRA) modeling[55] based on ICCT MOVES3 modeling of ACT in New York State (2025-2040)[56]

CARB analyzed the value associated with five health outcomes that are identified by the U.S. EPA as having a casual or likely causal relationship with exposure to $PM_{2.5}$: cardiopulmonary mortality, hospitalizations

[54] CARB. ACT Attachment C. Table II-3
[55] Northeast States for Coordinated Air Use Management, Health Impact Assessment of New York State Adoption of the California Omnibus and ACT Regulations, June 18, 2021, https://www.nescaum.org/documents/health-impact-assessment-of-nys-adoption-of-ca-hd-regulations.pdf/
[56] The International Council on Clean Transportation, Benefits of adopting California medium- and heavy-duty vehicle regulations in New York State, May 27, 2021, https://theicct.org/publications/nys-hdv-regulation-benefits-may2021

for cardiovascular illness, hospitalizations for respiratory illness, emergency room (ER) visits for respiratory illness, and ER visits for asthma. Health outcomes are monetized by multiplying the estimated number of incidents by a standard value derived from studies.[57] The value for avoided premature mortality is based on willingness to pay, which is a statistical construct based on the aggregated dollar amount of a group of people would be willing to pay for a reduction in their individual risks of dying in a year. Cost savings for avoided hospitalization and ER visits are based on a combination of costs associated with hospitalization and ER visits as well as the willingness of individuals to pay to avoid the adverse effects of hospitalization such as hospital charges, post-hospitalization care, out-of-pocket expenses, lost earnings of individuals, and more. CARB estimated 943 avoided premature deaths, 148 avoided hospitalizations for cardiovascular illness, 177 avoided hospitalizations for respiratory illness, and 453 avoided emergency room visits. CARB determined California's statewide estimated health benefits to be $8.9 billion.

Based on a methodology proposed to the NESCAUM Mobile Source Committee, the Department adjusted the California health impacts and benefits to estimate the total number of incidents and estimated health benefits to New York using state population and the proximity of residents to major road ways in accordance with the U.S. Department of Transportation's Transportation and Heath Tool.[58] Proximity to major roadways is defined as percentage of people who live within 200 meters of a high traffic roadway that carries over 125,000 vehicles per day. The Department applied the ratios of these metrics to California's benefits and estimates health benefits to New York of $3.3 billion for 2025-2040.

[57] CARB. ACT ISOR, October 19, 2019. Pg. V-3 to V-6
[58] U.S. Department of Transportation, Transportation and Health Tool, https://www.transportation.gov/transportation-health-tool

Monetized Health Benefits for New York State Based on California Estimates

State	Monetized Health Benefits (2018$)	Proximity to Major Roadways	Population
California	$8,904,000,000	3.5%	37,254,000
New York	$3,308,647,862	2.5%	19,378,000

The Department also considered COBRA simulations completed to examine the health effect impacts of ACT adoption in New York based on ICCT MOVES3 modeling results for PM2.5 and NOx as inputs. A COBRA simulation estimated 15 to 35 avoided premature deaths, 4 avoided hospitalizations for cardiovascular illness, 4 avoided hospitalizations for respiratory illness, and 9 avoided emergency room visits totaling $188 to $423 million in monetized health benefits to New York from 2025-2040.

Social Cost of Carbon

The monetized benefits of GHG reductions are estimated by considering the social cost of carbon. Greenhouse gas emissions are often seen as a negative externality in the economy and as a market failure, and a cost that is not accounted for in market prices. The social cost of carbon provides a present discounted value of the future damages caused by one metric ton increase in emissions into the atmosphere in that year, or equivalently, the benefits of reducing emissions by the same amount in that year. The social cost of carbon increases over time as the effects of climate change are compounded and future emissions cause incrementally larger damage. Damage-based social cost of carbon is established by the U.S. Interagency Working Group (federal IWG).

The Climate Act directed the Department to establish a value of carbon for use by State agencies, which recommends the federal IWG damages-based approach. The Department evaluated the value of carbon for ACT adoption in accordance with DEC guidance, “Establishing a Value of Carbon – Guidelines for Use by State

Agencies.[59] The DEC guidance document provides a recommended procedure for using a damages-based value of carbon along with a general review of the marginal abatement cost approach. The guidance is focused on the damages-based value as a tool to aid state agencies as they consider GHG emissions and climate change in their decision-making. Similar to the health benefits analysis, the Department relied on two sources of estimated emission reductions to calculate social cost of carbon estimates.

