

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

Revised 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, 2023. 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. The fleet owner or responsible official shall maintain the records of their information required by sections 2012.1 and 2012.2 until December 31, 2025 for their overall fleet.

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)] <u>(7-25-16)</u>	** ***
218-1.2(y)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] <u>(7-25-16)</u>	** ***
218-1.2(z)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] <u>(7-25-16)</u>	** ***
218-1.2(ab)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] <u>(7-25-16)</u>	** ***
218-1.2(ac)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] <u>(7-25-16)</u>	** ***
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)] <u>(7-25-16)</u>	** ***
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)] <u>(7-25-16)</u>	** ***

218-1.2(aq)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] <u>(7-25-16)</u>	** ***
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)] <u>(4-1-19)</u>	** ***
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)] <u>(7-25-16)</u>	** ***
218-1.2(be)	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] <u>(10-1-19)</u>	** ***
218-1.2(bf)	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] <u>(10-1-19)</u>	** ***
218-1.2(bg)	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] <u>(10-1-19)</u>	** ***
218-1.2(bh)	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] <u>(10-1-19)</u>	** ***
218-1.2(bi)	California Code of Regulations, Title 13, Section 1900 [(10-8-15)] <u>(7-25-16)</u>	** ***
218-2.1(a)	California Code of Regulations, Title 13, Section 1956.8 [(10-7-06)] <u>(4-1-20)</u>	** ***
	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)	** ***
	<u>California Code of Regulations, Title 13, Section 1961.1 (8-7-12)</u>	** ***
	California Code of Regulations, Title 13, Section 1961.2 [(10-8-15)] <u>(4-1-19)</u>	** ***
	<u>California Code of Regulations, Title 13, Section 1961.3 (12-12-18)</u>	** ***
	California Code of Regulations, Title 13, Section 1962 (2-13-10)	** ***
	California Code of Regulations, Title 13, Section 1962.1 (1-1-16)	** ***
	<u>California Code of Regulations, Title 13, Section 1962.2 (1-1-16)</u>	** ***
	<u>California Code of Regulations, Title 13, Section 1963 (3-15-21)</u>	** ***

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

	California Code of Regulations, Title 13, Section 1978 (10-8-15)	** ***
	<u>California Code of Regulations, Title 13, Section 2030 (9-5-14)</u>	** ***
	<u>California Code of Regulations, Title 13, Section 2031 (9-5-14)</u>	** ***
	California Code of Regulations, Title 13, Section 2047 (5-31-88)	** ***
	California Code of Regulations, Title 13, Section 2065 [(12-04-03)] <u>(4-1-19)</u>	** ***
	California Code of Regulations, Title 13, Section 2235 [(8-8-12)] <u>(10-1-19)</u>	** ***
	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 <i>et. seq.</i> (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)] <u>(4-1-19)</u>	** ***
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)] <u>(4-1-19)</u>	** ***
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)] <u>(4-1-19)</u>	** ***
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)	<u>California Code of Regulations, Title 13, Section 1963 (3-15-21)</u>	** — *** —
	<u>California Code of Regulations, Title 13, Section 1963.1 (3-15-21)</u>	** — *** —
	<u>California Code of Regulations, Title 13, Section 1963.2 (3-15-21)</u>	** — *** —
	<u>California Code of Regulations, Title 13, Section 1963.3 (3-15-21)</u>	** — *** —
	<u>California Code of Regulations, Title 13, Section 1963.4 (3-15-21)</u>	** — *** —
	<u>California Code of Regulations, Title 13, Section 1963.5 (3-15-21)</u>	** — *** —
<u>218-4.2</u>	<u>California Code of Regulations, Title 13, Section 2012 (3-15-21)</u>	** — *** —
	<u>California Code of Regulations, Title 13, Section 2012.1 (3-15-21)</u>	** — *** —
	<u>California Code of Regulations, Title 13, Section 2012.2 (3-15-21)</u>	** — *** —
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)] <u>(4-1-19)</u>	** ***
218-5.2(a)	California Code of Regulations, Title 13, Section 2065 [(12-04-03)] <u>(4-1-19)</u>	** ***
	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 <i>et. seq.</i> (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)] <u>(1-1-19)</u>	** ***
218-7.2(c)(2)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] <u>(1-1-19)</u>	** ***
218-7.2(c)(8)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] <u>(1-1-19)</u>	** ***
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)] <u>(1-1-19)</u>	** ***
218-7.4(b)(3)(ii)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] <u>(1-1-19)</u>	** ***
218-7.5(b)	California Code of Regulations, Title 13, Section 2222 [(4-17-17)] <u>(1-1-19)</u>	** ***
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)] <u>(12-12-18)</u>	** ***
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)] <u>(12-12-18)</u>	** ***

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)] <u>(12-12-18)</u>	** ***
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)] <u>(12-12-18)</u>	** ***
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)] <u>(12-12-18)</u>	** ***
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)] <u>(12-12-18)</u>	** ***
218-9.1	California Code of Regulations, Title 13, Section 2035 [(11-9-07)] <u>(10-1-19)</u>	** ***

	California Code of Regulations, Title 13, Section 2037 [(12-5-14)] <u>(4-1-19)</u>	** ***
	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)] <u>(10-1-19)</u>	** ***
	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	<u>California Code of Regulations, Title 13, Section 2140 (12-5-14)</u>	<u>**</u> <u>***</u>
	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)] <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)] <u>(2-23-90)</u>	** ***
218-11.1	California Code of Regulations, Title 13, Section 1965 [(10-8-15)] <u>(4-1-19)</u>	** ***
218-11.2	California Code of Regulations, Title 13, Section 1965 [(10-8-15)] <u>(4-1-19)</u>	** ***

Revised 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) is amending 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 adopted 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 adopted 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 CO₂e GWP100, rather than the GWP20 required by the Climate Act) in New York. The CLCPA defines "carbon dioxide equivalent" (CO₂e) 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 PM₁₀ ambient concentration from on-road medium- and heavy duty vehicles of approximately 0.265 micrograms/meter³ (µg/m³) , 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 adopted 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 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 (CO₂e, 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 CO₂e, GWP100 from 2025-2040.

Where appropriate, costs and benefits associated with New York's 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 CO₂e 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 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 adopted 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 adopted 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 adopted 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 adopted 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.

Revised 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) is amending 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 adopted 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 adopted 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 OBJECTIVES

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 adopting 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.

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

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.

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 “adopted” 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” (CO₂e) as a measurement of global warming potential (GWP) based on a twenty-year timeframe (GWP20), rather than a one hundred-year timeframe (GWP100). The USEPA estimates that on-road medium- and heavy- duty vehicles emitted approximately 13.6 million tons of GHG (when measured in CO₂e 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,

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>

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>

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-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 percent¹⁰ 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 NO_x 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.

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.

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).

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 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 PM₁₀ ambient concentration from on-road medium- and heavy duty vehicles of approximately 0.265 micrograms/meter³ (µg/m³), 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

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. Env'tl. Res. & Public Health 1, 1 (2018), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5800116/>

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 Env'tl. Health 1, 5-8 (2016), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5002106/pdf/12940_2016_Article_172.pdf

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 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

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

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.

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.

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

²⁰ Public Service Law Section 66-p.

²¹ ECL Section 75-0107.

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 amending 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 adopted amendment establishes annual ZEV sales requirements for original equipment 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 adopted 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

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>

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.

Adopted ZEV Sales Percentage Schedule²⁴

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

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

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 Modifiers²⁵

	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
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

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

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 adopted 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 adoption of California's ACT regulation is expected to significantly reduce NO_x, 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 adoption of California's ACT regulation from two sources:

1. Attachment D²⁶ to California's ACT rulemaking provides estimated emission reductions in California for NO_x, 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

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>

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

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 NO_x, 349 short tons of PM_{2.5}, and 5.52 million metric tons of GHGs expressed in carbon dioxide equivalents (CO₂e, 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.

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>

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

	Tank to Wheel NOx (short tons)	Tank to Wheel PM _{2.5} (short tons)	Well to Wheel CO _{2e} (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 C²⁹.

Cost to Manufacturers

The adopted 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 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

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>

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

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 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.

Incremental Cost of ZEVs in New York by Calendar Year

Calendar Year	Total Incremental Cost (millions 2018\$)
2025	40.96

³³ CARB, Attachment C, Table IV-8

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 procedure³⁴. 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 services will be required to report vehicle information and how they are operated, as

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>

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

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>

savings is expected due 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 1B³⁸, 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

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/>

efficiency and utilization 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<ype=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 CARB⁴², 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

⁴¹ CARB, ACT ISOR, October 19, 2019, Pg. IX-22

⁴² CARB, ACT ISOR, October 19, 2019, Table IX-14

maintenance facilities to service medium and heavy-duty ZEVs. New York costs to 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 price⁴³. 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

⁴³ CARB, ACT ISOR, October 19, 2019, Pg. IX-23

⁴⁴ CARB, ACT ISOR, October 19, 2019, Table IX-17

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. 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

⁴⁵ CARB, ACT ISOR, October 19, 2019, Pg. IX-25

⁴⁶ CARB, ACT ISOR, October 19, 2019, Pg. IX-25

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

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 adopted 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

⁴⁷ NYS Department of Motor Vehicles, Commercial Vehicle Registration Fee Schedule, September 1, 2009, <https://dmv.ny.gov/forms/mv202c.pdf>

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 2040⁴⁹. 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.

⁴⁸ CARB, ACT Attachment C, Tables IV-9, IV-10, and V-18,

⁴⁹ CARB, ACT Attachment C, Table V-18

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 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 adoption of ACT would reduce NO_x 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 Benefits⁵⁴

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).

⁵⁴ CARB. ACT Attachment C. Table II-3

2. NESCAUM sponsored CO-Benefits Risk Assessment (COBRA) modeling⁵⁵ 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 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

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>

⁵⁷ CARB. ACT ISOR, October 19, 2019. Pg. V-3 to V-6

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 Health 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.

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

⁵⁸ U.S. Department of Transportation, Transportation and Health Tool, <https://www.transportation.gov/transportation-health-tool>

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 CO₂e reductions⁶⁰ scaled by the VMT based scaling factor of 0.32 and by using CO₂e 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

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

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 ₂ e 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
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
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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 Adopted 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

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

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 adopted ACT adoption. 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 adopted 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 Authority⁶⁴ 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 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-

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>

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 adopted 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. 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

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>

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

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 adopted 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.

Potential Impact on Business Competitiveness

The adopted 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 adopted 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.

Potential Impact on Business Creation, Elimination or Expansion

The adopted 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

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>

infrastructure are likely to be positively impacted.

III. LOCAL GOVERNMENT MANDATES

The adopted 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 adopted 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 identity 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 identity 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

Revised 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 adopted 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 adopted 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 regulation will require an increasing percentage of annual medium- and heavy-duty vehicle sales be zero emission vehicles (ZEVs) for model years 2025 through 2035. The Department is unaware of any manufacturing of medium- and heavy-duty vehicles subject to the ACT regulation 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

Revised 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 adopted 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 adopted regulation which apply exclusively to rural

areas. Under the adopted 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 adopted rules.

Medium- and heavy-duty vehicle manufacturers will be required to submit annual compliance reports to the Department to demonstrate compliance with the adopted 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 adopted 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 held a virtual public hearing to provide information on the proposed regulation and solicit public comments. Additionally, there was a public comment period in which interested parties could submit written comments. 2,323 comments were received.

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

6 NYCRR Part 200, General Provisions

Revised 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 adopted 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 adopted 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 adopted 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 adopted 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 adopted 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 adopted 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 held a virtual public hearing after the amendments were proposed. Small businesses and local governments had the opportunity to attend this public hearing. Additionally, a public comment period was held in which interested parties could submit written comments. 2,323 comments were received.

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 identity with Section 177 of the Clean Air Act.

Summary of the Response to Comments

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

The New York State Department of Environmental Conservation (Department) is proposing to amend 6 New York Codes, Rules, and Regulations, Part 218, Emission Standards for Motor Vehicles and Motor Vehicle Engines, to incorporate California's Advanced Clean Trucks (ACT) zero emission vehicle (ZEV) standards for medium- and heavy-duty (MHD) vehicles.

Most commenters including vehicle manufacturers and environmental groups supported the Department's ACT adoption. The remainder, primarily trade associations representing engine manufacturers, the petroleum industry, renewable natural gas, agriculture, and food industry, were opposed to the regulation. Comments covered topics including general support for and opposition to the regulation, manufacturer ZEV sales mandate, alternative fuel types to ZEVs, early ZEV credits, ZEV mandate support, lead time requirement, delay ACT for future California revisions, vehicle design lifecycle, delay ACT for pending federal standards, Transportation Advisory Panel recommendations, supporting policies, New York businesses at a competitive disadvantage, ZEV purchase costs, out-of-state sales, lack of adequate investments, need for a multi-prong approach, identity, vehicle availability, legal issues, redefining near-zero, large entity reporting requirements, cost, pre-buy/no-buy, total cost of ownership, environmental and public health benefits, fuels, miscellaneous, and topics that were beyond the scope of this rulemaking.

Most commenters supported the Department's ACT adoption citing New York's climate change goals and the requirements of the Climate Leadership and Community Protection Act (CLCPA),

Chapter 106 of the Laws of 2019. Several stated adoption of MHD ZEV standards was vital given the transportation sector's disproportionate impact on mobile source criteria pollutant and greenhouse gas (GHG) emissions. Other commenters supported adoption of MHD ZEVs in general, but stated ACT was the incorrect mechanism to achieve this goal. These commenters advocated for proposed federal standards. The Department emphasized the importance of ACT adoption for both criteria and GHG pollutant reduction, to support the GHG emission reduction requirements of the CLCPA (see Environmental Conservation Law Article 75), and to support the statutory goal that one hundred percent zero-emissions MHD vehicles in the State by 2045 as set forth in recently adopted legislation (Chapter 423 of the Laws of 2021).

Comments were received in support and opposition to the manufacturer ZEV sales mandate. Some commenters stated the mandates were achievable and early credit provisions provided flexibility. Other commenters stated the ZEV sales mandate was a "naked sales requirement" without supporting investments in incentives and charging infrastructure. Commenters also stated that businesses and consumers would not purchase MHD ZEVs without corresponding ZEV purchase requirement. New York state has supporting programs and will evaluate these programs to determine if they should be expanded or if additional programs are needed.

Commenters stated the ACT regulation needed to consider alternative fuel options. Commenters stated renewable natural gas (RNG) vehicles provided an immediate emission reduction benefit, increased vehicle availability, and the ACT regulation should be revised to allow their use. The proposed changes did not meet the identity provisions of Section 177 of the Clean Air Act (CAA), nor the requirements of the CLCPA. RNG fuels and vehicles would not be banned under the ACT regulation.

Commenters requested limiting early ZEV credits to one year. This is not possible due to the identity provisions of Section 177.

Commenters stated support for ZEV mandates and noted the concept is similar to existing light-duty ZEV mandates. Commenters stated the manufacturer ZEV sales requirement was a necessary first step and manufacturers had many options for promoting vehicle sales. The Department agreed.

The Department received comments in support and opposition to the proposed lead time provisions. Supporters stated New York had authority to adopt for model year 2024. Other commenters asserted the State should adopt the definition incorporated in California and U.S. Environmental Protection Agency (EPA) regulations, which states that the model year for MHD vehicles is the same as the calendar year. The Department's position is that the lead time definition in Section 177 requires the proposed regulation be adopted prior to January 2, 2022 to provide two years lead time since the 2025 model year starts as early as January 2, 2024. The Department would use the definition of model year as being the calendar year for implementation and enforcement of the ACT regulation.

Several commenters encouraged the Department to delay ACT adoption until California incorporated a 100% ZEV sales mandate. California adopted its ACT standards March 15, 2021. The 100% sales mandate refers to a separately proposed Advanced Clean Fleets (ACF) rulemaking, which does not require a delay in New York's proposed ACT rulemaking.

Several commenters encouraged the Department to delay adoption of the proposed standards due to pending federal standards. New York strongly supports a federal program that would significantly lower emissions from internal combustion engines. However, relying on prospective federal

action risks failing to meet CLCPA emission reduction requirements.

Several commenters state investments in purchase incentives and charging infrastructure are required before ACT could be successfully adopted. The development of these complementary programs is outside of the scope of this rulemaking.

Some commenters stated ACT adoption in New York would place New York businesses at a competitive disadvantage with out-of-state businesses or would result in a “patchwork” of state standards. There will not be a “patchwork” of state standards. There will be one set of stringent, advanced MHD ZEV standards as adopted in California and those Section 177 states that adopt the ACT regulation. There is no federal MHD ZEV program available as an alternative.

Several commenters stated MHD ZEVs have purchase costs several times higher than comparable conventional vehicles. MHD ZEV trucks are expected to achieve total cost of ownership parity with conventional trucks for most vehicle classes within the regulatory timeframe. MHD ZEV trucks generally have lower operation and maintenance costs than conventional vehicles due to lower fuel costs, fewer components, and less required maintenance.

Several commenters stated ACT adoption would result in reduced vehicle sales tax collections due to New York businesses purchasing new vehicles out-of-state. Also, New York businesses may relocate out-of-state to reduce operating expenses resulting in a loss of jobs. Out-of-state vehicle purchases by New State businesses may result in decreased sales tax revenues for New York State. Conversely, out-of-state businesses and consumers routinely purchase vehicles in New York, which

may result in sales tax gains for New York. While some businesses may choose to relocate out-of-state to reduce operating costs, this is a business decision made by each company on an individual basis and involves numerous factors beyond adoption of the ACT regulation.

Commenters asserted the ACT rulemaking did not meet the indenticality provisions of Section 177. They allege the fleet mix is different in New York and results in a different standard than California's. They also allege California intends to revise the ACT regulation as part of the ACF rulemaking and that California and New York are intentionally hiding the ACT regulation in a different section of California Code. New York, and every other Section 177 state, will have a different mix of MHD vehicles than California. This variation represents differences in the application of the rule, rather than differences in the standard established by the rule. If New York were to require manufacturers to sell the same mix of sales for MHD vehicles as they do in California, this would create a "third vehicle" standard. The proposed ACF Rule is a separate regulation and beyond the scope of this rulemaking. The Department takes exception to the comment and rejects the Commenter's assertion that California, and other states including New York, are intentionally hiding proposed rulemaking documents and standards. DEC will review the proposed ACF rule when it is complete and will make any subsequent New York rulemaking proposal readily available to all stakeholders.

Commenters stated MHD ZEVs were either unsuitable or unavailable to meet customer needs. Numerous commenters stated several dozen vehicle options exist today. Consumers will have a wide selection of MHD vehicles of varying fuel types to choose from when making a vehicle purchase. MHD ZEV manufacturers currently offer battery options based on varying vocational applications.

Commenters asserted that the ACT proposal has numerous legal and procedural issues. They allege New York is prohibited from adopting under Section 177 since it is in attainment of the ozone National Ambient Air Quality Standards (NAAQS). Commenters further allege that New York is prohibited from adopting ACT because EPA has not issued a waiver of preemption. The Department finds no legal or procedural issues that preclude New York from adopting ACT. New York has areas currently classified as serious non-attainment which justifies the need to adopt these regulations to achieve attainment with the NAAQS. Waiver of preemption is not necessary until California enforces its standards.

Commenters requested the Department revise the definition of near-zero emission vehicles and make the regulations less restrictive. New York must adopt identical standards under Section 177. Modifying the definition as requested would violate the identity provision. It would also lead to the creation of a “third vehicle” standard, which is preempted by federal law. There is no provision in Section 177 to make modifications that are “less restrictive”.

Several commenters requested clarification of the large entity reporting dates and the reason for requiring the reporting information. The reporting date was incorrect in the draft Express Terms and has been revised to read April 1, 2023. Language was added to the Express Terms to clarify that report information must be retained until December 31, 2025. Information collected under ACT’s one-time large entity reporting requirement will be used to inform future regulatory activities, target infrastructure build-out, and identify areas potentially adversely impacted by MHD ZEV truck operations.

Commenter asserted ACT was not a final regulation due to the proposed ACF rulemaking, and the New York cost analysis was therefore incomplete. They also assert that “de minimis” emission

reductions do not justify the high costs of ACT adoption. The Department's fiscal and economic analysis was completed for the ACT rule and is not dependent on CARB's separate ACF regulatory proposal. The "de minimis" argument is irrelevant considering the State's legally mandated CLCPA targets to reduce GHG emissions from all sectors.

Commenters asserted ACT adoption will result in significant pre-buy/no-buy responses from businesses considering new truck purchases. They will accelerate vehicle purchases to buy diesel trucks rather than buy compliant ZEVs, or they will forego purchases altogether. Pre-buy/no-buy effects are difficult to predict. In certain situations, the pre-buy/no-buy effect has been absent; and in other cases, the effect has been observed but short lived.

Many commenters stated MHD ZEVs have lower total cost of ownership than comparable diesel trucks. The Department agreed. Other commenters stated most New York trucking companies are small businesses and will have difficulty affording increased purchase prices of MHD ZEVs. The proposed ACT standards does not ban the sale or use of diesel MHD vehicles. Individual small businesses will continue to have a wide selection of MHD vehicles with various power sources to consider when making a vehicle purchase. Incentives to help offset the higher initial purchase price of MHD ZEV trucks are available.

Numerous commenters commented on the adverse environmental and health impacts of diesel trucks, particularly in disadvantaged communities. Other commenters commented on the advantages of RNG vehicles and a perceived failure to account for all upstream and mining emissions associated with ZEVs. Also, commenters asserted MHD ZEVs would result in increased emissions, particulate matter, and infrastructure damage. The Department emphasizes improving air quality in disadvantaged

communities. RNG vehicles are not prohibited by ACT. Upstream emissions were accounted for in the Department's analysis. Mining emissions are beyond the scope. The Department believes truck operators will replace diesel trucks with ZEVs on a one-for-one basis and manufacturers must produce vehicles that meet customer needs. The Department analysis does not predict an increase in particulate matter from ZEVs. Infrastructure is beyond the scope of this rulemaking.

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

6 NYCRR Part 200, General Provisions

Assessment of Public Comments

Comments Received from September 8, 2021 through 5:00 P.M., November 17, 2021

Comments in General Support of ACT Adoption

Comment 1: I am OF COURSE for all of this. Commenter 2.

Comment 2: I support the agency's proposed incorporation of California's Advanced Clean Truck (ACT) zero-emission vehicle standards for medium- and heavy-duty trucks and reporting requirements for owners and operators of medium- and heavy-duty trucks as part of New York's existing low emission vehicle (LEV) program. Commenters 3-114, 116-120, 122-152, 154-157, 159-163, 165-168, 170, 172-198, 202-203, 205-212, 215-217, 219-225, 227-232, 234, 237-240, 252, 261.

Comment 3: I am writing in support of the agency's proposed incorporation of California's Advanced Clean Truck (ACT) zero-emission vehicle standards for medium- and heavy-duty trucks and reporting requirements for owners and operators of medium- and heavy-duty trucks as part of New York's existing low emission vehicle (LEV) program. Commenter 121.

Comment 4: In that regard, and to be clear, the Manufacturers, purchasers and users of ZEV trucks all support your Administration's goals of clean air and a strong program to reduce greenhouse gas emissions. Moreover, we all acknowledge that ZEV trucks are and should be the future of the medium- and heavy-duty commercial vehicle market. Commenter 153.

Comment 5: The Alliance supports the Department's efforts to improve New York's air quality through regulatory initiatives such as this proposal. The Alliance also commends the Department for its efforts to combat climate change and foster clean energy through promotion of electric vehicles. Commenter 171.

Comment 6: The Lion Electric Co. (Lion) is supportive of New York's proposed adoption of the Advanced Clean Trucks (ACT) rule. As an original equipment manufacturer of all-electric medium- and heavy-duty vehicles, we believe the strong, yet achievable standards set by the ACT rule will go a long way toward advancing New York's Climate Leadership and Community Protection Act (CLCPA) objectives for net-zero greenhouse gas (GHG) emission reductions, improving air quality, and providing high-quality jobs for New Yorkers. Commenter 204.

Comment 7: As major businesses, institutions, healthcare systems, employers, and investors with nearly \$43 billion in assets under management, we write to express our strong support for adoption of the Advanced Clean Truck (ACT) rule across states. Commenter 213, 2322.

Comment 8: I support incorporation of California's Advanced Clean Truck (ACT) standards. Commenter 214.

Comment 9: I support the agency's proposed incorporation of California's Advanced Clean Truck (ACT) zero-emission vehicle standards for medium- and heavy-duty trucks and reporting requirements for owners and operators of medium- and heavy-duty trucks as part of New York's existing low emission

vehicle (LEV) program. Commenter 226.

Comment 10: On behalf of the American Lung Association, I am writing to express our support for the adoption of the Advanced Clean Truck (ACT) standards in 2021. the American Lung Association in New York supports the adoption of the ACT rule this year as an important step to reducing harmful pollution exposures and health impacts from trucking pollution. Commenter 233.

Comment 11: Arrival supports New York's proposed adoption of the Advanced Clean Trucks (ACT) rule. Commenter 235.

Comment 12: We, the undersigned 81 New York-based scientists, researchers, health professionals, economists, engineers, and planners respectfully submit this comment in strong support of New York adopting the Advanced Clean Truck rule. The Advanced Clean Truck rule is a key step in the right direction. By adopting this regulation, you will demonstrate your commitment to cleaner air and a healthier future. Now is the time for New York to continue its climate and clean air leadership. Commenter 241.

Comment 13: Zeem Solutions is pleased to support and provide comment on New York State's proposed adoption of the Advanced Clean Trucks (ACT) Rule and fleet reporting requirements. Commenter 242.

Comment 14: BYD Motors LLC is pleased to support New York's proposed adoption of the Advanced Clean Trucks rule (ACT Rule). In addition, this Rule will send a strong message to the rest of the country

that New York State will continue in its role as a leader in protecting its residents and working to ensure a better future for the local and global environment. We thank Governor Hochul for her leadership on this issue and look forward to seeing the benefits sure to flow from the implementation of this ACT Rule. Commenter 243, 2313.

Comment 15: I am writing on behalf of the World Resources Institute's Electric School Bus Initiative to express our strong support for New York's swift adoption of the Advanced Clean Truck rule (ACT), which would require an increasing percentage of manufacturer medium- and heavy-duty vehicle (MHDV) sales to be electric each year beginning with model year 2025. To build on this momentum and expand New York's leadership in electric mobility, we respectfully request that your administration promptly adopt the ACT rule. WRI applauds your administration's commitment to transportation electrification, and we especially appreciate your efforts to electrify school buses throughout New York. Commenter 244.

Comment 16: The City of New York ("City") offers the following comments in response to the New York State Department of Environmental Conservation ("DEC") proposal to amend provisions relating to emission standards for motor vehicles and motor vehicle engines. The City strongly supports DEC's proposed amendments, which conform New York State's emission standards to California's Advanced Clean Truck ("ACT") standards. Commenter 246.

Comment 17: Rivian Automotive, LLC, ("Rivian") appreciates the opportunity to comment on the proposed amendments of 6 NYCRR Part 218 and 6 NYCRR Section 200.9 to adopt California's Advanced Clean Trucks ("ACT") Program (formally noticed as Proposed Part 218 Emission Standards

for Motor Vehicles and Motor Vehicle Engines). Rivian strongly supports New York's proposed adoption of the ACT rule as part of a comprehensive strategy for improving air quality in disproportionately affected communities, as well as addressing climate change consistent with the bold requirements of the Climate Leadership and Community Protection Act. New York continues to demonstrate impressive leadership in these areas with benefits for the state's transition to a clean technology economy, the climate, and public health. Commenter 247, 2309.

Comment 18: On behalf of E2 (Environmental Entrepreneurs) and our network of over 500 business leaders who work or live in New York, we are writing to express strong business support for New York's adoption of the Advanced Clean Trucks (ACT) rule before the end of 2021. This smart, clean vehicle policy will drive job growth and investment in New York's clean energy economy, reduce business costs, and mitigate the toxic, local transportation pollution that negatively impacts New York's economy. Commenter 248, 2316, 2323.

Comment 19: Air Products appreciates the opportunity to provide comments in support of the New York State Department of Environmental Conservation's (DEC) proposed adoption of the California Advanced Clean Truck (ACT) Zero Emission Vehicle (ZEV) regulation. In recognition of the rapidly expanding adoption of light-, medium-, and heavy-duty ZEV requirements across the country, Air Products strongly supports New York State's adoption of the California Advanced Clean Truck Zero Emission Vehicle standards. Commenter 250.

Comment 20: On behalf of The Union of Concerned Scientists (UCS) and our 29,000 supporters, activists, and Science Network members in New York, we thank you for the opportunity to comment on the Department of Environmental Conservation's (DEC) proposed Amendment of Parts 200 and 218 of Title 6 of the New York Codes, Rules and Regulations (NYCRR) to incorporate the Advanced Clean Trucks (ACT) rule. Commenter 251.

Comment 21: New York has long been a leader in fighting air pollution associated with cars and trucks, as demonstrated by its status as a 177, or California car, state. As you undertake the process the rulemaking process for the Advanced Clean Truck rule (ACT), we strongly urge DEC to consider the strategies employed by the California Air Resources Board (CARB) designed to support this policy. Commenter 258.

Comment 22: CALSTART is pleased to support New York's proposed adoption of California's Advanced Clean Trucks (ACT) rule. We believe the aggressive standards set by the ACT rule will go a long way toward advancing New York's Climate Leadership and Community Protection Act (CLCPA) objectives for net-zero greenhouse gas (GHG) emissions, improving air quality, and ensuring a just transition with green and good-paying jobs. CALSTART was supportive of the strong ambition of this rule during its promulgation by the California Air Resources Board (CARB). Based on our work nationally and globally through the Global Commercial Vehicle Drive to Zero (Drive to Zero) program, we believe this rule is a critical precondition for a well-functioning medium- and heavy-duty zero-emission vehicle (MHD ZEV) market. Commenter 260, 267-268.

Comment 23: CALSTART strongly supports adoption of the ACT rule by New York and the other signatories to the Multi-State MHD ZEV Memorandum of Understanding signed in July 2020. While not all of CALSTART's industry members see eye-to-eye on this topic, CALSTART views adopting the ACT rule as perhaps the single most integral action that a state can take to galvanize the development and maturation of a zero-emission trucks market. Commenter 260, 2303.

Comment 24: The ElectrifyNY coalition respectfully submits comments on the proposal by the New York State Department of Environmental Conservation (DEC) to incorporate California's Advanced Clean Trucks (ACT) rule into the state's low-emission vehicle (LEV) program. The ACT rule is a critical first step to jumpstart the transition to zero-emission vehicles (ZEVs) across the medium- and heavy-duty vehicle (MHDV) market, and promises enormous climate, air quality, environmental justice, and economic benefits. For these reasons, and as explained more fully below, we strongly support the proposed regulation and urge the DEC to finalize the rulemaking process before the end of the calendar year, so that the Department can begin implementing the rule as soon as possible and develop supporting policies that ensure that health, equity and good jobs are driving the state's climate policies. Commenter 262.

Comment 25: The undersigned, which include environmental groups, health professionals, labor organizations, transportation and environmental justice advocates, appreciate the opportunity to comment on the Advanced Clean Truck ("ACT") rule proposal and thank staff for their considerable time and effort spent on the rulemaking. Commenter 264.

Comment 26: ChargePoint is the nation's leading electric vehicle ("EV") charging network, with charging solutions for every charging need and all the places EV drivers go: at home, work, around town and on the road. ChargePoint designs, develops, and deploys residential and commercial AC Level 2 ("L2") and DC fast charging ("DCFC") electric vehicle charging stations, cloud-based software applications, data analytics, and related customer and driver services aimed at creating a robust, scalable, and grid-friendly EV charging ecosystem. ChargePoint supports the proposed change to 6 NYCRR Part 218 to Incorporate California's Advanced Clean Trucks Program which requires manufacturers to produce zero-emission trucks beginning in 2024 and increases production targets through 2035. Additionally, the regulation aims to put 300,000 zero-emission trucks on the road by 2035. It also requires that sales of medium and heavy-duty vehicles ("MHDVs") reach 30-50% by 2030, 40-75% by 2035, and 100% by 2045. Commenter 265.

Comment 27: Adopting the ACT regulations will help move New York forward with their goals to reduce Greenhouse Gas ("GHG") Emissions, which is essential for improving air quality for all. The ACT regulations will also create quality jobs for New Yorkers to build, install, and maintain the electric vehicle supply equipment ("EVSE") needed to support an increasingly electrified trucking and logistics industry. Commenter 265.

Comment 28: Tesla, Inc. (Tesla) submits the following comments in support of New York State's Department of Environmental Conservation's Proposed Rulemaking seeking to adopt the Advanced Clean Truck (ACT) Rule. The standards set by the ACT rule will play an invaluable role in ensuring sustained and systematic progress in transitioning New York's medium and heavy-duty vehicles to zero emission technologies. Such a transition is fundamental to the state's climate, environmental justice,

public health, and electric vehicle adoption goals. New York communities – especially those historically impacted by environmental injustice – work and live adjacent to the logistics and freight corridors that experience the heaviest traffic of heavy-duty vehicles in the state, and therefore deal with the largest amount of transportation induced air pollution. This rule will address these inequities of health and pollution by electrifying the diesel trucks primarily operating in and around these communities. Commenter 269, 2315.

Comment 29: Thank you for the opportunity to provide comments regarding New York State's consideration of California's Advanced Clean Trucks (ACT) Rule. Our communities need and deserve equitable access to clean air. We urge the New York State Department of Environmental Conservation to move forward this year with the rulemaking process for the Advanced Clean Trucks (ACT). Commenters 270-2301.

Comment 30: Earthjustice commends the New York State Department of Environmental Conservation for moving forward with this rule and strongly support its immediate implementations. Commenter 2302.

Comment 31: I am testifying on behalf of the Sierra Club. We represent over 125,000 members and supporters here in New York and over 4 million across the country. We express our strong support for the Advanced Clean Truck Rule. Commenter 2305.

Comment 32: I am testifying in strong support of adoption of the Advanced Clean Truck Rule. Commenter 2307, 2314, 2317.

Comment 33: I strongly support the DEC's proposed Advanced Clean Truck – ACT – rule to incorporate into New York's law California's latest zero emission vehicle standard for medium- and heavy-duty trucks. Commenter 2310.

Comment 34: I am completely in favor of trying to tackle a faster track means of addressing air pollution and greenhouse gas emissions within the transportation sector. Commenter 2319.

Comment 35: The New York State Thruway runs two blocks from my home and I see all the medium- and heavy-duty truck traffic that goes by each day. With the proliferation of warehouses in Rockland and across the state that truck traffic is just going to increase, so I want to thank Governor Hochul and the DEC for considering the revision of the existing Low Emission Vehicle Program to incorporate California's ACT standards. Commenter 2321.

Response to Comments 1-35: The Department thanks you for your comments and your support.

Comment 36: We need to commit to zero emissions vehicles as soon as possible! Commenter 52.

Comment 37: It is long past time that we should be treating Climate Change as the emergency that it is! Commenter 162.

Comment 38: The manufacturers, purchasers and users of ZEV trucks all support your Administration's goals for clean air and a strong program to reduce greenhouse gas emissions. Moreover, we all

acknowledge that ZEV trucks are and should be the future of the medium- and heavy-duty commercial vehicle market. Commenter 256, 2312.

Comment 39: We urge DEC to adopt this rule without delay—missing a compliance year only compounds the climate and air quality challenges from diesel truck pollution. Delaying holds back a market for a helpful technology that is ready to hit the road. Commenter 251, 2304.

Comment 40: At this point there is no reason to delay the rulemaking process. Commenter 214.

Response to Comment 36-40: The Department thanks you for your comments.

Comments in General Opposition to ACT Adoption

Comment 41: As an environmental professional I want to state that the proposed Advanced Clean Truck rule is a very poor idea. Commenter 115.

Comment 42: One size DOES NOT fit all, and therefor (sic) I oppose the proposed rule for New York State to mandate only electric trucks for transportation by a set date. Commenter 115.

Comment 43: State-specific programs, such as the Act Rule, while directionally correct, are not well-suited to the scope of these issues, and may work to hinder, not accelerate the deployment of ZEV trucks. Commenter 153.

Comment 44: I do not support the agency's proposed incorporation of California's Advanced Clean

Truck (ACT) zero-emission vehicle standards for medium- and heavy-duty trucks and reporting requirements for owners and operators of medium- and heavy-duty trucks as part of New York's existing low emission vehicle (LEV) program until new battery technology is developed. Commenter 164.

Comment 45: The Truck and Engine Manufacturers Association (EMA) appreciates the opportunity to submit comments regarding the Department of Environmental Conservation's (DEC's) proposed rulemaking (NPRM) to accelerate the deployment of medium-duty (MD) and heavy-duty (HD) zero-emission vehicles (ZEVs). As we have explained on several occasions, while EMA supports the DEC's push to accelerate the deployment of ZEV trucks, we strongly oppose the proposed opt-in to the California Air Resources Board's (CARB's) Advanced Clean Trucks (ACT) Regulation as the means to reach that shared objective. Commenter 199, 2318.

Comment 46: The Food Industry Alliance of New York State Inc., the premier trade association representing the full spectrum of the grocery industry is submitting these comments in opposition to the proposal that the Department of Environmental Conservation (DEC) has made to adopt and incorporate by reference California's Advanced Clean Trucks (ACT) Rule. Commenter 200.

Comment 47: Notwithstanding the many challenges involved, FIANY is fully supportive of a ZEV-truck future. The ACT Rule, at this time, is simply not the way to get there. Commenter 200.

Comment 48: I am commenting on this because it threatens the viability of recreational vehicles In New York and ignores potential impact elsewhere. I recommend that these regulations be delayed until the feasibility of meeting the Climate Act targets is evaluated and the life-cycle environmental impacts of

the proposed regulation is considered. The opinions expressed in these comments do not reflect the position of any of my previous employers or any other company I have been associated with, these comments are mine alone. Commenter 218.

Comment 49: On behalf of NFIB, representing nearly 11,000 small, independent businesses across every community and neighborhood in New York State, we are writing to express our concerns and opposition to the proposed “Advance Clean Trucks “ (ACT) rule. Commenter 236.

Comment 50: NFIB strongly urges the Department of Environmental Conservation to reconsider adopting California’s ACT Rule and instead focus on building out the infrastructure for a clean vehicle future. Please do not hesitate to contact us with questions, concerns, or if we can be of any additional help with providing direct feedback from small business owners. Commenter 236.

Comment 51: New York Farm Bureau (NYFB), New York state’s largest general farm organization, appreciates the opportunity to comment on the proposal by New York State Department of Environmental Conservation to adopt and incorporate by reference California’s Advanced Clean Truck (ACT) Rule. NYFB represents the great diversity of New York agriculture from, row crops, specialty crops, vintners, orchards, livestock, dairy and both conventional production and organic production and a wide range of sized operations. Farms rely on medium- and heavy-duty trucks both at the farm and distribution level of agriculture through transportation of inputs, livestock hauling, bulk commodity distribution, and the delivery of products to market. Medium duty trucks and vans can also play a daily role on farm for basic daily chores and tasks like bringing workers to fields or moving livestock. New York Farm Bureau has several issues with the proposed regulation. Commenter 245.

Comment 52: We applaud you and the Department of Environmental Conservation for your desire to aggressively tackle transportation sector emissions. Unfortunately, adoption of California's Advanced Clean Truck Rule (ACT), as currently proposed, will fail to deliver the desired results because it is limited solely to "zero-emission" vehicles and New York has not adopted a Low Carbon Fuel Standard (LCFS), which is an essential supporting policy. Commenter 249.

Comment 53: On behalf of the Empire State Forest Products Association (ESFPA) I am submitting these comments on the proposed 6 NYCRR Part 218 and 6 NYCRR Section 200.9 to incorporate California's Advanced Clean Truck (ACT) zero emission vehicle standards for medium- and heavy-duty trucks as part of New York's existing low emission vehicle (LEV) program. Specific to the proposed Part 218 regulations we have several concerns as the role of medium and heavy-duty vehicles have on the supply chain necessary to both bring harvested wood and fiber to wood product manufacturing facilities as well as to distribute manufactured wood products to markets across the state, country, and globe. The role of medium and heavy-duty vehicles in our sector is critical and one that without efficiency as well as controlled costs could disrupt the supply chains that exist in New York. Commenter 253.

Comment 54: NGVAmerica is the national trade association dedicated to the decarbonization of the transportation sector through the increased use of gaseous fuels including renewable and conventional natural gas and, eventually, hydrogen. Our 200-plus member companies produce, distribute, and market natural gas and renewable natural gas (RNG, also called biomethane), manufacture and service natural gas vehicles (NGVs), engines, and equipment, and operate fleets powered by clean-burning gaseous fuels across North America. NGVAmerica's members support the ultimate goal of the

Advanced Clean Trucks Rule – to decarbonize the medium- and heavy-duty transportation sector as quickly as possible while greatly reducing harmful criteria emissions that contribute to poor air quality. However, we respectfully disagree with the proposed program’s approach to achieving these objectives. Commenter 254.

Comment 55: On behalf of the New York State County Highway Superintendents Association (NYSCHSA), I appreciate the opportunity to comment on the proposed Department of Environmental Conservation (DEC) action to adopt the California Advanced Clean Trucks (ACT) Rule. NYSCHSA represents the rural, urban and suburban county highway departments that, together with the other local governments, are responsible for eighty-seven percent of the roads and over half the bridges in New York. To be responsible to taxpayers, ZEV truck purchases need to be good for the environment, highway department functionality, and county budgets. Commenter 255.

Comment 56: The American Fuel & Petrochemical Manufacturers (AFPM) shares New York’s goal (and has a history) of reducing transportation emissions, but NYSDEC has not made the policy or legal case for adopting California’s ACT regulation. NYSDEC fails to fully and transparently analyze all options for reducing truck emissions (including by the federal government), choosing instead to simply adopt standards designed specifically for California. Commenter 266.

Comment 57: Partners for a Zero Emission Vehicle Future (PZEVF) is a growing coalition of stakeholders from across the transportation sector united by a commitment to minimize transportation emissions and support the adoption of medium- and heavy-duty zero emission vehicles. We support New York’s interest in accelerating the adoption of zero-emission trucks to address the states air quality

and climate change goals, but believe that the adoption of the California's Advanced Clean Truck regulation will not support their realization. Commenter 256, 2312.

Comment 58: On behalf of the New York State Agribusiness Association (NYSABA), I appreciate the opportunity to comment on the proposed Department of Environmental Conservation (DEC) action to adopt the California Advanced Clean Trucks (ACT) Rule. NYSABA members are the agricultural protectant, seed and fertilizer industries and crop advisors. Our understanding is that most large vehicles used for bringing agricultural products to market and hauling raw commodities will be covered by the ACT Rule. Commenter 257.

Comment 59: Navistar recognizes New York's desire to increase electric vehicle penetration into the commercial vehicle market and we believe this can be a winning strategy for emissions reductions if executed appropriately. Navistar has a long history of investing in cutting edge technology to help reduce diesel emissions from trucks and surrounding communities including zero emissions technologies. Navistar supports the transition to a zero-emission future. However, to be successful, mandates like the ACT, need to be considered and adopted along with key structures that will support effective and stable deployment of zero emission trucks including widespread infrastructure and much needed incentives. Commenter 263, 2311.

Comment 60: We are not opposed to the adoption of clean truck technology in New York. However, we respectfully request that consideration be given to delaying the adoption so that we can put in policies that will support the use and operation of ZEV trucks. Commenter 2320.

Response to Comments 41-60: The Department thanks you for your comments. As set forth more fully in the Department's Regulatory Impact Statement, 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.

Manufacturer ZEV Sales Mandate

Comment 61: My question would be given that the medium/heavy duty market is still moving very slowly, compared to the light duty market. Would a NYS Truck manufacturer be forced to make a percentage of manufactured trucks ZEVs even if they have not been sold? That seems very onerous to me. Commenter 2.

Response to Comment 61: The Department thanks you for your comment. The Advanced Clean Truck (ACT) standards represent an annual sales requirement for medium- and heavy-duty (MHD) truck manufacturers, located in New York State or elsewhere, offering vehicles for sale in the State. Manufacturers will be required to meet an increasing annual percentage of their sales with zero and near zero emission vehicles (ZEV and NZEV) starting with the 2025 model year. ACT does not incorporate a fleet purchase requirement. The proposed regulation includes various flexibilities intended to reduce the compliance burden for manufacturers. Manufacturers will choose to produce and sell ZEVs into the market segments they deem to be most suitable for the products they manufacture. The proposed regulation includes MHD ZEV sales requirements that increase between

the 2025 to 2035 model years but do not reach 100% for any of the three truck classes. The proposed regulation provides manufacturers with credit averaging, banking, and trading provisions; early credit provisions; and the ability to meet part of their compliance obligation with NZEVs that have a minimum all-electric range.

Comment 62: As a long-time industry leader in all-electric medium- and heavy-duty vehicle manufacturing and sales, we believe it is critical that New York enact manufacturer sales targets for MHD ZEVs. Commenter 204.

Response to Comment 62: The Department thanks you for your comment. The ACT's sales mandate will be necessary to transition the medium- and heavy-duty fleet to zero-emission vehicles.

Comment 63: As a vehicle manufacturer, we also want to stress the value of the "early credits" provision of New York's proposed rule that would allow EV makers to begin earning compliance credits in Model Year 2022. Early action credits incentivize accelerated deployment of EVs. Not only does this deliver critical air pollution and greenhouse gas emissions reductions sooner, with important benefits for public health and New York's climate goals, but it can help industry grow more quickly to large-scale production and thus move down the cost curve. This is crucial for the long-term success of the industry as well as New York's transportation electrification efforts. Commenter 247, 2309.

Response to Comment 63: The Department thanks you for your comment. The "early credits" provision is an important part of the proposed rule and would help incentivize the deployment of MHD ZEVs to help reduce air pollution in New York.

Comment 64: Ensure the rules' enforcement penalty is identical to the California versions. Commenter 248.

Response to Comment 64: The Department's civil and criminal enforcement penalties, for violations of Environmental Conservation Law Article 19 and regulations promulgated pursuant thereto (including the ACT Rule) are set forth in sections 71-2103 and 71-2105 of the New York State Environmental Conservation Law and not subject to identity requirements under section 177 of the federal Clean Air Act (CAA).

Comment 65: In sum, the ACT Rule, with its unilateral ZEV sales mandates and nothing more, is not the regulatory platform on which New York should build its program to accelerate the deployment of MD and HD ZEVs. Commenter 199, 2318.

Comment 66: In brief, the ACT Rule amounts to a naked sales mandate that requires manufacturers to sell a prescribed number of zero-emission medium- and heavy-duty vehicles, without any corresponding ZEV-purchase incentives. Commenter 199.

Comment 67: While the adoption of California Air Resource Board (CARB) regulations has been a standard practice for many states, this proposed rule is not an emissions regulation but rather a narrowly crafted sales mandate which makes this rule both unique and problematic for five main reasons:

1. A Sales Mandate Ignores Basic Market Principles

2. New York Does Not Have California's Low Carbon Fuel Standard
3. Electric Trucks are Not a Viable Alternative to Diesel and are Largely Unavailable
4. Heavy-Duty Vehicle Recharging Has Significant Hurdles
5. To Tackle Climate Change Now, We Need an All-the-Above Approach. Commenter 249.

Comment 68: One thing is certain, over the next two decades internal combustion engines are not going away. Even if the EV market reaches the projected 42% of the class 2b through 8 vehicles, that still means that more than half of the marketplace is going to be internal combustion powered. We believe this will require the rural (e.g., farm and forest transports) and long-haul transports to have viable low carbon fuel alternatives that are not being considered in this rulemaking. As you undertake this rulemaking process for the ACT rule, we strongly urge DEC to consider the strategies employed by the California Air Resources Board designed to support this policy. Commenter 253.

Comment 69: While not a mandate to purchase, the ACT Rule is essentially a ZEV-truck sales mandate with no accompanying strategy to ensure that ZEV trucks will be available and affordable for a variety of agricultural needs. Many farm vehicles are designed to perform specialized tasks. In addition, few ZEV trucks have thus far demonstrated levels of prolonged horsepower and torque required for farm operations. Without improved technologies, significant subsidies and other financial incentives, and the build-out of charging infrastructure with reasonable electric rates, the agricultural sector will not be positioned to purchase with confidence many medium and heavy-duty ZEV trucks anytime soon. Until then, most consumers of trucks will continue to purchase conventional fuel vehicles each year up to and beyond when the proposed sales mandates are effective. Commenter 257.

Response to Comments 65-69: The Department does not support these comments. Like the existing light-duty vehicle ZEV mandate, the MHD ZEV mandate is an emissions standard. The ACT standards are intended to be technology forcing and will require complimentary programs. New York State has implemented the following programs to support MHD electrification:

1. New York State has two active MHD vehicle purchase incentive programs - the New York Truck Voucher Incentive Program (NYTVIP) administered by the New York State Energy Research and Development Authority (NYSERDA) and the New York City Clean Trucks Program (NYCCTP) administered by the New York City Department of Transportation
2. New York State has implemented a MHD Vehicle “Make Ready” Pilot program. MHD vehicle operators in New York State installing charging stations to electrify their fleets may be eligible for charging infrastructure funding from their utility through the MHD Make Ready Pilot. To qualify, fleets must be approved for participation in either the NYTVIP or the NYCCTP. Utilities can provide incentives of up to 90% of utility-side infrastructure costs to mitigate the cost of developing EV charging capacity. The Pilot focuses particularly on disadvantaged communities (DACs). The Make Ready Order also includes fleet assessment services provided through utilities.
3. New York is finalizing a statewide Electric Truck & Bus Challenge Prize competition that will award up to three \$8 million grand prize awards to repeatable solutions that identify and demonstrate ways to accelerate the deployment of MHD electric vehicles (EVs) in New York State, while supporting cost reduction and improved infrastructure for EVs, reducing air pollution and carbon emissions, and addressing systemic challenges to expanded electric fleet adoption.

The proposed adoption of a Low Carbon Fuel Standard is beyond the scope of this rulemaking.

Charging/refueling infrastructure for MHD ZEVs is an issue the Department is aware of and is actively engaged in with other agencies and authorities.

The federal Infrastructure Investment and Jobs Act signed by President Biden on November 15, 2021 includes state formula and potential competitive grant funding for MHD fueling and charging infrastructure. The Department will join other New York State agencies and authorities to review and seek, as appropriate, any future federal funding provided by the Infrastructure Investment and Jobs Act to promote development of MHD ZEV infrastructure in New York State.

Comment 70: Government cannot simply increase demand by placing a mandate on the supply side of the market. Demand is not dictated by supply. Aided by federal incentives, light-duty electric vehicles have only achieved about 2 percent of nationwide sales over the past decade and in California, a state that provides significant additional incentives, light-duty adoption is only about 4 percent. The proposed rule largely ignores this reality. For this rule to be successful, the electric vehicle (EV) industry will have to achieve the following trifecta:

1. EV truck adoption rates will have to advance at a pace that greatly exceeds the electrification of the light-duty sector.
2. The cost of battery metals must substantially decrease, even though the price of metals is currently trending higher.
3. Recharging infrastructure must be built at a record pace along with major costly electrical grid upgrades including new generation capacity.

California has already proceeded down this same failed path in 1990 when they created a mandate for

the sale of light-duty electric vehicles. The mandate called for 10 percent of light-duty vehicles sold in 2010 to be electric, which was of course never reached. Commenter 249.

Comment 71: California has attempted to mandate electrification for many years, but its approach has been met with consistent delays, waivers, and only minimal success, and that is with respect to light-duty vehicles and despite the State spending hundreds of millions of dollars across multiple programs and agencies to support widespread ZEV market adoption. The current light-duty ZEV sales mandate was first established in 1990 with goals of reaching 2 percent of sales by 1998, 5 percent in 2001, and 10 percent in 2003. Last year, however, ZEV-qualifying Advanced Technology Vehicles accounted for less than 8 percent of light-duty vehicle sales in California. Commenter 254.

Response to Comments 70-71: The proposed ACT rule does not require companies or fleets to purchase MHD ZEV vehicles. Fleets can purchase the vehicles that best suit their business needs which may or may not include ZEVs. However, the proposed regulation will result in an increased number of MHD ZEV models being available as purchase options for MHD vehicle purchasers and fleets. The Department anticipates that the proposed rule will provide regulatory certainty to support the market stability needed for long term vehicle purchase and charging/refueling business decisions.

New York State's recently adopted legislation (Chapter 423 of the Laws of 2021) establishing a statutory goal that one hundred percent of MHD vehicles offered for sale or lease, or sold, or leased, for registration in the state be zero-emissions by 2045 for all operations, where feasible (Environmental Conservation Law §19-0306-b). The proposed adoption of ACT supports this legislation.

There Are Alternative Fuel Types to ZEVs

Comment 72: Leading policymakers and fleets are acknowledging the need for an approach which is broader

than electric vehicles. Many leading fleets are adopting low carbon to carbon negative fuels such as RNG. UPS operates thousands of RNG trucks and Amazon just announced earlier this year that they will be deploying hundreds and possibly thousands of RNG trucks. LA Metro and NY MTA, the two largest public transit fleets in the nation, both have made significant investments in RNG buses and combined operate over 3,000 of them. RNG heavy-duty vehicles have similar performance as diesel and are available for wide-scale deployment now. The refueling infrastructure is largely in place and mostly funded by the private sector. In 2020 CARB certified RNG as the first and only carbon negative fuel based on the weighted average. RNG is able to achieve this status because it is created by capturing greenhouse emissions that would otherwise be released into the atmosphere. Commenter 249

Comment 73: We believe the adoption of the Advanced Clean Trucks Rule as it currently exists will not achieve its intended purposes and instead will delay achieving more immediate and longer-lasting reductions in harmful pollutants. A better, more cost-effective approach would be to accelerate the introduction and sale of a variety of emission reducing technologies including technologies that are commercially available today and have a track record of delivering steep emission reductions. Electrification surely must be part of the effort to addressing climate change emissions, but it is not the only solution and certainly will not deliver all the necessary reductions. Policies therefore should encourage a variety of technologies and solutions. Fortunately, today there are an increasing number

of low-carbon and carbon neutral biofuels that are readily available and proven, offering different pathways to delivering steep reductions in harmful emissions.

There is no reason to wait ten or fifteen years or more to breathe clean air. New York and other states should move more quickly to advance the uptake of commercially available, lower-polluting vehicles. By focusing on cost-effective solutions and readily available technology, New York and other states can move quickly to accelerate the retirement of higher-polluting, older, medium- and heavy-duty trucks that in many cases will not be impacted by the proposed rule because it only addresses new vehicle sales. Commenter 254.

Comment 74: But under California's rules, which New York would adopt by reference, these trucks do not qualify. Rather than encourage the accelerated uptake of these lower-polluting trucks, adopting the California program without change would signal to businesses and fleets that they should instead hold off and wait on deploying cleaner trucks until vehicles that satisfy the new mandate are available. Rather than delivering cleaner air or encouraging innovation and flexibility, this mandate will be an impediment to cleaner air now. Commenter 254.

Comment 75: An unfortunate fact of the California Advanced Clean Trucks Rule is that it picks technology winners and losers over the timely provision of lower emissions and cleaner air for all citizens. By focusing only on tailpipe emissions and excluding low-carbon biofuels to address climate change emissions, it instead mandates the use of the most expensive technology, i.e., full electrification, thus preventing new, ultra-low emission natural gas trucks from qualifying under the program and contributing to cleaner air and lower emissions. Commenter 254.

Comment 76: Effective public policy will set goals that increase overall welfare without dictating specific technology. A market-based approach will reduce the cost of achieving the policy goals while allowing communities, companies, and individuals to choose vehicles that best meet their overall needs, while considering drawbacks and advantages of different powertrain choices. Policies that allow various technologies to compete in the marketplace can and should be developed to achieve the goal of reducing GHG emissions in transportation in the most cost-effective manner possible. Mandating the use of a particular technology forecloses others and stifles innovation. Forcing electrification ignores the improvements being realized by renewable fuels. For example, renewable diesel is promising in part because it is chemically identical to petroleum diesel and can deliver GHG reductions of 50 to 90 percent depending upon feedstock. On a lifecycle basis, a new diesel truck running on renewable diesel emits fewer GHGs than a battery powered truck, while retaining refueling convenience and infrastructure.

Renewable diesel is becoming more widely available as new production facilities are built. Subject to renewable feedstock availability, this advanced fuel will build on past successes in improving air quality and lowering carbon emissions at a much lower cost than electrification. AFPM is concerned that the billions of dollars being invested in renewable diesel and technologies to improve the internal combustion engine will be adversely impacted by the ACT rules. Commenter 266.

Comment 77: New York's medium- and heavy-duty vehicles are getting dramatically cleaner as older vehicles are replaced with newer, more efficient models. Mandating more expensive technologies could thwart that progress by increasing costs and discouraging fleet turnover. Commenter 266.

Response to Comments 72-77: The proposed rule does not require fleet owners or businesses to purchase MHD ZEV trucks. Rather, it is a sales requirement on manufacturers to produce and deliver MHD ZEV trucks. Fleet owners have the option of deciding upon the types of trucks, whether ZEV, diesel, or other fuel type truck to purchase that best suit their needs. Additionally, the proposed rule includes increasing annual percentages of MHD ZEV sales over time.

MHD ZEV sales will help New York to meet greenhouse gas emission reductions required by the CLCPA, Chapter 106 of the Laws of 2019, and to achieve the 100% MHD ZEV sales requirement, where feasible, under Chapter 423 of the Laws of 2021. These statutory requirements cannot be met by the continued sales of internal combustion engine vehicles.

Renewable diesel fuel may provide greenhouse gas emission benefits if produced from waste feedstocks. However, criteria pollutant emissions benefits, particularly in localized “hot spots” impacted by MHD truck operations, are less than the benefits of replacing combustion engines with ZEV and NZEV powertrains.

The Department notes the raw materials and process facilities utilized to produce renewable diesel fuel for on-road vehicles can easily produce other beneficial products, particularly sustainable aviation fuel.

Early ZEV Crediting

Comment 78: Limiting early crediting to one year. Commenter 251.

Comment 79: Early crediting does not incentivize the switch to ZEVs and mainly captures purchases that would have already taken place. We urge DEC to only allow early crediting for Model Year 2024. This would minimize the potential negative impact early crediting could have on the rule's stringency and as a result its benefits. Also, offering one year of early crediting is consistent with what other Section 177 states are considering, notably New Jersey. Commenter 264.

Response to Comments 78-79: The early credit provision would help incentivize the deployment of MHD ZEVs to help reduce air pollution in New York. New York's regulation is required to comply with the identity provision of Section 177.¹ Early credits may be earned starting in model year 2021 in California in advance of the 2024 model year start date. Similarly, early credits may be earned in model year 2022 in New York in advance of the 2025 model year start date. The 2022 start date for early credits in New York reflects the 1-year interval between California and New York adoptions.

Comment 80: Further, the ACT rule employs credit mechanism systems that incentivize voluntary early action and permit a high degree of compliance flexibility. For example, the ACT rule allows zero-emission credit trading between manufacturers and between most truck classes, accounting for vehicle size, enabling manufacturers to shift credits from truck segments ripe for electrification to those that are less suitable. The ACT rule can also accommodate potential fluctuations in vehicle sales from year-to-year. The rule does this by basing manufacturers' ZEV credit requirements on average truck sales data from the previous three years. In that way, peaks or troughs in purchases due to economic or regulatory forces are smoothed and have minimal impact on the overall trajectory of ZEV sales. Commenter 264.

¹ https://iaspub.epa.gov/otaqpub/display_file.jsp?docid=14321&flag=1

Response to Comment 80: The Department thanks you for your comment.

Support for ZEV Sales Mandates

Comment 81: These figures clearly contradict the suggestion by detractors of the ACT rule who wrongly claim that a sales mandate alone is insufficient to drive increased ZEV deployments and is thus doomed to fail. Sales mandates by themselves have worked before and will work again now. This type of mandate is not a new, untested concept: since 2005, California's Zero-Emission Vehicle Regulation has required manufacturers to produce and deliver for sale a certain percentage of zero-emission passenger cars and light-duty trucks in the state. Ten additional states—including New York—have adopted this rule, collectively covering 30% of new car sales in the U.S. China, Quebec, and British Columbia, Canada, have modeled their light-duty ZEV mandates on the California program.

While we strongly support the adoption of a zero-emission MHDV purchase requirement, sales mandates that apply to manufacturers, like the ACT rule, have spurred ZEV sales even in the absence of a corresponding purchase requirement. A recent CARB analysis found that its ZEV regulation “provide[s] the stable, long-term signal that encourages manufacturers to make and sell ZEVs in the early market.” Through model year 2019, 625,000 ZEVs have been sold in California under this program. Manufacturers have more than met their requirements under the ZEV program, generating a surplus of credits to meet their ZEV requirements. Thus, far from failing to meet the ZEV program requirements, manufacturers have been overperforming even without a regulatory purchase mandate. Commenter 264.

Response to Comment 81: The Department thanks you for your comment.

Comment 82: Manufacturers have many tools at their disposal to encourage zero-emission MHDV purchases in the absence of a regulatory purchase mandate. The Northeast States for Coordinated Air Use Management (“NESCAUM”) has noted that, before Northeastern states adopted California’s ZEV regulations requiring manufacturers to deliver ZEVs to their markets, light-duty ZEVs were consistently less available for purchase in the Northeast compared to California, and that there was a “dramatic disparity” between manufacturers’ advertising spending on their gasoline models versus their ZEV models. NESCAUM therefore concluded that lower sales rates of light-duty ZEVs were attributable to factors within the control of automakers. MHDV manufacturers similarly are not beholden to consumer preference, but can affirmatively shape that preference through vehicle availability, marketing, purchase incentives, pricing, and other factors within their control. Commenter 264.

Comment 83: A necessary first step [is] to ensure that ZEVs [are] supported by manufacturers and made widely available before placing requirements on fleets. . . . The manufacturer ZEV sales requirement needs to be in place first because of the lead time needed to develop and manufacture vehicles. . . . [A] manufacturer sales requirement is necessary to ensure ZEVs are available and fully supported before fleet rules can begin. Commenter 264.

Response to Comment 82-83: The Department thanks you for your comment.

Lead Time Requirement

Comment 84: New York should not delay moving forward with the rulemaking process. The timeline to

adopt this rule is necessary to ensure the state meets the two-year lead time required under the Clean Air Act Part D, Section 177 for the 2025 model year, which can start as early as January 2, 2024. Commenters 3-114, 116-120, 122-152, 154-157, 159-163, 165-168, 170, 172-198, 202-203, 205-212, 215-217, 219-225, 227-232, 234, 237-240, 252, 261.

Response to Comment 84: The Department thanks you for your comment. The Department is required by Section 177 of the CAA to provide at least 2 years of lead time to vehicle and engine manufacturers. As the commenter states, the 2025 model year may start as early as January 2, 2024. Therefore, New York must adopt the Advanced Clean Truck standards prior to January 2, 2022 to provide the required minimum 2 years lead time.

Comment 85: As an initial matter, the DEC should recognize that it has until the end of 2022 to take action on the proposed opt-in to CARB's ACT Rule without violating the Clean Air Act's (CAA) two-year opt-in leadtime requirement in advance of the anticipated 2025 model year effective date. The fact that the DEC has another full year to consider this matter stems from how the definition of "model year" applies in the context of the ACT Rule. Under the ACT Rule, the term "model year" equates with calendar year. As a result, New York can defer acting on the pending opt-in initiative until next year and will still have two full "model years" (i.e., calendar years) in advance of an effective date in 2025, and so will still be in compliance with the two-year opt-in lead-time provision of subsection (1) of CAA section 177.

The most relevant definition of "model year" is found in the ACT Rule itself. Specifically, the ACT Rule (see CCR Title 13 section 1963 (c)(15)) references a provision of CARB's "Phase 2" greenhouse gas

(GHG) regulations as providing the applicable definition of “model year.” That provision (CCR Title 17 section 95662(a)(16)) defines model year, as follows:

“Model year” means one of the following for compliance with this subarticle.

Note that manufacturers may have other model year designations for the same vehicle for compliance with other requirements or purposes:

For tractors and vocational vehicles [which can include Class 2b-3 vehicles] with a date of manufacture on or after January 1, 2021, the vehicle’s model year is the calendar year corresponding to the date of manufacture; (emphasis added).

This directly applicable definition makes it clear that even though the term “model year” may have different applications as it relates to compliance with other regulatory requirements or purposes, as it relates to the ACT Rule, the term “model year” equates with calendar year. Accordingly, if New York is looking to implement the ACT Rule starting in the 2025 “model year,” that implementation will, by definition, apply to tractors and vocational vehicles (which can include Class 2b-3 vehicles) manufactured in the 2025 calendar year. Given that, so long as New York adopts the ACT Rule before the end of the 2022 calendar year, it will provide the requisite two-years leadtime before the start of the 2025 calendar year.

The applicable and controlling federal definition of “model year” leads to the same conclusion. The relevant EPA definition of “model year” is found in EPA’s Phase 2 greenhouse gas (GHG) regulations. Under the Agency’s Phase 2 regulations, “model year” means:

For tractors and vocational vehicles [which, again, can include Class 2b-3 vehicles] with a date of manufacture on or after January 1, 2021, the vehicle's model year is the calendar year corresponding to the date of manufacture. (40 C.F.R. §1037.801(i); emphasis added.)

This federal regulation matches the directly applicable CARB ACT regulation, and underscores the fact that model years and calendar years are the same for these purposes.

This conclusion is further reinforced by the manner in which the ACT Rule phases-in. Under the ACT Rule, a HDOH vehicle manufacturer's obligation to produce and sell a certain percentage of ZEV trucks in a given model/calendar year is based on the total number of all trucks that a manufacturer sells in that same calendar year. In that regard, sections 1963.1(a) and 1963.1(a) of the ACT Rule provide that:

[A] manufacturer shall annually incur deficits based on the manufacturer's annual sales volumes of on-road vehicles produced and delivered for sale in California. Deficits are incurred when the on-road vehicle is sold to the ultimate purchaser in California...

[A] manufacturer must retire a number of ZEV or NZEV credits that equals or exceeds their total annual deficits each model year ... (emphasis added).

Under these operative provisions of the ACT Rule, and by way of example, vehicles manufactured before the 2025 model year would not factor-in to the calculation of the ACT Rule's ZEV-truck

percentage-sales requirements for the 2025 model year, since those requirements would be based on manufactures' annual vehicle sales in 2025, not before. In fact, that percentage-sales requirement could not be fully calculated until the end of the 2025 calendar year (again, not before) when a manufacturer's total annual sales of conventionally-fueled trucks could be calculated.

Thus, it is clear from the operative definitions, and from the manner in which the ACT Rule phases-in, that model year and calendar year are synonymous as it relates to the implementation of the ACT Rule. Consequently, it is equally clear that New York can wait until the end of the 2022 calendar year and still provide two full years of lead-time before implementing the ACT Rule in the 2025 "model year." Commenter 199.

Comment 86: The ACT would require that truck manufacturers comply with the electric vehicle sales mandate in model year 2025. Without defining the definition of model year, manufactures could be forced to comply in 2024 due to their product launch schedules, forcing manufacturers to potentially deliver immature technology that is not fully validated or tested in customers hands. Customers' adoption rate will be directly impacted by the technologies ability to operate efficiently, cost effectively and perform at the necessary standards required to operate the business. Any difficulty with technology rollouts may result in customers hesitant to make a large capital investment on unproven technologies in the future. Commenter 263.

Response to Comments 85-86: It is the Department's position that New York is obligated to abide by the definition of lead time under Section 177 of the Clean Air Act when proposing to adopt California emission standards. Therefore, the Department is obligated to provide 2 years lead time from the start

of the 2025 model year, which may start as early as January 2, 2024. Two years of lead time from January 2, 2024 requires the proposed regulation to be adopted by January 1, 2022. Once the proposed regulation is adopted, the definition of model year for applicable MHD trucks would be implemented as described by the Commenter.

Furthermore, although the model year for some vehicles that would be regulated under this rule corresponds with the calendar year, there are other vehicles where that scenario does not apply. Some vehicles that this rule will apply to have model years starting before the corresponding calendar year and delaying the rule would result in those models not having the required 2-year lead time for this rule to take effect for the 2025 model year.

Delay Until California Incorporates a 100% MHD ZEV Sales Mandate

Comment 87: There are other important reasons to defer acting on the proposed opt-in to the ACT Rule. More specifically, CARB has announced its intent to substantially revise the ACT/ACF Rule to double the Rule's ZEV-truck requirements to a 100% ZEV-truck sales mandate from and after 2040, which will amount to a major revision of the ACT Rule. (See CARB Public Workshop Presentation, dated September 9, 2021, p. 56; Proposed CCR Section 95694.) New York would need to adopt those same revisions to the ACT Rule to maintain the "identity" required under Section 177 of the CAA. This is a significant change of circumstances. Accordingly, it only makes sense for the DEC to wait and see what the final revised ACT Rule looks like before moving to opt-in to it, especially since waiting to assess that final rule and its potentially doubled impacts will not jeopardize the targeted effective date in 2025. Commenter 199.

Comment 88: Consequently, and sometime soon, New York will need to amend its proposed opt-in to the ACT Program to include the 100% ZEV-sales mandate. That, in turn, will require an updated fiscal and economic impact analysis, which likely will further confirm that the costs of the proposed opt-in will far exceed any putative benefits. In light of this development, and as discussed above, the DEC should defer this rulemaking. Commenter 199.

Comment 89: The new law (Chapter 423, 2021) directs the conversion of New York's trucking fleet to ZEVs by 2045. Fittingly, the law also directs the DEC, in consultation with other State agencies, to prepare the necessary market-development, incentive and infrastructure-funding strategies over the next few years to achieve the bill's ZEV-truck targets. The state should make this central focus for now. Commenter 255.

Response to Comments 87-89: The ACT Rule was finalized in California on March 15, 2021. CARB has since proposed a 100% ZEV sales mandate as part of its proposed Advanced Clean Fleets (ACF) Rule. As currently proposed, the 100% ZEV requirement would take effect for 2040 and subsequent model year medium- and heavy-duty trucks. The ACF Rule is a separate rulemaking proposal, still under development, in California. The ACF proposal does not require a delay in New York's proposed adoption of ACT. The Department intends to review the CARB ACF rulemaking proposal to determine if it is appropriate for adoption in New York State. Regardless of CARB's ACF proposal, New York State has a statutory goal within Chapter 423 of the Laws of 2021 for 100% of in-state sales of new of MHD trucks to be ZEV by 2045, where feasible.

Vehicle Design Lifecycle

Comment 90: The development and design life cycle of a conventional powered truck is on average five to seven years depending on application. This includes the engineering, validation, testing and associated compliance work to ensure that the vehicle on the road is the safest and cleanest. Due to the immaturity of electric batteries for commercial vehicle applications, this lifecycle is longer due to the specific vehicle application performance requirements. Electric commercial powertrains do not share the same characteristic component deterioration profile as diesel components. Electric motors and inverters may demonstrate little or no performance degradation over time. However, batteries represent one of the most cost intensive and technologically volatile system components. Battery pack size, chemistry, energy density and durability are critical factors in determining the service up time performance and longevity in a vocational application. The design must consider these factors as battery performance diminishes. Customer expectations often determine the minimum acceptable performance and manufacturers must be prepared to respond to these rapidly changing demands. Manufacturers need sufficient time for validation prior to deploying these products and allow customers to provide feedback on real in use performance. This process of design, deploy, customer feedback and redesign are built into the vehicle development cycle, a process that has been validated for decades with conventional powertrains with less than a full decade of experience with zero emissions commercial vehicle applications. Commenter 263.

Response to Comment 90: The proposed ACT rule addresses vehicle design lifecycles through a 2-year lead time and a progressive phase-in of the MHD ZEV sales requirements in vehicle applications that have been deemed feasible for electrification. At least 70 MHD ZEV models are available today,

and this number is expected to increase significantly.² The proposed rule does not require fleet owners or businesses to purchase MHD ZEV trucks, rather it is a sales requirement on manufacturers to produce and deliver MHD ZEV trucks. Fleet owners have the option of deciding the types of trucks, whether ZEV, diesel, or other fuel type truck to purchase that best suit their needs.

Delay ACT Adoption for Pending Federal Standards

Comment 91: On behalf of the undersigned, and in light of the Biden Administration's announced intention to promulgate a new Federal Clean Trucks Regulation, we respectfully request that your administration delay the New York State Department of Environmental Conservation's (DEC) proposed adoption of the California Advanced Clean Truck (ACT) Rule, which would require manufacturers to sell a prescribed percentage of zero-emission medium- and heavy-duty vehicles (ZEV trucks), but which includes no provisions to incentivize the purchase of any ZEV trucks or develop the necessary recharging/refueling infrastructure. Commenter 153.

Comment 92: These reasonable concerns, along with the inherent benefits of coordinating around a nationwide Clean Trucks Plan, warrant a delay in the DEC's adoption of the proposed ACT Rule, and will allow for the implementation of a better roadmap toward a successful ZEV truck future. Commenters 153, 201.

Comment 93: While we do not support the DEC's potential opt-ins to California's ACT Rule, EMA and

² https://www.edf.org/sites/default/files/2021-03/HD_ZEV_White_Paper.pdf
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its members fully recognize that ZEVs are key to the future of the commercial trucking industry. Accordingly, as noted previously, EMA member companies are investing billions of dollars to develop and bring to market MD and HD ZEVs. Those efforts alone, however, will not achieve success. A broad-based transition of the trucking industry to ZEVs will take a determined and concerted effort by federal and state policymakers, manufacturers, trucking fleets, utilities, and other key stakeholders. During that period of transition, new cost-effective interim standards to reduce NOX and GHG emissions from conventionally-fueled trucks will be necessary to bridge the gap to the longer-term development and deployment of commercial ZEVs. Commenter 199.

Comment 94: More specifically, next-tier nationwide emission-reduction regulations for conventionally-fueled trucks will be key to establishing a cost-effective bridge to heavy-duty and medium-duty ZEVs. To that end, the DEC along with the other MOU States should work with EMA to advocate for next-tier EPA regulations for HD and MD vehicles and engines that include the following elements:

- Meaningful reductions in the tailpipe NOX standard.
- New test procedures focused on reducing emissions under lightly-loaded operating conditions typical of urban centers.
- Additional NOX control under extended idle conditions.
- Next generation “in-use” compliance-assurance protocols to control emissions over a broader range of real-world operating conditions.
- Program elements to ensure compliance over multiple years.
- Continued reduction of GHG emissions.
- Flexible emissions credits to incentivize ZEVs. Commenter 199.

Comment 95: A far more effective bridge to widespread commercial MD and HD ZEV sales and deployment is through a cost-effective nationwide EPA-implemented lower-NOX program. Future federally-certified lower-NOX HD/MD engines and vehicles will ensure that businesses and municipalities in each state have access to the full range of powertrain and vehicle solutions they are accustomed to purchasing today. They will not be forced to pay premium prices for new products, to purchase outside their brand preference, or to seek purchase opportunities in neighboring states. They can maintain profitability without resorting to purchasing used, higher-emitting vehicles, or maintaining their existing fleet longer without the environmental benefits gained from new vehicle purchases. Commenter 199.

Comment 96: The significant nationwide NOX reductions from an EPA lower-NOX program for commercial vehicles and engines would address any remaining nearer-term air quality attainment issues in New York. To the extent that there might be other local needs to reduce emissions from NOX “hotspots” within the State (e.g., ports), those local needs could be best addressed through more specific approaches, such as targeted accelerated fleet turnover programs, utilization of alternative fuels, deployment of zero-emission vehicles and equipment at specific facilities, utilization of the State’s purchasing and contracting power to acquire ZEV trucks, and other targeted incentive programs, rather than through the adverse statewide economic and environmental impacts that would result from the adoption of CARB’s program. Accordingly, New York should work for the implementation of EPA’s next-tier HD/MD regulations as the best option for achieving the State’s air quality goals during the bridge years before significant ZEV-truck market penetration takes hold. Commenter 199.

Comment 97: Significant in that regard, on August 5th, the Biden Administration announced its decision to implement its “Clean Trucks Plan” and to publish final next-tier low-NOx emission standards for HD/MD vehicles before the end of 2022, with those standards taking effect in 2027. Under the Clean Trucks Plan, EPA's new low-NOx regulations will be followed by “Phase 3” GHG standards taking effect in 2030, which likely will continue to accelerate the deployment of ZEV trucks on a nationwide basis. While the details of those EPA programs will need to be negotiated to ensure cost-effective outcomes, the DEC should align its programs with those inherently more effective nationwide regulations. Thus, and for this additional reason, the pending opt-in rulemaking should, at the very least, be deferred to allow for a thorough assessment of the efficacy of EPA's anticipated regulations for HD/MD trucks. Commenter 199.

Comment 98: NFIB, New York's leading small business advocacy organization representing nearly 11,000 small, independent businesses, respectfully requests that your Administration delay the New York State Department of Environmental Conservation's (DEC) proposed adoption of the California Advanced Clean Truck (ACT) Rule. This rule would require manufacturers to sell a prescribed percentage of zero-emission medium- and heavy-duty vehicles (ZEV trucks) but which includes no provisions to incentivize the purchase of any ZEV trucks or develop the necessary recharging/refueling infrastructure. Commenter 201.

Comment 99: Advocate for a National Approach. New York, along with the other MOU states, must advocate for next-tier EPA regulations for heavy- and medium-duty trucks and engines and should work to avoid the disparate state-by-state patchwork of ZEV-truck requirements that would disproportionately benefit the businesses in some states at the expense of businesses in other states. Commenter 153,

256.

Comment 100: The delay we are seeking also would allow the DEC, and all stakeholders, to consider the nationwide Clean Trucks Plan that the Biden Administration announced on August 5th. That nationwide federal program, which will be adopted next year, will advance the goals we all share to implement next tier emission-standards for conventionally-fueled trucks, while also accelerating the deployment of ZEV trucks. To do so effectively, however, we need a nationwide strategy and significant federal infrastructure funding, all as part of a larger effort to address climate change. Commenter 153, 256.

Comment 101: Instead, DEC and all stakeholders should first carefully consider the nationwide Clean Trucks Plan that the Biden Administration announced this past summer. That nationwide federal program, which is expected to be adopted next year, will advance the goals to implement next tier emission-standards for conventionally-fueled trucks, while also accelerating the deployment of ZEV trucks. Commenter 255.

Comment 102: In light of the Biden Administration's announced intention to promulgate a new Federal Clean Trucks Regulation and anticipated new federal support for the adoption of medium and heavy duty zero emission vehicles, we respectfully request the New York State Department of Environmental Conservation (DEC) delay the proposed adoption of California's Advanced Clean Truck (ACT) Rule. Commenter 256, 2312.

Comment 103: NYSABA is urging that the ACT Rule be paused to provide more time to plan for the

increased acquisition and charging costs of more expensive zero emission (ZEV) on-road trucks and agricultural-related equipment. Instead, DEC and all stakeholders should work with the federal government on an approach to transitioning to the national goal of zero emissions. The Clean Trucks Plan that the Biden Administration announced this past summer is expected to be adopted next year, and promises to implement next tier emission-standards for conventionally-fueled trucks, while also accelerating the deployment of ZEV trucks. A nationwide strategy and significant federal infrastructure funding approach is far superior to New York's proposed ZEV truck sales mandate. New York needs to be part of the larger effort to address climate change. Commenter 257.

Comment 104: It is likely that the forthcoming EPA rules establishing nationwide GHG and criteria emissions standards for new medium- and heavy-duty vehicles will result in even greater nation-wide emissions reductions. The DEC should cautiously evaluate the environmental benefits of these nation-wide EPA rules for the state of New York before adopting a California ACT mandate that could have the unintended effect of slowing fleet turnover, thereby mitigating the magnitude of the anticipated emissions reductions from the federal actions. Commenter 259.

Comment 105: Contrary to some industry assertions, the potential for updated federal regulations actually serves to reinforce, rather than undercut, the need for swift state-level action to adopt California's MHDV emission standards. While the details on potential federal action remain unclear, the ACT rule and related policies provide a certain path to advance MHDV electrification. Immediate ACT adoption is the best opportunity to achieve nearer-term reductions and associated health and economic benefits in advance of federal standards. And, they can be a durable and powerful catalyst for ambitious action at the federal level. Commenter 264.

Comment 106: The Biden administration recently announced a nationwide federal program which will be adopted next year. That will implement emissions standards for conventionally fueled truck and accelerate the deployment of ZEV trucks. With a federal program on the horizon, Business Council is concerned that another state specific policy will have a detrimental impact on New York's competitiveness particularly at a time when the state's economy is attempting to rebound. Commenter 2308.

Comment 107: However, we have serious concerns with state-by-state mandates and adoption of regulations that were designed to address climate issues in the State of California which are significantly different from New York. The California program is designed for Southern California, which has the worst air quality in the country, and it does not take into consideration differences between the State of New York and California. Getting a ZEV truck future is best achieved through a national program that will reduce greenhouse gas emissions smartly and cost-effectively. Commenter 2320.

Response to Comments 91-107: New York is encouraged by the Biden Administration announcement of the federal Clean Trucks Plan with regulations anticipated before the end of 2022. New York strongly supports a federal program that would significantly lower NOx emissions from internal combustion engines. However, relying solely on prospective action from the federal government puts New York at risk of failing to meet its emission reduction goals should future administrations decide to weaken or repeal the federal standards. The Clean Trucks Plan may, or may not, include a manufacturer ZEV sales mandate. New York State needs a rapid acceleration of MHD ZEV deployment to meet its climate change requirements and goals under the Climate Leadership and Community Protection Act (CLCPA)

and Chapter 423 of the Laws of 2021. Relying on proposed federal policies, already delayed by a previous administration, that allow for conventionally fueled trucks to act as a bridge will not achieve New York's air quality and climate goals.

New York State Law and Transportation Advisory Panel Recommendations Provide Additional Time

Comment 108: Notably, our request is fully consistent with the State Legislature's approach to this complicated issue, which you enacted pursuant to Chapter 423 of the Laws of 2021. The new law calls for the conversion of New York's trucking fleet to ZEVs by 2045, but also directs the DEC, in consultation with other State agencies, to use the next 1-2 years to prepare the necessary market-development, incentive and infrastructure-funding strategies to achieve the bill's ZEV-truck targets. Our proposed deferral also aligns with the similar recommendations that the Transportation Advisory Panel made to the State Climate Action Council – that the DEC should take 1-2 years to consider and adopt coordinated regulations to ensure that the necessary incentives and infrastructure for ZEV-trucks are in place. Commenters 153, 201.

Comment 109: In that regard, FIANY's members are willing to consider becoming ZEV-truck purchasers since ZEVs ultimately can be good for both the bottom-line and the environment. That said, the market and infrastructure for ZEV trucks in New York are not developed enough yet to let FIANY members acquire and operate a ZEV truck in a cost-effective way. A unilateral ZEV-truck sales mandate does nothing to change that. Commenter 200.

Comment 110: Notably, our request is fully consistent with the State Legislature's approach to this

complicated issue, which the Hochul Administration enacted pursuant to Chapter 423 of the Laws of 2021. Our proposed deferral also aligns with the similar recommendations that the Transportation Advisory Panel made to the State's Climate Action Council – that the DEC should take 1-2 years to consider and adopt coordinated regulations to ensure that the necessary incentives and infrastructure for ZEV trucks are in place. Commenter 256.

Comment 111: A recently enacted New York law directs the conversion of New York's trucking fleet to ZEVs by 2045. Fittingly, the law also directs the DEC, in consultation with other state agencies, to prepare the necessary market-development, incentive and infrastructure-funding strategies over the next few years to achieve the bill's ZEV-truck targets. New York should make this comprehensive preparatory approach it's central focus for now. ZEV truck purchases need to be demonstrably good for the environment, functional for the tasks needed, and affordable for farmers and their supporting custom operators. The market and infrastructure for ZEV trucks in New York is not yet developed to a point to justify the adoption of the California Advanced Clean Trucks (ACT) Rule at this time. Commenter 257.

Comment 112: Navistar recognizes that New York has had several successful truck grant programs, however not to the scale needed to accelerate the turnover of trucks. Using only port trucks as an example, the Port of New York New Jersey has a truck replacement program which last received funding in 2019 in the amount of \$2 million. At a grant of \$185k per truck that would have funded slightly over 10 trucks. There are 19,000 trucks that are registered at the port and it would take incentives of \$3.5 billion to turn that many trucks at \$185k per grant. New York must plan for and secure incentives to support the turnover of trucks. Commenter 263, 2311.

Comment 113: As such, we respectfully request that the Department of Environmental Conservation proposed adoption of a California (sic) be delayed to provide time for the necessary market development and the development of the incentive and infrastructure funding strategies, both necessary to achieve the proposed regulation underlying targets. We believe this request will both align with the structure of Chapter 423, the laws of 2021, recommendations offered by the Transportation Advisory Panel. The DEC should take one to two years to consider and adopt coordinated regulations to ensure that the necessary incentives and infrastructure for ZEV trucks are in in place. Commenter 2308.

Comment 114: Because of the required lead time for implementation under the Clean Air Act, by adopting the ACT rule now New York will be in step with the timeline contemplated by the Climate Action Council's Transportation Advisory Panel, which is likely to be incorporated into the draft scoping plan set to be released before the end of 2021. The first component that the Panel recommended as necessary to achieve zero-emissions trucks, buses and heavy equipment, was that DEC "Adopt Zero Emissions Vehicle Sales Regulations." The Transportation Advisory Panel anticipates a 1–2-year timeline to implement sales regulations like the ACT rule. There is no need for DEC to wait for any further instructions or measures from the Climate Action Council, as adopting the rule now would be in line with the implementation contemplated by the Transportation Advisory Panel recommendations. In fact, delaying adoption of the rule would put New York behind the timeline likely to be included in the state scoping plan. Commenter 264.

Response to Comments 108-114: The existing MHD ZEV purchase incentives and additional

supporting policies will be periodically evaluated to ensure the success of the ACT program. Programs such as the NYSERDA NYTVIP³ and the NYCCTP⁴ offer incentives that help cover the incremental cost of MHD ZEVs. The New York State Public Service Commission has also approved a \$15 million MHD Fleet Make-Ready Pilot Program, utility fleet assessment services, and a Clean MHD Vehicle Innovation Prize competition to incentivize MHD ZEV charging capacity. These programs will need to be evaluated or new programs may be necessary to help stimulate MHD ZEV deployment. The Department is already engaged with other State agencies and authorities to develop these programs and ensure CLCPA obligations are met.

The enactment of Chapter 423 of the Laws of 2021 and the Transportation Advisory Panel (TAP) recommendations do not necessarily require, or provide, for additional time for the Department to consider adoption of ACT. Chapter 423 instructs NYSERDA, PSC, and other state agencies to develop near-term actions and investment strategies by July 15, 2023 to improve sustainable transportation, freight, and transit options, including supporting light-, medium-, and heavy-duty zero-emission vehicles and infrastructure as part of larger transportation projects, where appropriate. The Department supports this required planning effort for accelerating ZEVs of all weight classes but does not interpret this provision as affording additional time to adopt ACT.

The TAP recommendations do note 1-2 years as “time to implement” the ACT regulation. The Department believes this time period includes the time required for the Department to formally adopt the ACT regulation through rulemaking and also a recognition of the CAA Section 177 lead time

³ <https://www.nyserdera.ny.gov/truck-voucher-program>

⁴ <https://www.nycctp.com/>

requirement. The TAP recommendations do not recommend a delay in adopting ACT.

ACT and Supporting Policies

Comment 115: Ensure that the vehicles procured under the ACT will be capable of being fueled and charged when they are delivered. Significant upfront costs for electric vehicle charging infrastructure poses significant risk to the success of New York's policies and will continue to be a significant barrier to widespread adoption of zero-emission trucks without New York adopting conducive policies for ZEV infrastructure, including utility policies. The timeline and cost of interconnecting a charger for an electric MHDV in New York is uncertain and the cost of fueling with electricity in New York is prohibitive, due to demand-charge dominant rate structures in most of the state. The Public Service Commission (PSC) has not comprehensively addressed the needs of MHD-ZEVs through make-ready policies or rate-design. Commenter 204.

Comment 116: NFIB has serious concerns about the propped (sic) adoption of California's Advanced Clean Truck (ACT) Rule as it includes no provisions to incentivize the purchase of ZEV trucks or to develop the necessary recharging /refueling infrastructure. Commenter 236.

Comment 117: New York will also need to make significant investments to install and maintain the necessary heavy-duty ZEV-charging and refueling infrastructure that is virtually nonexistent. The Charge Ready NY program administered by the New York State Energy Research and Development Authority does have some funding available, but this is limited to \$4,000 per port for Level 2 EVSE and an additional \$500 per port for projects in disadvantaged communities. This is a first step, but completely inadequate to support fleets in the state who are expected to install their own fueling system

in support of the ACT's requirements. New York utilities will also need to make significant investments to support the electric grid's resiliency and ensure power is available to meet the increased demand throughout the regions where ZEV trucks will be in operation. California utilities have established and made available well-funded charging infrastructure incentive programs in anticipation of the California ACT Rule. However, the New York Department of Public Service's Electric Vehicle Make-Ready Charging Infrastructure program provides only \$15 million to be split between all the utilities for the development of a Medium- and Heavy-Duty Fleet Make-Ready Pilot Program. Con Edison's pilot program for medium- and heavy-duty fleets only starts in 2022, making large scale deployment by 2024 unfeasible. This is all in addition to significant investment and effort needed to ensure the electric grid will have the power is available to meet the increased demand throughout the regions where ZEV trucks will be in operation. Commenter 256, 2312.

Comment 118: Conversely, New York does not have comparable grant funding to support the turnover of trucks required under the ACT. We recognize the several good programs which exist in the state including The New York Truck Voucher Incentive Program (NYTVIP) administered by the New York State Energy Research and Development Authority (NYSERDA), however the available funding is far below what will be needed. Using only port trucks as an example, the port has a truck replacement program which last received funding in 2019 in the amount of \$2 million. At a grant of \$185k per truck that would have funded slightly over 10 trucks. There are 19,000 trucks that are registered at the port, and it would take incentives of \$3.5 billion to turn that many trucks at \$185k per grant. Commenter 256, 2312.

Comment 119: It is inarguable that the ACT in itself won't be enough to deploy electric vehicles in

sufficient numbers to achieve important climate and clean air targets. To that end, among the complementary policies that will be needed to facilitate a transition to zero-emission vehicles will be sufficient infrastructure for a variety of fleet use cases. The New York Public Service Commission should be required to build utility programs that can help move the needle on infrastructure deployment and grid-beneficial rates. However, development of such infrastructure programs cannot and should not be a reason to delay adoption of the ACT rule—these regulations will not be implemented immediately, and as stated earlier, are designed to be flexible. As such, these efforts can and should happen in tandem. Commenter 264.