The following table shows the Department's estimated value of carbon at the three discount rates specified by the DEC value of carbon guidance using California CO_2e reductions[60] scaled by the VMT based scaling factor of 0.32 and by using CO_2e reductions from the ICCT MOVES3 modeling. The present worth values using a 2 percent discount rate will be used in the Department's cost/benefit summary. Since the Department couldn't separate CARB's CO2e value into the component gases we have taken a conservative approach of calculating the value of carbon by applying the value of CO2 to the CO2e metric. Estimating the value for the individual gases in the CO2e metric would likely result in a higher value.

Avoided Social Cost of Carbon by Year and Discount Rate (CA Scaled)

		Annual Benefits (Million 2018$) by Discount Rate		
Year	WTW CO_2e MMT	3%	2%	1%
2025	0.000	0.00	0.00	0.00
2026	0.000	0.00	0.00	0.00
2027	0.001	0.07	0.16	0.52
2028	0.018	1.04	2.33	7.41

[59] NYS Department of Environmental Conservation, Establishing a Value of Carbon, https://www.dec.ny.gov/docs/administration_pdf/vocfguid.pdf
[60] CARB, ACT Attachment D, Table 6

2029	0.052	3.05	6.80	21.40
2030	0.102	6.14	13.58	42.61
2031	0.162	9.92	21.89	68.19
2032	0.231	14.33	31.58	97.42
2033	0.308	19.44	42.48	130.72
2034	0.396	25.36	55.33	169.07
2035	0.488	31.76	69.21	209.51
2036	0.580	38.84	82.74	249.91
2037	0.669	45.47	96.78	289.68
2038	0.756	52.07	110.74	329.39
2039	0.839	58.64	123.80	367.32
2040	0.919	65.15	137.43	404.27
TOTAL	5.521	371.29	794.84	2,387.33
Net Present Worth		263.40	631.58	2,127.08

Avoided Social Cost of Carbon by Year and Discount Rate (ICCT MOVES3 Modeling)

		Annual Benefits (Million 2018$) by Discount Rate		
Year	WTW CO_2e MMT	3%	2%	1%
2025	0.00	0.00	0.00	0.00
2026	0.00	0.00	0.00	0.00
2027	0.12	6.87	15.38	49.27
2028	0.23	13.40	29.92	95.11

2029	0.35	20.72	46.21	145.41
2030	0.47	28.29	62.50	196.18
2031	0.67	40.97	90.40	281.61
2032	0.88	54.67	120.44	371.58
2033	1.08	68.14	148.87	458.13
2034	1.28	82.00	178.92	546.70
2035	1.49	96.91	211.17	639.28
2036	1.75	117.21	249.71	754.24
2037	2.01	136.58	290.72	870.20
2038	2.27	156.45	332.73	989.37
2039	2.53	176.82	373.29	1,107.60
2040	2.79	197.70	417.07	1,226.84
TOTAL	17.92	1,196.74	2,567.32	7,731.52
Net Present Worth		859.87	2,057.47	6,918.49

Estimated Avoided Social Cost of Carbon from 2025-2040

Scenario	Avoided SC-CO_2 3% Discount Rate (2018$ millions)	Avoided SC-CO_2 2% Discount Rate (2018$ millions)	Avoided SC-CO_2 1% Discount Rate (2018$ millions)
CA Scaled	263	632	2,127
MOVES3	860	2,057	6,918

Summary of Benefits-Costs for Proposed ACT Regulation

The Department is presenting a summary of the two methodologies used to evaluate ACT adoption costs and benefit in New York State. The format of these tables align with California's ACT Attachment D, Table V-18, but notably include the value of carbon estimates as the Department's guidance specifically recommends that State entities provide an assessment using a central value that is estimated at the 2 percent discount rate as the primary value for decision-making.[61]

Total Benefit-Cost Ratio and New Benefits for ACT Adoption from 2020-2040 (billion 2018$) – California Rulemaking with VMT and Health Benefit Scaling

Total Cost	Health Benefits	Cost-Saving (Benefit)	Tax & Fee Revenue	Social Cost of Carbon	Total Benefit	Net Benefit	Benefits-Cost Ratio
6.78	3.31	5.49	-0.25	0.63	9.18	2.40	0.35

Total Benefit-Cost Ratio and New Benefits for ACT Adoption from 2020-2040 (billion 2018$) – MOVES3 modeling, COBRA Health Risk Simulation, California Rulemaking with VMT Scaling

Total Cost	Health Benefits	Cost-Saving (Benefit)	Tax & Fee Revenue	Social Cost of Carbon	Total Benefit	Net Benefit	Benefits-Cost Ratio
6.78	0.42	5.49	-0.25	2.06	7.70	0.94	0.14

Both methodologies result in a positive net benefit with ACT adoption.