Response to Comments 115-119: The Department thanks you for your comment. The ACT regulation represents a manufacturer's MHD ZEV sales requirement. Complementary policies, including those leading to sufficient charging and refueling infrastructure, are needed to facilitate a transition to ZEVs for a variety of fleet use cases. The development of these complimentary programs is outside of the scope of this rulemaking.

The Department notes that the July 16, 2020 NYS Public Service Commission's "Order Establishing Electric Vehicle Infrastructure Make Ready Program and other Programs"⁵ includes a mid-term review to reconsider the program design and budgets to begin no later than October 1, 2022. While the Make Ready Order mainly addressed light duty vehicle charging infrastructure, the Order noted the importance of the MHD vehicle sector.

⁵ <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B6238DD07-3974-4C4E-9201-3E339E311916%7D>, pp. 99-100.

Comment 120: Another critique of the ACT rule is that the state would be unable to accommodate a sudden surge in zero-emission MHDV uptake at this stage and should thus delay adoption for multiple years. Yet this argument fails to understand the inherent flexibility built into the ACT rule. The ACT rule is in fact designed to accommodate an evolving zero-emission MHDV market and was developed with full recognition of the need to support ZEV deployment with supporting policies.

Following the two-year lead time from adoption to implementation, the ACT rule begins with low sales requirements and increases gradually, leaving time for ZEV technology to improve, the supporting ecosystem to mature, and vehicle prices to decline. The ramp-up in sales requirements is modest: from adopting the rule in 2021, to the second year of compliance in calendar year 2025, the sales requirement only grows to 10–13% of new sales. As discussed above, analysts expect significant advancements in range and efficiency in the intervening years, expanding suitability for a wider spectrum of ZEV uses and classes. The lead time and gradual phase-in will also allow New York State to implement the supporting policies that critics of the ACT rule are calling for, including the Public Service Commission's expected MHDV Make-Ready infrastructure program. Commenter 264.

Response to Comment 120: The Department thanks you for your comment. The Department ACT's regulatory structure promotes flexibility. New York's proposal to adopt California's ACT ZEV sales requirements, however, would not begin until the 2025 MY in order to comply with Clean Air Act Section 177 lead time requirements.

New York State Businesses Will Be at a Competitive Disadvantage

Comment 121: Furthermore, the adoption of this rule on a state-by-state basis creates significant

concerns for industries like ours, who are vying to remain competitive on the national level. New York's businesses should not be put at a competitive disadvantage – a national approach to this initiative is critical. Commenter 200.

Comment 122: In addition, there is a substantial chance that forcing the sale of ZEV trucks in New York before the market conditions, necessary incentive funding, and infrastructure are ready will result in a backlash if ZEV-truck purchasers find themselves with work trucks that cannot be fueled, serviced or operated in a manner to meet the demands of their businesses. A ZEV truck that cannot be utilized efficiently only serves to undermine, not promote, the market for ZEV trucks. Commenter 200, 2318.

Response to Comment 121-122: In the absence of national standards and programs, strong technology forcing state programs and mandates will achieve the significant penetration of MHD ZEV trucks in the marketplace in a timeframe that will enable states like New York to achieve its climate and air quality goals and requirements. There will not be a “patchwork” of state standards. There will be one set of stringent, advanced MHD ZEV standards as adopted in California and those Section 177 states that adopt the ACT regulation. There is no federal MHD ZEV program available as an alternative. The ACT ZEV mandate will ensure that zero-emission MHD vehicles are available for sale in New York State.

MHD ZEV Purchase Costs

Comment 123: There are several specific reasons to support our request for a delay of the DEC's pending ACT rulemaking. First, compared to conventionally fueled trucks, ZEV trucks currently have purchase prices that are 2-to-3 times higher and higher life-cycle costs. Commenters 153, 201, 236.

Comment 124: In that regard, MD and HD ZEVs currently have higher purchase prices (2-to-3 times higher than conventionally-fueled trucks), higher life-cycle costs, and lower utility (i.e., less cargo room) than conventionally-fueled vehicles. Commenter 199.

Comment 125: Compared to conventionally fueled trucks, ZEV trucks currently have purchase prices that are 2- to-3 times higher than their diesel equivalents. Commenter 256, 2312.

Comment 126: Few local governments are expected to afford to be in the market for ZEV trucks, which cost approximately three times more than a conventionally fueled truck. The public sector is not unique in this regard. Since there can be no ZEV truck sales without a significant volume of prospective purchases, adoption of the ACT Rule now is premature. Commenter 255.

Comment 127: The ACT Rule will have major consequences for industry across New York, as it will impose an enormous cost burden. The Food Industry in New York operates with a 1-2% profit margin, rendering a mandate such as this untenable. Commenter 200.

Comment 128: Managing the transition from diesel powered products to electric will need to be supported by vehicle purchase incentives for customers. Current models are two to three times more expensive than conventional models and there is also inherent business risk as the technologies have not been widely tested. The importance of a sustained incentive program is critical to ensure early adopter purchases, as well as, stabilizing a transitioning market that needs to maintain cost parity with conventional alternatives in the near term. Commenter 263, 2311.

Response to Comment 123-128: As further detailed in the Regulatory Impact Statement, MHD ZEV trucks generally have higher upfront purchase costs at this time. MHD ZEV trucks are expected to achieve total cost of ownership parity with conventional gasoline and diesel trucks for most vehicle classes within the regulatory timeframe⁶. Not all MHD ZEV trucks will have higher life-cycle costs than conventional MHD vehicles. MHD ZEV trucks generally have lower operation and maintenance costs than conventional vehicles due to lower fuel costs, fewer components, and less required maintenance. Battery prices are expected to continue to decrease during the regulation's phase-in duration. The current rapidly increasing prices of gasoline and diesel fuel, if continued, would result in cost parity sooner than estimated. New York State and New York City offer MHD truck voucher incentives to offset a portion of the incremental cost difference between a new MHD ZEV truck and a conventional truck. The Department acknowledges that businesses may pass increased costs to consumers. This is often cited as fees related to increased fuel expenses, notably diesel. Conversely, trucking businesses could also pass on savings to consumers from reduced operation and maintenance expenses attributed to ZEV truck operation.

New York's Adoption of ACT Will Lead to Out-of-State MHD Sales

Comment 129: In addition, to the extent that fleet operators are compelled to acquire new vehicles out-of-state, that would result in a cascading series of negative economic impacts as well. In particular, truck dealerships in New York would face significant adverse consequences, and if New York-based fleet operators were to choose to relocate out-of-state, significant in-state job losses

⁶ <https://www.edf.org/sites/default/files/documents/EDFMHDVEVFeasibilityReport22jul21.pdf>

would result across the wide-ranging trucking sector, including within the goods-movement, warehousing, and truck-servicing and repair sectors. Commenter 199.

Comment 130: California's concerns are more germane in New York, since it is a smaller state with multiple interstate highways running through and is in close proximity to large centers of population and shipping destinations. New York has close neighbors that do not have ACT mandates and MHDV purchasers will now have an increased incentive to move their purchases out of New York. For each vehicle purchased out of state, New York truck dealers and state tax revenue generated from the sale of the vehicle are potentially negatively impacted. API respectfully requests that DEC consider these factors and include them in the economic analysis. Commenter 259.

Comment 131: Another area requiring NYSDEC analysis is in quantifying the impact of leakage (shifting sales and trucking operations to other jurisdictions). Leakage increases the costs to the State and reduces the anticipated environmental benefits. CARB states in their Standardized Regulatory Impact Assessment (SRIA):

It is possible that manufacturers may shift sales for California-bound trucks out of state to avoid the requirements of the Proposed ACT Regulation which would consequentially reduce overall emissions reductions...

Moreover, to the extent the ZEV mandate increases costs for New York carriers, competition from surrounding states will have an impact on the State revenues, jobs, and the environment that differs significantly from the impact in California. These leakage concerns are even more pronounced in New York since it's smaller than California and its population is near states that are not pursuing BET

mandates. Commenter 266.

Response to Comments 129-131: Most of New York's geographic neighbors in the Northeast and Mid-Atlantic states have supported MHD adoption as signatories to Multi-State Medium- and Heavy-duty ZEV Memorandum of Understanding (MOU)⁷. New York and other states are currently completing regulatory efforts to adopt ACT in 2021 and 2022^{8,9,10}. Out-of-state vehicle purchases by New State businesses may result in a loss of sales tax revenues for New York State, but this is not a unique phenomenon resulting from this regulation. Cross-border sales have always existed to some degree in New York and neighboring states since the closest, or most convenient, vehicle dealership may be located a short distance across state lines. Conversely, out-of-state businesses and consumers routinely purchase vehicles in New York for the same reasons, which may result in sales tax gains for New York and a loss for the neighboring state. MHD vehicles purchased out-of-state would still have to comply with New York State regulations related to new registrations.

Comment 132: These current disadvantages will lead to substantial costs that most businesses cannot absorb, especially under the current economic conditions, which could result in a loss of jobs, a relocation of trucking businesses out of the State, and an adverse ripple effect upon the economies of our communities. Commenters 153, 201, 236.

Comment 133: In addition, New York's implementation of ACT could result in relocation of trucking

⁷ <https://www.nescaum.org/documents/multistate-truck-zev-governors-mou-20200714.pdf>

⁸ <https://www.nj.gov/dep/rules/notices/20210419a.html>

⁹ <https://www.maine.gov/dep/rules/index.html#5789893>

¹⁰ <https://www.mass.gov/doc/presentation-from-april-2021-stakeholder-meetings-mhd-vehicles/download>

businesses to neighboring states that do not have ZEV mandates for medium- and heavy-duty trucks and thus are capable of undercutting trucking companies based in New York. This in turn would result in a loss of jobs and tax revenue in New York that DEC should consider in evaluating the economic impacts of its proposed rule. Commenter 259.

Response to Comments 132-133: While there is the possibility that some businesses may choose to relocate out of state to reduce their operating costs, this is a business decision made by each company on an individual basis and involves numerous factors in addition to potential adoption of the ACT regulation. As stated above, there are indications that ACT will be widely adopted within the Northeast and Mid-Atlantic regions. The Department notes that numerous companies with a national, and often international, presence have expressed interest, and in many cases strong support, for a transition to MHD ZEV trucks. These companies cite the reduced operating expenses and the benefits to the environment as reasons to make the switch.

New York Has Not Made Adequate Investments

Comment 134: Second, New York State lacks the charging and refueling infrastructure necessary for ZEV trucks to operate. New York has not developed or implemented any effective measures to address these issues, which will make the ACT Rule impractical from the start. Commenters 153, 201, 236.

Comment 135: Invest in Incentives and Infrastructure: Before adopting ZEV truck sales mandates, such as the ACT Rule, New York State must prioritize the development of a viable and sustainable program to facilitate the purchase of ZEV trucks. Robust incentives must be established to offset all of the ZEV truck life-cycle costs that exceed current commercial vehicle costs, including: the higher purchase

prices; the relative operational inefficiencies (i.e., it takes more ZEV trucks to perform the work of conventionally fueled trucks); the lower residual values; and the required investments in new maintenance facilities, training, and parts inventories. Commenters 153, 201, 236, 256, 2312.

Comment 136: The net result is that the DEC's premature adoption of California's ACT Rule in New York will (as noted) hinder, not promote, the emerging market for zero-emission commercial vehicles and so will work to undermine the air quality and climate change benefits it purports to advance. Imposing ZEV truck sales mandates while the State has no realistic plan to incentivize ZEV truck purchases and to support ZEV truck use, will signal to our industries and the general public that the State is not taking the necessary time to implement a viable ZEV truck strategy – time specifically called for under the recent legislation noted above. Without a coordinated strategy, trucking fleets will be less likely to purchase ZEV trucks for the foreseeable future. That result is the exact opposite of our shared objective to accelerate the deployment of ZEV trucks. Commenters 153, 201, 236, 256.

Comment 137: New York will need to make significant investments to install and maintain the necessary ZEV-charging and refueling infrastructure that is currently nonexistent and will need to coordinate a substantial reconfiguration of the electric grid to ensure power is available to meet the increased demand throughout the regions where ZEV trucks will be in operation. Commenters 153, 201, 236.

Comment 138: The ACT Rule is not tailored to or suitable for adoption in New York for numerous reasons. Principal among them is that the ACT Rule will not accelerate the deployment and use of ZEV trucks in New York. All that the ACT Rule does is place a mandate on truck manufacturers to try to sell an increasing percentage of ZEV trucks in New York starting in 2025. But the ACT Rule does

nothing to incentivize or foster the purchase and use of ZEV trucks in New York. It amounts to a unilateral ZEV-truck sales mandate with no accompanying effort to ensure that any buyers in New York can afford to be in the market for a ZEV truck, which cost approximately three times more than a conventionally-fueled truck. Since there can be no sales without corresponding purchases, the ACT Rule stands to accomplish very little. Commenter 200.

Comment 139: To ensure a successful ZEV truck future, New York will need to do at least two critical things. First, New York must coordinate and incentivize with significant public funding the development and installation of a robust statewide recharging (and hydrogen-refueling) infrastructure – including upgrades in the electric grid and the siting of thousands of charging stations – sufficient to ensure the safe and reliable operation of ZEV trucks, without imposing undue costs and operational burdens on trucking operations and truckers. Commenter 200.

Comment 140: There are significant technical and practical challenges in deploying infrastructure in the state. As a truck manufacturer, Navistar has significant concerns that infrastructure will not keep pace with the ACT. Without thoughtful and coordinated infrastructure deployment, trucks will be deployed with nowhere to charge. This would be detrimental to the environment, the economy and the drive to getting to zero emission trucks. It is also important to keep in mind that light duty charging and heavy-duty charging infrastructure needs are different due to simple space considerations and other constraints, and may even be in competition in some instances. Commenter 263.

Comment 141: Strong consumer demand helps drive investments from vehicle manufacturers. Yet, strong regulations that set a clear direction for industry, such as the ACT rule, accelerate the pace of

innovation and ensure the industry makes these vehicles available to consumers. As has been the case with the ZEV regulations on light-duty vehicles, EV model availability and supply is significantly more robust in states that adopted the ZEV rule, than in those that did not. In a similar vein, states that adopt the ACT should see more electric trucks models available to operators in those states compared to those states that do not put a regulatory scheme in place. With growing demand and wide availability, supported by a strong regulatory framework, the broader industry could easily exceed the targets in the rule, giving momentum towards meeting state emission reduction goals. Commenter 269.

Comment 142: Few assessments acknowledge the additional monetary investments required and enormous challenges associated with the establishment of statewide heavy-duty vehicle charging infrastructure – including the build out of charge points, mandatory grid upgrades, and the expansion of transmission capacity – that must complement these new battery electric vehicle purchases once they are market ready and deployable. A number of recent reports have highlighted concerns regarding whether the electricity grid is ready for electric vehicles. One recent review of this issue by the Washington (sic) Post focused in on the issues specific to New York state. Based on that report it appears that there are some very serious challenges to preparing the grid so that it can transport renewable electricity to the locations it will be needed to serve electric vehicles, and additional challenges installing necessary charging equipment.

The infrastructure issue and challenges of getting electricity to where it is most needed goes to the issue of scalability and deployability which could significantly frustrate electrification plans even if vehicles become readily available and are lower in cost. An article published this week by Oregon Public Broadcasting highlights the very real concerns expressed by representatives of the trucking

industry. Oregon like New York is currently considering adoption of the Advanced Clean Truck program.

Here are excerpts from that article:

Oregon Trucking Associations President Jana Jarvis said there are opportunities for new technologies for the trucking industry but she's not sure if electric trucks are the fuel for the future, especially for medium- to heavy-duty trucks....it's unclear what the future holds when it comes to batteries and charging stations along transportation routes to ensure that trucks can deliver freight efficiently. "Then you think about having to stop and recharge — if there was a charging infrastructure and if there was enough grid capacity. And both of those are questions today," she said. "You start thinking about doing that every couple hundred miles and you realize the inefficiencies the trucking industry would be subject to by conversion to electric vehicles."

Jarvis said some of her association's larger companies are trying to use electric trucks, but getting the charging infrastructure installed in their terminals has been difficult, depending on their location. "

In many parts of the state there just isn't the grid capacity to accommodate that," she said.

Commenter 254.

Comment 143: Quite simply, New York has not made the preparations nor provide the investments necessary to be ready for 2025 when the proposed ZEV truck sales mandate would take effect.

Commenters 153, 201, 236.

Comment 144: By comparison, California, which is only now implementing its ACT Rule, has invested in its Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) for more than 10 years, providing funding for more than 7,000 advanced technology vehicles with a plan to invest hundreds of millions of dollars more in the coming years. Commenter 153.

Comment 145: California, which is only now implementing its ACT Rule, has invested over \$2 billion to date on clean transportation programs, and due to significant budget surplus, has recently included an additional \$1.165 billion over its existing annual allocations over the next three years for zero emission trucks and buses. California's HVIP program has been in existence for more than 10 years, funding more than 7,000 advanced technology vehicles, and the state intends to dedicate hundreds of millions of dollars more in the coming years. Commenter 256, 2312.

Comment 146: California has developed a robust incentive portfolio with varying types of programs (voucher, scrappage, loans, etc.) for technologies at varying stages of development (pilot, demonstration, commercial). California has spent over \$2 billion to date on clean transportation programs and, due to a significant budget surplus, has recently included an additional \$1.165 billion over its existing annual allocations over the next three years for zero emission trucks and buses. While it is a large sum of incentives, it is anticipated that this additional \$1.165 billion will support the turnover of only 3,250 trucks and buses. Commenter 263, 2311.

Comment 147: In addition, California utilities have established and made available well-funded charging infrastructure incentive programs in anticipation of the California ACT Rule. New York needs to implement significant investments, like California has already done, before it would be in a position to

adopt the ACT Rule. Commenter 153.

Comment 148: Second, New York must provide for widespread, readily accessible and sustained incentive funds to ZEV truck purchasers to offset the significantly increased purchase prices and maintenance costs associated with ZEV trucks. Commenter 200.

Response to Comments 134-148: The proposed adoption of California's ACT regulation sets emissions standards for MHD trucks. California's ACT regulation does not include MHD ZEV fleet purchase or ZEV charging/refueling infrastructure requirements in California, or elsewhere. Vehicle purchase and infrastructure incentives are best addressed by individual states. Incentive programs, such as NYTVIP and NYCCTP, have been demonstrated to be effective in accelerating MHD ZEV adoption.

It's anticipated that New York's adoption of the ACT regulation will likely send a strong market signal and provide regulatory certainty to not only MHD vehicle manufacturers but also electric vehicle supply equipment (EVSE) manufacturers, and EVSE network providers. The 2-year lead time provision provides time for vehicle manufacturers to produce compliant products, EVSE manufacturers to provide necessary charging equipment, and utilities and vehicle owners/operators to upgrade electrical service and install charging stations. ACT's escalating annual MHD ZEV sales requirements from MY2025 to MY 2035 provide both program flexibility and time.

New York's NYTVIP has been active since 2013 and the NYCCTP has been active since 2012. These two programs have successfully provided incentives for electric trucks, hybrid electric trucks,

compressed natural gas (CNG) trucks, diesel particulate filters, as well as hybrid electric and CNG conversions as the programs evolved. The NYTVIP and NYCCTP have been updated periodically as vehicle technologies advance and new sources of funding became available. The current programs utilize Volkswagen Settlement funds to cover a substantial portion of the incremental purchase cost of new electric MHD trucks compared to comparable diesel trucks. NYTVIP is also co-funded by the federal Congestion Mitigation and Air Quality Improvement (CMAQ) program. New York is committed to continuing truck voucher incentives as the MHD ZEV market matures.

Additional state actions related to incentives and infrastructure is likely to be undertaken during the 2-year lead time and beyond to further prime the market and meet statutory obligations. The combination of a strong ZEV mandate, incentives to offset a portion of the initial purchase cost, and increased availability of EVSE infrastructure provides manufacturers and consumers with certainty that a viable market exists for their products.

The Department notes that M/HD vehicle infrastructure costs were considered within California's Attachment C: Updated Costs and Benefits Analysis for the Advanced Clean Trucks Program¹¹. As set forth in the Department's regulatory support documents, the Department evaluated these costs and applied them for New York State cost analysis where appropriate.

The Department notes that Oregon adopted California's ACT on November 17, 2021, and Washington State adopted California's ACT on November 30, 2021.

¹¹ <https://ww2.arb.ca.gov/rulemaking/2019/advancedcleantrucks>

Need Multi-Prong Approach

Comment 149: We stand ready to partner with New York State toward that goal, but we need you and your Administration to undertake the required multi-prong approach that will advance our common goals while avoiding the potential negative impacts on our economy and communities. Commenter 153.

Comment 150: The foregoing conclusion is backed up by the Executive Officer for the South Coast Air Quality Management District (SCAQMD), the region of the country that experiences the most extreme levels of air pollution. In an August 3rd letter to a coalition of environmental advocacy groups (a copy of which letter is attached), the SCAQMD Executive Officer has explained in detail why reliance on regulatory mandates for ZEV-trucks is not a viable near-term strategy. His reasoning, which fully applies here, is set forth in part below:

Since 2008, the South Coast AQMD has invested \$37M for total project costs of \$316M in multiple zero-emission (ZE) demonstration and pilot projects. Largely due to our work to push and advance technology, we are now on the cusp of a future where widespread deployment of ZE technology is a reality. But we also know that reality simply isn't here yet - at least not for heavy-duty Class 8 trucks. And even if they were ready to be manufactured at large scale today, there are substantial challenges regarding whether the duty cycles for ZE Class 8 vehicles can meet business needs, and whether a service network is available for businesses that acquire these vehicles. In addition, the cost of ZE technologies is substantially higher than non-ZE

technologies, and while eventually we expect the total cost of ownership to be lower for ZE trucks, affordability remains a significant barrier to large-scale adoption. Finally, even if all these barriers were addressed, the charging/fueling infrastructure (plugs and hydrogen dispensing stations), the electrical distribution system (neighborhood transformers, substations, etc.) and the power/fuel supply to support widespread deployment will take many years to develop.

We recognize that there is tremendous desire in our impacted communities for ZE solutions today and hear that concern loudly and clearly. Nobody wants ZE trucks more than we do, but as outlined above and further detailed below, that is simply not possible in the near term beyond a pilot scale. This is not just our word; multiple recent technological assessments, including ones by the Ports of Los Angeles and Long Beach, and even the reports from the Luskin Center for Innovation and the ICCT that you reference in your letter concur with this position.

There are multiple reasons why, as a practical matter ZE heavy-duty trucks are not available today. First, while there appear to be multiple heavy-duty ZE truck models available for order, getting these vehicles delivered in a timely manner is an entirely different matter. Second, there are ongoing concerns regarding whether ZE trucks can meet needed duty-cycles. Third, there is currently a dearth of charging infrastructure and concerns regarding sufficient power supply needed to support widespread electrification.

Even if the technology and duty-cycle issues were resolved, neither the fueling structure nor the electronics are available to support widespread heavy-duty ZE truck deployment. Charging infrastructure has proven difficult to implement in our pilot projects with power capacities just over 100 kW. Installing the thousands of chargers with future 500kW and 1MW capabilities to shorten charge times have serious infrastructure challenges that impacts not only local distribution but also main utility line distribution and generation. We have spent over \$37 million to address the significant barriers that must be overcome to advance HD charging infrastructure. Unfortunately, it will be many years and tens of billions of dollars before this network is sufficient, utility infrastructure improvements made, and the installation process streamlined. As an example of the work needed, the California Energy Commission has forecast that approximately 141,000 50 kW chargers and 16,000 350 kW chargers would be needed statewide to support 180,000 electric medium and heavy-duty vehicles by 2030 (consistent with CARB's draft Mobile Source Strategy and ACT Rule). This is beyond the 31,000 50+ kW chargers (and the more than 1.2 million level 1 and 2 chargers) needed to support 8 million light duty ZE vehicles in 2030. As a comparison, there are only about 21,000 50+ kW chargers across the entire nation today.

The issues detailed by the SCAQMD are real. These issues are even more challenging in New York, and must be addressed before a ZEV-truck sales mandate is implemented, not after. Putting the cart before the horse, especially in the goods movement industry, cannot and will not yield sound public policy outcomes. Commenter 199, 2318.

Comment 151: A robust, sustainable, and cost-effective market for ZEV trucks requires that ZEV-truck purchase incentives, ZEV-truck fueling stations, ZEV-truck service centers, and a ZEV-truck roadside assistance network. All of those things need to be in place before any meaningful number of ZEV-truck purchases can or should be made. There is simply no way around that. Putting the cart before the horse has never been a good strategy, and that is especially true in the goods-movement industry. Commenter 200.

Comment 152: Another concern with the proposed regulation is cost and inadequate incentives to help meet the states set yearly goals. Although, New York State currently has some financial incentives for cleaner vehicle technology through the New York Truck Voucher Incentive Program (NYTVIP), the program is often over prescribed. Further, the program requires that voucher project result in verifiable emissions reductions and air quality improvements by decommissioning current diesel vehicles through a scrappage process, making it difficult for farms to transition their equipment to ensure that an electric vehicle with preform appropriately. Commenter 245.

Comment 153: Given the gradual phase-in of the rule, meeting the electric infrastructure needs for zero-emissions trucks is feasible. The charging needs of trucks adopted in the early years of the ACT rule can likely be met by existing grid infrastructure and vehicle-grid integration strategies that avoid the need for some distribution upgrades. Furthermore, adoption of the ACT rule will provide some certainty and a baseline trajectory for truck adoption around which electric utilities in the state can plan for and implement necessary grid upgrades and service extensions. That trajectory also provides a timeline for utilities, truck operators, and EV service providers to plan and install the chargers that will serve trucks adopted under the ACT rule. Commenter 251, 2304.

Comment 154: Another concern with the proposed regulation is cost and inadequate incentives to help meet the stated yearly goals. Although, New York State currently has some financial incentives for cleaner vehicle technology through the New York Truck Voucher Incentive Program (NYTVIP), the program is often oversubscribed. Further, the program requires that voucher project result in verifiable emissions reductions and air quality improvements by decommissioning current diesel vehicles through a scrappage process, making it difficult for logging and wood product fleets to transition their equipment appropriately. New York's incentive programs to date cannot bring to scale the conversions as well as transitions that will be necessary to meet the reality of our transportation sector in achieving zero and near zero vehicle emissions. Commenter 253.

Response to Comments 149-154: Complementary and interrelated policies and programs must be considered to successfully implement the ACT program to meet New York's clean air and climate goals and requirements. The Department is proposing to adopt strong, technology forcing standards to rapidly transition the MHD fleets to ZEVs. The standards are also intended to provide regulatory certainty to vehicle manufacturers, charging infrastructure manufacturers, public utilities, and vehicle purchasers that MHD ZEV trucks are viable purchase options in New York. New York State also has legal obligations under CLCPA, as set forth in Environmental Conservation Law Article 75, to reduce greenhouse gas emissions across all sectors of the economy including transportation. Chapter 423 of the Laws of 2021 establishes the statutory goal to have all MHD vehicle sales in New York State to be ZEVs by 2045, where feasible.

Private industry also has an important stake in preparing for widespread penetration of MHD ZEV

trucks. Many of the actions stated by the Commenter as being necessary to successfully launch MHD ZEV trucks in New York will be the responsibility of private entities. These include installing fueling stations, charging infrastructure, service centers, and roadside assistance networks catering to MHD ZEV trucks. ZEV truck manufacturers, manufacturers of charging infrastructure, and vehicle dealers and service centers are all stakeholders that could play a vital role in the successful implementation of the proposed regulation.

Comment 155: While New York is investing in, and has a long-term plan for, light-duty vehicle charging infrastructure, that envisioned build-out is vastly different from the necessary heavy-duty vehicle charging infrastructure, and the two cannot service both types of vehicles. Commenters 153, 201, 236.

Comment 156: The lack of incentives -- unlike California, New York does not have a dedicated revenue stream to support a robust incentive program for the purchase of ZEV vehicles, and we are concerned this will undermine the ZEV future. By forcing the technology into a market that is not ready, it will undermine the goal of the Clean Truck program. Accelerating ZEV purchase mandates without supporting infrastructure, utility grid preparedness, and a robust incentive is a recipe for failure. Commenter 2320.

Comment 157: I wanted to touch on four primary areas related to implementation of the ZEV purchase mandate that we are also concerned with. First, is the lack of charging infrastructure. A robust charging infrastructure for medium- and heavy-duty vehicles does not currently exist. Additionally, New York lacks adequate truck parking today, and these two issues combined create a significant concern on access to charging in a cost-effective way. Commenter 2320.

Response to Comment 155-157: While the issues are largely beyond the scope of this rulemaking, the Department notes that charging and refueling infrastructure for larger MHD trucks will need to be developed over time. The Department has already engaged in discussions with State agencies and authorities, as well as with private entities, encouraging them to consider accommodations for larger vehicles at future charging locations. Considerations may include higher power requirements, ease of access, and parking for larger vehicles. The federal Infrastructure Investment and Jobs Act signed by President Biden on November 15, 2021 includes state formula and potential competitive grant funding for MHD fueling and charging infrastructure. The Department will join other New York State agencies and authorities to review and seek, as appropriate, any future federal funding provided by the Infrastructure Investment and Jobs Act to promote development of MHD ZEV infrastructure in New York State.

Comment 158: First, it is the lack of infrastructure resources available in rural areas to charge electric vehicles and frankly charging infrastructure is even lacking on significant transportation routes let alone those roads less traveled. Build out of infrastructure is vital should any mandate for increasing the number of EVs sold in the state. However, some hurdles would remain even if the infrastructure was in place particularly around the area of livestock hauling. Charging a medium- or heavy-duty vehicle takes time, and the longer animals are transported can stress animals and potentially put them in unsafe conditions. Livestock hauling is already at a critical point as lack of processing capacity close to farms already make for hauling livestock longer than desired distances. Commenter 245.

Comment 159: The nature of log hauling in New York is largely handled by independent haulers who

live in rural areas of the state. Presently, there is insufficient infrastructure deployed to meet the demands of both medium and heavy duty EV's in the forest sector. Build out of charging infrastructure is vital should any mandate for increasing the number of EVs sold in the state. However, some hurdles would remain even if the infrastructure were in place particularly around the area transport and loading of logs from the wood lots to the mills. The demand for energy is more than just driving to and from wood lots. It also includes the trucks' ability to load logs and unload in the wood yards of the mills and concentration yards.

On the other end of the supply chain, we have logs, lumber and paper products from mills and concentration yards throughout upstate New York that need to transport harvested wood products throughout the State, inter-state across the country and to ports where products are shipped overseas. This distribution network is not universally supported by EV infrastructure to ensure timely delivery of our products. It is also unclear how demands for charging would impact e-logs of haulers and ensure that products can efficiently be distributed within what are already tight time and cost margins. Commenter 253.

Response to Comments 158-159: The Department is aware of the importance of having charging infrastructure in place for MHD ZEVs and is engaged with other state agencies and authorities to support the build out of this needed infrastructure. Private businesses also have a vital role in supporting the installation, operation, and maintenance of zero emission charging/refueling infrastructure. The proposed rule would require new MHD ZEV annual sales percentages phased-in starting with model year 2025 through model year 2035, where feasible. The ACT regulation does not contain fleet purchase requirements.

The Department notes that at least one study is planned to evaluate heavy-duty ZEVs suitability for logging applications.^{12, 13} The Department will join other New York State agencies and authorities to review and seek, as appropriate, future federal funding provided by the Infrastructure Investment and Jobs Act to promote development of MHD ZEV infrastructure in New York State including consideration for rural applications.

Comment 160: Currently, transportation in the agriculture industry is at a crisis mode and action on this rule could further that crisis and potentially be the tipping point. High transportation costs, labor needs, and complex supply line disruptions due partly to market disruptions caused by COVID-19 have only exacerbated the situation. Farmers are facing low commodity prices and increasing transportation costs. More needs to be done in investment of infrastructure, technology advancement and incentive programs before this rule is considered. Commenter 245.

Comment 161: Lastly, transportation in the forest and wood products sector is at a crisis mode and this rulemaking could tip the sector into a deleterious situation resulting in leakage and loss of supply chains to keep the wood products sector viable in New York. Unintended consequences of a poor rule, lack of investment in necessary infrastructure and not recognizing transition opportunities and longer-term use of liquid transportation fuels only exacerbates and prolongs this crisis. More needs to be done in investment in infrastructure, technology advancement and recognition of near zero emission applications of renewable liquid fuels before this rule can be adopted. Commenter 253.

¹²<https://www.campbellrivermirror.com/news/electric-logging-trucks-to-be-tested-on-island/>

¹³<https://www.theautochannel.com/news/2021/04/12/985272-large-market-for-downhill-electric-vehicles-reveals-idtechex.html>

Response to Comments 160-161: The continuation of incentives and further investment in infrastructure will likely be important to ensure the success of the proposed rule. New York State has established voucher incentive programs with the NYSERDA NYTVIP and the NYCDOT CTP that offer funding to offset a significant portion of the incremental cost of new MHD ZEVs compared to conventional MHD diesel vehicles. The New York State Public Service Commission has also approved a \$15 million MHD Fleet Make-Ready Pilot Program, utility fleet assessment services, and a Clean MHD Vehicle Innovation Prize competition to incentivize EV charging capacity to complement the truck voucher programs. These programs will need to be evaluated and potentially new programs developed to help stimulate MHD ZEV deployment. The Department is actively engaged with other State agencies and authorities to develop these programs.

The federal Infrastructure Investment and Jobs Act signed by President Biden on November 15, 2021 includes state formula and potential competitive grant funding for MHD fueling and charging infrastructure. The Department will join other New York State agencies and authorities to review and seek, as appropriate, any future federal funding provided by the Infrastructure Investment and Jobs Act to promote development of MHD ZEV infrastructure in New York State.

Comment 162: It is also important to note that federal MHDV policies are complementary, not substitutive of the ACT rule, especially due to longer lead times for policy implementation and urgency of emissions reductions. Commenter 251.

Response to Comment 162: The Department thanks you for your comment.

Comment 163: The development of federal incentives could be game-changer for this industry and remove the pressure of states being the sole source for driving down the price of vehicles and proving their field-readiness. CALSTART is actively working towards a federal point-of-sale truck incentive, but it is hard to predict the outcome or the timing of this effort. Commenter 260.

Response to Comment 163: The Department thanks you for your comment.

Comment 164: In light of the foregoing, the zero-emission MD and HD vehicle market in New York will require significant incentive funding until zero-emission trucks become profitable investments for trucking businesses. Incentives must be sufficient to offset all of the ZEV truck life-cycle costs that will exceed current commercial vehicle costs, including: (i) higher purchase prices, and increased sales taxes; (ii) operational inefficiencies (*i.e.*, it takes more ZEV trucks to perform the work of conventionally-fueled trucks); (iii) lower residual values; (iv) required investments in new maintenance facilities, training, and parts inventories; and (v) significant investments to install and maintain the necessary charging and refueling infrastructure. Additionally, incentives must be available for an extended period of time so fleets can rely on them in implementing their long-term business plans. Commenter 199.

Comment 165: The DEC also must consider the substantial challenges involved in developing the requisite charging and refueling infrastructure to support zero-emission MD and HD battery-electric trucks—something that CARB's ACT Rule failed to do. Charging stations are expensive (costing more than \$350,000), and must be located at fleet terminals and other depots where trucks are typically

parked, and as noted, developing that infrastructure will be complicated and time-consuming. Moreover, fleets will need to expand the charging infrastructure over time if they plan to deploy additional battery-electric trucks. Since it may take 24 to 48 months from concept to a having a fully functional charging station in place, the DEC should establish a primary near-term objective of incentivizing and assisting in the development of a sufficiently widespread charging infrastructure to enable the deployment of battery-electric commercial vehicles. Additionally, for fleet applications where fuel-cell electric vehicles may be the better option, hydrogen fueling stations will be needed. Commenter 199.

Comment 166: The ACT Rule fails to consider the significant financial incentives needed to make MD and HD ZEVs an attractive investment for a trucking business. Commenter 199, 2318.

Comment 167: Further, the ACT Rule does not address or provide in any way for the charging and refueling infrastructure that will be needed at fleet facilities to operate the mandated ZEVs, the build-out of which will be expensive, complicated, and time-consuming. An effective MD/HD ZEV program needs to include significant and sustained ZEV-purchase incentives, and significant and sustained public investments in ZEV infrastructure build-out and related costs. The ACT Rule does not address those necessary elements, and so will not result in an effective ZEV program for MD and HD ZEVs. Commenter 199.

Comment 168: Lion believes this rule is a critical precondition for a well-functioning medium- and heavy-duty zero-emission vehicle (MHD ZEV) market. At the same time, we believe the ACT rule alone will be insufficient to achieve the State's ambitious emission reduction targets. As such, we urge New York

agencies to view the ACT rule as the cornerstone of a broader policy approach to establish a conducive ecosystem that allow the ACT rule to achieve its desired scale of impact. A comprehensive suite of “wrap-around” policies and investments is required to provide clear directional signals to vehicle buyers, to create the infrastructure necessary to charge/refuel zero-emission vehicles, as well as guarantees to manufacturers that the market for zero-emission trucks will materialize as intended. Commenter 204, 267-268, 2303.

Comment 169: It is critical that DEC coordinate with sibling agencies such as the PSC to ensure that New York’s public agencies and utilities are ready to rapidly scale up zero-emission infrastructure. New York’s utilities will need to commit to supporting zero-emission fleets with needed infrastructure upgrades and ensuring that the cost of fueling vehicles with electricity is not higher than diesel. New York should expand its existing \$15 million Medium-and Heavy-Duty Make-Ready Pilot and permit its utilities to spend ratepayer funds on the “make ready” upgrades needed to serve electric fleets at the scale demanded by the ACT targets. New York should also consider providing significant public funding for fleet costs related to electric charging and hydrogen fueling, as California is doing. This will allow fleets to satisfy their charging needs, while ensuring ZEV fueling costs are lower than diesel equivalent costs, and ensuring that ACT timelines are achievable. Commenter 204.

Comment 170: While we strongly support adoption of ACT, we also believe that the scale of the climate challenge and New York’s emissions reduction targets will require more than this regulation alone. As such, we urge New York policymakers to view the proposed ACT rule as one of the cornerstones of a comprehensive policy approach that will maximize the impact not just of the ACT rule but of the state’s entire decarbonization agenda. A full suite of coordinated policies and investments is needed to support

both vehicle buyers and manufacturers alike to accelerate their transitions to EVs. In concert with adopting the ACT rule, Rivian strongly recommends that New York take additional steps including implementing a clean fuels standard (CFS) and strengthening the state's truck voucher program. We look forward to working with policymakers and stakeholders to enact a full menu of public policies in support of New York's goals. Commenter 247.

Comment 171: However, to ensure the successful implementation of the ACT program, New York needs to also implement additional supporting policies and incentives to make sure the commercial demand for zero emission vehicles is established, the supply of hydrogen fuel is sufficient to meet demand, and the necessary hydrogen fueling stations are deployed where they are needed. Commenter 250.

Comment 172: In addition, while the ACT rule is significant and feasible, it should be just the first step of many. To further address truck emissions and pollution reductions, we urge DEC to adopt the Heavy-Duty Low NOx Omnibus (HDO) as soon as possible to reduce harmful emissions from new combustion engines. DEC should take the lead from frontline communities on additional policies needed to expedite air pollution reductions in harmful hotspots. Commenter 251.

Comment 173: The ACT rule is just one step toward the climate and air pollution policies necessary for New York to reach its climate goals, and must be followed by complementary policies. For instance, tackling some of the state's environmental justice goals requires policies that guarantee emissions reductions in pollution burdened communities. Some of these policies might include: mandating emissions reductions from freight hubs and other high trafficked facilities (e.g. an "Indirect Source

Rule”); replacing and retrofitting existing diesel equipment; accelerating deployment of zero-emission transit and school buses; low and no-emission zones; establishing targeted deployment and incentive programs for EV charging infrastructure; and mandating emission-reduction measures that target environmental justice communities, transportation corridors, and port regions. Commenter 251.

Comment 174: In California, the jurisdiction on which the ACT rule is based, the Advanced Clean Trucks/ Advanced Clean Cars Programs and a low carbon fuel standard work in tandem. CARB describes California’s low carbon fuel standard as “a key part of a comprehensive set of programs in California to reduce emissions from the transportation sector, including the [...] Advanced Clean Cars Program.”² According to a 2020 report by Energy Innovation and the Environmental Defense Fund evaluating the emissions and economic benefits of California’s Advanced Clean Trucks rule, California’s low carbon fuel standard is key to making the program economically viable. Per the report, “[s]avings on fuel and maintenance plus Low Carbon Fuel Standard (LCFS) revenue far exceed higher manufacturing costs (for new vehicles) and infrastructure costs (for charging) [...] LCFS revenue represents the value stream available to electric trucks [sic] owners” (p. 4).³ Moreover, Appendix C of CARB’s Staff Report on proposed regulation of the Advanced Clean Trucks rule assumes that larger fleets would earn revenue through LCFS credits by building and owning their own EV charging infrastructure,⁴ helping to bolster compliance with the rule’s regulations. Commenter 258.

Comment 175: For one, it is crucial that the Department of Environmental Conservation (DEC) also commit to adopting the purchase requirements for fleets now under development by CARB. Fleet rules will provide clear directional signals to vehicle buyers, as well as guarantees to manufacturers that the market for zero-emission trucks will materialize. Additionally, these regulations are likeliest to succeed

if accompanied by other key elements, such as sustained robust purchase incentives and commitments by other state agencies to accelerate supportive infrastructure policy, including guaranteed utility support for charging infrastructure and funding for infrastructure deployment. The rapid pace of change demanded by the climate crisis and pervasive unhealthy air quality requires a comprehensive “ecosystem” strategy. Through the reduction of emissions from heavy-duty trucks in particular, the ACT rule will go a long way toward cleaning the air New Yorkers breathe, especially in disadvantaged communities. Still, the swift transition required means New York should also simultaneously pursue complementary policies—the scale and urgency of the problems New York is tackling demand an “all-hands-on-deck” approach, rather than selecting isolated options from the menu of available regulations, incentives, and market mechanisms. These are the very ecosystem recommendations CALSTART’s Drive to Zero program is providing to regions around the world who are now likewise exploring adoption of ACT and similar regulations. Commenter 260.

Comment 176: Coordination between DEC and its sibling agencies is imperative to ensure that both public agencies and utilities are ready to rapidly scale up zero-emission infrastructure. In particular, the Department of Public Service (DPS) has taken initial steps to activate electric utilities in facilitating fleet electrification but must move quickly and decisively to calibrate its policies to the level of ambition codified by the ACT. Authorizing a \$15 million statewide Medium- and Heavy-Duty Make-Ready Pilot as well as an earlier \$9 million authorization for fleet make-ready in Con Edison’s 2020 rate case were positive actions, but far more funding will be needed to support the infrastructure build-out needed for fleet electrification to reach scale in New York; for reference, the California Public Utilities Commission (CPUC) had authorized more than \$600 million in makeready investment for MHD fleets by California’s three major investor-owned utilities in the years immediately preceding the ACT rulemaking. This

investment will ensure that fleets in New York will not be burdened with the uncertain and potentially prohibitive costs of distribution system upgrades that are often needed to provide charging capacity for heavy-duty electric vehicles. Commenter 260.

Comment 177: For the ACT rule to have its full desired impact in New York, including the emergence of the state as an anchor market for the zero-emission supply chain and its many jobs, a suite of “wrap-around” policies and investments is required. There are four primary actions that we strongly recommend be taken in concert with this rule to ensure its success:

1. Adopt fleet purchase requirements for key “beachhead” segments that mirror the sales targets in the ACT rule, upon final publication of the Advanced Clean Fleets rule by CARB;
2. Create a ramp up to the rule via sustained and sufficient investments in incentives for the incremental up-front costs of zero-emission trucks and the charging equipment essential to fueling these trucks;
3. Coordinate with sibling agencies including NYSERDA and the Department of Public Service to provide significant funding for MHD ZEV infrastructure, to ensure infrastructure deployment timelines are coordinated with utilities, and to ensure that charging/fueling a ZEV will be less expensive than fueling with diesel through thoughtful rate design; and
4. Enact a Clean Fuel Standard to improve the operating economics for zero-emission fleets relative to diesel fleets and put in place a beneficial TCO environment while generating millions in annual revenues to keep clean and equitable transportation priorities well-funded. Commenter 260, 267-268, 2303.

Comment 178: Even with the ACT rule in place, it is clear that the state will have to pursue additional

strategies to reduce MHDV emissions to a level consistent with 2030 and 2050 emission limits. Such strategies should include, among other policies: supporting the build-out of charging infrastructure, providing permanent incentives to encourage phasing out dirty MHDVs, and additional vehicle emission standards addressing other on-road and non-road sectors. Commenter 262.

Comment 179: As DEC moves forward with these regulations, the state should develop a strategy to accelerate fleet turnover to the maximum extent practical. In particular, DEC should develop a plan to identify where the dirtiest diesel engines are still operating and target incentives and other activities to get those vehicles off the road. Such a policy offers an opportunity to reverse the legacy of environmental injustice in New York State. Targeted air quality monitoring can help identify communities with elevated exposures to air pollution and the types of sources contributing to those exposures and figure out where investments in ZEV technology are most needed. Additional targeted strategies will be needed to ensure that the communities most harmed by transportation pollution are prioritized in statewide emissions reduction efforts, in line with the CLCPA.