Potential Impact to Truck Fleets

Fleet owners would not be required to purchase ZEV trucks under the proposed ACT adoption.

[61] NYS DEC, Establishing a Value of Carbon, Pg.3. https://www.dec.ny.gov/docs/administration_pdf/vocfguid.pdf

However, if fleet owners choose to purchase electric trucks for their fleets, they would incur costs after the point of sale such as taxes, fueling, maintenance, midlife costs, and registration fees. Fleet owners would also incur costs relating to electric vehicle supply equipment such as infrastructure, maintenance bay upgrades, workforce training, and other transitional costs.

The proposed amendments would reduce costs to the state's overall trucking fleet as the savings from reduced operational costs of ZEVs offset the higher upfront vehicle purchase price (without application of incentives) and infrastructure costs. For certain battery-electric vehicles, the total cost of ownership is lower compared to diesel vehicles. CARB examined the cost difference using a California reference fleet of 20 Class 4-5 last mile delivery vehicles in 2024 for usage over 12 years. The battery-electric fleet saved approximately $1 million over 12 years, including LCFS revenue.[62] Based on CARB's "Draft Advanced Clean Trucks Total Cost of Ownership Discussion Document", battery-electric technologies are expected to reach total cost of ownership parity with diesel-powered vehicles by the 2024 for some applications.[63]

New York has supported, and is continuing to support, various programs to promote the transition of New York's transportation sector to cleaner energy. Two such programs are the New York Truck Voucher Incentive Program (NYTVIP) administered by the New York State Energy and Research Development Authority[64] and the New York City Clean Trucks Program administered by the New York City Department of Transportation. Currently, NYTVIP offers vouchers, or discounts to the initial purchase price, to eligible New York fleets that purchase Class 4-8 battery-electric and fuel cell vehicles. Vouchers for battery-electric and fuel cell vehicles currently cover up to 95 percent of the incremental cost of the electric vehicle. The incremental

[62] CARB. ACT ISOR, October 19, 2019. Pg. IX-32
[63] CARB. ACT Appendix H, Draft Advanced Clean Trucks Total Cost of Ownership Discussion Document. https://ww3.arb.ca.gov/regact/2019/act2019/apph.pdf
[64] NYSERDA, NY Truck Voucher Incentive Program, https://www.nyserda.ny.gov/All-Programs/Programs/Truck-Voucher-Program

cost is the cost difference between the ZEV and a comparable diesel vehicle, up to a certain cap depending on vehicle class, per vehicle.

The New York City Clean Truck Program offers rebate incentives for Class 4-8 heavy-duty battery-electric vehicles registered within the nine county New York Metropolitan Area and operated within, or near, New York City Industrial Business Zones that are located near disadvantaged communities. The New York City Clean Truck Program electric vehicle incentive amounts are aligned with NYTVIP.

The New York State Public Service Commission has also approved a Medium- and Heavy-Duty Fleet Make-Ready Pilot Program. The pilot program focuses on disadvantaged communities and offers incentives to mitigate the cost of developing EV charging capacity for qualifying medium- and heavy-duty vehicle fleets. The incentives cover up to 90 percent of the utility-side make-ready costs.[65] The pilot program is separate from the $700 million Make-Ready Program for light-duty vehicles.

Potential Impact on Businesses Due to Large Entity Reporting Requirement

The proposed ACT amendments include a one-time large entity reporting requirement that applies to large fleet owners and companies that contract for transportation related services. Qualifying entities would be asked to report information regarding what vehicles they own and how they operate, as well as company-wide information about their New York locations and how they and their contractors move freight and perform other services. The extent of reporting will vary based on size of the company and truck ownership. Businesses with a single facility category and with few vehicles can expect to complete their reporting in 4 to 10 hours.