- Electrifying Ports, Warehouses, Distribution Centers, School Bus Depots, Refuse Truck Depots, and Other Freight Hubs. New York State should target infrastructure build out, ZEV incentives, and other state policies and resources to accelerate the phase-out of all diesel and fossil fuel-powered vehicles in facilities with significant MHDV volumes. The cumulative impact of emissions from such facilities adversely impacts workers, residents, and children who attend school close by. Prioritizing electrification in these locations is one of the most important ways to address the systemic inequities inherent in our current transportation system. DEC should follow the lead of the South Coast Air Quality Management District in California by using authority under the Clean Air Act to establish an “Indirect Source Rule” to limit emissions from such

facilities. DEC should also collaborate with stakeholders to develop zero-emissions ports and distribution centers, modeled on the Port of Long Beach's Zero-Emissions Terminal Equipment Transition Project.

- **Accelerating Deployment of Zero-Emission Transit and School Buses.** Analysts suggest that transit and school buses are the two most mature zero-emission MHDV market segments today. Yet, electric bus deployments still represent a tiny fraction of vehicles in bus fleets throughout the state. A recent study found that electrifying public transit buses would provide the biggest “bang for the buck” in terms of emission reductions and 18 avoided health impacts. New York State should pursue policies to aggressively deploy zero-emission transit and school buses, and to phase out fossil fuel-powered buses as soon as possible, in line with the “Green Transit, Green Jobs” bill package proposed in the Legislature and New York City’s recently enacted all-electric school bus legislation.

- **Low and No-Emission Zones.** DEC should identify areas overburdened with MHDV emissions and develop model rules to create low-emission or zero-emission zones to encourage rapid ZEV deployment in these areas. Such policies could be modeled after those implemented at the Ports of Los Angeles and Long Beach, which will impose fees on diesel and natural gas trucks accessing the ports, while exempting ZEVs.

- **Adopting Other California Vehicle Emission Standards.** California has adopted or is planning to adopt emission standards for a range of other vehicle segments not covered by their standards for on-road light-duty vehicles and MHDVs. Examples include HDO, drayage trucks serving ports and railyards, cargo handling equipment, and transport refrigeration units. These rules could have a significant impact on air quality and public health in some of the most heavily impacted communities in New York State. DEC should join New Jersey, which has already expressed

intent to adopt emission standards for some of these segments. Commenter 264.

Comment 180: As the state implements ACT and develops supporting policies to accelerate zero-emission MHDV uptake, it is critical to understand and mitigate the impact that the transition to ZEVs will have on existing workers. As an initial matter, electrification should benefit drivers' health, since drivers have high exposures to diesel pollution. However, electrification could be disruptive for drivers and a host of other workers in jobs related to combustion vehicles including mechanics, workers at gas stations and along the gasoline/diesel supply chain, and others. There are also opportunities to use state investments to advance a just transition by ensuring that new jobs offer fair wages and benefits and spur job creation among in disadvantaged communities, while addressing existing problems like driver misclassification. Similarly, the state should ensure mechanics trained on maintenance of combustion engines are retrained and have good job opportunities in maintenance for electric vehicles or related jobs in installing and maintaining charging infrastructure. The "Green Transit, Green Jobs" bill package (S3535B/A3090 & S3405/A2083), which would simultaneously speed up the transition to zero-emission transit buses while leveraging public investment to encourage the growth of high-quality green jobs and provide for retraining of diesel-reliant workers, points to one way forward. Commenter 264.

Comment 181: However, in order to effectively reduce GHG and ensure that the transition to electric vehicles is equitable for all, New York must adopt the ACT regulations in tandem with other complementary policies. The ACT regulations are one step in a larger process that New York must undertake to achieve its necessary decarbonization and public health goals. ChargePoint believes that New York adoption of the ACT regulations, in tandem with legislation that requires the PSC to address

demand charges and a Clean Fuels Standard, will ensure New York's standing as a regional leader in MHD ZEV market development. Commenter 265.

Comment 182: The ACT will help achieve the targets set forth in the CLCPA and elsewhere and provide much-needed policy certainty to market participants concerned about a transition to zero emission vehicles without a clear pathway to make the transition. By adopting the ACT alongside other policies such as the Heavy-Duty Omnibus rule and the forthcoming Advanced Clean Fleet rule, they can reduce energy consumption and emissions from the transportation sector, decarbonize and modernize the state's energy system, and bring good-paying jobs to the state. Commenter 2314.

Response to Comments 164-182: The proposed ACT regulation establishes emissions standards for MHD ZEV trucks. It is not intended to address complementary New York State policies and programs related to MHD ZEV purchase or ZEV infrastructure incentives, or to establish funding sources for incentive programs. Incentive programs have been demonstrated to accelerate and complement the ACT MHD ZEV sales requirement. The Department is engaged with other state agencies and authorities, as well as stakeholders, to address these concerns. New York's proposed adoption of the ACT regulation is anticipated to send a strong market signal and provide regulatory certainty to MHD vehicle manufacturers, EVSE manufacturers, and vehicle owners and operators. The Department also anticipates that existing State MHD ZEV incentive programs (e.g., NYTVIP, NYCCTP, PSC Make Ready) will be evaluated and revised over time to reflect future MHD ZEV market conditions and to meet statutory obligations. The combination of a baseline ZEV mandate, with incentives to offset a portion of increased ZEV purchase costs, and increased availability of EVSE infrastructure would provide manufacturers and consumers with regulatory certainty that a viable market exists for their

products.

The federal Infrastructure Investment and Jobs Act signed by President Biden on November 15, 2021 includes state formula and potential competitive grant funding for MHD fueling and charging infrastructure. The Department will join other New York State agencies and authorities to review and seek, as appropriate, any future federal funding provided by the Infrastructure Investment and Jobs Act to promote development of MHD ZEV infrastructure in New York State.

Comment 183: NYSCHSA is urging that the ACT Rule be delayed as the affected industries, including local government highway and bridge construction and maintenance operations and those companies with which we contract for work, will need time to plan for the increased acquisition costs of more expensive zero emission (ZEV) on-road trucks and construction equipment. Commenter 255.

Comment 184: A nationwide strategy and significant federal infrastructure funding approach is far superior to New York's ZEV proposed sales mandate. New York needs to be part of the larger effort to address climate change. State specific programs, such as the ACT Rule, while directionally correct, are not well-suited to the scope of these issues, and may work to hinder, not accelerate, the deployment of ZEV trucks. Deploying aggressive state ZEV truck sales mandates to accelerate replacing the demand for diesel and gasoline fuels with electric charging sources as a central strategy for California and New York will most certainly require a national, private sector manufacturing and supply chain transformation that will need to be considered on a national economic basis. Commenter 255.

Comment 185: Forcing ZEVs into the market prematurely will lead to negative experiences with the

technology and result in increased hesitancy by fleet operators to embrace them. They will require new maintenance facilities, mechanic training, and parts inventories almost immediately upon first acquisitions of these vehicles. The transition could result in a loss of jobs, a relocation of businesses out of the state, and an adverse ripple effect on our local economies. Commenter 255

Comment 186: Improving the prospects of success for meeting the goal of a sustainable and cost-effective market for ZEV trucks will require purchase incentives; a robust network of recharging stations; a transition to service and maintenance garages manned by trained mechanics and stocked with available parts; and a ZEV truck roadside assistance network. These features need to be much further developed before a high volume of ZEV truck sales should be mandated. Commenter 255.

Comment 187: High-powered charging is especially important to enable the electrification of MHDV fleets for public (e.g., school buses, public transit) and private entities (e.g., last-mile delivery, transportation-networking companies, and regional freight). Unfortunately, traditional electricity rates were not designed to address the unique characteristics of high-powered chargers. Medium- and heavy-duty fleet operators face significant economic burdens driven by the way traditional demand charges were designed. Since MHDVs touch the lives of everyone in New York, from school buses to transit buses to municipal service trucks, addressing the operating cost barriers for public and private vehicle fleets is essential if policymakers want to ensure widespread and equitable access to the benefits of electric transportation for all New Yorkers, whether they own an EV or not.

It's important to note a local example in New York that supports the need for the public utilities to address demand charges. The Metropolitan Transit Agency ("MTA") has expressed concerns about the

about delivery rate structures for MHD vehicles with the Public Service Commission as recent as last year stating,

“The MTA reiterates that at current delivery rate structures and supply agreements the cost per mile of fueling an electric bus is in excess of \$2.00 per bus mile; this is more than twice as high as the cost of fueling a bus with diesel or CNG. This makes the adoption of electric buses even more challenging. Rate design must work for all parties: the utility must recover its costs, for-profit charging stations must be able to operate profitably, and electric vehicle owners must be able to fuel their vehicles at a cost per mile that is competitive. If we cannot achieve all three objectives, New York State will not make sufficient progress toward its goals of putting electric vehicles on the road. Electricity has the potential to cost far less per mile than diesel or CNG. The MTA urges the Commission to direct utilities to pursue rate design that will enable the rapid transition to electric transportation.”

As described above by the MTA, demand charges can prevent the deployment of ZEV MHD because the EV charging operators are, many times, overrun with excessive costs, making fossil fuel cheaper than going electric. If the ACT regulations are adopted, it will be crucial (sic) for Gov. Hochul to sign A3876/S3929 in order to meet the goals laid out in the program. Commenter 265.

Response to Comments 183-187: The proposed rule does not require companies or fleets to purchase MHD ZEVs. Fleets can purchase the vehicles that best suit their business needs, which may or may not include ZEVs. Private industry will have an important role in preparing for MHD ZEV trucks including installation of charging stations, maintenance garage upgrades, spare parts, etc. MHD ZEV incentives

are currently available through NYSERDA's NYTVIP and the NYCDOT's CTP. Relying on prospective action from the federal government to implement a national Clean Truck Plan puts New York at risk of failing to meet its emission reduction goals if future administrations decide to weaken or repeal the standards put in place by the current administration. New York needs a rapid acceleration of MHD ZEV deployment to meet its emission reduction commitments under the CLCPA and Chapter 423 of the Laws of 2021 and relying on federal policies that allow for conventionally fueled trucks to act as a bridge will result in a failure to meet New York's air quality goals.

Identity

Comment 188: There is another reason why the DEC's proposed opt-in to CARB's ACT Program should

not proceed. The proposed opt-in is not authorized under CAA section 177. The ACT Program as the DEC would adopt and implement it in New York would not be "identical" to the ACT Program that CARB is implementing in California. Commenter 199.

Comment 189: The ACT Rule, as adopted in California, requires the manufacturers of MD and HD vehicles to sell an increasing percentage of ZEV trucks starting in 2024, with the mandated ZEV-sales percentages varying for the different weight classes of MD and HD vehicles.

The ACT Rule, as originally adopted in California, applies the foregoing percentage-based sales mandates to the total number of MD and HD vehicles *that a manufacturer sells in California* to calculate the specific number and types of ZEV trucks, as sorted into the 3 weight-class groups, that a manufacturer needs to sell in a given year. Basically, a manufacturer generates a "deficit" for each

conventionally-fueled vehicle it sells in California in any of the three listed weight-class groups of vehicles. The manufacturer then needs to generate a “credit” to offset that deficit by selling a ZEV truck of the same type, by selling a near-ZEV truck of the same type (which will earn partial credit), or by buying credits from another manufacturer. The credits that a manufacturer earns are weighted (using differing multipliers) based on the vehicle class of the ZEV-truck that the manufacturer sells, with larger heavier trucks earning higher credit-multipliers than smaller lighter trucks. The following table lists the specific credit-multipliers that are applied under the ACT Rule:

The ACT Rule’s prescribed ZEV-sales percentages, in essence, are used to calculate the number of deficits that need to be retired each year through a manufacturer’s sale of ZEV trucks and generation of corresponding credits. Those required ZEV-sales numbers are directly tied to the numbers and types of MD and HD vehicles *that a manufacturer sells into the California market each year*.

Significantly, the DEC is not proposing to utilize the California-sales-based calculations to determine the number of ZEV trucks that would need to be sold in New York under the proposed opt-in to CARB’s ACT Rule. Instead, the DEC intends to apply the above-listed ZEV-percentage sales mandates and weighting factors to the number and types of conventionally-fueled MD and HD vehicles that a manufacturer *sells in New York*. One very important outcome from substituting New York sales-based data for the California sales-based data is that New York’s ACT Program will not be “identical” to California’s. The number and mix of MD and HD vehicles sold into New York is fundamentally different from the number and mix of MD and HD vehicles sold in California. The result to MD and HD vehicle manufacturers is that the ACT Program as implemented in California, on the one hand, and

in New York, on the other, *will not be identical. In essence, New York is proposing to adopt new and separate sets of MD and HD ZEV standards*
– *which it is not authorized to do.*

Consider the following example: In 2028, Manufacturer A sells in California 400 Class 2b- 3 Group trucks, 200 Class 4-8 Group trucks, and 400 Class 7-8 tractors. Under the ACT Program's percentage-based ZEV-sales mandates in 2028, that Manufacturer will need to sell 80 Class 2b-3 ZEV trucks, 60 Class 4-8 ZEV trucks, and 80 Class 7-8 ZEV tractor-trucks. To that Manufacturer, the breakdown for its overall production of MD and HD ZEVs in 2028 for California will need to be 36.5% Class 2b-3 trucks, 27% Class 4-8 trucks, and 36.5% Class 7-8 tractor-trucks (to total 100% of the Manufacturer's required ZEV-truck production). However, if that same Manufacturer A sells in New York that same year (2028) 300 Class 2b-3 Group trucks, 150 Class 4-8 Group trucks, and 50 Class 7-8 tractors, it will need to sell 60 Class 2b-3 ZEV trucks, 45 Class 4-8 ZEV trucks, and 10 Class 7-8 ZEV tractors. Under that scenario, the practical result to that same Manufacturer is that the manufacturing profile for its overall production of ZEV trucks for New York (as distinguished from California) will need to be 52% Class 2b-3 trucks, 39% Class 4-8 trucks, and 9% Class 7-8 tractor-trucks. Thus, to that Manufacturer, and in practice to any manufacturer, the ZEV-truck production mandates under the ACT Program are **not identical** for California and New York.

Significantly, the disparate and non-identical impacts on manufacturers from imposing the prescribed ZEV-sales mandates on differing mixes of truck sales in the two States will be exacerbated even more – multiplied, in fact – once the ACT Rule's various ZEV-credit multipliers (weighted differently for the three different weight-class groupings) are applied to manufacturers' differing mixes

of trucks sold each year in the two States. That multiplying effect of the very real differences between the implementation of the ZEV mandates makes it even more apparent that the ACT Program would not apply identically to manufacturers selling trucks in New York and California. The net result is that the DEC is not authorized to adopt the ACT Program under CAA Section 177. Commenter 199.

Response to Comments 188-189: The ACT's ZEV Sales Percentage table establishes increasing MHD ZEV sales by model year according to three groups (Class 2b-3, Class 4-8, and Class 7-8 Tractors). New York's proposed rule will adopt the same percentages beginning with the 2025 model year. New York, and every other Section 177 state, will have a different mix of MHD vehicles than California. Within the regulatory flexibilities provided by ACT, applicable MHD manufacturers may need to sell a different set of MHD ZEVs in New York compared to California to achieve compliance. This variation represents differences in the application of the rule, rather than differences in the standard established by the rule. This has been the case with New York's incorporation of California's motor vehicle emission standards going back to New York's initial adoption in 1990. If New York were to require manufacturers to sell the same mix of sales for MHD vehicles as they do in California, the rule would likely not be identical as the resulting MHD ZEV sales percentages would differ from those established in the CARB's ACT rule. This would in turn create a "third vehicle" standard.

Comment 190: The "identity" requirement has other implications as well. As noted above, CARB has announced its intent to revise the phase-in schedule of the ACT Rule's ZEV-truck sales mandates by adding an additional final phase-in step for "2040 and beyond." That final step will require manufacturers to sell 100% ZEV trucks in all three different weight classes of MD and

HD vehicles. To maintain the required identicality with CARB's ZEV-truck sales mandates, New York will need to adopt that amendment as well. Commenter 199.

Response to Comment 190: The ACT Rule was finalized in California on March 15, 2021. CARB has proposed a 100% MHD ZEV sales mandate as part of its proposed Advanced Clean Fleet (ACF) rule, which as currently proposed, would take effect for 2040 and subsequent model year MHD trucks. The proposed ACF Rule is beyond the scope of this rulemaking. The Department intends to review the CARB ACF rulemaking proposal to determine if it is appropriate for adoption in New York.

Regardless of CARB's adoption of the ACF proposal, New York State has a statutory goal of requiring 100% of MHD in-state truck sales to be ZEV by 2045, where feasible, to comply with the requirements of Chapter 423 of the Laws of 2021.

Comment 191: CARB's ACT Rule relies, in part, on an earlier-adopted CARB rule that establishes certification requirements for ZEV powertrains. If the DEC does not also adopt that rule, the ACT Programs in California and New York will be non-identical on that basis as well. In addition, as noted above, New York will need to adopt any future amendments to California's ZEV-truck sales mandates to maintain the requisite identicality. Commenter 199.

Response to Comment 191: The Department incorporates applicable California standards by reference. ZEV powertrain certification requirements are referenced in the California standards and are therefore incorporated by reference in New York in 6 NYCRR Part 200. Further, New York is preempted from certifying vehicles and powertrains as this would create a "third vehicle" standard.

The Department routinely updates its incorporation of California standards under 6 NYCRR Part 200 to maintain identity.

Comment 192: In an obvious maneuver to try to obviate the need for opt-in states to adopt the anticipated amendment to the ACT Rule's ZEV-sales requirements, CARB is planning to include the final 100% ZEV-sales step in Title 17 of the California Code of Regulations (CCR) as opposed to Title 13 where the current ACT provisions are codified. That blatant ploy to evade the reach and consequences of the "identity" provision of the CAA Section 177 cannot and will not succeed. To maintain an identical program governing the mandated sales of ZEV trucks, New York will have to adopt CARB's announced final step toward 100% ZEV truck sales from and after 2040. That clear conclusion holds regardless of where in the CCR CARB might try to camouflage its de facto (and de jure) amendment to the ACT Rule. Commenter 199.

Response to Comment 192: The Department takes exception to this comment and rejects the Commenter's assertion that California, and other states including New York by extension, are intentionally hiding or obfuscating proposed rulemaking documents and standards. New York is aware of CARB's proposed Advanced Clean Fleets (ACF) rulemaking, which is beyond the scope of this rulemaking proposal. DEC will review the proposed rule when it's complete and will make any subsequent New York rulemaking proposal readily available to all stakeholders.

Regardless of CARB's adoption of the ACF proposal, New York State has a statutory goal of requiring 100% of MHD in-state trucks sales to be ZEV by 2045, where feasible, to comply with the requirements of Chapter 423 of the Laws of 2021.

Vehicle Availability

Comment 193: New York's commercial vehicle market includes many distinct segments that each require unique vehicle configurations, and each application has a different level of suitability for HD and MD ZEVs. We estimate that there are at least 70 different market segments for Class 4 through 8 trucks in New York, with some applications (e.g., residential parcel delivery) representing reasonable targets for electrification, while others (e.g., plowing snow) are much less suitable. Any analysis of the opportunities for deploying MD and HD ZEVs in New York must consider the diverse market segments and include a robust evaluation of each one. Those segments identified as highly suitable may be considered "beachhead" markets, where zero-emission trucks can be deployed first before expanding to other market segments. Commenter 199.

Comment 194: As the DEC staff is well aware, commercial trucks are not just big cars. Unlike the passenger car market where purchasers select from a limited number of vehicle options, commercial fleets provide truck manufacturers with extensive and detailed vehicle specifications so their trucks will meet the particular demands of the fleets' unique operations in the most efficient and cost-effective manner. When a trucking company purchases a commercial vehicle, it is making a significant capital investment in business equipment that it expects to deploy in a manner that will return a profit. Trucks are amortized over longer time periods than cars, and they are assessed, not with regard to subjective criteria such as style and comfort, but solely on the objective basis of performance capability and cost-efficiency. Thus, truck purchasers' decisions turn on detailed up-front assessments of the customized truck's utility for the job at hand, and its purchase price, durability,

operating costs, and resale value. In short, a trucking company will only invest in a new commercial vehicle when it will improve the bottom line of their business. Commenter 199.

Comment 195: The fleet of medium- and heavy-duty vehicles in operation on U.S. highways is extremely diverse. It has evolved and diversified over decades to meet a wide range of engineering, operating and durability specifications tailored to the often-unique needs and requirements of many different end-use applications.

Some vehicles are designed for short urban daily package delivery trips in fleet operations, others are used in port freight drayage operations, while still others are engaged in utility maintenance operations, building and highway construction, urban and intercity passenger transit and freight hauling, to name just a few end-use vocational applications. While some companies have announced plans to incorporate electric and zero emission vehicles into their operations, these technologies cannot currently meet the needs of all of the end-uses for medium- and heavy-duty fleets. For instance, some cities are testing the use of battery electric buses (BEB) to determine if they can meet their needs depending on the terrain, mileage of the route and the time available to charge. Some have found issues while others have been successfully deployed. Other municipalities continue to find that diesel buses and natural gas buses serve their municipal requirements while contributing to their GHG and other environmental goals. A ZEV-centric regulatory approach would place significant limitations on fleets whose needs cannot be served by this technology. Commenter 259.

Comment 196: In addition, and as noted above, commercial vehicle and engine manufacturers likely will be so overwhelmed by the scope, stringency, and timing of CARB's new requirements that there

is a strong possibility that several major manufacturers will exit the California market. Those that remain may only be able to offer limited product options to minimize costs and risks. At the recent Board hearings on CARB's MD/HD Rules, CARB staff conceded that only two heavy-duty engine manufacturers have committed to even *try* to develop CARB-compliant products for the 2024 model year. No commitments have been made regarding compliant products for the 2027 model year and beyond. States outside of California should work to avoid (not opt-in to) those types of adverse market outcomes. Otherwise, the consequences could be severe – both environmentally and economically. Commenter 199.

We encourage DEC to allow private and public entities the freedom to determine the powertrain technology that best meets their individual operational needs and that best fits within the constraints imposed by the economic/capital requirements and management philosophy of their individual organizations. Such an approach will result in the most economic use of capital and the most-sustained reductions in carbon emissions. Commenter 259.

Response to Comments 193-196: Private and public entities will continue to have a wide selection of MHD vehicles of varying fuel types to choose from when making a vehicle purchase. The proposed rule includes a MHD manufacturer's sales requirement for increasing percentages of MHD ZEVs. The proposed rule does not include a fleet purchase requirement. While a MHD ZEV model may not be available, or feasible, for a particular application or class within the proposed regulatory timeframe, the ACT provides a phased-in increase in ZEV sales over time allowing for continued technology development while also providing MHD vehicle manufacturers regulatory compliance flexibility.

Comment 197: Today, Lion has deployments in more than 16 states, and there are currently over 400 electric vehicles in operation throughout North America with over 8 million miles of service provided. Lion is manufacturing and deploying a whole range of all-electric class 5 through class 8 vehicles, including the Lion6 and Lion8, commercial heavy-duty electric urban trucks designed to serve New York and the country's freight and goods movement industries. Commenter 204.

Comment 198: Arrival is a commercial electric vehicle (EV) manufacturer founded in 2015, with North American headquarters in Charlotte, NC. Arrival's pioneering new method of design and production enables us to create groundbreaking products with a goal of being comparable in price with fossil fuel equivalents and offer a lower Total Cost of Ownership (TCO) for operators. Arrival's vertically integrated approach uses in-house developed hardware and software and combines it with assembly in low CapEx Microfactories, which will serve local communities in a smaller footprint than conventional factories. Arrival has announced two U.S. Microfactories in Rock Hill, SC and Charlotte, NC. The Rock Hill facility is a \$46 million investment creating 240 new jobs and will produce up to 1,000 electric buses a year. The Charlotte Microfactory is a \$41.2 million investment which will employ 250 people that will be able to assemble up to 10,000 electric delivery vans annually. Our vision is to build additional Microfactories near our customers in communities around the country. Commenter 235.

Comment 199: Zeem provides zero-emission vehicles, infrastructure and logistic solutions to small and medium-size businesses to support and accelerate the deployment of MHD ZEVs for fleets throughout the country, with New York being a major focus. Small, medium and disadvantaged fleets often lack the resources to navigate difficulties and costs associated with deploying electric vehicles and building charging infrastructure. Zeem simplifies this process by providing equitable access to leasing, servicing,

parking, charging and energy storage through our e-fleet-as-a service solution and shared depot facilities. Commenter 242.

Comment 200: BYD's mission is to create a zero-emissions transportation system and has established a broad manufacturing system of vertically integrated electric vehicle inputs, including batteries, which are necessary for achieving this goal. According, BYD has built and delivered more than 60,000 electric buses and 14,000 electric trucks worldwide. In the US, BYD has delivered more than 500 electric buses and 200 electric trucks. Commenter 243, 2313.

Comment 201: Rivian is an independent U.S. company dedicated to the mission of keeping the world adventurous forever with our lineup of all-electric adventure vehicles. The company has started deliveries of its pickup (R1T)

with the SUV (R1S) expected to launch later this year. With features like an electric motor at each wheel, over 300 miles of range on a single charge, 0-60mph times of 3 seconds and the ability to tow up to 11,000 pounds (R1T), these products will open a new class of zero emission vehicles to consumers, meeting ever-growing demands for performance and capability while emitting zero tailpipe emissions. To support our R1T and R1S customers in New York, Rivian recently launched one of its first service centers in the country in Brooklyn. In addition to the R1 vehicles, Rivian will be delivering 100,000 all-electric last-mile delivery vans for Amazon in the coming years, reducing greenhouse gas (GHG) emissions from the delivery sector and improving local air quality around logistics hubs, along key travel corridors, and in neighborhoods. These all-electric delivery vans will be produced at the same Normal, Illinois, assembly plant as the R1T and R1S. Our contribution to the zero-emission medium- and heavy-duty market won't end there as we introduce additional products and services soon to further

support fleet electrification.

We strongly support programs of ambitious emissions regulation and zero-emission vehicle (ZEV) sales requirements as core to our values and vision for the world. Implementation of the ACT regulation will drive critical emissions reductions in the transportation sector in New York as detailed by staff in the regulatory impact assessment. Rivian's vehicles would be subject to the proposed standards and are proof that now is the time to adopt this regulation. The Rivian R1T, R1S and last-mile delivery van are already beginning to drive on New York's roads and can all be counted toward MHD ZEV requirements. Commenter 247, 2309.

Comment 202: In addition, the company was one of the first heavy-duty truck manufacturers to develop and deploy an all-electric last mile delivery commercial van, the eStar, in 2009. Several important lessons were learned regarding technological requirements for vehicle optimization, charging infrastructure, and customer cost of ownership which all greatly differ from the traditional diesel-powered products. Navistar's customer focused approach for EV deployment comes from these previous attempts at hybrid electric and fully electric vehicles. Today, the company is focused on both battery and fuel cell electric commercial vehicles. Navistar is currently delivering battery electric school buses to school districts today and recently announced that the fully electric International eMV Series medium-duty truck is now in production. Also, Navistar and GM recently announced a partnership to develop and manufacture a fuel cell class 8 on-highway truck for the market by 2024. Commenter 263, 2311.

Comment 203: Tesla's mission is to accelerate the world's transition to sustainable energy. Moreover,

Tesla believes the world will not be able to solve the climate change crisis without directly reducing air pollutant emissions—including carbon dioxide (CO₂) and other greenhouse gases (GHG)—from the transportation and power sectors. To accomplish its mission, Tesla designs, develops, manufactures, and sells high-performance fully electric vehicles and energy generation and storage systems, and installs, and maintains such systems. Tesla currently produces and sells four fully electric, zero emissions vehicles (ZEVs): the Model S sedan, the Model X sport utility vehicle (SUV), the Model 3 sedan, and the Model Y mid-sized SUV. Tesla is also planning to launch a medium duty pickup truck, the Cybertruck, and a Class 8 heavy-duty truck, the Tesla Semi. The Semi will come in two models with ranges of 300 and 500 miles respectively and will demonstrate that an all-electric truck can meet virtually any duty cycle when paired with the megawatt charging system that Tesla and the industry is developing.

The ACT rule is reasonable given the level of demand that can be observed in the marketplace. On the heavy-duty side, since unveiling the Tesla Semi in late 2017, a significant number of fleets with substantial freight needs have placed reservations for the truck, indicating broad industry demand for heavy-duty electric vehicles. These fleets will be deploying the Tesla Semi in a wide range of applications, including but not limited to, manufacturing, retail, grocery and food distribution, package delivery, dedicated trucking, rental services, intermodal, drayage, and other applications. Companies with operations throughout North America representing every major trucking sector and category of the economy have reserved the Tesla Semi, ranging from food service to logistics to retail. Commenter 269, 2315.

Comment 204: Tesla is not alone in its efforts to manufacture electrified medium and heavy-duty

vehicles, with several other major manufacturers announcing plans to make zero emission Class 8 trucks. A similar picture emerges in the context of electric pick-up trucks, with several major legacy and new automakers unveiling plans to manufacture electric pick-up trucks. Tesla anticipates that most – if not all – of these offerings would fall within the Class 2b-3 class. According to a recent report from CalStart, last year there were 95 models of zero emission medium and heavy-duty vehicle models in commercial production, and that number is set to increase by nearly 78% to 169 models by the end of this year. Commenter 269.

Response to Comments 197-204: The Department thanks you for your comments. The Department notes that several MHD ZEV manufacturers indicated that an increasing number of MHD ZEV trucks will become available within the next several years in addition to those already available.

The Department supports new innovations in manufacturing, leasing, logistics, and charging solutions that collectively contribute to the transition to zero emission MHD vehicles. (See also footnote 4).

Comment 205: Air Products is a world leading supplier of hydrogen and hydrogen mobility solutions with over 60 years of experience. The Company's technologies are used in over 1.5 million refueling operations annually, across 20 countries and over 250 projects. In California, currently the primary market for hydrogen fuel cell electric vehicles (FCEV) in the United States, Air Products:

- operates a total of 9 hydrogen productions plants across five locations – Sacramento, Wilmington, Carson, Martinez and Torrance;
- supplies hydrogen for the mobility market in California through liquid, bulk, and pipeline modes of supply; and

- operates 6 retail light-duty hydrogen refueling stations and the heavy-duty transit bus refueling station for the Orange County Transportation Authority.

Air Products has also announced a \$5 billion joint venture green hydrogen project, which will come online by 2026 and provide renewable hydrogen on a global scale. We have additionally committed to investing \$2 billion of private funding in fueling infrastructure to bring this fuel to market to power buses, medium and heavy-duty trucks, and other applications. We look forward to bringing a portion of that investment, and green hydrogen, to markets across the United States.

Fuel cell technologies and hydrogen energy are being increasingly viewed as essential decarbonization options across the United States and around the world for a wide range of sectors, including transportation of goods and people. Fuel cell electric vehicles use fuel cells to generate electricity onboard through an electrochemical reaction of hydrogen, not combustion. The light-duty FCEVs on the road today are capable of traveling 300 to 400 miles on a tank of fuel, with refueling in just three to five minutes. Fuel cell electric vehicle transportation is showing great promise for the medium-duty and heavy-duty vehicle markets in particular due to their long-range, fast refueling, and scalability – allowing for smooth operations for fleets using an efficient centralized fueling capability.

In just the last few years, there has been considerable commercial development in fuel cell transportation and hydrogen fueling. Today, over 12,000 light-duty fuel cell electric consumer vehicles have been sold in California, accompanied by dozens of fuel cell electric buses in revenue service across the country, and a growing deployment of medium- and heavy-duty vehicles for long-haul transport and delivery services, including customers like DHL, UPS, and FedEx. Commenter 250.

Response to Comment 205: The proposed rule supports the transition of the MHD vehicle fleet to ZEVs, including battery electric, fuel cell electric, and near zero emission vehicles.

Comment 206: Ultimately this policy of zero emissions vehicles will cover other vehicle classes and include recreational vehicles. Based on my personal experiences and observations, I believe that when that happens this business will die in New York because electric vehicle technology I (sic) incompatible with the needs of the campers. There simply isn't enough room for the batteries necessary to provide enough range for use and still provide nough (sic) storage for the camper. Commenter 218.

Response to Comment 206: The proposed ACT rule clearly states that new MHD ZEV annual sales percentages will be phased-in starting with model year 2025 through model year 2035, where feasible. It may be possible that a MHD ZEV may not be available, or feasible, for a particular application or class within the proposed regulatory timeframe. The Department notes that at least one RV rental company is in discussions with EV manufacturers to purchase approximately 1,000 zero emission recreational vehicles and SUVs.¹⁴ There is early action in the Recreational Vehicle (RV) space looking at how zero emission technologies can be applied and what may be the earliest successful use cases for electrified RV type vehicles.^{15, 16, 17}

The Department notes that Governor Hochul recently signed legislation under Chapter 423 of the Laws

¹⁴ <https://www.bloomberg.com/news/articles/2021-11-22/rv-marketplace-outdoorsy-in-talks-with-rivian-ford-for-ev-order>

¹⁵ <https://www.caranddriver.com/news/a34980821/lordstown-camping-world-electric-rv/>

¹⁶ SylvanSport Leads the Charge Towards Sustainability with All-Electric RV Line - SylvanSport

¹⁷ https://www.greencarreports.com/news/1133238_tear-drop-camper-trailer-fast-charges-evs-with-75-kwh-of-extra-batteries

of 2021 establishing a goal that all new MHD vehicles sold in New York State be zero emission by 2045, where feasible.

Comment 207: The good news is that zero-emission trucks are already becoming readily available in a wide variety of models and sizes. Battery-electric trucks do not release tailpipe emissions, and when charged on the Northeast electric grid, they have around 66-87 percent lower lifecycle global warming emissions compared to diesel trucks. A recent report from the Union of Concerned Scientists, the Natural Resources Defense Council, and MJ Bradley and Associates showed that if New York adopts both the Advanced Clean Truck rule and the Heavy-Duty Omnibus Rule, the Empire State could see more than 444,000 zero-emission trucks on the road by 2050. These programs would also bring over \$21.4 billion in public health, environmental, and economic benefits to our state in that same timeframe. Commenter 241.

Response to Comment 207: The Department thanks you for your comment. MHD ZEVs in New York would provide lower lifecycle emissions compared to comparable diesel trucks, as well as providing public health, environmental, and economic benefits.

Comment 208: Adopting the ACT can also help drive further industry and workforce development opportunities. New York has the largest school bus ridership of any state in the U.S. and operates 50,000 buses, approximately 10% of the nation's school bus fleet. School districts will benefit from having increased ESB options as manufacturers focus on selling ZEV school buses within New York. Additionally, because New York constitutes a large share of the national school bus market, ACT adoption within New York will play a key part in further maturing the electric school bus industry, driving

vehicle and infrastructure costs down. Commenter 244.

Response to Comment 208: The Department thanks you for your comment. The adoption of this regulation will accelerate electric school bus market deployment and related workforce development. Over time, a reduction in electric school bus purchase and infrastructure costs are anticipated with increased electric school bus sales.

Comment 209: The ACT standards will ensure that ZEV truck models needed by freight companies are available and will thereby hasten the retirement of heavy- and medium-duty diesel vehicles and, ultimately, improve City air quality. Commenter 246.

Response to Comment 209: The Department thanks you for your comment. The proposed regulation will help ensure the availability of MHD ZEV trucks. The retirement and replacement of older diesel trucks with MHD ZEV trucks will support New York's efforts to improve local air quality and further greenhouse gas reductions.

Comment 210: Achieving necessary reductions in the City requires complementary efforts from the regulatory systems on which New York City relies, such as New York State's vehicle emissions standards. New York State's vehicle emission standards, in part, help ensure the availability and affordability of low emission vehicles in the market, which enables the City to use these vehicles in its own fleet and promote their use throughout the City as a way to reduce GHGs and other harmful emissions in the City. Commenter 246.

Response to Comment 210: The proposed regulation will help ensure the availability of ZEV and NZEV MHD vehicles for sale in New York State. The Department supports New York City's efforts to purchase MHD ZEVs and NZEVs in the City fleet.

Comment 211: An important element of a successful transition to EVs will be ensuring that sufficient options are available on the market and infrastructure exists for their operation. The City notes that for many emergency (e.g. fire engines and ladders, police emergency service response trucks, New York City Department of Environmental Protection sewer trucks, New York City Department of Sanitation snow melting units, or New York City Department of Transportation asphalt repair units) and other specialty (e.g. forestry log loaders, tree trimmers, tractors, rack trucks, chippers, and beach vehicles/equipment) vehicles no viable electric option currently exists. The City encourages the development and integration of sufficient electric specialty and emergency vehicles into the market in order for the City to be able to incorporate such electric vehicles into its fleet while continuing to provide necessary services.

The City's fleet includes emergency response vehicles, which may have more exacting performance requirements than most current EV technologies offer. Even among the non-emergency fleet, compatibility issues such as use of vehicles in consecutive shifts without sufficient time to recharge an EV battery or use of vehicles to travel large distances that current EV range may not support, present hurdles that must be overcome in order for the City expand its electric medium and heavy duty fleet. Commenter 246.

Response to Comment 211: The MHD ZEV market is still maturing and some specialized vehicles,

such as those used for emergency response, may need further technological development before being readily available on the commercial market. The proposed rule requires new MHD ZEV annual sales percentages to be phased-in starting with model year 2025 through model year 2035, where feasible. This provides additional time for technology development. It may also be possible that a MHD ZEV may not be available, or feasible, for a particular application or class within the proposed regulatory timeframe. The ACT provides regulatory compliance flexibility for applicable MHD vehicle manufacturers. The proposed ACT rule does not require fleet purchases. Fleet purchase options of MHD vehicles that include non-ZEV fuel types will be available.

Comment 212: Clean Energy has been in the clean transportation business for almost twenty-five years. We are North America's largest provider of renewable natural gas (RNG) for the transportation sector and are proud of our role in delivering an ever-increasing amount of carbon negative fuel into the tanks of America's medium and heavy-duty vehicles. As a California-based company, we heavily participated in the regulatory process that developed California's ACT and are very familiar with the rule's potential pitfalls. Commenter 249.

Response to Comment 212: The Department thanks you for your comment and appreciates your participation in the regulatory process to develop California's ACT rule.

Comment 213: California adopted an LCFS in 2009 which supports a plethora of clean fuel technologies and has invested billions of dollars into clean vehicle incentives. LA Metro alone has estimated that it will require at least \$1.5 billion to transition to electric buses. New York is positioned very differently because it

lacks many of the policies supporting the electric vehicle market which California has had in place for years. Even under these optimal conditions in California, electrification has barely achieved a foothold in the light-duty market and remains all but absent in the medium and heavy-duty space. Commenter 249.

Comment 214: Transportation electrification efforts in the heavy-duty sector have certainly made advances but remain decades away from truly being a viable alternative to diesel. In 2017, Tesla unveiled their Class 8 Semi but four years later they remain unavailable. In fact, it was recently announced that Tesla's head of heavy-duty trucking was leaving the company. In 2020, Nikola released a promotional video which appeared to show an operational Class 8 battery-powered truck, but it turned out the truck was not even functional. The video was staged by drifting the truck down a slight decline. Commenter 249.

Comment 215: Another concern with the approach New York is taking is that electric vehicles are mostly not commercially available and as a technology solution for trucking are unproven from the standpoint of deployability, scalability, dependability, and cost-effectiveness. Many of the companies touting the ready availability of electric trucks are new market entrants with no track record of manufacturing, servicing, or supporting motor vehicles in actual use. Regarding their claims that the technology will be less costly to operate, there is no data to support the argument because the vehicles in most cases do not yet exist. Comment 253.

Comment 216: While EV sales staff may paint a picture of decreasing costs, the reality is quite different. In a

November 2021 interview, Daimler Truck CEO, Martin Daum stated, “The first truth is, in heavy duty commercial vehicles you need such a huge amount of energy, meaning you need such large batteries, that such a truck always will cost significantly more than a combustion engine powered truck.” This problem is further compounded by the rising costs of the batteries themselves. The chief executive of Benchmark Mineral Intelligence in October of 2021 told Reuters, “The market may have to reposition itself for a period of rising battery cell prices, a new phenomenon for an industry conditioned to expect year-on-year falls.” Commenter 249.

Comment 217: Another claim is that over time these trucks will cost less to purchase as the cost of batteries comes down, despite the significant increase in demand for battery materials and batteries. Consider the views expressed recently by Daimler Truck, a company that has many years of experience in manufacturing and supporting trucks. Daimler Truck CEO, Martin Daum stated, “The first truth is, in heavy duty commercial vehicles you need such a huge amount of energy, meaning you need such large batteries, that such a truck always will cost significantly more than a combustion engine powered truck.” Commenter 253.

Response to Comments 213-217: New York has existing programs and policies required to support the MHD EV market. Existing programs, such as NYSERDA’s NYTVIP and the NYCDOT’s CTP, offer incentives that fund a substantial portion of the incremental purchase cost of MHD ZEVs to comparable MHD diesel vehicles. New York’s NYTVIP has been active since 2013 and the NYCCTP has been active since 2012. A \$15 million MHD Vehicle Make Ready Pilot, utility fleet assessment services, and a Clean MHD Vehicle Innovation Prize Competition complement the NYTVIP and NYCCTP.

The Frequently Asked Questions section of the Daimler truck brand Freightliner website¹⁸ addresses the question of “Do electric trucks have a lower cost of ownership than diesel trucks?” with a response of “Depending on the region of deployment, grants and incentives may be available to offset the higher initial purchase price of an electric truck, pushing it closer to parity with a comparable diesel truck. This, combined with lower fuel costs and reduced maintenance over the lifetime of the vehicle, can enable owners to achieve a Real Cost of Ownership advantage over operating comparable diesel models.”

Comment 218: Not only are Class 8 over the road electric trucks unavailable but other less taxing applications,

such as electric transit buses, have proven to be greatly restricted by performance factors. In 2019, Foothill Transit, located in the San Gabriel Valley area of Los Angeles, collaborated with CARB and the U.S. Department of Energy’s National Renewable Energy Laboratory (NREL) to evaluate battery electric buses (BEBs) in revenue service. In the Foothill study, natural gas buses performed more work and were more reliable than the BEBs, two critical metrics for transit agencies. The average miles traveled by the natural gas buses exceeded that of the BEBs each month by between 2,200 and 2,800 miles.⁶ While most cost comparison studies assume equivalent mileage for electric and natural gas buses, the reality is that fewer lifetime miles means that these studies greatly underestimate the true cost of operating electric buses. Given heavier payloads and more rigorous work schedules, these issues will only be magnified in the trucking sector. Commenter 249.

Comment 219: Claims regarding cost-effectiveness almost always overlook factors such as range,

¹⁸ <https://freightliner.com/trucks/ecascadia/>

utility, and turnover. In many cases, it appears that fleets deploying shorter-range electric vehicles will need to deploy more trucks to move the same amount of freight. The implications of this are huge as trucking fleets will need more trucks and more drivers in some cases if they deploy electric trucks. These factors appear to be ignored in cost-comparisons, but they have significant implications. For shorter range trips and vehicles that do not accumulate significant daily mileage, electric trucks may be an excellent option, but it is also true that in these applications there is less opportunity to reduce fuel consumption and offset pollution. Commenter 253.

Response to Comments 218-219: A limited number of Class 8 ZEV trucks are currently commercially available. The Department notes that several New York State transit entities have been successfully operating electric transit buses throughout the state for several years under a wide range of weather conditions, terrain, and route lengths.

The proposed rule includes a MHD sales requirement for manufacturers to sell increasing percentages of MHD ZEVs. The proposed rule does not include a fleet purchase requirement. Fleets will make business decisions when deciding on purchasing MHD vehicles. The Department does not support the comment that more ZEV trucks are needed to move the same amount of freight, especially with respect to short range applications. The Department notes that MHD ZEV manufacturers currently offer battery options based on varying vocational applications. It may be possible that a MHD ZEV may not be available, or feasible, for a particular application within the proposed regulatory timeframe.

Comment 220: The technology for this transition is ready now. The intent of this rule is to make this technology available and put to use. Commenter 251.

Comment 221: The sales milestones in the ACT rule are technologically feasible and economically sound. The zero-emission MHDV market has undergone significant growth in the last two years, with both fleets committing to electrification as well as vehicle manufacturers producing prototype vehicles and pilot fleets, announcing commercial launch dates, and taking commercial orders for electrified models. In the United States, there are more than 100 models of electric trucks and buses from over 30 manufacturers that are available today or with production announced before this rule goes into effect, covering every truck class and most duty cycles.

Virtually all market segments could be fully mature by 2025, with rapid technological advancements being made for even the most demanding duty cycles. MHDV manufacturers are in the position to be able to take part in this transition by adjusting vehicle availability, marketing, purchase incentives, pricing, and other factors. The ACT rule in New York would be a market accelerator for these rapidly developing and desperately needed technologies and would increase the availability of zero-emission vehicles to fleets and operators. Commenter 251, 2304.

Comment 222: Contrary to what some might say, the market is ready to support this transition. Numerous truck applications can be electrified today, and many more will become viable by the time the rules are phased in. Commenter 2302.

Response to Comments 220-222: The Department thanks you for your comment.