[65] State of New York Public Service Commission. Order Establishing Electric Vehicle Infrastructure Make-Ready Program and other Program, XVII. Medium- and Heavy-Duty Fleet Make-Ready Pilot Program, http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B8A20EDDA-02D4-4ED2-968D-B8B35A522A75%7D

Businesses with a moderate amount of facilities and vehicles can expect to complete their reporting in 20 to 30 hours. Businesses with a large amount of facilities can expect to complete their reporting in approximately 40 hours. The cost to the business is expected to be the number of hours expected multiplied by the cost for staffing per hour and the lost revenue from the employee assigned to collect information. CARB has developed a reporting template for the Advanced Clean Trucks Regulation under Large Entity Reporting Sample Response.[66]

Potential Impacts on State and Local Government

State and local government agencies would also be required to report information under the large entity reporting requirement. It is anticipated that state and local government agencies would require similar time allotments as other large entities to complete reporting.

The proposed amendments will affect tax revenue at the state and local level as the current purchase cost of an electric truck is greater than a comparable diesel truck. Sales tax revenues are likely to increase as zero-emissions trucks are more expensive than their gasoline and diesel fueled counterparts.

The increase in battery-electric vehicles sold will increase the amount of electricity used resulting in increased tax revenue collected by local governments. Fuel tax revenue generated from fuel taxes on gasoline and diesel will be reduced as gasoline and diesel vehicles will likely be displaced with electric and hydrogen fuel vehicles reducing the amount of gasoline and diesel dispensed in the state.

[66] CARB, ACT Appendix J, Large Entity Reporting Sample Response, https://ww3.arb.ca.gov/regact/2019/act2019/appj.pdf

Potential Impact on Business Competitiveness

The proposed amendments apply equally to all medium- and heavy-duty vehicle manufacturers that sell vehicles in New York and will likely promote business competitiveness, as manufacturers may compete on vehicle pricing and incentives to ensure medium- and heavy-duty ZEV sales to meet the proposed requirements.

Potential Impact on Employment

The proposed amendments are not expected to cause a significant change in New York employment. The adoption of the ACT regulation would result in positive impacts for some industries and negative impacts for others. CARB estimated a slightly positive job impact of 0.04 percent from 2025 to 2040.[67] Motor vehicle and parts manufacturing represents a small portion of employment in New York. Based on Bureau of Labor Statistics data, as of January 2020, vehicle parts manufacturing employment accounted for 0.11 percent of the civilian labor force of New York.[68] The medium- and heavy-duty vehicle parts segment is assumed to be included in the count for vehicle parts manufacturing. The oil and gas extraction industry as well as automotive repair and maintenance industry may see a decreased employment growth rate due to a reduced demand in gasoline and diesel fueled medium and heavy-duty vehicles. Any employment losses associated with decreased sales and manufacturing of diesel and gasoline medium- and heavy-duty vehicles are likely to be offset by employment increases in fields associated with the deployment of battery electric vehicles and fuel cell vehicles. These fields include battery manufacturing, fuel cell manufacturing, electric vehicle parts manufacturing, electric vehicle charging infrastructure installation, hydrogen fueling infrastructure, electric vehicle and charging/fueling infrastructure repair and more.

[67] CARB. ACT ISOR, October 19, 2019. Pg. IX-38
[68] Bureau of Labor Statistics, Automotive Industry: Employment, Earnings, and Hours, https://www.bls.gov/iag/tgs/iagauto.htm

Potential Impact on Business Creation, Elimination or Expansion

The proposed amendments would accelerate the transition of the New York medium- and heavy-duty fleet to zero-emissions vehicles. The medium- and heavy-duty zero emission vehicles sold in New York as a result of adoption would rely on battery and fuel-cell technology rather than gasoline and diesel. Businesses that rely on selling gasoline and diesel fuel in New York State may be negatively impacted. Businesses involved in the manufacturing of electric vehicle batteries, fuel-cell technologies, and electric vehicle parts are likely to be positively impacted. Businesses involved in installation, maintenance, and repair of electric vehicle charging infrastructure and hydrogen fueling infrastructure are likely to be positively impacted.

III. LOCAL GOVERNMENT MANDATES

The proposed ACT regulation does not impose a local government mandate pursuant to Executive Order 17. No additional paperwork or staffing requirements are expected. Local governments have no additional compliance obligations as compared to other subject entities.

IV. PAPERWORK

The ACT regulation should not result in any significant paperwork for New York vehicle suppliers, dealers or government. Manufacturers would be required to submit annual medium- and heavy-duty vehicle sales information to New York. This is expected to be in an electronic system similar to the existing ZEV CRDT system for light-duty ZEV reporting. Large entities that operate medium and heavy-duty trucks in New York would be required to comply with a one-time reporting requirement. Affected entities would be required to complete a one-time submittal of aggregated and binned data for representative facilities. Entities would also be able to report binned, representative information about the vehicle types owned.

V. DUPLICATION

There are no relevant state or federal rules or other requirements that would duplicate, overlap, or conflict with the proposed ACT rulemaking.

VI. ALTERNATIVES

The option of maintaining the current low emission vehicle (LEV), ZEV, and GHG programs without adopting CARB's ACT was reviewed and rejected. The primary bases for this decision were that the Department believes this is not permitted under Section 177 due to the identicality requirement, and that it would not realize the additional emission reduction benefits associated with the proposed amendments. New York State must maintain compliance with recent improvements in the California standards in order to achieve the emission reductions necessary for the attainment and maintenance of the ozone and carbon monoxide standards, as well as reductions in GHG emissions in furtherance of CLCPA requirements.

There is currently no federal ZEV sales requirement for medium and heavy-duty vehicles available in lieu of California standards. Not adopting the ACT standards would violate the identicality requirement of Section 177 regarding LEV 3 standards, forcing New York to revert to federal Tier 3 standards for medium-duty vehicles. This would adversely impact New York's ability to achieve and maintain air quality standards and its climate change goals, including the requirements of the Climate Act.

VII. FEDERAL STANDARDS

There is no federal medium and heavy-duty ZEV regulation equivalent to California's ACT regulation. The adoption of California's ACT regulation would accelerate the transition of New York's medium- and

heavy-duty fleet to zero-emission vehicles and significantly reduce NOx, particulate matter, and greenhouse gas emissions from these vehicles.

The severity of New York State's air quality problems dictates that New York State must maintain compliance with recent improvements in the California standards in order to achieve necessary reductions of pollutants that aid in the formation of ground-level ozone, as well as climate change. Adhering to federal standards would impede New York's ability to attain and maintain ambient air quality standards and make reasonable further progress as required in its State Implementation Plan. In addition, adhering to federal standards would similarly impede the State's ability to meet the GHG emission reduction requirements of the Climate Act.

VIII. COMPLIANCE SCHEDULE

The ACT regulation would take effect beginning with the 2025 model year for vehicles with GVWR greater than 8,500 lbs. The sales requirements would increase annually until the model year 2035 where it will remain for subsequent model years. Entities subject to the one-time large entity reporting requirement would be required to report by April 1, 2023.

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

Job Impact Statement

1. Nature of Impact:

The New York State Department of Environmental Conservation (Department) is adopting amendments to 6 NYCRR Section 200.9 and 6 NYCRR Part 218 to incorporate California's Advanced Clean Truck (ACT) standards for medium- and heavy-duty trucks, which became effective March 15, 2021 in California.

The proposed amendments to the regulations may adversely impact jobs and employment opportunities in New York State. New York State has had the California on-road motor vehicle emissions program in effect since model year 1993 for passenger cars and light-duty trucks, with the exception of model year 1995, medium-duty vehicles since model year 2004, and heavy-duty vehicles for model years 2005 through 2007. The Department is unaware of any significant adverse impact to jobs and employment opportunities as a result of previous revisions.

2. Categories and numbers affected:

The proposed revisions may have an adverse impact on businesses involved in manufacturing, selling, servicing, or purchasing medium- and heavy-duty vehicles. Medium- and heavy-duty vehicle manufacturers are expected to incur costs to comply with the regulation. The proposal will require an increasing percentage of annual medium- and heavy-duty vehicle sales be zero emission vehicles (ZEVs) for model years 2025 through 2035. There is currently little, or no, medium- and heavy-duty vehicle manufacturing in New York State. As a result, no significant job losses in this sector are expected within the State. Most, if not all, medium- and heavy-duty vehicle manufacturers will have to allocate resources to produce a greater quantity of California compliant zero emission medium- and heavy-duty vehicles to supply the New York market along with associated record

keeping, reporting, and warranty costs.