Comment 223: Medium and heavy duty on-road vehicles are critical to the supply lines from forest to

mills and include everything from transporting foresters and loggers to and from the woods as well as heavy duty hauling tractors and trailers equipped with log loaders. These vehicles travel from their point of origin upwards to 100 miles where they meet loggers in the woods, spend hours loading logs or chips and then run to mills which receive the timber and fiber to concentration yards and manufacturing facilities scattered around rural New York. In any given day, a hauler may make 1-2 runs to mills/day that in some instances operate 24/7. While we are aware that medium and heavy-duty EV technology is finally getting close to production after several years of delays, there is currently no EV log truck that can operate in the conditions in which they work throughout rural New York State. Commenter 253.

Comment 224: Electrification is reaching the commercial vehicle market. But with limited initial ranges of electric medium and heavy-duty trucks, it is clear that manufacturers are targeting last-mile and urban short distance deliveries for first deployments. Towing reveals how extreme weight and aerodynamics impacts EV range. Based on a literature review of heavy-duty EV trucks, a broad rule of thumb is that towing, and payload will effectively cut the vehicles rated range in half and in some circumstances (such as heavy awkward loads of logs and some farm products) the towing can cut EV range as much as 80%. Commenter 253.

Comment 225: The ACT Rule is essentially a ZEV-truck sales mandate with no accompanying strategy to ensure that ZEV trucks will be available and affordable for a variety of highway construction needs. Many highway department vehicles are designed to perform specialized tasks or to be fitted with interchangeable bodies and attachments. County highway departments together own thousands of Class 8, Class 7, Class 2 and other vehicles, as do our contracting partners. Consumers of these vehicles are expected to continue to purchase conventional fuel vehicles each year up to and beyond

when the proposed sales mandates are effective. In addition, few ZEV trucks have demonstrated that they can meet the needs for the levels of horsepower and torque on an hour-to-hour basis required for highway construction. Without improved technologies, significant subsidies and other financial incentives, and the build-out of charging infrastructure with reasonable electric rates, it's hard to see the public highway construction sector as a responsive market for medium and heavy-duty ZEV trucks anytime soon. Commenter 255.

Comment 226: NYSABA has reviewed the proposal and concludes that the adoption of the ACT Rule would have a significant impact on our businesses and farming operation in the state. We worry that accelerated sales mandates of this magnitude would alter the market for farm and farm-support equipment possibly upending our industries' current voluntary efforts to transition to low carbon vehicles. Commenter 257.

Response to Comments 223-226: The proposed rule includes a sales requirement for applicable MHD vehicle manufacturers to sell increasing percentages of MHD ZEVs. The proposed rule does not include a fleet purchase requirement. Fleets will make business decisions when deciding on purchasing MHD vehicles. It may be possible that a MHD ZEV may not be available, or feasible, for a particular application or class within the proposed regulatory timeframe. ACT provides a phased-in increase in ZEV sales over time allowing for continued technology development while also providing MHD vehicle manufacturers with regulatory compliance flexibility.

Comment 227: While unique use cases that are harder to electrify, such as snowplows, may persist, as we discuss earlier, large percentages of each state's truck fleet will be suitable for a transition to

ZEVs over the ACT rule's lifetime. The existence of potential edge cases does not negate the viability and effectiveness of the rule, especially in a market as dynamic as ZEVs. Just a few days ago, manufacturers announced an order for a fully-electric fire truck that will be deployed next year, underscoring the rapid evolution of zero-emission technology across commercial sectors. Further advancements should be expected on the heels of the U.S. Department of Energy's recent announcement that it is investing a total of \$127M in some of the leading vehicle manufacturers to pioneer cutting-edge zero-emission MHDV technologies, including Class 8 vehicles with ranges exceeding 400 miles. Commenter 264.

Response to Comment 227: The Department thanks you for your comment. A large percentage of the New York MHD truck market is well suited for ZEVs.

Comment 228: The market for zero-emission MHDVs is ready to support ACT rule adoption in New York State. New York is a "high-potential" state for truck electrification, with only one state scoring higher across eight indicators of zero-emission MHDV readiness. The North American Council for Freight Efficiency and RMI conclude that fleets with trucks operating regional haul routes of 230 miles or less per shift in New York State and other "high-potential" regions "should immediately begin planning for electric truck deployments."

Indeed, the latest data supports DEC's conclusion that most commercial MHDVs in use today have duty cycles and characteristics that support widespread electrification (such as relatively limited ranges, predictable routes, and fixed locations). The market for zero-emission MHDVs serving these operations is relatively mature already, and market trends indicate that DEC is correct to assume that technological

advancements will expand the realm of MHDV applications for which ZEVs will become viable. There has been considerable growth in the MHDV market in just the last two years, and by 2025 the market will evolve further, with multiple companies expected to sell zero-emission MHDVs in nearly all market segments.

Currently, 30 companies offer at least one medium- and heavy-duty ZEV for sale commercially—covering every class of truck—which will grow to at least 40 by 2025. Commercial ZEV offerings today are capable of supporting the majority of truck duty cycles and rapid technological progress is unlocking electrification of even the most demanding duty cycles. Adopting the ACT rule will act as an accelerator to increase the supply of zero-emission MHDVs, achieve economies of scale from higher production volumes, lower costs, and encourage solutions to increase demand and capture significant savings.

These findings are confirmed by a recent M.J. Bradley & Associates analysis, which breaks down the entire MHDV universe into seventeen discrete market segments and evaluates the prospects for near-term electrification based on four factors central to fleet owner procurement considerations: commercial market, charging, technical feasibility, and business case. The analysis found that a majority of these segments, accounting for roughly two-thirds of the in-use MHDV fleet, score favorably on at least three out of four factors, indicating “strong potential for near-term EV uptake.” Electrifying these segments in the near-term will yield considerable benefits in terms of GHG emission reductions and health-harming NO_x and PM emissions. Furthermore, “[v]irtually all market segments” could be “fully mature” by 2025”—when the ACT rule will phase in in New York State.

The prospects for truck electrification are not merely theoretical. The Run on Less-Electric

demonstration project completed earlier this year collected operational data from real world electric truck fleets in several applications, including delivery vans, box trucks, port terminal tractors, and heavy-duty semi-tractor-trailers. The 13 companies that participated in the demonstration project found that electric trucks not only “perform[] better than recent diesel” models, but in the applications tested, did not inhibit operations due to range or refueling needs. Extrapolating from this data, nearly half of the trucks in use today may be suitable for electrification now. Commenter 264.

Response to Comment 228: The Department thanks you for your comment. MHD ZEVs will be capable of supporting the majority of typical New York State truck duty cycles.

Comment 229: There are almost 684,000 Class 2b-8 trucks and buses on New York's roads, driving 11.5 billion miles annually throughout the state. In 2020, over 97% of new heavy-duty vehicle sales in New York State, and nearly two-thirds of new medium-duty vehicle sales were diesel vehicles. Those numbers will have to shrink considerably by 2035—down to 23% for heavy-duty vehicles and 14% for heavy-duty vehicles under some projections—to achieve mid-century decarbonization ZEVs will have to account for most of that difference. Yet, across medium-and heavy-duty vehicle segments, ZEVs accounted for less than 1% of new sales in 2020.

The ACT rule will induce considerable growth in the population of zero-emission MHDVs deployed in New York State through 2050. The ICCT study quantified the number of zero-emission MHDV deployments attributable to the ACT, finding that its implementation will add over 25,000 zero-emission MHDVs in 2030. That number will swell to over 228,000 zero-emission MHDV deployments attributable to the ACT rule by 2050, representing a substantial transition towards a fully zero-emission MHDV fleet.

Commenter 264.

Response to Comment 229: The Department thanks you for your comment.

Comment 230: As an industry we are supportive of an incentive-based initiative that lead to improving our environment including the use of near zero emission and zero emission vehicles, and in fact, 43 percent of US commercial trucks are now powered by the newest generation near zero emission vehicle technology. Commenter 2320.

Response to Comment 230: The Department thanks you for your comment. The proposed ACT rule includes a requirement for applicable MHD vehicle manufacturers to sell increasing percentages of MHD ZEVs in New York State.

Legal Issues

Comment 231: There are a number of potential legal and procedural issues that may preclude New York from opting-in to CARB's ACT Rule. More specifically, New York likely does not meet the opt-in criteria in Section 177 of the federal Clean Air Act (CAA). It also appears that New York likely will not be able to justify the fiscal impacts of adopting CARB's Rules as required under the applicable New York rulemaking statutes. Commenter 199.

Response to Comment 231: The Department finds no legal or procedural issues that preclude New York from adopting this proposed rule. In accordance with our Regulatory Impact Statement and other regulatory support documents, Department staff have analyzed these arguments and believe

that New York has legal authority to adopt this proposed rule and has met the requirements to opt-in under section 177 of the Clean Air Act.

Comment 232: New York's progress and schedule to achieve the 70 ppb ozone NAAQS likely cannot justify opting-in to CARB's ACT Rule. As detailed in New York's 2019 Air Quality Report (AQR), 6 out of 9 of New York's Conservation Administrative Regions already meet the 70 ppb ozone NAAQS. Region 3 also in in compliance, other than for the single site at White Plains. And Regions 1 and 2 in the NYC metro area are already near compliance, with ozone values ranging from 69-74 ppb. Significantly, ozone levels continued to go down in 2020.

More importantly, New York will need to demonstrate attainment with the 70 ppb ozone NAAQS several years before any opt-in to California's ACT Rule could take effect starting with the 2025 model year. New York's attainment demonstration date – August of 2022 – is three years prior to the proposed implementation of the ACT Rule. Obviously, any actual emission reductions from the Rule's implementation will occur several years later. Commenter 199.

Response to Comment 232: The progress New York has made towards improving local air quality does not preclude New York from adopting this proposed rule. There continues to be significant air quality concerns throughout the state, particularly in disadvantaged communities that have been subjected to disproportionate amounts of diesel exhaust. New York has areas currently classified as serious non-attainment which justifies the need to adopt these regulations to achieve attainment with the National Ambient Air Quality Standards (NAAQS). It is unclear why the commenter believes the State will not be able to incorporate the standards into the State Implementation Plan (SIP). The

downstate New York Metropolitan area was unable to attain the 8-hr. 2008 NAAQS by the statutory deadline of July 20, 2021.¹⁹ The Department anticipates this area will be reclassified to severe nonattainment area in the next few months. Department staff analyzed this Commentor's arguments and finds that New York has the legal authority to adopt this proposed rule.

Comment 233: Accordingly, it is clear that New York will not be able to rely on any potential opt-ins to demonstrate attainment with the current ozone NAAQS, and in fact, is obligated to demonstrate attainment several years before the contemplated opt-in would even take effect, let alone result in significant reductions in ozone-precursor emissions. The net result is that since New York does not need and cannot use opt-ins to CARB's Rules as SIP provisions to demonstrate ozone attainment, New York is not authorized to opt-in to those Rules under CAA section 177. Section 177 applies only in those instances where a State that is in nonattainment with a NAAQS (i.e., for ozone) needs to include more stringent California standards as SIP measures to demonstrate NAAQS-attainment. That is not the case here, so section 177 does not apply.

The specific terms of CAA section 177 (42 U.S.C. §7507) are as follows:

New motor vehicle emission standards in *nonattainment* areas Notwithstanding section 7543(a) of this title [the CAA section relating to the preemption of state standards] **any State with plan provisions approved under this part** ["Part D - Plan Requirements for Nonattainment Areas"] may adopt and enforce for any model year standards relating to the control of emissions from new motor vehicles or new motor vehicle engines and take

¹⁹ <https://www3.epa.gov/airquality/greenbook/hbcs.html#NY>

such other actions as are referred to in section 7543(a) of this title respecting such vehicles if –

–

(1) Such standards are identical to the California standards for which a [preemption] waiver has been granted for such model year; and

(2) California and such State adopt such standards at least two years before commencement of such model year (as determined by regulations of the Administrator). (Emphasis added.)

The foregoing statutory language clearly indicates that the option for States to utilize section 177 is limited to those States that have EPA-approved SIPs and that need to include more stringent California standards as SIP provisions in order to bring the States' nonattainment areas into attainment with the applicable NAAQS, including for ozone. The heading to section 177 – “New motor vehicle emission standards in **nonattainment** areas” – reinforces that conclusion. In that regard, CAA section 171(2) (42 U.S.C. § 7501(2)) defines a nonattainment area to mean “for any air pollutant, an area which is designated ‘nonattainment’ with respect to that pollutant.” Given that definition, a State that is demonstrating compliance with the NAAQS through an EPA approved “maintenance plan” would not be eligible for an opt-in under Section 177, since the submission of a maintenance plan applies to a State “which *has attained* the national primary ambient air quality standard for that pollutant.” (42 U.S.C. § 7505a.)

The Second Circuit Court of Appeals has reinforced the foregoing conclusion, noting that “[i]t was in an effort **to assist those states struggling to meet federal pollution standards** that Congress directed in 1977 that other states could promulgate regulations requiring vehicles sold in their state to be in compliance with California’s emission standards.” *Motor Vehicle Manufacturers Ass’n v. New*

York State of Dept. of Environ. Conservation, 17 F.3d 521 (2nd Cir. 1994). (Emphasis Added.)

“Section 177 was inserted into the Act in 1977 **so that states attempting to combat their own pollution problems could adopt California’s more stringent emission controls.**” Id.

The relevant legislative history of section 177 also makes it clear that opt-ins to California's mobile source standards are only available to States that need to utilize California standards to address persistent NAAQS-nonattainment issues. More specifically, as explained in the 1977 House (Report No. 95-294), CAA section 177 was initially referred to as “Section 221” in the proposed 1977 amendments to the CAA. In its explanation of Section 221 (now, Section 177), the House Committee stated that “a State which is subject to the [new] vehicle inspection and maintenance requirements [I/M] of [proposed] section 208 of the [1977 CAA amendments] is authorized to adopt and enforce new motor vehicle emission standards which are identical to California standards for which a waiver is given under section 209(b) of the act.” (H.R. 95-294, p. 431.) Significantly, the application of proposed section 208, which mandated that States adopt I/M programs, was expressly limited to the “29 air quality regions **predicted to exceed the national primary ambient air quality standards.**” In other words, the House understood and intended that the option to adopt California standards was limited to those States that would be in nonattainment but for their inclusion of California’s more stringent standards in their SIPs. (Id. at 224.) The House Committee Report went on to note as follows:

[T]he Committee is concerned that preemption [of state standards] (section 209(a) of the Act) now interferes with legitimate police powers of the States, prevents effective

protection of public health, and limits economic growth and employment opportunities **in non-attainment areas for automotive pollutants.**

Id. at 244 (emphasis added).

The accompanying Senate Report (S.R. 95-127) for the relevant amendments to the CAA in 1977 contained similar statements regarding the scope and availability of CAA section 177. Of particular note in that regard is the statement of Senator Anderson:

One issue of particular concern to me is the limitation in section 209 of the waiver from the State preemption provision for automobile emission standards only for the State of California I believe, **communities and States with substantial cleanup problems** should be allowed the option of protecting the public in their jurisdiction **by requiring accelerated cleanup [through California standards]**. (S.R. 98-127, p.93.) (Emphasis added.)

Thus, the relevant House and Senate Reports demonstrate that the potential opt-ins envisioned under what would become CAA section 177 were intended to apply only to those States that were still predicted to be in nonattainment with the NAAQS, and so were compelled to adopt more stringent California mobile sources standards as components of their accelerated NAAQS attainment efforts, specifically as plan provisions in their SIPs. The underlying premise for California's ability to seek a waiver of federal preemption under section 209(b) of the CAA is that the State faces "**compelling and extraordinary**" air quality challenges. (42 U.S.C.

§7543(b)(1)(B).) That same premise carries over under section 177 for potential opt-in States as well. Where a State does not face its own similar compelling air quality needs, the opt-in afforded under Section 177 – and the implicit waiver of the otherwise controlling provisions of federal preemption that apply for vehicles that move in interstate commerce – is simply not available.

It is clear from all of the foregoing that a State's opt-in to California regulations under Section 177 is authorized only when the California regulations at issue are necessary components of the State's NAAQS attainment demonstration. Again, that is simply not the case here. Accordingly, New York cannot and will not rely on any potential opt-ins to demonstrate attainment with the current ozone NAAQS, and in fact, New York must demonstrate full attainment several years before the ACT Rule could take effect. The net result is that since New York does not need to use opt-ins to CARB's Rules as SIP provisions to demonstrate ozone attainment, New York is not authorized to opt-in to those Rules under CAA section 177. Commenter 199.

Comment 234: The proposed ACT rule is legally deficient for the following reasons: (1) EPA has not issued California a preemption waiver, so New York may not lawfully adopt the ACT rule; (2) the State cannot simply rely on California's analysis of ACT given the myriad differences between the states; and (3) the State's failure to undertake its own analyses violates its Administrative Procedure Act. We address each of these deficiencies below.

Section 209 of the Clean Air Act (CAA) preempts states from adopting or enforcing motor vehicle emissions standards. Under certain circumstances, EPA may grant California a waiver allowing that

state to adopt its own motor vehicle emissions standards. Section 177 of the CAA allows states to opt into California's emissions standards provided certain statutory prerequisites are met, including:

- (1) the California standards are ones "for which a waiver has been granted" by EPA;
- (2) the opt-in State adopts standards "identical to the California standards"; and
- (3) California and the opt-in State "adopt such standards at least two years before the commencement of such model year."

NYSDEC's proposal satisfies none of these statutory criteria. First, California has yet to apply for a waiver, much less obtain one from EPA. NYSDEC's attempt to proceed without a valid California standard is unlawful and contravenes binding precedent in the U.S. Court of Appeals for the Second Circuit. In *American Auto. Mfrs. Ass'n v. Cahill*, the Second Circuit vacated a New York ZEV mandate because no California standard was in effect at the time. As the court explained: "If other states may adopt a 'California standard' that is not in force in California, the consequences will be wholly at odds with congressional intent." Second, NYSDEC can make no showing of the requisite identity between its proposal and California standards because California has yet to file a waiver application with EPA. CARB often makes technical amendments and interpretative changes to its emission standards before submittal of a waiver application package. Without a submission of record to EPA, New York has no valid point of comparison to make the identity showing. Third, New York cannot assure the statutory two-year lead-time between adoption of its standard and commencement of the model year because CARB and EPA have yet to apply for (or grant) the waiver application.

NYSDEC's proposed deferment of enforcement does not cure this legal infirmity, as the CAA clearly prohibits a state from not only "enforcing" but also "adopting" the standard. For this reason, NYSDEC

must await the outcome of the California waiver proceedings. New York and its stakeholders are spending significant resources on a rule that it may not legally adopt or that may be finalized in a different form depending upon how California and EPA approach the federal waiver proceeding. Commenter 266.

Comment 235: CAA section 177 establishes a number of criteria that a State must meet in order to be authorized to adopt and enforce California mobile source standards. See 42 U.S.C. §7507. One of those criteria, discussed more fully below, is that the State must need to include the California standards in its SIP to meet the State's NAAQS-attainment obligations. New York cannot meet that criterion. Another criterion is that the State's adoption and opt-in process must result in the State having standards that "are **identical to the California standards** for which a [preemption] waiver has been granted." 42 U.S.C. §7505(1). (Emphasis added.) The DEC's proposal does not satisfy the CAA's identity requirement. Commenter 199.

Comment 236: The proposed ACT rule is unlawful and therefore should not be finalized. Section 209 of the Clean Air Act preempts states from setting their own motor vehicle emissions standards. However, if California seeks to set its own more stringent standards, EPA may issue a preemption waiver. And, pursuant to Section 177 of the CAA, other states may then create emissions standards identical to California's if there is an EPA waiver in effect and such action is necessary for the state to come into compliance with the NAAQS. A Clean Air Act waiver is not in effect and the EPA must first grant a waiver to California as a precondition to the enforcement of the proposed ACT rule. The plain language of the relevant federal statutes precludes states from adopting or enforcing standards,

making DEC's proposed adoption in conflict with the text of the statute, regardless of its plans to defer enforcement until a waiver is granted. Commenter 259.

Response to Comments 233-236: California had clear legal authority to adopt the ACT MHD vehicle standards that were adopted on March 15, 2021. A waiver of preemption is not necessary until California enforces its standards. Based on the deficit-based compliance and ACT program flexibility, the Department estimates enforcement would not commence in California until 2026. Likewise, New York has the legal authority to adopt the ACT rule under Section 177 of the CAA. New York is adopting standards identical to those adopted in California and providing the required minimum 2-years lead time, which would start with model year 2025. The ACT standards would likely not be enforced until 2027 in New York as manufacturers have one year to make up any deficits.

Multiple commenters mischaracterized New York's Ozone NAAQS attainment status. New York's 9-county NYMA is currently classified as a serious nonattainment area. The Department anticipates NYMA will be reclassified as a severe nonattainment area within a few months for failure to attain in 2021. There is a clear and compelling environmental need for adoption of the ACT standards under CAA Section 177. Even if one chooses to ignore this fact, Section 177 authority does not disappear immediately upon attainment of the NAAQS. New York would retain its authority to adopt ACT standards under Section 177 to maintain its attainment status with the NAAQS.

Comment 237: The ACT program's electrification mandates also conflict with Congress's goal to encourage renewable fuel, such as renewable diesel and ethanol, to be blended into liquid fuel for transportation. Finally, the ACT program is preempted under the Interstate Commerce Commission

Termination Act, which prohibits states from regulating the rates, routes, and services of interstate trucking companies. The requirement to utilize ZEVs to provide trucking services is related to the service provided by motor carriers and therefore preempted. Commenter 266.

Response to Comment 237: The ACT regulation sets ZEV sales requirements for applicable MHD vehicle manufacturers. It is not a ZEV purchase requirement. The Department finds no conflict with Congressional renewable fuel goals as the ACT regulation does not prohibit the manufacture, sale, or use of renewable diesel or ethanol fuels. Likewise, there is no preemption issue under the Interstate Commerce Commission Termination Act as ACT does not regulate rates, routes, or services of interstate trucking companies. Trucking companies, or other fleets, are under no obligation to purchase MHD ZEVs. Furthermore, ACT does not set fuel rates, obligate drivers to travel specific routes, and does not require any entity to provide or purchase specific services.

Comment 238: EPA has directly addressed the question of whether CAA section 177 authorizes States to opt-in to CARB regulations directed at the reduction of greenhouse gas (GHG) emissions, as opposed to criteria pollutants for which NAAQS have been established, and for which States have specific attainment obligations under the CAA. EPA has concluded that States cannot use section 177 to adopt CARB GHG-oriented regulations. More specifically, EPA has determined that “CAA section 177 is in fact intended for NAAQS attainment planning and not to address global air pollution.” (84 FR 51351.) New York is not authorized to contradict that determination of section 177’s scope. Since CARB’s ACT Rule is a regulation principally aimed at reducing GHGs, as is New York’s opt-in rulemaking, New York is not authorized to opt-in to the ACT Rule under CAA section 177. Commenter 199.

Comment 239: Additionally, the unique circumstances of EPA's current revocation of California's waiver raise substantial legal and policy concerns that DEC's proposal fails to address. Stakeholders deserve clarity as to what model years might be affected in a proposed reinstatement. A final reinstatement of the waiver retroactively to past or current model years under production would raise substantial due process and retroactivity concerns. Were those concerns heeded, a final reinstatement covering only partial model years would invalidate DEC's proposal and require it to begin a new rulemaking process to align with the reinstated waiver.

DEC cites no authority under New York administrative law for a "contingent" rulemaking that depends on a series of other agencies and actors – and of significant concern, other states – taking steps and for good reason. Such contingent rulemakings violate settled norms of fairness, due process and administrative law because they leave stakeholders guessing as to how a rule might affect the public in its final form. As a policy matter, it would be prudent to await the outcome of the waiver proceedings. New York and its stakeholders are spending significant resources on a rule that may not come to pass or may be finalized in a different form depending upon the federal waiver proceeding. Further, even if a Clean Air Act waiver was in effect in California, states must adopt regulations that are identical to California's rules in order to avoid Federal preemption. Commenter 259.

Response to Comment 238-239: The Supreme Court ruled in Massachusetts v EPA that greenhouse gases are air pollutants, and that EPA has the statutory authority and obligation to regulate the emission of such gases from new motor vehicles. See, 127 S. Ct. 1438 (2007). California, and other states under Section 177, likewise have clear authority to regulate greenhouse gas emissions,

especially in the absence of federal action. The ill-considered actions of the previous Administration and its EPA to ignore established case law and illegitimately revoke a valid waiver do not change the fact that greenhouse gases are air pollutants.

Comment 240: In any rulemaking, the DEC must prepare a detailed economic impact analysis of the proposed rule, along with a corollary regulatory flexibility analysis. (See New York State Administrative Procedures Act, Article 2.) A thorough benefit-cost analysis (BCA) is a core component of what is required. In this case, as detailed earlier, the DEC's derivative VMT-based fiscal impact analysis is inherently deficient, and cannot sustain the proposed rulemakings.

EMA previously engaged independent experts to assess the costs and benefits of CARB's Rules, both as applied in California and as potentially applied in the other 49 States. ACT Research (and more recently Ricardo) assessed the incremental costs of CARB' Rule on a per-truck basis, and NERA Consulting quantified the potential corresponding public health benefits on a per-truck basis.

On the cost side, and just looking at CARB's low-NOx requirements without adding-in the ZEV-mandate costs, ACT found that, based on new truck sales volumes in California, CARB's Rules would increase the price of a new truck in California by approximately \$58,000, using a 7% discount rate. Since new truck sales volumes in New York are less than in California, using that per-truck cost increase to assess the cost of New York's potential opt-in to the CARB Rules is a conservative approach.

On the benefits side, NERA quantified the public health benefits (i.e., avoided premature deaths) that could be attributed to the reductions in ozone and secondary PM emissions from implementation of CARB's Rules, and then calculated those benefits on a per-truck basis, both for California and for States outside of California as well, using a smaller 3% discount rate. For New York, those benefits amount to approximately \$6,900 per-truck (\$6,600 per-truck from secondary PM reductions, and \$300 per-truck from ozone reductions).

Comparing the likely benefits and costs in New York from an opt-in to CARB's Rules yields a cost-benefit ratio (or a negative benefit-cost ratio) of approximately 8.4-1, on a conservative basis.

Rulemakings that would have such extremely inverted economic consequences cannot meet the criteria for valid administrative regulations. And that is even before the other downstream consequences of a potential opt-in are taken into account.

More specifically, ACT found that given the substantial per-truck cost increases that will result from the CARB's Rules, it can be expected that truck fleet operators (in addition to retaining their current vehicles longer, or buying new vehicles out-of-state) will accelerate their purchases of new trucks before the CARB Rules takes effect (a "pre-buy"), and will refrain from buying new trucks after the CARB Rules takes effect (a "no-buy"). The likely net result will be that the anticipated pre-buy/no-buy will shift 40% or more of the new truck market to accelerated purchases prior to the implementation of the CARB Rules in New York, which will proportionally and significantly dilute, if not eliminate, any potential benefits from the CARB Rules, including under the ACT Rule since the extent of the ZEV-sales mandate is derived from the level of in-state sales of conventionally-fueled trucks.

In addition, it can be anticipated that once the ACT Rule takes effect in New York, truck dealerships in the State will see their businesses suffer, long-haul fleet operators may choose to move out-of-state, and trucking-related job losses will occur. All of those adverse outcomes will only compound the already upside-down cost-benefit calculus for the contemplated opt-in.

In sum, opting-in to CARB's ACT Rule would be cost-prohibitive. Since such opt-ins are not authorized under CAA section 177 to begin with, it seems clear that New York is not authorized to adopt and opt-in to the ACT Rule. Commenter 199.

Comment 241: While several of CARB's regulatory programs are directionally consistent with EMA's vision for EPA's next-tier nationwide rule, CARB will be implementing those elements with unreasonably short timelines, questionable technical feasibility, unsustainable cost-benefit metrics, and material adverse impacts on new vehicle prices and sales volumes. The overall impacts of CARB's new regulations are likely to have extremely negative consequences. In that regard, commercial fleets have not reacted positively in the past to the deployment of major new emissions-control technologies on an accelerated timeline, and, as a result, we fully expect that the significant "pre-buy/no-buy" scenarios that occurred in 2007 with respect to commercial vehicles will be experienced again in California, as well as in any opt-in states. Commenter 199.

Comment 242: With respect to the substance of the DEC's fiscal and economic impact analysis, that "analysis" amounts to the DEC's wholesale reliance on the analysis that CARB did to quantify the benefits and impacts of its rules in California, not New York. (See NPRM, p. 3-4.) The DEC simply

took CARB's numbers and scaled them down using a simplistic VMT-based factor (calculated by dividing the number of vehicle miles traveled (VMT) by HD/MD trucks in New York by the number of HD/MD VMT in California). The DEC conducted no new New York-specific cost-benefit analysis of its own whatsoever. That direct and simplistic transposition of CARB's numbers to New York is insufficient as the basis for an administrative rulemaking of this magnitude for numerous reasons, including that: (i) there is a different MD/HD vehicle mix in California than in New York, along with different traffic patterns and vehicle speeds; (ii) there are different vehicle ages, mileage accruals and emission profiles in California than in New York; (iii) the new-vehicle sales and penetration rates are different in California, especially considering the unique California Truck and Bus Rule; (iv) there are different vehicle replacement rates in California than in New York; (v) there are different vehicle-idling emission rates and durations in California; there are different impacts from out-of-state vehicles; and (vi) there are different EGU emission profiles, different market capacities to absorb increased marginal costs, and much different air quality impacts in California, as opposed to New York. The DEC's analysis takes none of those critical differences into account. Commenter 199.

Comment 243: DEC indicates that implementation of the rule will, over the period of 20 years (2020-2040), result in a net savings of \$94 million to \$2.4 billion (\$2018) after \$6.78 billion worth of compliance costs. These estimates should be revisited to ensure that all costs and uncertainties associated with ACT are accounted.

Given the small net savings relative to costs, DEC must have a high confidence in its estimated savings to require imposing such a costly mandate. API believes numerous assumptions render the confidence in the projected savings insufficient to justify such enormous costs (which have also been

underestimated as explained in these comments). Even small adjustments to assumptions and modeling (such as expected fuel costs) could cause the program to impose net costs rather than savings due to higher costs or reduced benefits of the mandate.

DEC's analysis does not consider issues such as annual miles driven, costs associated with battery replacement and disposal at end-of-life, financing, recharging time, and the impact on truck utilization. As a result, DEC has underestimated the costs of adopting the ACT Rule.

DEC uses a scaling factor of 32% of the vehicle miles traveled to estimate the EVSE and fueling infrastructure costs indicating a cost of \$3.10 billion from 2025 -2040. The analysis indicates that "[s]ome sites will not require electrical service upgrades." While this statement may be accurate for smaller vehicles and fleets, larger trucks and larger fleets could require DCFC equipment which will likely require additional make-ready infrastructure. The Energy Marketers of America study, "Utility Investments and Consumer Costs of Electric Vehicle Charging Infrastructure," analyzed eight sources, including two from the Department of Public Service New York from 2020, that indicates that the make-ready infrastructure cost for DCFC equipment can range from \$83,000 to \$115,000 per facility. API respectfully requests that the rule's economic analysis be updated to reflect the costs of installing make-ready infrastructure.

The proposed ACT rule does not quantify the cost of infrastructure upgrades that will be required to implement the mandate. This is another issue of central relevance to the rulemaking that does not appear to be present in the proposed rule or supporting materials. The full cost of a network for

MHDVs is substantial, and we respectfully suggest that DEC reevaluate these numbers to ensure the costs are properly considered.

It appears that any infrastructure costs could result in an increase to ratepayer's costs particularly if the utilities seek to include these costs in their rate-base. API respectfully requests that the DEC quantify these costs and include them in its economic analysis supporting the ACT rule.

A study of the New England power grid by Energy Futures Initiative, a nonprofit clean energy think tank founded by former U.S. Department of Energy Secretary Ernest Moniz, estimates that the electricity needed to power the complete electrification of transportation and other sectors will increase by 60 to 90 percent over the next three decades. This large increase in electricity demand occurs despite significant energy efficiency included in the study's scenarios. Absent energy efficiency, demand growth would be even higher. The costs associated with this expected demand growth also should be quantified and considered by DEC.

A Princeton University study, "Net-Zero America," anticipates that this shift will require "at least \$2.5 trillion in additional capital investment into energy supply, industry, buildings, and vehicles over the next decade relative to business as usual." An aggressive electrification scenario, the study further estimates, will require \$2.6 trillion of energy supply-side capital before 2030, and \$10 trillion by 2050. Electric customers who are not utilizing the MHDVs or any EV at all, could ultimately see much of the cost of the infrastructure in their utility bills.

New York's current average residential retail rate is approximately 18 cents per kilowatt-hour (kWh). New York's electric rates already are nearly 40 percent above the national average. If DEC moves forward with the proposed ACT rule, the expanded electric demand can cause additional electricity costs further disadvantaging New York.

We respectfully suggest that DEC consider these costs before proceeding. According to the EIA 2021 Energy Outlook, end use electricity prices in the transportation sector are projected to increase 20 percent in the southern part of the state and 11 percent upstate between 2020 and 2040. These rates of increase are higher than projected for California and illustrate how scaling to California is inappropriate. Commenter 259.

Comment 244: The Californian forecast for increased electricity prices understates the future cost of electricity in New York. The current average retail price of residential sector electricity in New York is about 20 cents per kilowatt-hour (kWh), not the 14.9 cent figure cited in the Regulatory Impact Analysis (RIA). New York's residential electricity rates already are more than 41 percent above the national average, and its commercial electricity rates are almost 60 percent greater than the national average. Moreover, New York revised its Clean Energy Standard in 2019 to require 100 percent carbon-free electricity from both renewable sources and nuclear energy by 2040, yet it retired two nuclear reactors in the last three years. If NYSDEC moves forward with the proposed ACT rule, coupled with its electricity generation policies, these rates could rise even higher above the national average. NYSDEC has not accounted for how this Proposal will impact electricity prices (by increasing electricity demand). Applying a scaling factor to artificially reduce electricity prices used in

the cost-benefit analysis understates the true costs of ACT applied in New York. NYSDEC must consider these costs before proceeding.

According to EIA's Electric Power Monthly, California and New York saw disparate increases in end use electricity prices in the transportation sector between August 2020 and August 2021. New York saw a roughly 7.5 percent increase versus less than one percent in California. These rates of increase are higher than projected for California, and the failure to factor in these differences in expected electricity rate increases helps illustrate how relying on California's analysis for this variable understates the cost of the ACT rule. Commenter 266.

Comment 245: NYSDEC has a legal obligation to conduct a cost/benefit analysis in connection with the ACT rulemaking. Reliance on the blunt scaling of California's analysis produces errors that overstate the Proposal's benefits and underestimate its costs. Additionally, NYSDEC failed to include several factors of central relevance to this rulemaking.

NYSDEC Improperly Scales California's Analysis By extrapolating from the assumptions and conclusions used in California's regulatory analysis of ACT, NYSDEC has failed to conduct the comprehensive analysis necessary to understand the costs and benefits of the rule in New York. The Federal Highway Administration, whose data NYSDEC bases its scaling factor on, warns that "... users need to recognize that highway statistical information is not necessarily comparable across all States...a user should not expect to find consistency among all States, due to many State-to-State differences." Further, it notes that when making State level comparisons, it is inappropriate to use these statistics without recognizing those differences that impact comparability. Some of those

differences include characteristics such as urban/rural similarities, population density, degree of urbanization, climate, geography, differing State laws and practices that influence data definitions, administration control of the public road system, similarity of the basic State economies, traffic volume similarities, and the degree of State functional centralization. California and New York are different on almost every characteristic.

Applying a 32 percent scaling factor to variables such as vehicle miles traveled (VMT), electricity infrastructure buildout, electricity prices, lost business and tax revenue, and other important variables produces a distorted picture of the real-world conditions that New York will face if California's ACT rule is adopted by NYSDEC. Commenter 266.

Comment 246: NYSDEC relies on CARB data and a scaling factor to estimate electric vehicle supply equipment (EVSE), charging/electricity infrastructure, and maintenance costs at \$3.1 billion, but does not explain how the CARB cost range (chargers cost \$5,000 to \$50,000 and infrastructure upgrades cost \$20,000 to \$55,000) by vehicle group could impact total cost. These costs could underestimate the infrastructure costs by more than 2.5 times because they do not account for the upgrades necessary to construct the infrastructure required to supply electricity to the charging equipment.

Two recent studies indicate that massive electrification will increase generation, transmission, and distribution costs. The costs associated with this expected demand growth also must be quantified and considered by NYSDEC, including all generation, transmission, and distribution costs. The construction of the necessary infrastructure to charge BETs presents complex issues that may

adversely affect the New York ratepayer. NYSDEC has a duty to quantify these significant “hidden” costs associated with the ACT Rule.

Finally, the rule fails to assess how an increase in demand for charging capacity could impact electrical grid reliability, especially in light of the state’s 2040 carbon-free electricity mandate that will increasingly rely on intermittent renewable energy sources. Commenter 266.

Response to Comments 240-246: As set forth in more detail in the Regulatory Impact Statement, the Department relied in part on CARB’s analysis due to the comprehensive and extensive research conducted by CARB to ensure that the proposed ACT rule was feasible and cost-effective. The Department determined and maintains that a scaling factor based on VMT is an appropriate methodology for the determination of applicable New York State costs and benefits for several reasons. Vehicle miles traveled is directly correlated to almost every cost component associated with the rule such as vehicle costs, fueling costs, maintenance costs, infrastructure costs and more. Based on FHWA Highway Statistics, single-unit trucks and combination trucks account for a similar percent of the VMT for the respective New York and California fleets. Even when broken down between rural and urban miles, the VMT traveled in interstate, arterial, and other roads are similar.

In CARB’s analysis, annual mileage is factored into costs such as fuel costs and maintenance. Mileage is assumed to be identical to ICE counterparts.²⁰ Vehicle costs are not amortized as the manufacturer would see the cost the year it is built.²¹ California amortized vehicle and infrastructure

²⁰ <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/isor.pdf>. Page IX-7

²¹ <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/isor.pdf>. Page IX-9

costs over 5-year and 20-year periods.²² California excluded the cost of battery recycling because the residual value of the battery may offset the cost of recycling, and may be both a revenue source or cost.²³ The CARB analysis does account for infrastructure upgrade costs defined as the cost of upgrading the site to deliver power to the charger (trenching, cabling, laying conduit, transformer upgrades and more). This cost ranges from \$20,000 to \$55,000 per charger depending on vehicle weight class.

The Department did not adopt the CARB cost analysis without due consideration of New York State factors. Contrary to some comments, the Department did not apply a single scaling factor to the California cost analysis. Some costs and savings within the CARB analysis were excluded (e.g., low carbon fuel standard) while others were revised to reflect New York conditions (e.g., fuel costs, vehicle registration fees, etc.). The Department's analysis included climate benefits considering the social cost of carbon as set forth in the Department's Value of Carbon Guidance established under the CLCPA. Examining the U.S. Energy Information Administration (EIA) 2021 Energy Outlook, Energy by Prices and Source²⁴, electricity costs in the Middle Atlantic region are not expected to significantly outpace that of the Pacific Region. From 2025 to 2040, average electricity cost across all sectors in the Middle Atlantic region is expected to be between 70 to 75 percent of that of the Pacific Region. For the transportation sector, this range is even narrower, ranging from 72 to 75 percent.

²² <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/isor.pdf>. Page IX-15

²³ <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/isor.pdf>. Page IX-27

²⁴ <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=3-AEO2021&cases=ref2021&sourcekey=0>

The Department does not support the Commenter's claim that the proposed ACT rule will increase the cost of electricity. Increased demand for electricity has been shown to decrease electric delivery rates, as increased consumption of electricity can increase the efficient use of the distribution system, driving down the marginal cost of distribution. As battery technologies improve, an increase in electric MHD vehicles allows for the potential for advancements, such as vehicle-to-grid applications, that may reduce the need for peaker plants, further reducing electric rates and improving air quality. In addition, the CLCPA requires the statewide electrical demand system to be zero emissions by 2040 and to also address the impacts of the program on safe and adequate electric service in the state under reasonably foreseeable conditions. See Public Service Law Section 66-p.

Further, EIA provides average retail electricity prices, by state, for four end use categories (residential, commercial, industrial, and transportation). California "transportation" electricity prices are lower than New York, however, the Department believes that the transportation electricity prices include subway and rail operations. The EIA "commercial" electricity price is arguably the best indicator of what electricity prices MHD fleet operators will actually experience. Upon review of annual averages for 2017-2020, New York prices ranged between 14.06 and 14.75 cents/kwh, while California averaged between 15.76 and 17.53 cents per kwh. Based on this evaluation of actual California and New York electricity rates, the Department applied a scaling factor to California's projected electricity costs for the Department's cost analysis.

Comment 247: NYSDEC must comply with the New York State Administrative Procedure Act (NYSAPA), 48 which requires three analyses. First, NYSDEC must consider the "Job impact" of its rulemakings, and "minimize" any unnecessary adverse impacts on existing jobs . . . for the residents

of the state.” Second, NYSDEC must also address the “Regulatory impact” of its rulemakings, under which the State must “consider utilizing approaches which are designed to avoid undue deleterious economic effects or overly burdensome impacts of the rule. . . . [including] the specification of performance standards rather than design standards.” Third, NYSDEC must consider “Rural Flexibility,” which requires considering “minimizing any adverse impact of the rule on . . . interests in rural areas.

NYSDEC has failed on all three fronts. First, NYSDEC has not attempted to minimize unnecessary adverse impacts on existing jobs. By increasing the cost of trucks in the state, jobs will be lost as sales decrease. NYSDEC has also ignored jobs lost in the trucking industry, as the rule will likely increase the capital costs and lower utilization rates for New York-based carriers. Second, NYSDEC has not considered approaches that would mitigate or avoid economic effects or burdensome impacts of the rule. Contrary to legislative intent, NYSDEC’s proposed adoption of California’s ACT BET mandate ratifies a design standard without considering adopting a performance standard that would allow alternative drivetrain designs to compete for consumer demand in the market apportioned for BETs. Third, NYSDEC has not considered minimizing the rule’s rural impact. Rural consumers could bear steep costs in electricity prices and infrastructure upgrades due to the competing and increased demand that BETs will place on inadequate existing infrastructure—even though few rural interests benefit because BETs and EVs are less appropriate in high mileage and certain vocational applications. Moreover, the potential shift to out-of-state purchases may also adversely impact rural dealerships, among others, through reduced sales. Rural interests, among others, will also be harmed through increased road damage due to the increased weight of BETs.

New York's adoption of California's ACT was predetermined and is thus arbitrary—NYSDEC properly concludes that CAA Section 177 only permits New York to adopt standards "identical" to California's ACT; however, this limitation does not authorize NYSDEC to ignore state law requiring a robust analysis of the impacts of ACT in New York and potential alternatives to a BET mandate. NYSDEC's perfunctory analyses combined with its failure to evaluate alternatives renders this rulemaking arbitrary and capricious. As detailed in Section II.B, *infra*, NYSDEC's results-driven process ignores germane differences between New York and California that confound any simple extrapolation of the impact of California's ACT to New York, and further demonstrate that NYSDEC's proposed rule is procedurally and substantively deficient. Commenter 266.

Response to Comment 247: As discussed in the Regulatory Impact Statement, motor vehicle and parts manufacturing represent a *de minimis* 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.²⁵ The medium- and heavy-duty vehicle parts segment is assumed to be included in the count for vehicle parts manufacturing.

Most of New York's geographic neighbors in the Northeast and Mid-Atlantic states have supported MHD adoption. Out-of-state vehicle sales would result in a loss of sales tax revenues for New York State, but this is not a new phenomenon resulting from this regulation. Cross-border sales have always existed to some degree in New York and neighboring states since the closest vehicle dealership may be located across state lines. Conversely, out-of-state residents routinely purchase

²⁵ Bureau of Labor Statistics, Automotive Industry: Employment, Earnings, and Hours, <https://www.bls.gov/iag/tgs/iagauto.htm>

vehicles in New York for the same reasons. This results in sales tax gains for New York and a loss for the neighboring state.

The impacts to electric grid capacity, electricity rates, EVSE infrastructure, and road maintenance in rural areas, and any other areas of the State, are beyond the scope of this rulemaking. However, the Department is actively engaged with other state agencies and authorities, as well as stakeholders to address concerns.

The Department conducted a reasoned and sufficient analysis of the costs and benefits of the proposed adoption, as is required by SAPA. Additional statutory requirements (CLCPA and Chapter 423 of the Laws of 2021) were also considered. Also, the Department's analysis was not merely a "simple extrapolation" of California's analysis. The Department's analysis included California costs that were deemed to be relevant to New York, excluded costs that were deemed not to be applicable in New York, and modified California costs and inputs for New York conditions. Furthermore, the Department's analysis applied New York's social cost of carbon set forth in the Department's Value of Carbon Guidance established under the CLCPA.

Comment 248: Further, the ACT rule results in truck manufacturers funding the New York (and California) mandate by imposing a hidden consumer fee on the purchasers of diesel trucks in New York and throughout the country. New York General Business Law prohibits deceptive acts and practices like these.

The ACT sales mandates force manufacturers to artificially reduce the true cost of a BET and fund that subsidy by increasing the price of diesel truck sales throughout the country. Yet, NYSDEC has cited no legal authority to impose a hidden fee/tax on new truck buyers in their own state, let alone nationwide, in order to “accelerate the market” for electric trucks. Nor has New York made any attempt to estimate and disclose the cost of these credits to buyers of new diesel trucks in the State of New York. At a minimum, New York must require truck manufacturers to publicly disclose the cost of these credits and pay for them only with sources of revenue generated within the state imposing the mandate. They have not done so. Commenter 266.

Response to Comment 248: The adoption of the ACT regulation does not result in a “hidden fee/tax” on New York State or residents of other states. ACT sets annual MHD ZEV sales requirements for applicable vehicle manufacturers. It is not a fleet purchase requirement, and it does not regulate vehicle prices. Product pricing is the responsibility of individual vehicle manufacturers and is beyond the scope of this rulemaking. Vehicle manufacturers routinely use sales of popular and/or expensive models to subsidize cheaper and/or less popular models.

The price of ZEV credits is beyond the scope of this rulemaking. However, the cost of a credit will be whatever the market will bear. Manufacturers will reach agreements on the price of credits amongst themselves, without direction from the Department or other states, as occurs in the existing light-duty ZEV program. Information pertaining to ZEV credit prices may be determined by reviewing manufacturer's Securities and Exchange Commission public filings.

Comment 249: Finally, through amending its vehicle emission regulations, New York State is acting in a manner that is consistent with the cooperative federalism structure of the Clean Air Act and ensures the effectiveness of Clean Air Act regulations moving forward. Section 209 of the Clean Air Act gives California the ability to adopt its own, more stringent emission control standards for motor vehicles and section 177 gives New York State the authority to adopt those standards. The current rulemaking takes an important and necessary step towards preserving that authority which serves as an essential part of New York City's plans to protect public health and the environment. Commenter 246.

Response to Comment 249: The Department thanks you for your comment.

Comment 250: Amending New York State regulations to appropriately incorporate California's updated emission standards will aid the City's efforts to meet its emission reduction goals and advance the State's goals by preventing vehicle manufacturers from complying with less stringent federal standards in New York instead of the more stringent California standards. California's more stringent standards were adopted by New York State in 1990 and, with each new, more stringent standard adopted and implemented, play an integral role in protecting public health and the environment.

This is also an important step to achieving the goals set in the Climate Leadership and Community Protection Act ("CLCPA"), passed by the New York State legislature in 2019. The CLCPA is among the most ambitious climate laws in the world and requires New York to reduce economy-wide GHG emissions by 40 percent by 2030 and no less than 85 percent by 2050 from 1990 levels.

Commenter 246.

Response to Comment 250: The Department thanks you for your comment. Adoption of the proposed ACT rule is an important step in achieving the emission reduction requirements set in the CLCPA, as well as Chapter 432 of the Laws of 2021.

Redefine Near-Zero

Comment 251: The Department of Environmental Conservation should modify the proposed rule by adopting the traditional definition of the term “Near-Zero” in order to include low carbon and carbon negative compliance options. Commenter 249.

Comment 252: New York can alter the California ACT language to improve its effectiveness so long as those

changes do not include provisions that are more burdensome. Clearly, allowing greater flexibility would not be considered more burdensome. Therefore, we ask that the traditional definition of “Near-Zero” be adopted so that low to no carbon fueled engines, including RNG, may be permitted to meet compliance quotas under the rule if quotas are unable to be met with zero-emission trucks. Commenter 249.

Comment 253: If New York goes forward with the Advanced Clean Truck Rule, we strongly urge it to amend the program to incorporate existing near-zero technology vehicles. California's regulations unfortunately do not include near-zero natural gas or other commercially available near-zero powered vehicles since it recently revised its definitions of near zero and has yet to finalize certification procedures for these vehicles. California's actions are particularly perplexing given that the South Coast Air Quality Management District (SCAQMD), a body responsible for addressing the worst airborne

pollution of any region in the nation, has consistently taken the position that the expanded use of near-zero natural gas trucks and buses is critical to its effort to meet mandatory federal Clean Air Standards. SCAQMD has continued to express its commitment to accelerating the expanded adoption of natural gas vehicles in its efforts to combat pollution and improve air quality in California.

We believe that the California Air Resources Board's actions in redefining near-zero and its misguided decision to exclude available, extremely low polluting vehicles in an effort to favor certain technologies is unfortunate and bad policy since studies have shown California could achieve increased emission benefits now and for the longer term by accelerating sales and purchases of available near-zero technologies. Our request is that New York include provisions in its rules allowing near-zero natural gas trucks powered by biofuels to qualify toward the obligations included in the program. Commenter 254.

Comment 254: We acknowledge that it is appropriate to reduce criteria pollutants in non-attainment areas and continue to increase efficiency in the transportation sector while also recognizing the need to consider the tradeoffs, for example the cost to the consumer, effects on the economy and the environment, infrastructure modification, freight hauling capacity, driver shortages, and consumer choice. However, as both the Western States Petroleum Association (WSPA) and the SCAQMD have noted, the pursuit of these end goals must allow for the multiple technologies and strategies available now or in the process of being implemented that have demonstrated cost-effectiveness and affordability for consumers. Mandating that future medium- and heavy-duty vehicles be equipped with "zero emissions technologies" ignores and could forgo the "near-zero" technology options that are currently commercially available, offer significant environmental benefits, are cost-effective, and are feasible

across a broad spectrum of vehicle end-use applications.

We urge New York to avoid adopting the California approach of focusing on electrified vehicle-centric mandates at the expense of commercially available low-nitrogen oxides (NOx) technologies that are being deployed to meet near-term air quality goals. In this regard, a recent technical assessment sponsored by WSPA suggests that the expanded penetration of these vehicles, coupled with increased introduction of renewable liquid and gaseous fuels, offers significantly lower carbon intensity pathways that could deliver earlier and more cost-effective air quality and GHG reduction benefits than a ZEV-centric approach that essentially postpones improvements in air quality for decades.

There are many different types and uses of MHDV and encouraging a diverse and flexible use of technologies will achieve the environmental progress that DEC is seeking. Today, battery electric trucks (BET) are priced significantly higher than conventionally powered trucks and the infrastructure needed to charge the vehicles is also expensive. This regulation could make all trucks more costly, and have the unintended consequence of reducing overall new MHDV sales (assuming constant capital expenditures). Stated another way, these rules may have the unintended consequence of slowing fleet turnover. Commenter 259.

Response to Comments 251-254: New York must adopt identical standards under Section 177 of the Clean Air Act. Modifying the definition as requested would violate the identity provision of Section 177. It would also lead to the creation of a “third vehicle” standard, which is preempted by federal law.

Comment 255: In order to increase the likelihood that New York's proposed ACT will transition the transportation sector off of diesel and for engine manufacturers to be able to meet their compliance requirements, we propose the creation of a safety net. This safety net would allow other clean fuels to participate if zero-emission compliance is not feasible. To establish this safety net, Clean Energy recommends the Department of Environmental Conservation modify the proposed rule by adopting the traditional definition of the term "Near-Zero" in order to include low carbon and carbon negative compliance options. The definition that was created for the California ACT is limited to zero-emission capable hybrids. Under the traditional definition, "Near-Zero" means engines which are certified to achieve CARB's optional low NOx standard of 0.02 g/bhp-hr. This standard represents a 90 percent reduction in NOx emissions from the current federal standard and in-use testing shows a 95 percent reduction. While not a carbon standard, it would allow low carbon to carbon negative fuels, like RNG, to participate while also achieving significant NOx reductions. This type of policy would increase the rule's chance of success. New York could then advance their electrification efforts without the risk of foregoing emissions reductions in the near-term should EV technology in the heavy-duty sector not advance as quickly as some expect. Because this change would be less restrictive than CARB's proposal, Clean Energy believes it is a permitted modification. Commenter 249.

Comment 256: A constant refrain is that the Clean Air Act does not allow states to make changes to California's regulations. We, however, believe that consistent with the provisions in section 177 of the Clean Air Act, New York can alter the California rule to meet its needs so long as those changes do not include provisions that are more burdensome. As such, allowing greater flexibility and increasing the opportunity for existing near zero trucks would not be considered more burdensome and therefore is legal. Commenter 254.

Response to Comments 255-256: There is no provision in Section 177 of the Clean Air Act to adopt a “safety net” or make modifications that are “less restrictive”. Standards adopted under Section 177 must be identical to those adopted by California.

Comment 257: In the Summer of 2020, New York joined 10 Northeast and Mid-Atlantic jurisdictions (and later Quebec) in signing a zero-emission MHDV Memorandum of Understanding (MOU) committing the state to at least 30 percent electric truck sales by 2030 and 100 percent by 2050. This MOU also states that jurisdictions should create an action plan with concrete steps to help them meet these goals. One of the key steps offered in the MOU as an example is to leverage “environmental and air quality benefits associated with the adoption of the California Advanced Clean Trucks rule under Section 177 of the Clean Air Act.” The current administration and legislature expanded on this commitment by passing A.4302/S.2758, which set goals for all new passenger cars and trucks sold in the state to be zero emissions by 2035 and all new medium- and heavy-duty trucks and buses to be zero-emissions by 2045. This is the most that almost any state has committed to cleaning up the transportation system. Adopting the ACT rule would put New York on a clear path to meet the goals of the MOU and this legally binding legislation and is a concrete step towards reducing both climate and toxic air pollution. Commenter 251.

Response to Comment 257: The Department thanks you for your comment.

Comment 258: DEC has full legal authority to adopt the ACT rule and take a necessary first step to reduce emissions throughout New York and particularly in the state’s overburdened communities.

Clean Air Act Part D, Section 177 specifies, “any State which has plan provisions approved under this part may adopt and enforce for any model year [California] standards relating to control of emissions from new motor vehicles or new motor vehicle engines.” “Plan provisions approved under this part” applies both to nonattainment plan provisions and maintenance plan provisions, both of which EPA approves under Clean Air Act Part D. Because EPA has approved multiple New York nonattainment and maintenance plan provisions, New York satisfies the threshold requirement of Section 177 to adopt the California Standards. Indeed, New York’s most recent Draft Proposed Revisions to the State Implementation Plan for the 2008 ozone NAAQS demonstrate that the New York Metro Area continues to be in nonattainment past the July 2021 deadline, and that mobile source emissions are a key reason. Commenter 264.

Response to Comment 258: The Department thanks you for your comment. New York State has legal authority to adopt this proposed rule.

Comment 259: The process is underway. The implementation has thus far followed the statutory schedule, and the Climate Action Council is on the verge of revealing its draft scoping plan, New York's roadmap for achieving the goals established in the CLCPA. Commenter 2308.

Response to Comment 259: The proposed ACT rulemaking process has followed the statutory schedule. The Climate Action Council draft scoping plan is anticipated to be released soon and is expected to support New York's air quality goals and the Statewide greenhouse gas emission reduction requirements established in the CLCPA.

Large Entity Reporting Requirement

Comment 260: Alliance members, who operate vehicle fleets that support their efforts to maintain a safe and reliable electric system across the State, request that the Department clarify several specific points about the large entity reporting requirement.

First, regarding the one-time large entity reporting requirement dates, in multiple locations, the Regulatory Impact Statement and the Regulatory Impact Statement Summary both state that “Entities subject to the one-time large entity reporting requirement would be required to report by April 1, 2023.”¹ We note, however, that the proposed express terms for Section 218-4.2 -- “large entity vehicle reporting” – state that “Complete information must be reported by April 1, 2022.”² Our understanding is that the Department intended for the regulation to include the April 1, 2023 compliance date. Furthermore, given the timeframes prescribed by the State Administrative Procedures Act for the completion of regulations and the significant amount of information required by the referenced California regulations, the April 1, 2023 compliance deadline for this filing is more appropriate and feasible. We request that DEC confirm in the final rule that the one-time large entity vehicle reporting deadline is April 1, 2023. Commenter 171.

Comment 261: However, the City seeks to better understand implications of the proposed amendments’ one-time reporting requirements, particularly when the information will be required to be submitted to DEC on a very short timeframe—by April 2022. Commenter 246.

Response to Comments 260-261: The Department thanks the Commenters. The Department clarifies that the reporting deadline was incorrect in the draft Express Terms, and the correct date as indicated

in the adopted Express Terms is April 1, 2023. This date was chosen to provide sufficient time for applicable fleet stakeholders to adequately complete the reporting process. The reporting date will be updated in the final rulemaking package.

Comment 262: Second, also relating to dates for the one-time large entity vehicle reporting, California Code of Regulations, Title 13, Section 2012(e)(3), which is incorporated by reference for proposed Section 218-4.2 states that “The fleet owner or responsible official shall maintain the records of their information required by sections 2012.1 and 2012.2 until December 31, 2024, for the overall fleet.” However, this requirement is presumably predicated on California’s requirement that large entities needed to file their information by April 1, 2021. Based on the presumed April 1, 2023 compliance deadline in New York State, the Department should clarify in its final rule the length of time it intends large entities to maintain records if it is a date other than December 31, 2024. Commenter 171.

Response to Comment 262: The Department thanks you for your comment. The recordkeeping retention requirement in the draft Express Terms was incorrect, and the correct date in the adopted Express Terms to retain reporting records to is December 31, 2025. The reporting date will be updated in the final rulemaking package.

Comment 263: Third, given the large amount of data that the Department will be accumulating under the large entity reporting requirement, Alliance members request that the Department issue a standardized reporting format. We note that California published an extensive guidance document to assist large entities in understanding their compliance requirements. The California guidance also included a standardized spreadsheet template. Alliance members believe that standardized data

collection processes will help the Department to best understand the data and therefore assist with the decarbonization of medium and heavy-duty vehicle fleets in the future. Commenter 171.

Response to Comment 263: A standardized reporting format is preferred to ensure efficient data entry and usability. The Department is collaborating with California Air Resources Board staff to utilize California's reporting templates and guidance documents in the development of the large entity reporting process for New York. Department staff believe it will be beneficial for stakeholders to follow the same reporting formats where practical. The California templates will be adjusted appropriately to reflect that submitted reports are applicable to New York State.

Comment 264: Finally, we assume that the Department intends that in all instances where the word "California" appears in Sections 2012, 2012.1, and 2012.2, that large entities in New York should substitute the word "New York." For example, the preamble to Section 2012.2 states that "Vehicles that accrue the majority of their annual miles in California but are not assigned to a particular location in California, must be reported as part of the headquarters or another location where the vehicles' operation is managed." For the proposed rule to make sense, this type of substitution must be made throughout, and Alliance members intend to comply with the rule by doing so. Commenter 171.

Response to Comment 264: The Department incorporates California vehicle standards and requirements by reference in Part 200. Under this incorporation, any reference to "California", "Executive Officer", etc. is replaced by "New York", "Commissioner", etc.

Comment 265: As a large fleet owner, the City would be subject to the one-time reporting requirements

required by the proposed amendments. Although the proposed amendments estimate the cost of the one-time reporting requirement in New York to be \$4.8 million, the specific financial and logistic burden this would present to the City is unknown. Furthermore, if the proposed amendments are adopted, such reporting would be due to the State within a very fast timeframe—by April 1, 2022. The City suggests that the State provide more detail regarding how the information it collects will be used and the importance of such information in developing future emission standards, and consider the need to obtain the information on such a tight timeline. Commenter 246.

Response to Comment 265: The April 1, 2022 reporting date in the draft Express Terms was an error and will be replaced with April 1, 2023 in the final rule adoption. Information collected under the one-time large entity reporting requirement will be used to inform future Department regulatory activities, target infrastructure build-out, and identify areas potentially adversely impacted by medium- and heavy-duty truck operations.

Comment 266: We also appreciate DEC's proposal to adopt a fleet reporting rule, which will provide necessary information to DEC and the public about the state of New York's fleets. Commenter 264.

Response to Comment 266: The Department thanks you for your comment and your support.

Comment 267: Adopt a Fleet Reporting requirement for fleet operators with five vehicles or more to gather more granular information on New York's medium- and heavy-duty fleets. Commenter 248.

Comment 268: Setting the fleet reporting threshold at five vehicles or more and make the data publicly

available at the most granular level possible. Commenter 251.

Comment 269: But DEC must make a number of improvements to ensure robust and up-to-date reporting from as many fleets as possible. DEC's proposed 50-vehicle threshold is set too high and would fail to cover the majority of New York's MHDVs, which operate in much smaller fleets. Therefore, we recommend that DEC lower this reporting threshold to 5 or more vehicles and require all tractors and drayage trucks to submit reports under the reporting rule. Commenter 264.

Response to Comments 267-269: There is no provision within Section 177 of the Clean Air Act to allow New York to make modifications of the ACT one-time fleet reporting requirement. Standards adopted under Section 177 must be identical to those adopted by California.

Comment 270: Identifying areas with high rates of freight traffic and, consequently, diesel pollution, allowing New York to target clean transportation policies to the communities that need relief most. Commenter 264.

Comment 271: Help utilities make better informed electric utility investments today to install the charging infrastructure necessary to support zero-emission MHDVs. It will also enhance utility distribution system planning efforts that are vital in the transition to clean vehicles as a well-designed grid can lower bills for all customers by avoiding expensive system upgrades. Commenter 264.

Comment 272: Moreover, the reporting requirements of one time for fleet operators and manual LEV manufacturers I do not believe is a burdensome requirement and is needed to help the DEC establish

future plans for the transition to ZEV. Commenter 2310.

Comment 273: DEC is proposing to adopt both the ZEV sales standards as well as the one-time, large-entity fleet reporting requirements specified by the California ACT rulemaking. The latter requires subject entities to submit a one-time report detailing information that will help identify future strategies to accelerate adoption of zero emission medium- and heavy-duty vehicles. During the California ACT rulemaking process, the California South Coast Air Quality Management District (SCAQMD) commented that this approach did not meet the state's more immediate public health and welfare goals associated with the reduction of NOx and toxic diesel particulate matter emissions and was more costly than a regulatory policy focused on the use of currently available technology. Commenter 259.

Response to Comments 270-273: The Department thanks you for your comment. Information collected under ACT's one-time large entity reporting requirement will be used to inform future regulatory activities, target infrastructure build-out, and identify areas potentially adversely impacted by MHD ZEV truck operations.

Comment 274: As the proposal points out, this one-time reporting requirement should not be too time consuming and will take between 4–10 hours to complete for businesses in a single facility category, and up to 40 hours for businesses with multiple facilities throughout the state. However, other states have projected that the reporting requirement will take on average 4 hours of time to complete and since fleets already collect this information, we believe that shorter reporting times for New York will also be expected. Commenter 264.

Response to Comment 274: The Department thanks you for your comment. The reporting time estimates provided in the rulemaking documents represent conservative estimates to provide entities with sufficient time to report. It is likely that many entities will be able to complete the reporting requirement in less time.

Cost

Comment 275: The DEC's fiscal and economic impact "analysis" relates to the proposed opt-ins to CARB's ACT Rule, as originally adopted. But, as noted, the ACT Rule is in the process of being reconsidered to require 100% ZEV truck sales by 2040. Thus, the DEC's analysis is necessarily looking at a rule that is still subject to significant revision. The DEC's fiscal/economic analysis needs to be revised accordingly. Commenter 199.

Response to Comment 275: The referenced 100% MHD ZEV sales requirement is part of a California's proposed Advanced Clean Fleets regulation, which is a separate rulemaking effort. The Department's fiscal and economic analysis for this rule was completed for the proposed adoption of the ACT rule and is not dependent on CARB's separate ACF regulatory proposal.

Comment 276: "Applying the VMT-based scaling factor to California values" (NPRM, p. 3), the DEC assumes that the proposed opt-in to the ACT rule will result in cumulative CO₂-equivalent reductions of 5.52 MMT CO₂E through 2040. (See NPRM, pp. 19-20.) At the same time, however, NYSERDA's most recent Greenhouse Gas Inventory for New York calculates that total CO₂-equivalent GHG emissions in the State are 205.61 MMT. Thus, the proposed opt-in to CARB's ACT Rule will, at most,

address just 2.7 percent (2.7%) of the GHG emissions inventory at issue. The actual GHG reductions will be far less than that because ZEV-truck purchases in New York will be far less than the mandated number of ZEV-truck sales. The resultant de minimis impacts on GHG emissions cannot justify the very significant costs and market disruptions that will result from attempting to implement the ACT Rule in New York. Commenter 199.

Response to Comment 276: As noted in the Regulatory Impact Statement, the Department presented two values for cumulative CO₂e reductions from 2025-2040. The cited 5.52 MMT was based on a scaling of California estimated reductions. The cited 17.91 MMT from the ICCT report. The Commenter's 205.61 MMT value represented a pre-CLCPA greenhouse gas emissions inventory which is no longer current. The Department maintains that MHD vehicles are responsible for a disproportionate amount transportation related greenhouse gas emission as well as criteria pollutants like Ozone, PM and NO_x. This proposed rule will help promote MHD ZEVs, reduce transportation related air pollutants and enable New York to meet the greenhouse gas emission reduction requirements of the CLCPA. The Commenter's "de minimis" argument on GHG emissions is irrelevant considering the State's legally mandated goal to reduce GHG emissions from all sectors of New York's economy by 85% by 2050 (when measured against 1990 levels). Every sector of GHG emissions (e.g., transportation) will need to be reduced regardless of its current relative contribution to meet the CLCPA emission reduction requirements.

Comment 277: The most salient fact in that regard is that nothing contained within the ACT Rule will compel or even encourage any truck operator in New York to purchase any new MD and HD trucks in New York starting in 2025. And nothing suggests that they will. There is no viable infrastructure for

ZEV trucks in New York, and there are no meaningful ZEV-truck purchase incentives in New York. By comparison, it should be noted that the level of ZEV-truck purchase incentives used to try to spur the deployment of ZEV trucks in California, including at the Ports of Los Angeles and Long Beach, range from \$175,000 to \$200,000 per truck. (See SCAQMD Ports Committee Presentation, October 15, 2021.) New York has implemented nothing close to those types of incentive programs. Thus, the DEC's inherent assumptions about future increasing ZEV-truck purchases due to the ACT Rule are wholly unsupported by any actual New York-specific data. Commenter 199.

Response to Comment 277: The NYSERDA NYTVIP and the New York City Clean Trucks Program are active incentive programs that provide funding for new MHD ZEV truck purchase for up to \$185,000.²⁶ These programs include the ability to adjust incentive amounts based on participation levels. The Department anticipates that the proposed rule will provide regulatory certainty to support the market stability needed for long term purchase decisions for MHD ZEVs as well as charging/refueling.

New York State has a statutory goal of will be requiring 100% of MHD in-state truck sales to be ZEV by 2045, where feasible, to comply with the requirements of Chapter 423 of the Laws of 2021. The federal Infrastructure Investment and Jobs Act signed by President Biden on November 15, 2021 includes state formula and potential competitive grant funding for MHD fueling and charging infrastructure. The Department will join other New York State agencies and authorities to review and

²⁶ <https://www.nyserda.ny.gov/All-Programs/Truck-Voucher-Program/How-the-Program-Works/Funding-Amounts>, <https://www.nycctp.com/available-funding/>

seek, as appropriate, any future federal funding provided by the Infrastructure Investment and Jobs Act to promote development of MHD ZEV infrastructure in New York State.

Pre-Buy/No Buy

Comment 278: The DEC's analysis also fails to account for the likelihood that some manufacturers will simply choose to exit the New York market for new HD/MD vehicle sales in order to avoid selling non-competitively priced products in the State, and to avoid the disruptive constraints of state-specific ZEV-trucks sales requirements. Similarly, the DEC's "benefits" analysis completely overlooks the fact that truck purchasers in New York likely will buy any needed new heavy-duty vehicles in advance of the implementation of CARB's standards (a "pre-buy"), which will be followed by a long deferral of any new truck purchases after the California standards take effect in New York (the ensuing "no-buy"). Alternatively, truck owners may simply retain their older vehicles for as long as possible, or will make any new truck purchases out-of-state. The net result is that even the already de minimis emissions reductions that the DEC has estimated (through its short-hand VMT methodology) will not actually occur given the anticipated response of the MD/HD vehicle market to the adoption of CARB's very costly standards in New York. Commenter 199.

Comment 279: Consequently, instead of buying ZEV trucks, fleet customers may simply choose to purchase other less expensive truck technologies, or to continue maintaining their existing trucks. Commenter 199.

Comment 280 As noted above, forty-five percent of New York's fleet of heavy-duty diesel vehicles use the newest generation diesel technology that meets the latest EPA emissions standards for PM

and NOx. One of the unintended consequences of the ACT rule is that due to rising costs, consumers may effectively forgo the purchase of low emissions diesel trucks and near-zero emissions natural gas trucks that can improve air quality much faster than would occur under the ACT rule. Commenter 266.

Response to Comments 278-280: Adoption of the ACT regulation will require applicable MHD vehicle manufacturers to offer MHD ZEVs for sale in New York State. These manufacturers will need to make a business decision as to whether or not to offer MHD vehicles for sale in New York State beginning with the 2025 model year. MHD vehicle purchasers will continue to have a wide range of vehicles to consider for their next vehicle purchase.

Pre-buy/no-buy effects are difficult to predict. In certain situations, the effect has been absent and in other cases the effect has been observed but short lived.

Comment 281: Moreover, even that de minimis estimated impact is actually overstated, since it does not account at all for the significant pre-buy/no-buy of MD and HD trucks that will occur in New York in response to the proposed opt-in to CARB's ACT Rule. It also fails to account for the actual penetration rate for new HD/MD vehicles in New York. More specifically, the actual penetration rate for 2010-compliant Class 3-8 vehicles in New York is still less than 50%, more than a decade after the 2010 standards took effect. Additionally, as mentioned above, the DEC's VMT-based analysis fails to account for the fact that there is no requirement whatsoever under the ACT Rule that anyone in New York actually purchase a ZEV truck, nor has New York taken sufficient steps to make such purchases economically viable. Consequently, since the DEC's analysis fails to consider the manner

in which the HD/MD vehicle market will actually respond to New York's opt-in to CARB standards, that analysis, simplistic as it is to begin with, is inherently deficient. Commenter 199.

Response to Comment 281: Pre-buy/no-buy effects are difficult to predict. In certain situations, the pre-buy/no-buy effect has been absent; and in other cases, the effect has been observed but short lived. The Commenter is correct in that the ACT regulation does not require fleet purchases. It's anticipated that New York's adoption of the ACT regulation will likely send a strong market signal and provides regulatory certainty to not only MHD vehicle manufacturers but also electric vehicle supply equipment (EVSE) manufacturers, and EVSE network providers. New York has developed active programs, such as NYSERDA's statewide NYTVIP, and the New York City Clean Trucks Program, that provide incentives to offset a significant portion of the incremental purchase costs for MHD ZEVs.

Comment 282: In terms of estimated costs, again premised solely on VMT-based scaling, the DEC's analysis significantly misstates the marginal cost of ZEV trucks. ZEV trucks cost 2-to-3 times more than conventionally-fueled trucks. CARB's postulated marginal costs (\$14,000 to \$87,000 per vehicle) are not based in reality. In addition, ZEV trucks require very expensive recharging or refueling stations that take multiple years to permit and install, and also require new maintenance and service facilities equipped with new tools and capabilities. Further, HD recharging stations cost considerably more than \$355,000 once all permitting and installation costs are taken into account. Commenter 199.

Response to Comment 282: As set forth in the Regulatory Impact Statement, while the initial purchase cost of a MHD ZEV may be higher than an equivalent diesel-powered vehicle, lower

operational and maintenance costs will help offset the total cost of ownership costs over the life of the vehicle. Incentives available through the NYSERDA NYTVIP and NYCCTP can also help reduce the initial purchase price on a MHD ZEV. The California cost analysis, and by extension New York's, did not include available incentive programs when estimating MHD ZEV purchase costs. Costs for ZEV charging infrastructure/refueling were considered within the California cost analysis. Charging station costs are highly variable based on location, existing electrical service, charging type (L2, DCFC) and charging rate requirements.

Comment 283: There are multiple other reasons why the DEC's non-New York-specific fiscal analysis cannot withstand scrutiny. By way of example, the DEC does not even provide an estimate of how many new CARB-certified conventionally-fueled trucks will be sold and registered in New York on an annual basis from and after the 2025 model year, also factoring in the expected pre-buy/nobuy response. Without any attempted accurate estimate of those in-State new truck sales, the potential emissions benefits in New York from opting-in to CARB's ACT Rule cannot be assessed in a reasonable manner, since the mandated ZEV-truck sales under the ACT Rule are wholly dependent on the number of sales in New York of new conventionally-fueled trucks from and after 2025. And again, even if that mandated sales number were to be calculated, there can be no assurance whatsoever that any of those required sales (and purchases) will actually take place.

The fact that the DEC does not even attempt to include this most basic information (or any other actual New York-specific cost-benefit information for that matter) in its fiscal analysis demonstrates beyond any doubt that the regulatory impact analysis at issue is wholly inadequate to support the proposed rulemaking. Commenter 199.

Response to Comment 283: The Department maintains that the cost analysis completed for this proposed rule is sufficient. Two sources were used to estimate future MHD sales in New York State. ICCT estimated future New York sales using EPA's MOVES model²⁷. The Department also scaled California MHD ZEV sales estimates. California's methodology to estimate the MHD population was included within Attachment D - Emissions Inventory Methods and Results for the Proposed Advanced Clean Trucks Regulation Proposed Modifications.²⁸ Total sales were noted in the ISOR²⁹ as well as CARB spreadsheets 2020a and 2020b.

The Department did not factor, or include a correction, for the any pre-buy/no-buy response. As stated above, pre-buy/no-buy effects are difficult to predict. In certain situations, the effect has been absent and in other cases the effect has been observed but short lived.

Comment 284: In light of the foregoing, the DEC should be clear and transparent about the limited efficacy of this rulemaking. First, the DEC should recognize the unavoidable fact (discussed above) that it is highly unlikely – as in very highly unlikely – that trucking firms in New York will buy ZEV trucks in numbers that come anywhere near to matching the ACT Rule's mandated increasing percentage of ZEV-truck sales. Those ZEV-truck purchases cannot and will not occur without the necessary build-out of the required recharging/refueling infrastructure, and without substantial ZEV-truck purchase incentives, probably in excess of \$150,000 per truck. New York is not in a position to

²⁷ <https://theicct.org/publications/nys-hdv-regulation-benefits-may2021>, Attachment - Benefit calculations of California MHD regulations adopted in New York State, "Tables" tab

²⁸ <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/30dayattd.pdf>, pp. 2-9.

²⁹ ISOR, Table IX-2

fund those necessary prerequisites. Simply stated, New York is not California, nor does New York have access to California's resources to fund ZEV programs. Thus, only a very small fraction of the hoped-for ZEV-truck purchases are likely to occur in the real world of New York's trucking industry. The DEC needs to appreciate and acknowledge those realities. Commenter 199.

Response to Comment 284: MHD ZEV truck incentives are recommended during the initial phases of the proposed ACT rule. The NYSERDA NYTVIP and the NYC CTP currently offer incentives for MHD ZEV purchases, up to \$185,000 (Class 8 trucks)³⁰. Lower operational and maintenance costs will also help offset the initial higher purchase price of MHD ZEV when compared to an equivalent diesel truck.

Government and private investment will be required for charging and refueling for MHD ZEV trucks along trucking corridors, ports and industrial zones. The Department anticipates that the proposed rule will provide regulatory certainty to support the market stability needed for long term charging/refueling business decisions. Chapter 432 of the Laws of 2021 requires 100% new MHD vehicle sales to be ZEV by 2045, where feasible.

Comment 285: Second, even if ZEV-truck purchases were to occur in a manner that comes close to matching the mandated percentages of ZEV-truck sales – which almost certainly will not occur – the potential resultant GHG reductions need to be put into perspective. In that regard, and as already noted, the proposed opt-in will impact well less than 2% of New York's GHG inventory.

³⁰ <https://www.nyserdera.ny.gov/All-Programs/Truck-Voucher-Program/How-the-Program-Works/Funding-Amounts>

More fundamentally, the ZEV-truck purchases that the DEC is counting on simply will not occur on the DEC's assumed timeline. On that point, there is a readily available reality check regarding the actual market for ZEV trucks in New York. Currently, and notwithstanding years of state programs and efforts, the percentage of battery electric passenger cars in New York as of the end of 2019 is less than 1%. (See EVAdoption Website.) The DEC's assumed penetration rates for ZEV trucks under its benefits analysis for this rulemaking are clearly revealed to be beyond unrealistic when compared against the actual real-world penetration rate for ZEV cars in New York.

Another way of looking at the inherent inefficacy of this proposal is to consider the number of new trucks that are sold into New York on a yearly basis. Polk Data Services information shows that approximately 17,250 new trucks are sold in New York annually. If we assume under a still-overstated best case scenario that ZEV trucks can do five times better than ZEV cars, and can somehow achieve a 5% deployment rate in New York, that amounts to 860 ZEV trucks per year in the 2030 timeframe. When seen in that light, it is clear that there are better alternatives than unilateral sales mandates to advance the deployment of ZEV trucks in New York, including through alternative types of incentive and targeted pilot programs. The ACT Rule is simply not the way to go. Commenter 199.

Comment 286: According to Polk Data Services, average annual heavy-duty truck sales (Class4-8) in New York over the past several years have been only approximately 17,250 units. The market impacts in New York of opting-in to CARB's ACT Rule, including the expected pre-buy/no-buy impacts, likely would dramatically reduce that annual sales number. Thus, the DEC's failure to conduct any actual New York-specific cost-benefit analysis using any actual New York-specific data

regarding expected new truck sales conclusively establishes that the DEC's fiscal and economic impact analysis is fundamentally deficient. Commenter 199.

Comment 287: If CARB-compliant products are not available in New York, or if the market does not accept the substantially increased costs associated with the few CARB-compliant products that might be available, fleet operators will accelerate their purchase of new federally-certified vehicles in New York, or acquire new trucks in adjacent non-opt-in states, rely more on the used truck market, or simply retain their existing fleet vehicles longer. All of those actions will have a negative impact on air quality and delay progress in the attainment of air quality goals. In particular, if New York trucking fleet operators accelerate their new truck purchases ahead of the 2025 model year, or shift those purchases out-of-state, that will frustrate and undermine the implementation of the ACT Rule in New York, since the Rule's HD and MD ZEV-sales mandates are derived from the number of in-state sales of new conventionally-fueled trucks. Commenter 199.

Response to Comments 285-287: As stated above, any potential pre-buy/no-buy scenarios would likely be temporary and not result in long term impacts on truck sales numbers in New York. Although the sales of ZEV light-duty passenger cars are beyond the scope of this rulemaking, the number and percentages of initial registrations of ZEV passenger cars in New York continues to increase³¹.

Comment 288: There are significant benefits inherent in more stringent standards. When reviewing market growth in response to 2007 and 2010 federal engine standards, there was smooth growth in

³¹ <https://www.nyserda.ny.gov/All-Programs/ChargeNY/Support-Electric/Map-of-EV-Registrations>

vehicle demand prior to, and during implementation of the 2014 Phase 1 fuel efficiency and emissions standards. Indeed, the purchase of MY 2014 vehicles was higher than any year since 2005. This demonstrates that strict standards do not dampen adoption of cleaner vehicles and fuel cost savings are an important component of making the economic case for the transition.

It should also be noted that “the pre-buy in response to 2007 criteria pollutant standards [was found] to be approximately symmetric, short-lived, and small in volume relative to previous estimates,” indicating that fears of mass purchase of more polluting vehicles before implementation of a standard may not come to fruition. The bottom line is that, rather than seeing fleets buy dirtier, ostensibly cheaper vehicles in a panic, there is clear evidence that no meaningful adjustment in market purchasing occurs as a result of these standards. Fleets recognize the cost savings over time of cleaner vehicles and do not seem inclined to ignore those benefits to reap the marginally lower purchase price of more polluting vehicles while they still can. Commenter 264.

Response to Comment 288 The Department thanks you for your comment.

Comment 289: The promulgation of this rule would have a harmful effect on a wide range of small businesses, including contractors, farmers, truckers, retail operations, and nearly every small business that relies on transportation of goods. Commenter 201, 236.

Response to Comment 289: The proposed regulation is a MHD vehicle manufacturer ZEV sales requirement not a vehicle purchase requirement. Individual small businesses will continue to have a wide selection of MHD vehicles to consider when making a vehicle purchase.

Comment 290: CARB's TCO analysis in the ACT relied on California's progressive ZEV infrastructure policies in place at the time, which included guaranteed utility make-ready funding, and new rates that ensure electricity is an affordable fuel. New York therefore must focus on these factors to create a positive TCO environment for zero-emission trucks and ensure the ACT sales targets are attainable. Commenter 204.

Response to Comment 290: Incentives and investments in infrastructure will be important to ensure the continued success of this proposed rule. NYSERDA NYTVIP and the NYCCTP offer incentives that help cover the incremental cost of MHD EVs. The New York State Public Service Commission has also approved a \$15 million MHD Fleet Make-Ready Pilot Program, utility fleet assessment services, a Clean MHD Vehicle Innovation Prize competition to incentivize MHD EV charging capacity. These programs will likely need to be evaluated or new programs may be necessary to help stimulate MHD ZEV deployment. The Department is actively engaged with other State agencies and authorities to develop these programs.

Comment 291: The ACT rule will help bring down costs for zero-emission medium- and heavy-duty vehicles by requiring manufacturers to increase model availability to meet the needs of fleet operators and driving investment in clean transportation research and development. This will enable cost-effective electrification of commercial vehicles at the pace and scale needed to meet climate and air quality goals, while delivering public health and economic benefits for communities and businesses alike. Commenter 213, 2322.

Comment 292: We have made significant commitments to reduce our greenhouse gas (GHG) emissions to protect the health and economic well-being of the communities in which we live and operate. Transportation is now the largest source of GHG emissions across the nation, a substantial component of our carbon footprint, and a major operating expense. Moreover, transportation is a major source of harmful air pollutants that disproportionately impact low-income communities. Commenter 213, 2322.

Response to Comments 291-292: Adoption of the proposed rule would increase MHD ZEV model availability, support air quality goals and Statewide greenhouse gas emission reduction requirements set forth in the CLCPA, provide health benefits and will likely lower the purchase cost of MHD ZEVs.

Comment 293: Improving air quality is not only the right thing to do for public health and for these communities, it also makes economic sense. Fewer instances of respiratory illness, missed days of work and hospitalizations will increase personal disposable income and help reduce the financial pressure on our healthcare system. These impacts cross state lines, just like the commercial vehicles in our fleets and value chains. Commenter 213.

Response to Comment 293: The Department thanks you for your comment.

Comment 294: Increased access to cost-effective zero-emission commercial vehicles across states will allow us to remain competitive in a market where our customers, investors, patients, and employees increasingly expect us to lead on sustainability. A growing number of clean vehicles offer significant

cost savings through lower

fuel and maintenance costs, and reduce the risk associated with the volatility of fossil fuel prices and supply. Commenter 213, 2322.

Response to Comment 294: The Department thanks you for your comments.

Comment 295: However, commercial vehicle electrification still faces significant challenges due to higher

upfront costs, weight, charging time, battery range, and the availability of charging infrastructure.

Market-enabling policies like the ACT will rapidly unlock the long-term savings, climate, and clean air benefits of medium- and heavy-duty vehicle (MHDV) electrification, while spurring the much-needed widespread deployment of charging stations. The more states that adopt ACT, the greater the market-forcing benefits of the rule, thereby lowering costs and creating a more stable and self-sustaining

market. Commenter 213, 2322.

Response to Comment 295: The transition to MHD ZEVs poses significant challenges. The proposed rule will increase the MHD ZEV market to help lower vehicle costs, mitigate climate change, reduce criteria pollutants, and spur the deployment of charging stations. The States of California, Oregon, and Washington have formally adopted the ACT regulation. In addition to New York, several other states are currently in the rulemaking adoption process.

Comment 296: Electrification of commercial transportation will support a cleaner, more energy-efficient

economy through local innovation and investment in clean technology manufacturing – creating new jobs, cutting costs for our value chains, mitigating climate risk, improving public health, and reducing health care costs. Commenter 213, 2322.

Response to Comment 296: The Department thanks you for your comment. The transition to commercial MHD ZEVs will have many benefits including creating new jobs, mitigation of climate risks and improving public health.

Comment 297: Bold action by state leaders is urgently needed. We strongly support adoption of the ACT rule across states to accelerate MHDV electrification, allowing both manufacturers and fleet operators to capture savings from economies of scale and provide more cost-effective emissions reductions for all. Commenter 213, 2322.

Response to Comment 297: The Department thanks you for your comment. New York's adoption of the ACT regulation, along with California and potentially other states, will help create the economies of scale needed to accelerate the transition to MHD ZEVs.

Comment 298: Furthermore, the City is working to identify sufficient charging station siting opportunities throughout the City. This can be complicated in a city, like New York City, with spatial constraints in existing buildings and parking lots. Even so, ensuring that the necessary infrastructure exists is important to support the City in expanding its electric medium and heavy duty fleet. Commenter 246.

Response to Comment 298: The Department thanks you for your comment. Continued development

of charging/refueling infrastructure is needed to support an accelerated transition to MHD ZEVs.

Total Cost of Ownership

Comment 299: Electric trucks are also less expensive to service, maintain, and fuel over the lifetime of the vehicle,

providing significant long-term cost savings to New York's businesses and fleet managers and owners.

Accounting for capital costs needed to transition New York's fleet, these rules will result in \$318 million in net fleet savings by 2050. In fact, the total savings for the owner of a zero-emission truck or bus over its lifetime is expected to be almost \$13,000, on average. Importantly, the transition to domestically produced electricity would insulate fleet operators and owners from the volatile global oil market.

Commenter 248, 2316, 2323.

Comment 300: A recent study by Gladstein, Neandross, and Associates, determined that the Schneider trucking company would save \$554,813 on fuel costs annually by converting its 42-truck fleet in Stockton, California to electric. What the study also found is that the recharging infrastructure costs would be 16 times more than the fuel savings: \$8.9 million. Commenter 249.

Response to Comments 299-300: The Department thanks you for your comments. The comments reflect that the high initial upfront cost of charging equipment can be offset in part by operational and maintenance cost savings over time. Some vehicle types, such as the Class 8 trucks in the cited report, will take longer to achieve total cost of ownership parity. Multiple studies indicate total cost of ownership parity of MHD ZEVs with comparable diesel-powered trucks within the next 10 years for most applications. Some applications currently have demonstrated TCO parity. The Department notes that

charging infrastructure costs are typically a significant one-time capital cost while operational cost savings are typically reporting annually as in the Commenter's example.

Comment 301: We estimate that its adoption would result in \$19.4 billion in net societal benefits for New York by 2050. Commenter 251.

Comment 302: Indeed, the typically lower total cost of ownership of electric trucks, potential for managed vehicle charging and vehicle-to-grid integration, and downward pressure on electricity rates show that electric trucks make economic sense. We estimated the ACT rule to result in \$325 million in utility net revenue by 2050 and would attract \$131 million per year in public and private investments in charging infrastructure. With incoming resources from the recent federal infrastructure package, in addition to New York-specific programs, there is even more opportunity to take advantage of how electric truck technology can and will work for the state. Commenter 251, 2304.

Comment 303: The ACT rule is a foundational policy that New York should adopt as swiftly as possible to accelerate the transition to zero emission trucks. In the process of developing the ACT rule, California provided overwhelming evidence of its cost-effectiveness and feasibility, and further by slashing truck emissions and shifting towards zero emission vehicles, this rule is expected to accrue billions of dollars in public health benefits and fuel and maintenance cost savings for fleet owners and similar benefits are expected in New York. Commenter 2306.

Comment 304: A recent report by MJ Bradley & Associates found that the ACT could provide approximately 1.9 billion dollars in net societal benefits to New York by 2050. It's vital that New York

adopt these rules as soon as possible to maximize the benefits and ensure our state remains a leader in the clean energy economy. Commenter 2306, 2314.

Response to Comments 301-304: The Department thanks you for your comment. Adoption of the proposed ACT rule would provide many social, environmental, and economic benefits for New York.

Comment 305: While some electric trucks may have higher initial costs than their diesel counterparts today, electric truck owners and operators see drastically reduced fuel and maintenance costs. Furthermore, the initial cost gap between the two is shrinking each year and, in some applications, electric trucks have lower total cost of ownership today. A recent UCS review of several studies on electric truck ownership found that in nearly every case, battery electric trucks, including long-haul semi-trucks, are cheaper than diesel vehicles on a total-cost-of-ownership basis for vehicles purchased within the next 10 years. In our New York-specific analysis, we also found the ACT rule would save fleet owners \$270 million annually by 2050, largely from savings on fuel and maintenance. If DEC adopts the ACT rule, it will further the cost parity between electric and diesel trucks and place New York among a growing group of states leading the transition toward cleaner and more efficient commercial vehicles. Commenter 251.

Comment 306: The rules are cost-effective because of the lower fuel costs for electricity and will be effective on a total cost of ownership basis. By next decade they will actually be cost parity on purchase price basis as well. The New York State and the region is prime for electrification today. Commenter 2302.

Response to Comments 305-306: The Department thanks you for your comment. MHD ZEV operators

could realize significant fuel and maintenance savings. The Department notes that the total cost of ownership of MHD ZEV trucks has many variables, including the type of charging infrastructure, existing electrical service, truck weight, and vocation. Total cost of ownership parity between MHD ZEVs and conventional MHD diesel trucks is anticipated for most weight classes within the next decade.

Comment 307: In addition, these vehicles will need to be recharged in one of the nation's highest-cost electric energy markets. Commenter 255.

Response to Comment 307: MHD ZEV operators will likely see significant fuel and maintenance savings when compared to equivalent diesel trucks.

Comment 308: Unlike the case of consumers purchasing light duty vehicles, heavy-duty fleets evaluate and purchase commercial vehicles based mainly on their return on investment and total cost of ownership. Today's vehicle and battery prices, together with the uncertainty of electricity charging costs, charging structure buildout, and vehicle residual values make it nearly impossible for fleets to purchase these vehicles and integrate them into their operations without substantial public funding. Commenter 256, 2312.