Dealerships will be able to sell California certified vehicles to buyers from states bordering New York. Since vehicles must be California certified in order to be registered in New York, New York residents will not be able to buy non-complying vehicles out-of-state but may be able to buy complying vehicles out-of-state. These businesses compete within the state and generally are not subject to competition from out-of-state businesses. Therefore, the regulation is not expected to impose a competitive disadvantage on affiliated businesses, and there would be no change from the current relationship with out-of-state businesses.

Ancillary businesses such as gas stations, repair shops, and parts retailers may be adversely impacted as the medium- and heavy-duty vehicle fleet transitions from gasoline and diesel fueled internal combustion engines to battery electric and other zero emission propulsion systems. It is anticipated that any losses in these sectors will be offset by increased employment opportunities in fields related to electric vehicle charging infrastructure and training technicians to service new medium- and heavy-duty ZEVs.

3. Regions of adverse impact:

None.

4. Minimizing adverse impact:

The regulation attempts to minimize adverse impacts on medium- and heavy-duty vehicle manufacturers by offering various compliance flexibility mechanisms. These include weight class modifiers, near zero emission vehicle (NZEV) credit provisions, and credit averaging-banking-trading (ABT) programs. The weight class modifier provides flexibility allowing manufacturers to produce more ZEVs in one vehicle class to avoid having to produce a small number of ZEVs in other groups. Credit is also given for NZEVs through model year 2035. Credits may be banked, traded, and sold among vehicle classes and to other manufacturers.

The regulation is not expected to have adverse impacts on medium- and heavy-duty vehicle dealers. Dealerships will be required to ensure that the vehicles they sell are California certified. Starting with the 1993 model year for light-duty vehicles, the 2004 model year for medium-duty vehicles, and the 2005 model year for heavy-duty vehicles, most manufacturers have included provisions in their ordering mechanisms to ensure that only California certified vehicles are shipped to New York dealers. The implementation of the regulation is not expected to be burdensome in terms of additional reporting requirements for dealers. There would be no change in the competitive relationship with out-of-state businesses.

5. Self-employment opportunities:

None that the Department is aware of at this time.

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

Rural Area Flexibility Analysis

1. Types and estimated numbers of rural areas:

The New York State Department of Environmental Conservation (Department) is adopting amendments to 6 NYCRR Section 200.9 and 6 NYCRR Part 218 to incorporate California's Advanced Clean Truck (ACT) standards for medium- and heavy-duty trucks, which became effective March 15, 2021 in California.

There are no requirements in the adopted regulation which apply only to rural areas. These changes apply to manufacturers' requirements for the manufacture and sale of medium- and heavy-duty zero emission vehicles (ZEVs) sold in New York. The proposed revisions may have an adverse impact on businesses involved in manufacturing, selling, servicing, or purchasing medium- and heavy-duty vehicles.

The adopted changes are revisions to the current low emission vehicles (LEV) standards. New York State has had the California on-road motor vehicle emissions program in effect since model year 1993 for passenger cars and light-duty trucks, with the exception of model year 1995, medium-duty vehicles since model year 2004, and heavy-duty vehicles for model years 2005 through 2007; the Department is unaware of any adverse impact to rural areas as a result. The beneficial emission reductions from the program accrue to all areas of the state.

2. Reporting, record keeping, other compliance requirements, and professional services:

There are no specific requirements in the proposed regulation which apply exclusively to rural areas. Under the proposed amendments, large entities that operate medium and heavy-duty trucks in New York would be required to submit a one-time reporting requirement of aggregated and binned data for representative facilities. Entities would also be able to report binned, representative information about the vehicle types

owned. Large entities would include, but not be limited to; retailers, manufacturers, refiners, hotels, drayage terminal operators, utility providers, refuse companies, federal, state, and local government agencies, and other types of large employers. Professional services are not anticipated to be necessary to comply with the proposed rules.

Medium- and heavy-duty vehicle manufacturers will be required to submit annual compliance reports to the Department to demonstrate compliance with the proposed regulations. The reporting requirements are expected to be similar to existing light-duty reporting requirements. Professional services are not anticipated to be necessary to comply with the rules.

3. Costs:

The adopted revisions are expected to result in additional costs for New York State consumers of medium- and heavy-duty vehicles. The one-time large entity reporting requirement is estimated to have a total cost of $4.8 million for all subject entities in New York State. Consumers of medium- and heavy-duty vehicles will also face increased upfront purchase costs for new zero emission vehicles, primarily from the cost of battery packs. Increased purchase costs are expected to be offset in part by state and federal purchase rebates and reduced operation and maintenance costs relative to gasoline and diesel fueled vehicles. Medium- and heavy-duty vehicles are anticipated to achieve cost parity with conventionally fueled vehicles by 2035 without state or federal rebates.

Medium- and heavy-duty vehicle manufacturers will likely see increased costs to produce and deliver compliant vehicles to the New York market. These costs are anticipated to be passed thought to consumers in the form of increased purchase prices. Dealerships will be required to ensure that the vehicles they sell are California certified. Starting with the 1993 model year for light-duty vehicles, the 2004 model year for medium-duty vehicles, and the 2005 model year for heavy-duty vehicles, most manufacturers have included provisions in their ordering mechanisms to ensure that only California certified vehicles are shipped to New York dealers. The

implementation of the regulation is not expected to be burdensome in terms of additional reporting requirements for dealers.

4. Minimizing adverse impact:

The proposed changes apply statewide. The regulation attempts to minimize adverse impacts on medium- and heavy-duty vehicle manufacturers by offering various compliance flexibility mechanisms. These include weight class modifiers, near zero emission vehicle (NZEV) credit provisions, and credit averaging-banking-trading (ABT) programs. The weight class modifier provides flexibility allowing manufacturers to produce more ZEVs in one vehicle class to avoid having to produce a small number of ZEVs in other groups. Credit is also given for NZEVs through model year 2035. Credits may be banked, traded, and sold among vehicle classes and to other manufacturers. The regulation is not expected to have adverse impacts on medium- and heavy-duty vehicle dealers. The Department is minimizing the reporting requirement for large entities that own or operate medium- and heavy-duty vehicles by requiring entities to only report once.

5. Rural area participation:

The Department plans on holding a virtual public hearing to provide information on the proposed regulation and solicit public comments. Additionally, there will be a public comment period in which interested parties can submit written comments.

6 NYCRR Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines

6 NYCRR Part 200, General Provisions

Regulatory Flexibility Analysis for Small Businesses and Local Governments

1. Effect of rule:

The New York State Department of Environmental Conservation (Department) is adopting amendments to 6 NYCRR Section 200.9 and 6 NYCRR Part 218 to incorporate California's Advanced Clean Truck (ACT) standards for medium- and heavy-duty trucks, which became effective March 15, 2021 in California. These changes apply to manufacturers' requirements for the manufacture and sale of medium- and heavy-duty zero emission vehicles (ZEVs) sold in New York. The proposed revisions may have an adverse impact on businesses involved in manufacturing, selling, servicing, or purchasing medium- and heavy-duty vehicles.

State and local governments are also consumers of medium- and heavy-duty vehicles that will be regulated under the adopted amendments. Therefore, local governments who own or operate vehicles in New York State are subject to the same requirements as owners of private vehicles in New York State. The adopted changes are revisions to the current low emission vehicle (LEV) standards. New York State has had the California on-road motor vehicle emissions program in effect since model year 1993 for passenger cars and light-duty trucks, with the exception of model year 1995, medium-duty vehicles since model year 2004, and heavy-duty vehicles for model years 2005 through 2007 and the Department is unaware of any adverse impact to small businesses or local governments as a result of previous revisions. Section 177 of the federal Clean Air Act requires New York to maintain standards identical to California's in order to maintain the LEV program.

2. Compliance requirements:

There are no specific requirements in the proposed regulation which apply exclusively to small

businesses. Local governments may be subject to the one-time large entity reporting requirement if they operate at least one medium- or heavy-duty vehicle. The large entity reporting requirements are effective statewide. Medium- and heavy-duty vehicle manufacturers will be required to submit annual compliance reports to the Department to demonstrate compliance with the proposed regulations. The reporting requirements are expected to be similar to existing light-duty reporting requirements. Professional services are not anticipated to be necessary to comply with the rules.

3. Professional services:

There are no professional services needed by small business or local government to comply with the adopted rule.

4. Compliance costs:

The proposed amendments include a one-time large entity reporting requirement that applies to large fleet owners, government agencies, and companies that contract for transportation related services. The extent of reporting will vary based on size of the company and truck ownership. Businesses with a single facility category and with few vehicles can expect to complete their reporting in 4 to 10 hours. Businesses with a moderate amount of facilities and vehicles can expect to complete their reporting in 20 to 30 hours. Businesses with a large amount of facilities can expect to complete their reporting in approximately 40 hours. The cost to the business is expected to be the number of hours expected multiplied by the cost for staffing per hour and the lost revenue from the employee assigned to collect information. The cost of the one-time large entity reporting for all New York entities combined is estimated to be approximately $4.8 million.