Response to Comment 308: The total cost of ownership (TCO) of MHD ZEV trucks when compared to equivalent diesel trucks is likely to continue to improve with almost all applications having a favorable TCO within the next 10 years. Some MHD ZEV application have already demonstrated TCO parity. The TCO calculations do reflect the costs associated with charging and refueling infrastructure. The NYSERDA NYTVIP and NYCCTP currently offer incentives to help offset the higher purchase cost of

MHD ZEVs. A \$15 million MHD Vehicle Make Ready Pilot, utility fleet assessment services, and a Clean MHD Vehicle Innovation Prize competition complement NYTVIP and NYCCTP.

Comment 309: Medium and heavy-duty electric vehicle infrastructure has different functional requirements compared to light duty charging. Commercial vehicle fleets will require multiple Level 2 (L2) and fast DC charging options at varied locations to support high power opportunity charging. Due to vehicle operation, fleets will need to account for infrastructure costs which can range from \$50K for an L2 to \$175K for a Fast DC charger into their payback models. This can have significant impact on fleets with limited reserve operating margin and/or those that operate in vocations that are not currently viable for electrification. Commenter 263.

Response to Comment 309: Commercial MHD applications will employ multiple charging options. The costs for installing EVSE will vary greatly based on existing site electrical infrastructure, degree of required electric utility upgrades, the type of equipment (i.e., L2, DCFC), and charging rate requirements. The ACT regulation does not include a fleet purchase requirement. MHD fleets will still have the ability to make purchase decisions that include all fuel types, including ZEVs. It may be possible that a MHD ZEV may not be available, or feasible, for a particular vocation or application within the proposed regulatory timeframe.

Comment 310: The reason for this strong interest is clear – the economics of electrified heavy-duty vehicles are incredibly compelling for end-users. Tesla estimates that the time to recoup the investment in a Tesla Semi, given the operational savings it provides customers compared to a conventional class 8 truck, will be approximately two to three years (class 8 diesel trucks have a 15-year average lifetime).

With the per mile operational costs being so much less expensive than that of diesel trucks, economic minded operators will maximize the use of their electric trucks and quickly expand the number of electric trucks in their fleets. Commenter 269.

Response to Comment 310: The Department thanks you for your comment. Over the MHD ZEV useful life, lower operational and maintenance costs for MHD ZEV trucks will help offset their initially higher purchase costs and associated charging/refueling infrastructure when compared to equivalent diesel trucks. New York also has two incentive programs, NYTVIP and NYC CTP, that for the purchase of new MHD ZEVs.

Comment 311: The cost of a new ZEV can be as much as 60,000 dollars more than a diesel model, all factors considered. As mentioned previously, the vast majority of trucking companies in New York are small. They are family-owned multigenerational companies that simply do not have the resources to purchase this equipment. Commenter 2320.

Response to Comment 311: Many trucking companies in New York State are small businesses. The proposed regulation is a MHD manufacturer ZEV sales requirement and does not include a fleet purchase requirement.

The proposed ACT standards does mandate an increasing annual sales percentage of MHD ZEV trucks, but it does not ban the sale or use of internal combustion, fossil fueled MHD vehicles. Individual small businesses will continue to have a wide selection of MHD vehicles with various power sources to consider when making a vehicle purchase. In addition, incentives to help offset the higher initial purchase price of MHD ZEV trucks are available through the NYSERDA NYTVIP and the NYCCTP.

There is also a \$15 million MHDV Make Ready Pilot Program, utility fleet assessment services, and a Clean MHD Vehicle Innovation Prize competition to complement NYTVIP and NYCCTP.

Environmental and Public Health Benefits

Comment 312: All New York residents and all human beings for that matter have a right to breathe clean air. Our government has the capacity to uphold this basic human right by adopting the ACT rule.

Commenter 2317.

Response to Comment 312: The Department thanks you for your comment.

Comment 313: Transportation is the leading source of air pollution and greenhouse gas emissions in New York. Medium and heavy-duty diesel-powered trucks are linked to harmful health impacts such as asthma attacks, heart attacks, lung cancer, and premature deaths. These air pollutants disproportionately affect communities of color due to their proximity to high-traffic areas. For example, in New York, 74% of Black people and 80% of Asians live in a county with unhealthy air quality due to transportation emissions. By transitioning to zero-emissions vehicles, we can improve public health outcomes across the state. Commenters 3-114, 116-120, 122-152, 154-157, 159-163, 165-168, 170, 172-198, 202-203, 205-212, 215-217, 219-225, 227-232, 234, 237-240, 252, 261.

Comment 314: Looking at New York State as a whole, approximately 2.7 million Latinos, 2 million African Americans, and 1.2 million Asian Americans experience concentrations of PM_{2.5} from transportation above the state average, representing 74% of the state's Black and Latino residents and 80% of the state's Asian American residents. By contrast, more than two-thirds of white New Yorkers

live in areas with transportation pollution well below the state average. The ACT rule will accelerate the transition to clean zero-emission vehicles, protect public health, and help tackle the climate crisis by reducing emissions from one of New York's most polluting sectors: MHDVs. However, additional programs will be needed to ensure targeted emission reductions in environmental justice communities. Commenter 264.

Response to Comments 313-314: The transportation sector is a leading source of criteria and greenhouse gas emissions in New York and may have deleterious impacts on individuals' health. Communities of color often bear a disproportionate burden due to their proximity to high-traffic areas including ports, intermodal hubs, highways, etc. The commentor's percentages are similar to percentages seen in various publications including a Union of Concerned Scientists fact sheet titled *Inequitable Exposure to Air Pollution from Vehicles in New York State*.³²

Comment 315: Implementing this rule will reduce the harmful impacts of trucking pollution in New York through the shift to zero-emission technologies, meaning less harmful air and climate pollution and healthier lungs. These rules represent a critical opportunity to advance the widespread transition to zero-emission technologies to advance clean air benefits and reduce health impacts associated with heavy-duty truck pollution. Commenter 233.

Response to Comment 315: The Department thanks you for your comment. The proposed rule will help reduce diesel exhaust emissions from MHD vehicles, improve air quality and reduce health impacts.

³² <https://www.ucsusa.org/sites/default/files/attach/2019/06/Inequitable-Exposure-to-Vehicle-Pollution-NY.pdf>

Comment 316: The American Lung Association's State of Air Report 2021 notes that over 327,000 children and 1.4 million adults in New York live with asthma and face greater risks due to unhealthy air. The New York Metropolitan Area ranks as the 14th most ozone-polluted city in the United States, and 20th most particle-polluted. Breathing unhealthy air can cause asthma attacks, increased risk of respiratory infection, heart attacks and strokes, lung cancer and premature death. Children, older adults, people with heart and lung illnesses, lower income residents and people of color face increased risks due to poor air quality. Climate change amplifies public health risks and disparities, including increasing conditions for poor air quality. Commenter 233.

Comment 317: Many downstate counties, including my home county of Putnam, receive D or F grades from the American Lung Association for their ozone air pollution and the New York metropolitan area ranked 13th most polluted urban area for ozone nationwide. Ground level ozone is dangerous for health conditions including COPD and asthma and cause an increased risk of premature death. Children are at higher risk from ozone exposure especially for asthma exacerbations because their lungs are still developing and they are likely to be active outdoors when ozone layers are high.

Diesel-powered medium- and heavy-duty vehicles release particulate matter which include fine particulate matter in a number of organic compounds. Diesel exhaust is responsible for detrimental health consequences including lung cancer, worsened chronic heart and lung diseases such as asthma, and premature death. The health harms are worse for people living along highways and in areas near industrial and poor areas. These are often communities of color and low-income

communities, making it a significant environmental justice issue. The American Lung Association ranked the New York metro area 20th nationwide for the most polluted. We have no time to waste for transitioning to a clean transportation sector for both our health today and to address the health crisis of climate change in meeting our climate goals under the CLCPA. Commenter 2307.

Comment 318: As noted by DEC and in its regulatory impact statement, the proposed amendments are consistent with New York State Climate Law to reduce greenhouse gas emissions in the state and pollutants like nitrous oxide, nox, and particulates in disadvantaged communities. I urge the DEC to adopt the ACT rule immediately. We cannot delay in reducing our greenhouse gases. Commenter 2321.

Response to Comments 316-318: The Department thanks you for your comments.

Comment 319: Adopting the ACT rule will ensure increasing sales of zero-emission trucks in New York to reduce harmful air and climate pollution, save lives and reduce disparities in pollution exposures. The NYSDEC estimates that the transition to zero-emission trucks would significantly reduce smog-forming Oxides of Nitrogen (NOx), fine particle pollution and climate-forcing greenhouse gases. Commenter 233.

Comment 320: The implementation of the ACT rule would accelerate zero-emission truck sales, mitigate negative impacts of mobile source emissions statewide and improve air quality for communities disproportionately impacted by transportation related pollution.

At Zeem, we target locations for our depots near transportation hubs and major arteries with high truck traffic in disadvantaged communities (DACs) providing social, economic and environmental benefits. Transportation is the largest source of greenhouse gases in New York with commercial trucks disproportionately emitting more GHG than any other mobile source. The proposed regulation complements New York's ongoing efforts and investments to electrify the transportation sector and help achieve the state's climate goals. More importantly, it would address disproportionate health risks by reducing emissions in communities that have been overburdened by transportation pollution for decades. ACT adoption would help Zeem provide equitable access to zero emission vehicles for trucking companies operating in and around DACs directly mitigating harmful health related impacts from diesel emissions. Commenter 242.

Comment 321: Pollution from motor vehicles disproportionately impacts communities of color and low-income communities in New York State and across the region. MHDVs, many of which emit carcinogenic diesel exhaust, produce an outsized share of the air pollution and are responsible for much of the associated adverse health impact. Eliminating tailpipe emissions from MHDVs and other vehicles would immediately improve air quality and public health across the state, but especially those communities that are currently the most exposed to the harmful effects of today's inequitable and unjust transportation system. It would also further the CLCPA's equity provisions, which require the state to prioritize emission reductions in disadvantaged communities. By establishing a market for zero-emission MHDVs, the ACT rule would lay the foundation to allow the fleets with the most significant local impact to transition away from high-emitting vehicles. While adopting the ACT rule is an important first step, New York must also adopt additional measures, policies, and programs designed specifically to ensure reductions in air pollution from transportation in communities of color and low-income

communities (i.e., environmental justice communities). Commenter 262.

Comment 322: The transportation sector is responsible for a disproportionate share of toxic air pollution that impacts the health of communities across the state. Pollution from these vehicles like trucks and buses are the major reason why we see elevated exposures to toxic pollutants in communities of color and low-income communities around the state. These communities tend to live, work, or attend schools near highways, warehouses, bus depots, ports and other facilities that attract a major amount of truck traffic. Hundreds and even thousands of trips a day. This drives poor health outcomes in these neighborhoods. Commenter 2302.

Comment 323: Transportation is the largest source of greenhouse gas emissions in the state, and trucks in particular are a major source of emission and pollution criteria in New York. The toxic fumes from these trucks are an environmental and public health crisis leading to numerous respiratory and cardiovascular diseases and extracting a heavy toll in medical bills and diminished quality of life. Moreover, truck pollution disproportionately harm communities of color and low-income communities who tend to live adjacent to freight hubs. Commenter 2306.

Comment 324: Reduced emissions will result in substantial and vital health benefits especially for people living in areas of heavy-duty truck and bus traffic. Commenter 2310.

Comment 325: This localized pollution is most likely to affect people who live near freight and vehicle corridors, sports, and bus depots. In practical terms, this means that low and moderate income families and environmental justice communities often bear a disproportionate brunt of industrial pollution. This

increased exposure to pollution has real health consequences including higher rates of respiratory and cardiovascular disease and co-morbidities that may exacerbate the severity of COVID-19 and other illnesses. Commenter 2314.

Comment 326: According to pediatricians, children are particularly vulnerable to air pollutants because their lungs are still developing and they tend to spend more time outside. Can we really accept a world in which it's becoming increasingly unsafe for our children to just go out and play because the air they inhale could make them sick? We also know that harmful pollutants from cars, trucks, and buses are more concentrated in and have more damaging effect on communities of color because major highways, warehouses, and other truck infrastructure are often located near these communities. Commenter 2317.

Response to Comments 319-326: The Department thanks you for your comments. The proposed rule will help reduce diesel exhaust emissions statewide and improve air quality in disadvantaged communities.

Comment 327: NYSDEC estimates health benefits of \$3.3 billion between 2025-2040 associated with implementation of the rule. Further, the American Lung Association's 2020 Road to Clean Air report estimates that the widespread transition to zero-emission vehicles (including the trucking sector included in the ACT program) could generate an annual public health benefit of over \$4 billion in New York, saving over 150 lives per year and avoiding over 5,100 asthma attacks. A key policy recommendation in the Road to Clean Air report is for states to adopt zero-emission trucks standards to advance healthier air for all communities, and we applaud New York for moving forward with this

rule. Commenter 233.

Comment 328: The benefits of zero-emission transportation are clear, and the transition in the medium- and heavy-duty sector is vital to improving and protecting health. Commenter 233.

Comment 329: Air pollution from our transportation system is a direct threat to local communities – often low-income communities of color – as well an existential threat to humanity on a global scale. We believe rules like the ACT Rule are critical tools needed to continue to push the market toward a broader and more robust zero emissions trucking system. According to one recent study, this Rule would provide a host benefits to the state of New York by 2050:

- Preventing 231 hospital visits and 237 premature deaths,
- Avoiding 155,116 of lost work days from respiratory illnesses,
- Achieving \$2.7 billion in state public health savings,
- Slashing greenhouse gas emissions by 64 million metric tons,
- Adding thousands of new jobs and GDP growth of \$453 million. Commenter 243, 2313.

Comment 330: A recent study found that if New York adopts the ACT in 2021, the state will unlock over \$3.3 billion in private and public investment in charging infrastructure through 2050. Additionally, plugging in thousands of new electric trucks and buses will spread an increasing amount of electricity demand over the largely fixed costs of the system. Utility net revenue from increased electricity sales from the ACT rule is projected to be about \$325 million by 2050. These savings would be passed directly to New York customers, resulting in reduced utility bills with annual savings of \$32 per

household and \$152 per business per year by 2050. Commenter 248, 2316, 2323.

Comment 331: The ACT will also provide major public health benefits. Toxic, local air pollution caused by internal combustion engines poses a significant risk to public health and therefore considerable economic costs in the form of additional hospital visits and healthcare expenses, decreased work productivity, and missed workdays. In fact, a robust economy is predicated on a healthy workforce and a healthy consumer population. Coupled with policy direction provided from the adoption of the Heavy-Duty Omnibus (HDO) rule, it is projected that the ACT will result in \$6.3 billion in avoided health costs by 2050. Commenter 248, 2316.

Comment 332: Recent analysis confirms that the rule will actually reduce hundreds of tons of toxic pollution and will deliver billions of dollars in cost savings and health benefits to New Yorkers. Commenter 2302.

Comment 333: Adopting the ACT rule will also reduce emissions of nox which contributes to ozone formation and particulate matter which will contribute to 3.3 billion dollars in health-care savings from 2025 to 2040. Commenter 2321.

Response to Comments 327-333: The Department thanks you for your comment. The proposed rule will reduce diesel exhaust emissions and provide significant health benefits.

Comment 334: Not only are medium- and heavy-duty trucks a climate issue for New York, but they are also a major public health problem. Diesel emissions are responsible for dangerous levels of nitrogen

oxides and fine particulate matter that increases the risk of severe respiratory illnesses and other health problems. We have only seen this issue amplified as studies continue to link long-term exposure to fine particulate matter with an increased risk of death from the COVID-19 pandemic. Commenter 241.

Comment 335: Adopting the ACT will help New York meet the goals established in the 2020 multi-state MOU on medium- and heavy-duty vehicles, to which New York is a signatory. This rule will significantly clean up the MHDV fleet, which is responsible for a disproportionate amount of NOx emissions. According to a recent study conducted by MJ Bradley and Associates, implementation of the ACT rule is projected to reduce over 123,000 metric tons of NOx and particulate matter over the next 30 years from New York's highest emitting sector. The study also found that ACT would curb over 155,000 cases of respiratory illnesses across New York based on projected air quality improvements, resulting in \$2.77 billion in estimated health benefits.

Adopting the ACT will meaningfully advance the electrification of school buses and, therefore, improve the health of the roughly 2.3 million students who take the bus to school each day. New York's children are exposed to harmful diesel emissions every day on their commutes to and from school. Students inside diesel school buses are exposed to pollution levels as much as twelve times higher than ambient levels outside, which is linked to reduced lung development and negative impacts on cognition and academic performance. Moreover, marginalized communities are disproportionately impacted by the effects of diesel pollution, so a transition to electric school buses across the state will also help to address racial and economic inequities. Commenter 244.

Comment 336: Adopting these rules is also consistent with the multistate medium- and heavy-duty truck

emission vehicle memorandum of understanding that New York has signed. Commenter 2310.

Response to Comments 334-336: The Department thanks you for your comments. The proposed rule will improve air quality health concerns for children throughout New York State, as well as help improve air quality in disadvantaged communities that have been disproportionately impacted by diesel exhaust pollution.

Comment 337: Zeem supports and applauds Governor Hochul's comprehensive plan to combat climate change helping to make New York a clean energy leader in the country. Electrifying the transportation sector is a key component of that plan and the state's emissions reduction goals. Private sector partners in the clean energy industry are attracted to expand and conduct business in states with favorable policies. ACT would further incentivize collaborative investment that will support decarbonizing transportation and improving air quality as well as create jobs and generate economic growth. Commenter 242.

Response to Comment 337: The Department thanks you for your comment.

Comment 338: Indicators of truck traffic and industrial land-use consistently explain spatial patterns across the City's neighborhoods in monitoring data on nitrogen oxides, fine particulates and black carbon from the New York City Community Air Survey, demonstrating the influence that truck emissions have on the City's air quality. A New York City Department of Health and Mental Hygiene burden assessment of motor vehicle emissions in the City found that PM_{2.5} from on-road mobile sources contributed to 0.7% of all deaths in the City each year, with the largest share due to emissions from

trucks and buses, even though these vehicles' miles traveled contribution was only 6%. The burden assessment also found higher densities of truck traffic and PM2.5-attributable deaths and hospitalizations in low-income neighborhoods—communities that already suffer from systematic disinvestment and multiple environmental exposures. Relative to more affluent neighborhoods, high-poverty neighborhoods in the City had 1.7 times the PM2.5 exposure and 9.3 times the rate of emergency department visits for asthma due to emissions from trucks and buses. Commenter 246.

Response to Comment 338: The Department thanks you for your comment.

Comment 339: Adopt the ACT before the end of 2021 to maximize economic, health and environmental benefits and avoid missing key compliance deadlines that, if missed, would allow thousands of new diesel vehicles onto New York roads that would not transition to zero-emission models for decades to come. Commenter 248, 264, 2302, 2305, 2306, 2314, 2317.

Response to Comments 339: The Department thanks you for your comments.

Comment 340: As DEC has noted, transportation accounts for 36 percent of the state's global warming emissions, more than any other end-use sector. And the states medium- and heavy-duty vehicles (MHDV) make up a disproportionate share of this—they comprise only 5 percent of the state's registered vehicles, but make up 24 percent of global warming emissions, 52 percent of nitrogen oxide emissions, and 45 percent of particulate matter emitted from on road vehicles. Given the long lifetimes and high usage of these medium and heavy-duty vehicles, they represent a disproportionate amount of climate and air pollution from the transportation sector.

The map below shows how on-road diesel pollution from trucks and buses is concentrated in certain areas of the state, usually at the nexus of truck routes and other goods movement infrastructure (ports, warehouses, railyards, etc.). New York City accounts for more than 40 percent of the population of the state and is one of the country's biggest logistical centers with some of the highest diesel pollution in the country. Other hot spots across the state include Albany, Buffalo, Rochester, and Syracuse. These diesel pollution hotspots in New York State overlap with communities experiencing inequitable burdens from all on-road vehicle pollution, other environmental risks, social determinants of health, and socioeconomic vulnerabilities.

Diesel pollution disparities exist at multiple scales — between different states, cities, neighborhoods, or even ends of a city block. It is important to note that this map utilized a reduced-form air quality model to estimate PM_{2.5} exposure at the census tract level and captures only some disparities in air pollution exposure. Other studies and projects utilizing satellite techniques and hyperlocal air quality monitors have demonstrated how within-city air pollution disparities are also severe in New York and are largely driven by diesel trucks.

Electric trucks are not a silver bullet to addressing these disparities, but could be an important tool if strong policies, beyond the ACT rule, are put into place to ensure these cleaner trucks reduce pollution in overburdened communities first. Battery electric trucks have zero tailpipe emissions and when charged on the Northeast electric grid, have around 66-87 percent lower lifecycle global warming emissions compared to diesel trucks, depending on the vehicle application (e.g., long-haul semi-truck vs. local delivery truck). Given projected increases in vehicle miles traveled and freight activity, the

goals of the Climate Leadership and Protection Act (CLCPA) of net-zero overall global warming emissions by 2050 will not be met without having more electric trucks on the market and in use. Commenter 251, 2304.

Comment 341: While people often speak about how the climate crisis will impact future generation, the reality is that we are experiencing the impacts of the climate crisis now. It is clear that New York needs to take immediate action this year to clamp down on climate-driven emissions, the largest source of which is from our transportation sector, contributing to 40 percent of the state's total carbon dioxide emissions and 36 percent of all greenhouse gas emissions by sector. Commenter 2305.

Comment 342: The rule would help New York to make necessary progress towards addressing its ground level ozone particulate matter in greenhouse gas pollution. This is because while medium- and heavy-duty trucks and buses make up only a small percent of the state's registered vehicles, 5 percent, they contribute a disproportionate share of nitrogen oxide which is a ozone protector, fine particulate matters in greenhouse gases. Commenter 2307.

Comment 343: New York City's transportation sector is the largest contributor of carbon pollution, responsible for 36 percent of all greenhouse gas emission in the state and rising. It is also a significant contributor to help impacting pollution. Mobile emission sources produce nearly two-thirds of nox emissions in the state, and within the transportation sector medium- and heavy-duty trucks and buses produce an outsized share of pollution relative to their population. Commenter 2314.

Comment 344: Transportation, as people have mentioned before, is responsible for a whopping 36

percent of all greenhouse gas emissions in New York State. While medium- and heavy-duty vehicles are only 12 percent of all the vehicles on our roads, they produce disproportionately high levels of dangerous emissions. These emissions not only damage the ozone layer and contribute to the climate crisis, they also pour toxins into the air around us leading to asthma, bronchitis, and other serious respiratory illnesses. I have three family members who struggle with asthma, and as a school teacher, I saw the number of young students with asthma increase significantly over the years. Commenter 2317.

Response to Comments 340-344: The Department thanks you for your comments. New York has and will continue to implement policies with a focus on disadvantaged communities that have historically been subjected to disproportionate amounts of diesel exhaust. The NYSERDA NYTVIP (e.g., trucks, transit buses, school buses) and the NYCCTP (e.g., trucks) incentive programs both have a strong disadvantaged community focus for MHD vehicle replacement projects. This proposed rule also supports the CLCPA greenhouse gas emission reduction requirements and disadvantaged community air quality goals.

Comment 345: In a study UCS conducted with NRDC and M.J. Bradley & Associates, we found complementary results to the estimates in this rule's regulatory impact statement and the International Council on Clean Transportation's (ICCT) study of climate and air pollutant emissions reductions. We estimated that the ACT rule would make a substantial impact, and result in electric trucks making up 17 percent of the trucks on the road by 2035—over 124 thousand vehicles. That's far more trucks than New York has today, but is also only a first step towards how many the state needs in order to address its climate and public health crises. Even with its adoption, in 2035 there will be another 83 percent of

trucks on the roads still emitting dirty diesel exhaust. Ultimately for our health and climate, every truck on the road needs to be a zero-emission vehicle. Commenter 251, 2304.

Response to Comment 345: The Department thanks you for your comment.

Comment 346: We found that the ACT rule would result in a 5.1 million metric ton (41 percent) reduction in annual MHDV fleet greenhouse gas (GHG) emissions, a 123 metric ton (38 percent) reduction in annual MHDV fleet PM2.5 emissions, and a 10,350 metric ton (46 percent) reduction in annual MHDV fleet nitrogen oxide (NOx) emissions by 2050 from a baseline scenario. Commenter 251.

Comment 347: Although medium- and heavy-duty trucks and buses account for only 12 percent of all vehicles on the road in New York, they are responsible for a bulk of the toxic air pollutant. Fifty-two percent of the nitrous oxide emissions and nearly 45 percent of the particulate matter is introduced by the entire transportation sector. Commenter 2305, 2306.

Response to Comments 346-347: The Department thanks you for your comments.

Comment 348: Cumulatively over the next 30 years, we estimate the ACT rule would result in reductions from baseline of 64 million metric tons in GHG, 122,000 tons of NOx, and 1,483 tons of PM2.5 emissions. The HDO rule would increase cumulative NOx emissions reductions to 339,000 tons, and additional policies could reduce emissions even further. By 2050, the state would save more than \$2 billion in avoided health costs with these emissions reductions, and prevent over 230 deaths, 155,000 respiratory illnesses, and 230 hospital visits. Commenter 251.

Response to Comment 348: The Department thanks you for your comments. The Department notes that several commenters provided emission reduction estimates based on time periods that differ from the Department's analysis (i.e., 2025-2040).

Comment 349: NGV America believes the best approach is to focus on what matters the most – accelerating the timely retirement of older, higher emitting vehicles from New York's roads. Taking older trucks off the road, adopting policies that reduce congestion in neighborhoods with exceedingly high pollution, increasing access to affordable, lower-polluting public transit, and implementing other similar measures, will provide more immediate relief and longer-lasting public health benefits than trying to force businesses and fleets to slowly incorporate costly and unproven technology. And using available funds to accelerate the uptake of commercially available, low-polluting cost-effective trucks will provide more immediate reductions than waiting for the slow phase-in of a sales mandate that is likely to fail because it is too heavily reliant on electric vehicles. Commenter 254.

Response to Comment 349: The Department believes the ACT MHD ZEV sales requirement will support the transition of the MHD fleet to zero emission vehicles resulting in improved air quality and public health. Promoting lower emissions conventionally fueled MHD trucks over ZEV trucks will make it difficult for New York to meet the emission limits established by the CLCPA.

Comment 350: NGV America's members are committed to increasing the use of new ultra-low NOx medium- and heavy duty natural gas-powered trucks and buses – these engines perform at levels that are 95% below the federal NOx standard and 98% below the PM standard. New natural gas ultra-low

NOx engines operating on renewable natural gas – available today – produce greenhouse gas emissions that are 75 to 500 percent lower than diesel powered vehicles and deliver carbon neutral or carbon negative emissions in real world applications. Today, the majority of fuel used in on-road natural gas vehicles is renewable natural gas. RNG use accounted for 92 percent of the fuel consumed in California in natural gas vehicles in 2020, while 53 percent of fuel consumed in nationally in natural gas vehicles was RNG. This use is expected to increase as many fuel providers in our industry are committed to supplying greater volumes of RNG and some plan to only offer RNG in the future. NGV America's members have set a goal of achieving 80 percent penetration of RNG in on-road fuel use by 2030 and 100 percent by 2050. Commenter 254.

Comment 351: The latest data from California's low carbon fuel standard (LCFS) program demonstrates just how clean and low carbon these heavy-duty, high fuel use vehicles truly are – the average carbon intensity of bioCNG sold in California in 2020 was -5.85 g/MJ and in the second quarter of 2021, the average was -35.87 g/MJ. Vehicles fueled by fully renewable electricity produced from solar and wind do not achieve such an impressive carbon negative intensity score. Commenter 254.

Response to Comments 350-351: RNG vehicles may have limited application when electrification is not feasible, but RNG widespread usage in the transportation sector will be insufficient for New York to meet the greenhouse gas reductions required by the CLCPA and the 100% MHD ZEV sales goal by 2045, where feasible, established under Chapter 423 of the Laws of 2021. The CLCPA requires a different greenhouse gas accounting methodology compared to other states or programs which results in smaller environmental benefits for RNG.

Comment 352: It is inexplicable that policy makers continue to ignore the upstream emissions associated with zero-tailpipe emission vehicles and refuse to open up the regulations to encourage and incentivize vehicles powered by low-carbon, carbon neutral and even carbon negative fuels. The refusal to include these other vehicles and fuels not only ensures that the rollout of cleaner, lower emitting trucks will be delayed but raises serious doubts about the viability of the strategy that as the Biden Administration points out faces serious challenges. Commenter 254.

Comment 353: As recognized in the Biden Administration's "Long Term Strategy," just released as part of its COP26 policy contribution, achieving net-zero emissions will require focusing on a variety of strategies beyond just electrification. As noted in the plan, the Biden Administration will "prioritize clean fuels like carbon-free hydrogen and sustainable biofuels where electrification is challenged." The plan elsewhere specifically calls attention to the limitations of electrification and the need to expand efforts to promote the use of low-carbon biofuels and hydrogen: "Accelerated research, development, demonstration, and deployment of lower-carbon fuels, such as clean hydrogen and sustainable biofuels, will contribute to the decarbonization of applications that may be more difficult to electrify including aviation and marine transportation and some medium- and heavy-duty trucking segments." Commenter 254.

Comment 354: Because NYSDEC has chosen to simply scale the California Air Resources Board (CARB) analysis, it replicates CARB's failure to assess upstream mining emissions. Commenter 266.

Response to Comments 352-354: In addition to the proposed ACT rule, New York will consider the adoption of complementary emission reduction strategies in the short term. While the proposed ACT

standards do mandate an increasing annual sales percentage of MHD ZEV trucks, it does not include a 100% sales ban of MHD fossil-fuel powered vehicles. There will likely be a demand for fossil fueled trucks, including those using biofuels, even after the regulatory timeframe of 2035. MHD ZEVs include battery and hydrogen fuel cell powered MHD vehicles.

The Department's evaluation of emission impacts from the proposed adoption of ACT included two modeling exercises: California's Attachment D, Emissions Inventory Methods and Results for the Proposed Advanced Clean Trucks Regulation, and the ICCT WORKING PAPER 2021-23, Benefits in New York State of Adopting California Medium- and Heavy-Duty Vehicle Regulations, 2020–2050. California's evaluation did include upstream greenhouse gas emissions associated with energy production. The ICCT effort considered upstream emissions using a methodology similar to California's. Upstream emissions in New York are minimal as there is no petroleum refining in New York State.

Upstream mining emissions were not included in either effort. Neither California nor the U.S. EPA consider emissions from mining as they are considered vehicle production emissions. Neither California nor the U.S. EPA consider emissions from mining as they are vehicle production emissions. Any mining operations conducted in New York State would likely require an environmental impact assessment during the permitting process, and would have to comply with relevant regulatory requirements. Consideration of mining emissions on a global scale are considered outside of the scope of this proposed rule.

Comment 355: Under New York's landmark Climate Leadership and Community Protection Act of 2019

(CLCPA) - the goals of which DEC is in the process of implementing- New York must reduce its greenhouse gas (GHG) emissions by 85% by 2050. Given that New York's transportation sector is responsible for 47% of its GHG emissions,¹ decarbonizing transportation is essential to reaching this goal. The ACT is designed to complement our CLCPA goals, promoting accelerated decarbonization of the state's transportation sector. Commenter 258.

Comment 356: The Climate Leadership and Community Protection Act (CLCPA) set nation-leading mandates to reduce emissions, and DEC has adopted a binding greenhouse gas budget that applies to all sectors of the economy. Currently, transportation accounts for the largest share of greenhouse gas emissions in the state, and in contrast to other emission sources, transportation sector emissions are on the rise. At the same time we know that, given challenges in eliminating emissions from some other sectors, transportation sector emissions must be slashed to the fullest extent possible in order to meet 2030 and 2050 emission limits. Achieving these goals requires aggressive policymaking to spur the adoption of zero-emission vehicles across the entire on-road vehicle fleet, including passenger vehicles and commercial MHDVs. This is confirmed by the state's own modeling, which found that it would be virtually impossible to meet the CLCPA's binding emission reduction mandates without the ACT rule and other zero-emission vehicle sales mandates. Currently, electric trucks account for less than 1% of the on-road MHDV fleet; the ACT rule would increase the availability of zero-emission MHDVs across the state, allowing more fleets to transition off of fossil fuels. Adopting the ACT rule is therefore a necessary step towards meeting our climate targets. To maximize the rule's benefits, DEC should ensure that the rule is finalized before the end of the year, which will make sure the state captures the fullest extent of the ACT's market-enabling impact. Commenter 262.

Comment 357: To avoid missing compliance years and delaying the rule's sweeping benefits, it is imperative that New York adopt the ACT rule by the end of 2021. While some of the rule's opponents have raised misleading and/or misinformed reasons for delay, a previously submitted letter to DEC refutes those unsupported arguments. Commenter 264.

Comment 358: It's my understanding that DEC has a regulatory authority to enact this rule. I urge it to do so before the end of this year. Commenter 2310

Response to Comments 355-358: The Department thanks you for your comments. The proposed adoption of the ACT rule is consistent with the greenhouse gas emission reduction requirements established by the CLCPA, see Environmental Conservation Law Article 75, and the 100% MHD ZEV sales by 2045 goal established by Chapter 423 of the Laws of 2021.

Comment 359: To achieve the bold GHG reduction commitments in the CLCPA, it will be necessary to rapidly accelerate the deployment of ZEVs, including MDHVs. Even with the ACT rule and 100% light-duty ZEV sales in place, preliminary modeling shows that GHG emissions from transportation will only be reduced by 55% in 2050, compared to a reference case scenario. Fully implemented, the ACT rule will still allow 25–60% of sales to be combustion engines in certain segments. New York should view adoption of the ACT rule as a necessary first step in achieving the transformative changes necessary to decarbonize the transportation sector, but not the only strategy. We must strive for 100% ZEV sales across MHDVs where feasible, and take bold actions to get there. Commenter 264.

Response to Comment 359: The Department thanks you for your comment. The proposed rule includes

a requirement for MHD manufacturers to meet increasing annual sales percentages of ZEVs. The Department notes that the recently enacted Chapter 423 of the Laws of 2021 establishes a 100% MHD ZEV sales by 2045 goal, where feasible.

Comment 360: One way for New York to start this transformation is to “lead by example,” in line with the Multi-State Memorandum of Understanding, which affirms the state’s commitment to “progress toward electrification of its government and quasi-governmental agency fleets.” New York should convert all state MHDV fleets to zero-emission vehicles where feasible, as soon as possible, and work with cities and counties to do the same. Several municipalities will require all vehicle purchases to be electric by 2030, and the state should be able to meet a similar timeline. Commenter 264.

Response to Comment 359-360: The Department thanks you for your comment. New York State and New York City recently joined the Climate Group’s ZEV Pledge where governments commit to fully converting fleet vehicles to ZEVs. New York State and New York City committed to converting their respective medium- and heavy-duty fleets to ZEVs by 2040. New York State also committed to converting its light-duty vehicle fleet to ZEVs by 2035.³³

Chapter 432 of the Laws of 2021 requires all new light-duty (e.g., passenger cars, pickup trucks, SUVs) sales to be ZEVs by 2035, and all new medium-and heavy-duty vehicle sales to be ZEVs, where feasible, by 2045.

³³ <http://www.usclimatealliance.org/publications/2021/11/7/us-climate-alliance-states-commit-to-new-high-impact-actions-to-achieve-climate-goals-and-go-further-faster-together>

Comment 361: Tesla supports the ambitious climate goals laid out by New York in the Climate Leadership and Community Protection Act (CLCPA), requiring 40% emissions reductions from 1990 levels by 2030 and 85% reductions by 2050, and the recently enacted ZEV law requiring 100% of new light-duty vehicles be ZEVs by 2035 and 100% medium- and heavy-duty ZEV sales by 2045. Taken together, these bold laws commit the state to dramatically reducing GHG emissions, improving air quality, increasing the adoption of electric vehicles, and enhancing public health and quality of life for communities across the state. The transportation sector is the largest contributor of greenhouse gas emissions in New York, contributing approximately 36% of emissions. The analyses guiding the work of the Climate Action Council clearly show that reaching the commitments of the CLCPA will require aggressively decarbonizing its transportation sector in New York. To have any chance of meeting its goals, truck operators in New York must have access to the newest models of zero emissions trucks in all classes on the market and the ACT is the key regulatory tool to make sure that these advanced vehicles are available to New York's truck fleets. The ACT rule will encourage electric truck manufacturers to focus more time, energy, and resources on selling trucks to operators in the state. This will not only help to accelerate the adoption of these trucks but will ensure that there is ample supply of electric trucks of all classes available for truck operators in the state.

Most importantly, this effort will reduce harmful tailpipe emissions in the state significantly. Given the emissions profile of diesel trucks, the ACT will have a dramatic positive impact both on reducing GHG emissions and criteria air pollution, particularly in disadvantaged and low-income communities that traditional have borne the brunt of diesel pollution and adverse climate impacts. As one of the first states to adopt the rule, New York would be among the first to realize the enormous benefits from the deployment of medium and heavy duty zero emission vehicles.

We appreciate and support New York joining the multi-state memorandum of understanding (MOU) with 14 other states and the District of Columbia to zero-out emissions from new medium- and heavy-duty trucks and buses by 2050. The Rhodium Group in a recent analysis found that the MOU “would reduce US oil demand by 138 to 144 million barrels cumulatively by 2035, depending on the pace of future economic recovery. Its impact grows substantially over time as the stock of medium and heavy-duty trucks turns over, resulting in a cumulative reduction of 709 to 740 million barrels by 2045. If the MOU were expanded nationally, the impact would increase six-fold.” This reduced oil demand would lead to drastic reductions in GHG emissions from the transportation sector. “The current MOU could reduce 277 to 289 MMT CO₂ by 2045, on a cumulative basis, and reduce annual GHG emissions from medium and heavy-duty trucks by 11 MMT or 1% of US truck emissions in 2035, and 35 MMT or 2% of total US truck emissions in 2045. This would result in an estimated 1.8 to 1.9 billion metric tons of cumulative emissions reductions by 2045, and annual GHG emission reductions of 70 MMT or 5% of US truck emissions in 2035, climbing to 252 MMT or an 18% reduction in US truck emissions in 2045, relative to the baseline.” While the MOU was an important first step, it will do nothing to reduce emissions unless the signatories to the MOU actually enact the recommended actions found therein. The ACT rule is an essential step forward to seeing actual emissions reductions from the medium- and heavy-duty transportation sectors in New York. Commenter 269, 2315.

Response to Comment 361: The Department thanks you for your comment. The proposed rule would lead to drastic reductions in transportation related criteria pollutant and greenhouse gas emissions. This proposed rule also supports the emission reduction requirements of the CLCPA and the statutory 100% MHD ZEV sales goals by 2045, where feasible, within Chapter 432 of the Laws of 2021.

Comment 362: Electrification of MHDVs must be a major component of any strategy to improve air quality and public health throughout the state, and particularly in environmental justice communities. A study in California found that diesel exposures accounted for 70% of the cancer risk posed by all air toxics. Yet last year, 97% of new heavy-duty vehicle sales and 65% of new medium-duty vehicle sales were diesel. Clearly, state regulations are needed to move the MHDV market towards zero-emissions.

A study from the International Council on Clean Transportation (“ICCT”) found that ACT adoption would reduce annual NOx emissions by over 3,250 tons per year, and would eliminate a cumulative total of nearly 45,000 tons of NOx through 2050. The ACT would also reduce annual PM2.5 emissions by 50 tons per year compared to a business as usual scenario and would eliminate a cumulative total of 640 tons of PM2.5 emissions through 2050.

Evidence from New York City shows how the current pattern of PM2.5 emissions from MHDVs leads to disparities in health outcomes. The ACT rule, paired with policies that target ZEV deployments, can start the process of eliminating diesel emissions, which as mentioned above, is the major driver of inequality in exposure to air pollution. Adoption of the ACT rule will avoid 237 premature deaths, 231 hospitalizations, and over 155,000 health issues associated with diesel trucking by 2050, according to another analysis by M.J. Bradley & Associates. Commenter 264.

Comment 363: These air pollutions harm the health of our communities, especially frontline communities of color. No communities in New York deserves to be a sacrifice zone for the movement of goods. Adopting the ACT rule in New York would directly result in huge public health, economic, and

climate benefits including preventing 237 premature deaths, over 155,000 lost workdays from respiratory illness annually, and could even slash greenhouse gas emissions by 54 million metric tons. Commenter 2305.

Response to Comments 362-363: The Department thanks you for your comments. Improving air quality and public health throughout the state, and particularly within disadvantaged communities that have been disproportionately affected by diesel emissions, needs to be a priority. The proposed rule supports the emission reduction requirements of the CLCPA which includes a strong focus on prioritizing reductions of GHG and co-pollutant emissions in disadvantaged communities, and New York State's statutory goal of 100% MHD ZEV sales by 2045, where feasible within Chapter 432 of the Laws of 2021.

Comment 364: While adopting the ACT rule is an important first step, New York must also adopt additional measures designed specifically to ensure reductions in air pollution from transportation in communities of color and low-income communities (i.e., environmental justice communities). Environmental justice communities are exposed to disproportionately high levels of air pollution in New York and across the country. The CLCPA requires the state, both in its scoping plan and in promulgating regulations designed to achieve mandatory GHG reductions, to prioritize and maximize the reduction of GHG and co-pollutant emissions in disadvantaged communities. While the ACT will reduce overall emissions from MHDVs, complementary policies are necessary to comply with the CLCPA and ensure those reductions benefit communities that are currently overburdened by pollution. Complementary, targeted policies could include creating zero-emission zones where the use of internal combustion engine vehicles is limited; replacing and retrofitting existing diesel equipment; establishing deployment

and incentive programs for EV charging infrastructure; and mandating emission-reduction measures that target environmental justice communities, transportation corridors, and port regions. Additionally, the CLCPA requires a goal of 40% and no less than 35% of the benefits of climate-related investments, such as in the transportation sector, to accrue to disadvantaged communities. Under this provision, it is expected that future incentive programs and other investments meant to accelerate MHDV electrification should be targeted to disadvantaged communities. Commenter 264.

Response to Comment 364: The Department thanks you for your comment. Reducing air pollution, including GHGs and criteria pollutants, from the transportation sector in communities of color and low-income communities (i.e., disadvantaged communities) is a priority. The proposed rule supports the emission reduction requirements of the CLCPA which prioritizes benefits in disadvantaged communities. The Department, NYSERDA, and NYCDOT have implemented the existing MHD ZEV incentive programs to prioritize truck and bus replacement projects within, or near, disadvantaged communities.

Comment 365: Emissions from MHDVs are also significant contributors to regional and local air quality problems. Motor vehicles directly emit dozens of harmful pollutants, including carbon monoxide, black carbon, nitrogen oxides (“NOx”), fine and coarse particulate matter, as well a range of toxic air substances like benzene and formaldehyde. Emissions from MHDVs account for 24% of all GHGs from the on-road vehicle fleet and are also responsible for 52% of the NOx, and 45% of the fine particulate matter (“PM2.5”) emitted by on-road vehicles. These emissions also lead to the formation of “secondary” pollutants, like ozone, that are not directly emitted but form afterwards through reactions in the atmosphere. Each of these pollutants can cause adverse human health and environmental

impacts. Adoption of the ACT will help to reduce this health harming pollution—DEC estimates health benefits to New York of \$3.3 billion for 2025–2040, based on applied ratios of these metrics to California’s benefits and estimates. Commenter 264.

Comment 366: Electrification of MHDVs would eliminate tailpipe emissions and is thus a critical air quality and public health intervention. Nine counties in New York State, home to over 12 million New Yorkers, are currently in nonattainment of the federal air quality standard for ground-level ozone, or smog. Even as a mounting body of evidence points to health effects at lower levels (prompting EPA to consider an even more stringent standard in order to protect public health), the New York Metro Area remains in nonattainment of the now outdated ozone standard set in 2008, let alone the most recent standard set in 2015. Emissions from MHDVs have been pinpointed as “a major and growing contributor” of persistent ozone exceedances in the region. In fact, the Ozone Transport Commission, which includes New York State, issued a statement in support of “accelerat[ing] widespread adoption of zero-emission [MHDVs]” as a means to improve air quality throughout the region.

Within the region, air pollution is not evenly distributed. Numerous studies demonstrate the impact of MHDV emissions in contributing to existing disparities. A nationwide study found that air pollution is variable within cities along racial and income lines—and that intracity inequalities, which are especially severe in New York and throughout the Northeast, are largely driven by diesel trucks. Other studies have linked localized air pollution levels and related health outcomes within New York City to patterns of truck and bus traffic. A recent study by the New York City Environmental Justice Alliance used hyper-local monitoring to identify several air pollution “hot spots” adjacent to heavily trafficked facilities and corridors in the Bronx and Brooklyn. This finding confirms prior studies showing that the impact of air

pollution near Hunts Point in the Bronx, which attracts thousands of truck trips per day, “varies across the community as a function of large truck traffic.” In Albany, Department of Health data reveals a “substantial and consistent” discrepancy in asthma hospitalization rates and other health outcomes between the South End neighborhood, which experiences “heavy truck and other diesel vehicle traffic” and other industrial activity at the Port of Albany, and similar neighborhoods further from the Port. Commenter 264.