New York State currently maintains personnel and equipment to administer the LEV program. No additional costs will be incurred by local governments for the administration of this program.

5. Economic and technological feasibility:

Most commercial medium- and heavy-duty vehicles operate less than 100 miles per day and operate from fixed locations. There are numerous models of medium- and heavy-duty zero-emission vans, trucks and buses from several manufacturers currently available, which are ideally suited to serve local and last-mile operations. It is expected that a growing number of ZEVs across all vehicle classes will become suitable for more applications as technology advances.

The proposed amendments would reduce costs to the state's overall trucking fleet as the savings from reduced operational costs of ZEVs significantly outweigh the higher upfront vehicle purchase price (without application of incentives) and infrastructure costs. For battery-electric vehicles, the total cost of ownership is lower compared to diesel vehicles. Cost parity is anticipated to be achieved for a growing number of classes by 2035 as battery prices fall and technology improves. Incentives are currently available to offset some or all of the higher vehicle capital costs and some of the early infrastructure costs to help fleets begin transitioning to ZEVs now.

Several funding programs are available to support the use of advanced technologies administered by state agencies, federal agencies, and local air districts. Two such programs are the New York Truck Voucher Incentive Program (NYTVIP) administered by the New York State Energy and Research Development Authority and the New York City Clean Trucks Program administered by the New York City Department of Transportation. Currently, NYTVIP offers vouchers, or discounts to the initial purchase price, to eligible New York fleets that purchase Class 4-8 battery-electric and fuel cell vehicles. Vouchers for battery-electric and fuel cell vehicles currently cover 95 percent of the incremental cost of the electric vehicle. The incremental cost is the cost difference between the ZEV and a comparable diesel vehicle, up to a certain cap depending on vehicle class, per vehicle.

The New York City Clean Trucks Program also offers rebate incentives for Class 4-8 heavy-duty battery-electric vehicles that would be registered in the nine county New York Metropolitan Area and operated within, or near, New York City Industrial Business Zones that are located near disadvantaged communities. The New York City Clean Trucks Program electric vehicle incentives are aligned with NYTVIP.

The New York Public Service Commission has also approved a Medium- and Heavy-Duty Fleet Make-Ready Pilot Program. The Pilot Program focuses on disadvantaged communities and offers incentives to mitigate the cost of developing Electric Vehicle charging capacity for qualifying medium- and heavy-duty vehicle fleets. The incentives cover up to 90 percent of the utility-side make-ready costs.

6. Minimizing adverse impact:

The proposed changes apply statewide. The regulation attempts to minimize adverse impacts on medium- and heavy-duty vehicle manufacturers by offering various compliance flexibility mechanisms. These include weight class modifiers, near zero emission vehicle (NZEV) credit provisions, and credit averaging-banking-trading (ABT) programs. The weight class modifier provides flexibility allowing manufacturers to produce more ZEVs in one vehicle class to avoid having to produce a small number of ZEVs in other groups. Credit is also given for NZEVs through model year 2035. Credits may be banked, traded, and sold among vehicle classes and to other manufacturers. The regulation is not expected to have adverse impacts on medium- and heavy-duty vehicle dealers. The Department is minimizing the reporting requirement for large entities that own or operate medium- and heavy-duty vehicles by requiring entities to only report once.

There will be no adverse impact on local governments who own or operate vehicles in the state because they are subject to the same requirements as those imposed on owners of private vehicles. This rulemaking is not a local government mandate pursuant to Executive Order 17. This regulation contains exemptions for emergency

vehicles, and military tactical vehicles and equipment.

7. Small business and local government participation:

The Department plans on holding a virtual public hearing after the amendments are proposed. Small businesses and local governments will have the opportunity to attend this public hearing. Additionally, there will be a public comment period in which interested parties can submit written comments.

8. For rules that either establish or modify a violation or penalties associated with a violation:

In accordance with NYS State Administrative Procedures Act (SAPA) Section 202-b, this rulemaking does not include a cure period because the Department is undertaking this rulemaking to maintain identicality with Section 177 of the Clean Air Act.