Comment 367: DEC’s Regulatory Impact Statement states that the Proposed rule “[is] consistent with the requirements of the CLCPA . . . to further reduce [GHG] emissions in the State.” The reality is much starker: there is no plausible way to achieve the CLCPA’s binding emission limits without adopting the ACT rule. Meeting the economywide emissions limit for 2050 will require a 86– 97% reduction in transportation sector emissions by 2050. Achieving emission reductions of this magnitude will require the “phase-out of internal combustion engine vehicles and replacement with electric drivetrains” across all on-road vehicle classes, according to the National Academies. Modeling presented to the Transportation Advisory Panel demonstrates clearly that there is no scenario where this transportation sector-specific target is met without adoption of ACT and parallel ZEV mandates for passenger vehicles. The transition to electric vehicles must happen “almost immediately,” and the Pathways Analysis found that zero-emission vehicles will need to be “normalized” by 2030 in order to achieve midcentury limits, given the expectation that MHDVs can stay on the road for several decades. This slow rate of attrition will impede natural fleet turnover towards zero-emission MHDVs, making immediate implementation of the ACT rule a critical and immediate priority given the fact that ZEV adoption in MHDVs lags considerably behind that in light-duty vehicles. Commenter 264.

Comment 368: Detailed analysis from the national academies makes it clear that achieving climate mandates will require the complete phaseout of polluting fossil fuel vehicles, not just for passenger cars, but for trucks and buses as well. The State's own modelling has confirmed that CLCPA targets will not be met unless we go forward with the ACT and other regulations to accelerate the transition to zero emission trucks and buses, and this transition must begin almost immediately given the fact that many trucks can stay on the roads for multiple decades. Commenter 2302.

Comment 369: As been noted, transportation is one of New York's major source of greenhouse gas emissions. DEC's proposed rule will further the important goals of the New York Climate Leadership and Community Protection Act, CLCPA, by reducing both greenhouse gas emissions and fine particulate matter. These reduced emission benefits are noted in the rule itself. New York State has one of the highest ambient concentration of particulate matter in the nation. This is why the proposed rule is so important for the people of New York. Commenter 2310.

Comment 370: The benefits of the ACT are significant. The California Air Resources Board determined that the rule provided significant cost benefits to fleet owners, will speed the transition to cleaner vehicles, and results in significant health and environmental benefits across the state. Indeed, a recent study by ICCT indicates that ACT adoption alone in New York will result in projected fleet-wide reductions between 2020 and 2040 of 62 percent of PM 2.5 and 42 percent of nox emissions. Commenter 2314.

Response to Comments 365-370: The Department thanks you for your comment. New York's adoption of the ACT rule would support the greenhouse gas emission reduction requirements of the CLCPA

and the 100% MHD ZEV sales goals under Chapter 432 of the Laws of 2021. This proposed rule will also help improve air quality in disadvantaged communities that have historically been subjected to disproportionate amounts of diesel exhaust.

Comment 371: Immediate implementation of ACT will also further the achievement of other important climate policies. In 2020, New York State joined 15 other states plus the District of Columbia in committing to 100% zero-emission truck and bus sales by 2050, with an interim goal that at least 30% of all new MHDV sales should be zero-emission by the end of this decade. The current administration expanded on this commitment by signing into law A.4302/S.2758, which codifies a target to transition all medium- and heavy-duty vehicles to zero-emission alternatives where feasible by 2045, and with an analogous target to transition off-road vehicles by 2035. Commenter 264.

Response to Comment 371: The Department thanks you for your comment

Comment 372: The World Health Organization has deemed air pollution a public health emergency that has contributed to 8.8 million premature deaths each year. During this COVID-19 global health pandemic, studies have shown that repeated exposure to air pollution is also linked to an eleven percent increase in mortality for those infected with COVID-19. Commenters 270-2301.

Response to Comments 372: The Department thanks you for your comment.

Comment 373: Medium and heavy duty vehicles, specifically trucks and buses, disproportionately contribute to our ongoing climate and air pollution crises. We must act now to begin to clean and electrify

our medium and heavy-duty sector. Once purchased, most medium and heavy-duty vehicles remain on the road for many years. If New York is going to turn the tide on climate change and vehicular air pollution, we must begin replacing our dirtiest trucks and buses as soon as possible. Commenters 270-2301.

Response to Comment 373: The Department thanks you for your comment. MHD vehicles disproportionately contribute to New York's air quality concerns.

Comment 374: The public health and scientific communities are in agreement that we need to move quickly to solve the ongoing air pollution and climate crises. New York need to build on its landmark climate laws and the success of the Hunts Point Clean Trucks Program by adopting the California regulations. This will save lives, create new green jobs, and mitigate the impacts of climate change. Commenters 270-2301.

Response to Comment 374: The Department thanks you for your comment

Comment 375: The UN Intergovernmental Panel on Climate Change warned us in August that only by reaching net zero carbon emissions by 2050 will we keep warming at 1.5 degrees Celsius, and continuing or increasing carbon emissions before 2050 will bring warming up to a possible 4.4 degrees Celsius. It's clear that we don't have much time left to prevent the planet from reaching a disastrous level of climate change, and New York State must do its part by adopting the ACT rule this year which you will reduce the greenhouse gas emissions by millions of metric tons. Commenter 2321.

Response to Comment 375: The Department thanks you for your comment

Comment 376: Rockland County has been a nonattainment zone for ozone for years, and residents here would benefit from the cleaner air. The rule would ensure especially as truck traffic increases. While there will be some costs to require sales of zero emission trucks and associated infrastructure, there will also be significant savings in fuel and maintenance costs. When we consider the billions of dollars in damage from severe weather caused by climate change, we can't afford not to adopt this ACT rule now. If New York State is serious about fighting climate change, we must rapidly transition to zero emission transportation. The evidence clearly shows where the planet is headed if we don't stop using fossil fuels now. Commenter 2321.

Response to Comment 376: The Department thanks you for your comment.

Comment 377: It is inappropriate to extrapolate data from California to support the proposed ACT rule for New York for the following reasons: (1) upwind sources are not accounted for; (2) there is no estimate of leakage as trucking services are provided by out-of-state operators; and (3) there is no analysis showing whether ACT is necessary for New York to come into attainment.

Unlike California, New York's nonattainment areas are significantly influenced by the atmospheric transport of emissions generated in neighboring states. This will mitigate the perceived environmental benefits associated with the adoption of the California ACT rule in New York. As noted earlier, the geographies of California and New York are starkly different. California encompasses 163,695 square miles compared with New York's 54,556 square miles. The San Joaquin Valley is in the southern part

of the state's vast Central Valley and lies between two mountain ranges. The Coast Ranges to the west are 3,300 feet high and the Sierra Nevada to the east are 11,000 feet high. The Los Angeles/South Coast Air Basin is similarly situated between mountain ranges. According to the South Coast Air Quality Management District, "Air pollution tends to stagnate within these air basins due to natural barriers, such as mountains, unless prevailing winds are strong enough to disperse it into other areas." In short, New York does not share these geographic challenges in non-attainment areas.

Similarly, according to California's most recent freight plan, most movements by both weight and value begin and end within California. In 2015, the total number of kilotons transported within California were 904,887 and are forecasted to reach 1,200,531 kilotons by 2045. New York's freight plan notes that only about 9 percent (by mass) and 7 percent (by value) of the freight transported by truck begins and ends within the state.

In estimating the environmental and health benefits associated with adopting the California ACT rule, the DEC references a study that was performed by the Interstate Council on Clean Transportation (ICCT) that focused on this topic. The modeling performed by the ICCT suggests that, absent any additional regulations beyond 2020 (i.e., "Business as Usual") MHDV emissions of NO_x, PM_{2.5} and CO_{2e} in New York state will continue to drop through the mid-2030s due to the combined impacts associated with the introduction of cleaner more efficient fuels and vehicle technologies and fleet turnover. ICCT projected that in comparison to its "Business as Usual" model, adoption of the California rule would reduce medium- and heavy-duty NO_x, PM_{2.5} and CO_{2e} in 2035 by 6%, 4% and 8%, respectively and by 8%, 6% and 14%, respectively in 2040. While this information is informative, neither the ICCT nor the NY DEC made any attempt to evaluate it in the context of overall trends in emissions

inventories for the state of New York, nor was any attempt made to demonstrate that the emissions benefits were necessary for the nonattainment areas within New York to come into compliance with the NAAQS.

API respectfully suggests that New York policymakers recognize that their state is fundamentally distinct from California geographically and economically. Adopting the ACT Program in New York that was developed by California regulators with California's singularly unique attributes is not the most prudent approach. In addition, California regulators have not done any critical analysis on alternative vehicle technologies beyond ZEVs that can reduce emissions now and even more into the future. Nor have they done a critical analysis of the uncertainties and ultimate feasibility of pushing forward a 100% ZEV requirement. This lack of analysis could have significant impacts to consumers and businesses. Commenter 259.

Comment 378: New York policymakers need to fully consider whether mandating electric MHDVs will increase traffic congestion. According to a study done by the University of California's Institute of Transportation Studies, MHDVs could weigh between 1,400 and 5,300 pounds more than the diesel/gasoline fueled trucks. These additional weight increases could have the unintended consequence of increasing the number of truck movements on the road due to vehicles not being able to carry a full load and meet weight requirements. Further, the number of vehicles and the increased weight would increase the necessary maintenance much of which would likely be paid for by state and local agencies (and, ultimately, taxpayers).

New York might decide to allow heavier trucks to accommodate the increased weight of new ZEV

trucks. However, according to the Federal Highway Administration, 9.7 percent of bridges are rated as poor condition, which indicates that might not be a wise choice.

Without increasing weight restrictions, operators would be left with the option of decreasing the weight of their loads in each truck. This requires additional trucks to deliver the same amount of freight with a resulting increase in traffic, an elevated likelihood of more frequent periods of traffic congestion (and associated environmental and safety impacts), as well as higher freight transportation costs. Yet, if weight limits are increased, that only portends greater damage to roads and bridges.

Moreover, New York ports are already experiencing higher equipment dwell times, due to several factors, and increasing truck trips would only exacerbate congestion at the ports. API respectfully suggests that DEC conduct a comprehensive evaluation of the potential environmental, safety and cost impacts related to increased medium and heavy-duty truck trips that could arise from adoption of the proposed ACT rule. Commenter 259.

Comment 379: The trucking industry's driver shortage and its impact on supply chains and the price of consumer goods has made national news. The trucking industry cannot afford to idle drivers for long periods of recharging. Most medium- and heavy-duty vehicles take less than 10 minutes to fuel with petroleum-based liquid fuels, but even using a supercharging rate of 350 kW, a BET would take over an hour. If the operator avoids supercharging in order to avoid degrading the battery, charging would take even longer.

Similarly, NYSDEC ignores that battery-powered trucks and buses are uncompetitive and impractical

for weight-sensitive and many mid-range or long-haul routes. Weight limitations would require more BETs to move an equivalent amount of cargo (as the vehicles weigh-out). Moreover, increasing truck trips would only exacerbate congestion at the ports. The port of New York/New Jersey is experiencing average container dwell times of five to seven days compared with three to four days normally, while average chassis dwell times at warehouses are up to 15 days from three to four days earlier this year. Commenter 266.

Comment 380: According to the American Transportation Research Institute, New York is home to the 9 th worst truck bottleneck in the country at the interchange of Interstate 95 and Interstate 287 (Rye, NY). Congestion wastes time and money, and could increase the risk of accidents. At a minimum, NYSDEC should evaluate the potential impacts from increased medium- and heavy-duty truck trips resulting from the proposed ACT rule.

A University of California Institute of Transportation Studies study suggests long-haul, heavy-duty electric trucks with a range of just 300 miles could be over 5,300 pounds heavier than their liquid fuel counterparts in 2030. Short-haul and medium-duty trucks could weigh 1,400 pounds more than traditional trucks. Some of the BETs would weigh out earlier, meaning additional trucks would be required to deliver the same amount of freight currently being transported by lighter diesel-powered trucks, therefore increasing traffic. Without increasing weight restrictions, operators must decrease the weight of their loads in each truck, thereby requiring additional trucks to deliver the same amount of freight with a resulting increase in traffic and freight transportation costs. Commenter 266.

Comment 381: With increased weight, trips, VMT, or some combination thereof, jurisdictions will have

to decide whether to increase allowable truck weight limits. The Federal Highway Administration (FHWA) looked at increased weight and axle scenarios in 2016 and found that current models, data limits, and other factors “were so profound that the results could not accurately be extrapolated to confidently predict national impacts.” FHWA concluded that no changes in the relevant Federal truck size and weight laws and regulations should be made until these limitations are overcome. Yet if the weight limit increases, this portends greater damage to roads and bridges, many of which are already structurally deficient or need repair. A University of California Institute of Transportation Studies study notes that this additional weight could increase pavement repair costs by up to \$21 million annually on California state highways and up to \$33 million on local roads. Additionally, one-time charges to strengthen or replace bridges in the state could be an additional \$12 million, in 2018 dollars. Much of these costs would fall on local governments. NYSDEC must analyze these issues and present these costs to affected parties. Commenter 266.

Response to Comments 377-381: The ACT will not necessarily increase the number of trucks on the road due to MHD ZEVs not being capable of carrying a full load and to meet weight requirements. The proposed rule is a manufacturer sales requirement not a purchase requirement. The onus is on vehicle manufacturers to build and offer products that meet customer needs. The ACT standards do not go to 100 percent ZEV sales within the regulatory timeframe. Businesses will continue to be able to make the most appropriate choice from multiple fuel options when considering a truck purchase. It is expected that businesses deciding to purchase a MHD ZEV will replace conventional MHD trucks on a one-for-one basis to meet their needs. MHD truck operators will still have the option of utilizing fossil fueled MHD vehicles for heavier loads and more challenging applications. MHD ZEVs could be utilized in last mile delivery and other less challenging applications in the near term. Properly selected battery electric

trucks will often reach volume capacity (“cube out”) before reaching weight limits. Similarly, impacts to road infrastructure are expected to be minimal as appropriately selected battery electric trucks will often reach volume capacity (cube out) before reaching weight limits. Hydrogen fuel cell powered MHD ZEVs will likely have similar freight capacity as diesel powered trucks.

Any potential impact on congestion will be greatly outweighed by the emission reductions and health benefits of MHD ZEVs. MHD ZEVs will allow New York to achieve the emission reductions required in the CLCPA and the 100% in-state MHD ZEV sales goal by 2045, where feasible, under Chapter 432 of the Laws of 2021. The Department finds that weight restrictions, road infrastructure maintenance, and the current congestion issues related to port operations are beyond the scope of this rulemaking proposal.

Further, Commenters have misstated some estimated reductions within the ICCT report. Commenters stated that ICCT projected 4 percent reductions of PM and 8 percent CO₂e in 2035 relative to the “Business as Usual” (BAU) case. The correct values are 5 percent reduction for PM and 11 percent for CO₂e. Likewise, Commenter stated ICCT projected a 14 percent reduction in CO₂e in 2040 relative to the BAU case. The correct value is 15 percent.³⁴

The Department does not find adequate support for commenters assertion that battery electric MHD trucks will take over an hour to charge using a 350kW charger. Those MHD ZEV trucks capable of utilizing a 350kW charger should be capable of recharging in significantly less than an hour, even when

³⁴ <https://theicct.org/publications/nys-hdv-regulation-benefits-may2021>, Attachment - Benefit calculations of California MHD regulations adopted in New York State, Summary tab (Scenario 1 and 3)

assuming the battery is near zero percent capacity and is then fully recharged. Charging times for large Class 8 battery may take longer than an hour using a lower kW rated charger. The majority of MHD ZEVs are expected to recharge overnight in return-to-base operations.

Comment 382: In estimating the environmental and health benefits associated with adopting the California ACT rule in New York, the NYSDEC references an Interstate Council on Clean Transportation (ICCT) study. This study has several flaws, including: 1) its failure to perform a marginal cost analysis of each new BET versus each new diesel truck; 2) assuming a zero-emissions grid without any cost considerations; and 3) inadequately accounting for different climates.

The study fails to consider that for the same dollar invested, greater emission reductions could be achieved by accelerating the transition to new diesel trucks. U.S. DOT's FHWA notes that diesel engine retrofits are particularly cost effective in reducing CO, NOx, and VOCs, and also lead to considerable reductions in PM.⁹² Conversely, FHWA shows the least cost-effective projects include heavy-duty vehicle replacements. Heavy-duty vehicle replacements show especially low cost-effectiveness for VOCs and PM, as these vehicles emit large amounts of these pollutants regardless of fuel type.

The Proposal states “that the second source [ICCT] estimated that New York's adoption of ACT would achieve emission benefits of ... 17.91 million metric tons of CO₂e, GWP100 from 2025- 2040.” The ICCT report states that the “relative greenhouse gas emission benefits of the Advanced Clean Trucks rule, magnified by a zero-emission electric grid in 2040 and complemented by full implementation of trailer greenhouse gas standards, are significant. Cumulative avoided emissions are 17.91 million metric tons from 2020 to 2040...” (emphasis added). The proposal just assumes a zero-emissions grid

by 2040 but makes no mention of costs to upgrade the grid to zero-emissions, which likely preclude such a transition, and would distort NYSDEC's environmental benefits under ACT. Commenter 266.

Response to Comment 382: The Department does not support the assertion that the ICCT report for New York State is flawed. The ICCT report includes several modeling scenarios to estimate future emission reductions based on New York's potential to adopt several California regulations, including an ACT scenario. New York business as usual (BAU) and ACT scenarios were used for the rulemaking proposal. The ICCT report does not include an associated cost analysis. The ICCT modeling completed was based on New York State inputs, including a zero-emissions grid in 2040 consistent with CLCPA requirements. The requests for a marginal cost analysis of each new BET versus each new diesel truck and consideration of costs to achieve a zero-emissions grid are beyond the scope of this rulemaking.

Comment 383: In addition to the above, medium-duty and heavy-duty electric trucks will increase tire wear and associated particulate matter emissions in the areas where they operate. Neither California nor New York has evaluated these emissions. Commenter 266.

Response to Comment 383: The Department does not support the contention that California and ICCT did not consider brake wear within their respective emissions modeling (EMFAC, MOVES). ICCT modeled brake wear consistent with California's assumption that regenerative braking reduced brake wear by up to 50 percent.

Particulate matter emissions from tire wear were not included in the emissions modeling efforts for this proposed rule. ICCT's modeling assumed that any increased weight attributable to the battery pack would displace payload, resulting in the overall GVWR of the vehicle being unchanged. It is likely that a portion of the battery pack weight would be offset by the weight loss with the elimination of the conventional engine and transmission. The transition from diesel powered MHD trucks to ZEV trucks will eliminate engine exhaust (tailpipe) particulate matter emissions. Regenerative braking on electric trucks will further reduce particulate material emissions by the decreasing brake wear. The Department believes that the engine exhaust and brake wear particulate matter emission reductions from MHD zero emission vehicles greatly outweighs the potential for increases in tire wear particulate matter emissions

Fuels

Comment 384: A concern for planners of highway equipment purchasing is the potential for the disruption and scarcity of the supply of conventional fuels or even affordable and adaptable low-carbon alternative fuels for existing vehicles and equipment even before the sales mandates kick-in.

Commenter 255

Response to Comment 384: The Department believes that conventional fuels will remain available as long as there is a market for them. As an example: aviation gasoline remains available where needed nationwide even though the market is 0.14% of the motor gasoline market.

Comment 385: It's expected that fossil fuel producers and distributors will continue to reduce their investments in this state or completely exit the New York market in anticipation of low- or no-profits, additional industry regulations and restricted sources of capital. Commenter 255.

Response to Comment 385: Each individual supplier will make its own marketing and investment decisions. However, the Department expects the transportation liquid fuel market will continue to attract sufficient supply even as it contracts in the future. The proposed ACT regulation does not include a 100% MHD ZEV requirement. As such, fossil fueled vehicles can be sold in New York State during the regulatory time frame.

Comment 386: We note that many of the baseline assumptions in CARB's ACT rulemaking regarding TCO and price parity over time relied on the assumption of both ongoing incentives and low fueling costs. Low fueling costs in California are supported by the Low Carbon Fuel Standard program, which reduces the effective operating cost for MHD ZEVs, and commercial EV rates that have been adopted by the California Public Utilities Commission. The impact of these two policies (Low Carbon Fuel Standard and EV rates) toward a beneficial TCO cannot be overstated, but New York provides neither form of operating cost support that are facilitating fleet electrification in California. If CARB determined that sustained policies for fuels will be required to support the business case for MHD ZEVs in California, then similarly sustained incentive support will certainly be needed for New York's MHD ZEV market to take root. Importantly, purchase incentives can and should step down with time to keep pace with technological improvement as manufacturers increase production volumes and progress down the technology cost curve. Commenter 260.

Response to Comment 386: This comment incorrectly states that CARB's ACT analysis included

vehicle and infrastructure incentives, as CARB did not include incentives in its analysis.³⁵

New York State currently provides cost support for MHD ZEV trucks. The NYSERDA NYTVIP and the NYCCTP provide incentives to help offset a significant portion of the higher purchase price for MHD ZEV trucks. A \$15 million Medium and Heavy-Duty Make Ready Pilot, utility fleet assessment services, and a Clean MHD Vehicle Innovation Prize competition complement NYTVIP and NYCCTP.

Anticipated lower fuel and maintenance costs will reduce the MHD ZEV total cost of ownership. Over time with technology improvements including the trend of declining battery costs, and increased MHD ZEV production volumes, the initial purchase costs for MHD ZEV trucks will decrease. The proposed rule will help create a stable market environment for companies to make long term business decisions regarding MHD ZEVs.

The Department is engaged with state agencies and authorities, utilities, and other stakeholders to address concerns related to adding additional ZEVs to the New York electric grid. Combined renewable sources of electricity from solar, wind and hydro power have proven to be reliable and cost effective. CLCPA requires 70% renewable energy generation by 2030 and achievement of zero emissions in the electricity sector by 2040. See Public Service Law Section 66-p.

Comment 387: API members are making significant investments in new fuels and process technologies that reduce carbon emissions. Investments in lower-carbon intensity fuels such as renewable diesel,

³⁵ <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/isor.pdf>. Page IX-8

biodiesel, renewable natural gas, are used in existing diesel and CNG medium- and heavy-duty vehicles and reduce emissions today, often creating less GHG emissions rate than that of battery electric vehicles. Our members are also investing in the production of blue and green hydrogen which can be used in fuel cells. The industry is reducing refinery GHG emissions through improved processes and increased efficiency and is applying its scientists to build better tires for electric vehicles. The natural gas and oil industry is committed to reducing GHG emissions in an affordable, reliable and cleaner manner. Commenter 259.

Response to Comment 387: The Department thanks you for the comment. The proposed rule supports New York State's efforts to reduce transportation related emissions as required in the CLCPA and the 100% MHD ZEV sales goal by 2045, where feasible, established by Chapter 432 of the Laws of 2021. The ACT manufacturer sales requirements do not prohibit the use of fuels referenced. Continued levels of use for carbon-based fuels would result in the failure to meet the emission reduction requirements of the CLCPA. New York has one of the cleanest power grids in the nation which includes many renewable sources. The percentage of renewable power grid in the New York power grid continues to increase as additional renewable sources such as solar, wind, hydro power are added to the grid. CLCPA requires 70% renewable energy generation by 2030 and achievement of zero emissions in the electricity sector by 2040. Public Service Law Section 66-p.

The Department notes that the production of blue and green hydrogen used to fuel MHD fuel cell ZEVs would support the ACT sales requirements.

Comment 388: There is no fuel that generates "zero GHG emissions." Each fuel should be considered

within the framework of a fuel/vehicle pathway and evaluated on a lifecycle basis to ensure that policy decisions to reduce GHG emissions are fully informed before they are adopted and implemented. Before adopting this rule, we respectfully request that DEC quantify the holistic, real-world GHG emissions associated with battery powered medium- and heavy-duty trucks within the state and consider the benefits of other technologies that can achieve similar goals at a more economical cost. Several issues that should be considered include:

- Purchase price and useability rate of different vehicle technologies,
- Infrastructure investment requirements,
- Battery material and liquid fuel sourcing emissions and environmental concerns,
- Recycling and disposal of vehicle components,
- Scarcity of minerals available in the U.S., and
- Implications to national security and feasibility of associated with different technologies.

Commenter 259.

Response to Comment 388: The proposed rule supports New York State's efforts to transition to a MHD ZEV fleet and reduce transportation related emissions as required in the CLCPA and Chapter 423 of the Laws of 2021. In addition, New York has one of the cleanest power grids in the nation which includes many renewable sources. The percentage of renewable power in the New York power grid will increase as additional renewable sources such as solar, wind, hydro power are added to the grid to achieve CLCPA electricity sector requirements. Battery material sourcing within New York State would require environmental impact studies during the permitting process, and is outside of the scope of this proposed rule. Private industry is finding value in battery reuse applications such as for balancing renewable energy sources. Efforts are also being made to recycle used batteries into a sustainable

domestic source of materials needed for new batteries. The scarcity of domestic battery material and national security issues are outside of the scope of this proposed rule.

Comment 389: In addition, access to fast DC charging will be critical for applications that currently rely exclusively on the public fueling network for continuous operation such as: drayage; day cab short and regional haul. Multiple fast DC chargers may require multi-megawatt level service upgrades which could result in the installation of additional electrical substations and ensuring buildout lead-times align with customers and regulators deployment dates. The infrastructure incentives are particularly acute in the hydrogen supply and distribution network. Currently most existing stations can dispense less than 500 kg/day or <450 diesel gallon equivalents, or enough hydrogen to refuel a conventional line haul truck 1.5x. Station cost, capacity and hydrogen transport remain critical technical obstacles to an effective build out. Commenter 263, 2311.

Response to Comment 389: Public and private investments in MHD ZEV infrastructure will be important to ensure the success of this proposed rule. The New York State Public Service Commission approved a \$15 million MHD Fleet Make-Ready Pilot Program, utility fleet assessment services, and a Clean MHD Vehicle Innovation Prize competition to incentivize MHD EV charging capacity. A broader Make Ready program may be considered during the midterm evaluation by October 2022. The Department is actively engaged with other State agencies and authorities to develop charging and re-fueling infrastructure programs. The federal Infrastructure Investment and Jobs Act signed by President Biden on November 15, 2021 includes state formula and potential competitive grant funding for MHD vehicle fueling and charging infrastructure. The Department will join other New York State agencies and authorities to review and seek, as appropriate, any future federal funding opportunities provided by the

Infrastructure Investment and Jobs Act to promote development of MHD ZEV infrastructure in New York State. The Department anticipates that the proposed rule will provide regulatory certainty to support the market stability needed for long term charging/refueling business decisions.

Comment 390: Liquid fuels can provide near-term, significant GHG emission reductions from the on-road vehicle fleet when evaluated within an analytical framework that comprehends technology-neutral, performance-based standards for fuels, vehicles, and infrastructure. To achieve this goal, it is critical that the federal government link fuel and vehicle standards to ensure consistent CO₂ accounting across all fuel/vehicle technology options. Current vehicle GHG standards consider only tailpipe emissions. A well-to-wheels approach provides a systems-based analytical framework for evaluating the GHG impacts of various fuel-vehicle pathways, including internal combustion engines (i.e., gasoline, diesel, or natural gas), battery electric, hydrogen, and hybrid technologies.

API supports a federal policy that improves fuel carbon intensity to drive CO₂ reductions from transportation. Liquid fuels can provide GHG emissions improvements using feedstock and process technologies that reduce fuel carbon intensity.

There are significant benefits to developing a holistic, systems approach to regulating GHG emissions from transportation. Establishing a federal carbon intensity standard for the motor fuel pool that declines over time and is reflected in the evolution of the EPA test fuel properties used for emissions standard certification purposes would not only benefit new medium- and heavy-duty vehicles, but also could achieve emissions reductions across the entire existing vehicle fleet.

A well-to-wheels approach would allow the market to drive carbon reductions at the lowest abatement cost, while preserving consumer choice. Vehicle manufacturers benefit with the ability to demonstrate the overall emissions reductions that are achieved as the carbon intensities of the fuel pool, electric grid and vehicle fleet improve over time.

MHDV consumers and fleet owners will benefit through market competition that results in a variety of innovative technologies that help to reduce the cost of carbon abatement for each fuel/vehicle technology pathway. Adopting a federal well-to-wheels approach, combined with fuel carbon intensity reductions, provides a broad spectrum of industries that power the transportation system (e.g., engine and equipment makers, petroleum refiners, power generators, and biofuels manufacturers) with incentives to reduce GHGs. Commenter 259.

Response to Comment 390: Federal greenhouse gas reduction programs would be desirable. However, such federal programs do not currently exist, and the durability of any hypothetical federal program would be uncertain. In any case, the ACT program, and vehicle electrification in general, does not preclude state or federal policies that reduce the carbon intensity of transportation fuels.

Comment 391: A full LCA will reveal that New York can best reduce the environmental impacts of medium- and heavy-duty vehicles by allowing EPA rules to go into full effect rather than adopting expensive battery electric truck (BET) mandates that will dramatically slow fleet turnover, blocking the resulting emissions reductions and safety benefits that are being achieved under the federal standards. An LCA would properly account for the GHG emissions generated over the vehicle's lifetime, including emissions associated with vehicle production, operation (recharging/refueling), required infrastructure

modifications, battery replacement, and end of life disposal options. For example, because heavy-duty trucks are used for a million miles, BETs will require multiple battery replacements. Battery production results in significant carbon emissions from mining, assembly, and disposal activities. Broader environmental impacts and national security concerns should be considered as well. Given the significant environmental effects of the rule, NYSDEC should provide an Environmental Quality Review before finalizing the proposed rule.

Lithium-ion batteries are made from critical minerals including cobalt, graphite, lithium nickel, and manganese. Electric vehicles (EVs) require six times the mineral inputs of traditional internal combustion engines. One study suggests that the extraction and processing of critical minerals are responsible for approximately 20 percent of the GHG emissions associated with battery production. A typical lithium EV battery weighs about 1,000 pounds. While there are dozens of variations, a typical battery contains around 25 pounds of lithium, 30 pounds of cobalt, 60 pounds of nickel, 110 pounds of graphite, and 90 pounds of copper. Since ore grades vary, acquiring these five elements to produce a single battery requires mining about 90,000 pounds of ore. Roughly 90,000 pounds of ore requires digging and moving between 200,000 and over 1,500,000 pounds of earth, a rough average of more than 500,000 pounds per battery. Now consider a heavy-duty 80,000-pound Class 8 truck in the U.S. with a 500-mile range. The semi would require five times the number of lithium-ion battery cells that a car would use today. That's between 1.5 and 7.5 million pounds of earth moved per truck battery. Further, the International Energy Agency (IEA) pins the average GHG intensity for production of lithium carbonate at around 5 metric tons of Carbon Dioxide Equivalent (CO₂e) emitted per ton of metal, and approximately 15 CO₂e metric tons per ton of cobalt sulfate. The mining of minerals for BETs typically occurs in countries where environmental, health, and safety precautions are significantly less stringent

than those in the U.S.

New York's adoption of the BET requirement will result in a significant environmental impact that must be studied. Processing commodities is an energy and environmentally intensive activity and results in emissions that NYSDEC cannot ignore. Commenter 266.

Comment 392: Armed with state specific LCAs of alternative GHG reduction policies, NYSDEC should compare the cost of abatement of each by dividing the cost of the policy by the amount of GHG reductions achieved by the policy. The cost of abatement is normally expressed as dollars per ton CO₂e reduced. NYSDEC should present to the public its estimates of the cost per ton of GHG and NO_x abatement on a lifecycle basis via the proposed ACT rule, as compared to the same cost of abatement of investing in more fuel-efficient diesel engines, biodiesel, renewable diesel, and other technologies. Commenter 266.

Comment 393: New York must also not ignore increased battery degradation (and earlier disposal and replacement) associated with the "fast-charging" that is most frequently utilized to minimize the hours of charging time that would otherwise be required to place a commercial truck in service. Neither NYSDEC nor CARB quantify the effect of fast chargers. Studies have shown that charging a battery with too much power could cause lithium plating and dendrite formation around the anode, permanently reducing capacity. At a pack level, it can cause cells to age at different rates and pack overheating. Further studies of light-duty vehicles reveal that vehicle hardware improvements to enable these increased fast-charging speeds could cost approximately \$1,000, assuming no change in battery size. NYSDEC must quantify the costs associated with fast-charging before finalizing this Proposal and also

account for how many battery replacements are needed over the life of the BET. Commenter 266.

Response to Comments 391-393: The Department does not support the contention that the proposed ACT rule would slow fleet turnover and that battery electric trucks will definitely require multiple battery replacements. While the proposed ACT standards do mandate an increasing annual sales percentage of MHD ZEV trucks by 2035, where feasible, it does not ban the sale or use of internal combustion, fossil-fueled vehicles. Fleet operators will continue to have multiple choices for fuel type to consider during a truck purchase. Truck manufacturers will need to develop and supply batteries that meet the needs of the truck duty cycle and account for any fast-charging requirements. Fleet operators will need to decide what battery size, battery chemistry, and charging rates that best fit their truck duty cycles. Many MHD trucks return to a centralized location where overnight charging may be a better and more economical choice compared to fast-charging. No one technology or vehicle model will be the best solution to every duty cycle and refueling/recharging requirements. Batteries in modern light-duty vehicles have demonstrated robust long-term performance. As battery technology matures and improves, the market will favor batteries with minimal degradation over time. Battery life cycle costs are rapidly changing as battery manufacturing costs decline and battery recycling technologies mature. The California cost analysis, and the Department's by extension, did consider fast charging on mid-life battery replacement for certain vehicle types.

The Department's rulemaking complied with the requirements of the State Administrative Procedures Act and the State Environmental Quality Review Act, including an environmental assessment, coastal assessment, and a negative declaration. A lifecycle analysis devoted to battery production is outside of the scope of this proposed rule.

Comment 394: Moreover, liquid transportation fuels are also taxed at both the federal and state level to fund the construction and maintenance of bridges, roads, highways, and other transportation initiatives. The federal tax on diesel fuel is 24.4 cents per gallon, while New York adds 22.85 cents per gallon in the form of a state tax. Consumption of #2 distillate fuel in New York reached nearly 1.9 billion gallons in 2020.

The Federal Highway Administration projects single unit commercial vehicle miles traveled to increase by 1.9 percent year over year from 2018 through 2038, and combination truck miles to increase 1.3 percent over the same period. Given that there is no federal tax on electricity and there are de minimis state taxes on electricity, API respectfully suggests that DEC analyze the impact on tax revenue generated from changes to diesel fuel consumption and switching to increased consumption of electricity. Commenter 259.

Response to Comment 394: Tax policy is outside the scope of this rulemaking, and outside of the Department's authority. The Department and other agencies are aware that successful compliance with CLCPA requirements will ultimately require changes in the sources of revenue used for transportation infrastructure maintenance.

Comment 395: Collectively, our members have invested billions of dollars to make fuels cleaner allowing engines to be more efficient. The refining industry has reduced the maximum sulfur content of highway diesel fuel from 5,000 ppm to 15 ppm. The refining industry also has reduced the annual average sulfur content of gasoline by a third from 30 parts per million (ppm) to 10 ppm under the fuel

property requirements in the EPA Tier 3 rulemaking implemented on January 1, 2017. Reduced sulfur content in diesel and gasoline has lowered fleet emissions in New York and has enabled cleaner engine technologies. We also note that significant improvement in truck efficiencies from reducing vehicle weight to creating aerodynamic solutions for trucks and trailers are made possible by the petrochemicals our members produce.

Against this backdrop of a long history of technological innovation and improved efficiencies, API believes state transportation policies should be realistic in nature, recognize the vital role liquid fuels have historically played and will continue to play, and – above all – preserve affordability, ensure reliable movement of people and goods, and preserve consumer choice. Generally speaking, these goals can be best achieved through free markets as opposed to market-distorting mandates, subsidies, or the imposition of unrealistic emissions or sales target. Commenter 259.

Response to Comment 395: While the sulfur content of fuels is outside the scope of this rulemaking, the Department acknowledges the progress made in reducing the sulfur content in highway diesel fuel and notes that this progress was, at least in part, made in response to increasingly stringent regulatory standards. While the proposed ACT standards do mandate an increasing annual sales percentage of MHD ZEV trucks by 2035 where feasible, it does not ban the sale or use of internal combustion, fossil-fueled vehicles. There will still be a demand for those fuels even after the regulatory timeframe of 2035.

Comment 396: Furthermore, studies show that the carbon reductions realized over the lifetime of operating an electric vehicle vary depending on the carbon intensity of the electric grid where the vehicle is used. As EIA data shows, in terms of carbon intensity, no two state's energy supplies are identical.

NYSDEC must complete an LCA incorporating New York's unique circumstances. Commenter 266

Response to Comment 396: According to the EIA data, New York has one of the lowest carbon intensity energy supply by state.³⁶ New York continues to add renewable zero emission energy sources such as solar, wind and hydro-electric power to the electric grid to further reduce the carbon intensity of the state energy supply consistent with CLCPA electricity sector requirements. This combination of low carbon intensity and increasing amounts of renewable zero emission power makes the New York electric grid a favorable location for MHD ZEVs as well as helping to achieve the emission reduction requirements of the CLCPA.

Miscellaneous

Comment 397: I have been reviewing the Department's regulatory package supporting the proposal to adopt California's Advanced Clean Trucks rule, which is very thorough. I have a question about one particular data point. On page 11 of the RIS, it states "Based on EPA's National Air Toxic Assessment, New York State has a statewide diesel PM10 ambient concentration from on-road medium- and heavy duty vehicles of approximately 0.265 micrograms/meter³ (µg/m³), which is one of the highest in the United States," with a citation pointing to EPA's NATA data.

I'm wondering if you can advise how that specific numeric figure was calculated? I am familiar with the NATA dataset, just wondering about the analytical steps taken to derive that figure. Commenter 1.

³⁶ <https://www.eia.gov/environment/emissions/state/>

Response to Comment 397: The Department thanks you for your comment. The figure was obtained directly from the U.S. EPA's National Air Toxic Assessment (NATA; <https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results>). Specifically, the figure was obtained by selecting "DieselPM10" under "Pollution Specific Results" and selecting New York statewide values. The figure cited is the sum of "OR HD Off Network Diesel Concentration" and "OR HD On Network Diesel Concentration".

Comment 398: I want to ensure that the ACT is explicitly aligned with New York's climate law-- which sets a clear mandate to transition NYS to a fully electrified transportation system. Commenters 3-114, 116-120, 122-152, 154-157, 159-163, 165-168, 170, 172-198, 202-203, 205-212, 215-217, 219-225, 227-232, 234, 237-240, 252, 261.

Response to Comment 398: Pursuant to the Clean Air Act, New York is proposing to adopt ACT standards identical to those adopted by California. Adoption of the ACT standards will support New York State's efforts to reduce transportation related emissions and help New York State achieve the climate requirements set forth in the CLCPA. Adoption of ACT is also consistent with Chapter 423 of the Laws of 2021 (S2758/A4302) that establishes a 100% sales goals for MHD to be ZEVs by 2045, where feasible. Adoption of ACT is also consistent with Chapter 423 of the Laws of 2021 (S2758/A4302) that establishes a 100% sales goals for MHD to be ZEVs by 2045, where feasible.

Comment 399: The rule is an important step in meeting the goals of the 100% EVs by 2045 law recently enacted. Commenters 3-89, 91-114, 116-120, 122-152, 154-157, 159-163, 165-168, 170, 172-198, 202-203, 205-212, 215-217, 219-225, 227-232, 234, 237-240, 252, 261.

Response to Comment 399: The proposed rule supports New York State's efforts to reduce transportation related emissions as required in the CLCPA and the 100% in-state MHD ZEV sales goal by 2045, where feasible, established by Chapter 432 of the Laws of 2021.

Comment 400: State leadership is driving the fight against climate change. For decades, New York State has aligned its vehicle standards with California's. Adopting California's Advanced Clean Truck Rule will move New York closer to its goals while improving the air quality and health in communities historically overburdened by diesel pollution. Commenters 3-114, 116-120, 122-152, 154-157, 159-163, 165-168, 170, 172-198, 202-203, 205-212, 215-217, 219-225, 227-232, 234, 237-240, 252, 261.

Comment 401: Taking this step is essential if NY is serious about NY's climate law. It is also an important step in reducing particulate and other pollutants, which disproportionately affect disadvantaged communities. Commenter 114.

Comment 402: NEW YORK NEEDS TO HELP LEAD THE WAY AND REDUCING CLIMATE IMPACTS OF TRANSPORTATION IS TOP OF THE LIST. Commenter 169.

Response to Comments 400-402: The Department thanks you for your comment. The Department supports these comments. The Department supports these comments and on the importance of improving air quality and public health throughout the state, and particularly in disadvantaged communities that have been disproportionately affected by diesel emissions. The proposed rule supports New York State's efforts to reduce transportation related emissions as required in the CLCPA,

which includes a strong focus on disadvantaged communities, as well as New York States' 100% MHD ZEV sales goal by 2045, where feasible, established by Chapter 432 of the Laws of 2021.

Comment 403: The proposed rule should end all NEW truck sales in NYS unless they are non-fossil using by 2026. Commenter 90.

Response to Comment 403: The Department notes that there is currently no corresponding federal MHD ZEV sales requirement banning all fossil-fueled vehicles by 2026. Section 177 of the Clean Air Act allows states the option to adopt California emissions standards provided they are identical. The Department's proposed rulemaking to adopt California's ACT rule requires increasing annual MHD ZEV sales percentages phased-in starting with model year 2025 through model year 2035, where feasible. It may be possible that a MHD ZEV may not be available, or feasible, for a particular application or class within the proposed regulatory timeframe. Governor Hochul recently signed legislation under Chapter 243 of the Laws of 2021 (A4302/S2758) establishing the goal that all new MHD vehicles sold in New York State be ZEV by 2045, where feasible.

Comment 404: This is required by 6NYCRR Part 617.9b5(i) and NYS Civil Practice Law, Article 78. Commenter 90.

Response to Comment 404: The Department is required to complete an environmental assessment and coastal assessment in accordance with 6 NYCRR Part 617.9b5(i), also known as the State Environmental Quality Review (SEQR). As set forth in the Regulatory Impact Statement, the statutory authority for this rulemaking 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). The amendments are also consistent with the requirements of the Climate Leadership and Community Protection Act (CLCPA), Chapter 106 of the Laws of 2019. Article 78 of New York State Civil Practice Law & Rules (CPLR) codifies the rights of stakeholders to appeal a final rulemaking decision and does not provide statutory authority to adopt the proposed regulation.

Comment 405: What good is an electric truck if it is fueled by coal generated electricity. Commenter 115.

Response to Comment 405: The Department disagrees with this comment. New York State has one of the cleanest electrical grids in the nation. There are no longer any no coal-fueled power plants operating within the State, consistent with the requirements of the Department's 6 NYCRR Part 251 regulation. The U.S. Energy Information Agency's New York energy profile³⁷ details that in 2020 renewable sources and nuclear power supplied 60% of New York's in-state power generation. In addition, the CLCPA requires 70% renewable energy generation by 2030 and to achieve a zero emission electricity sector by 2040.

Comment 406: In fact, I would prefer even more aggressive targets. Not only do we need to ensure that we meet NY mandates to transition our transportation system away from fossil fuels, but also new legislation requires vehicles to be 100% electric by 1945. I hope the rule making process proceeds as

³⁷ <https://www.eia.gov/state/?sid=NY>

quickly as possible and allow us to meet these mandated goals, leading the fight to limit global warming as well as the other ancillary benefits to public health and social justice. Commenter 121.

Response to Comment 406: Thank you for your comment. The Department assumes the Commenter intended to state 2045 rather than 1945 regarding the 100 percent electric vehicle goals. Governor Hochul recently signed legislation under Chapter 432 of the Laws of 2021 (A4302/S2758) that establishes a goal of 100 percent new light-duty vehicle sales be ZEVs by 2035; 100 percent of new MHD vehicle sales be ZEVs, where feasible, by 2045; and a transition to 100 percent of off-road vehicles and equipment, where feasible, by 2035. The ambitious goals of this legislation, and the proposed adoption of the ACT regulation, will significantly reduce greenhouse gas and criteria pollutant emissions thereby improving the health and welfare of all New York residents. Section 177 of the federal Clean Air Act allow states the option of adopting California emission standard regulations provided they are identical.

Comment 407: I also think that the impact on vehicle markets of California and New York acting together will stimulate more rapid adoption of stronger climate action nationally. Commenter 121.

Response to Comment 407: The Department thanks you for your comment. The Department believes that strong, coordinated action by California, New York and other states is the best course of action in the absence of unified, national MHD ZEV standards. California has a long history of pioneering mobile source emissions control programs, which are subsequently adopted by the federal government. New York also has a long history of adopting the California mobile source programs and implementing them in the absence of more stringent and protective federal standards. New York State is a signatory to the

Multi-State Medium- and Heavy-Duty (MHD) Zero-Emission Vehicle (ZEV) Memorandum of Understanding (MOU), through which a coalition of 15 states, the District of Columbia, and more recently the Canadian province of Quebec have committed to work together to reduce greenhouse gas emissions and air pollution from trucks and buses by transitioning to ZEVs. The signatories to the MOU have collectively agreed to consider adoption of the ACT regulation. This coordinated action should provide a clear message to the MHD industry that there will be a sustainable market for MHD ZEVs. The States of California, Oregon and Washington have adopted the ACT regulation and additional states are currently in the rulemaking process to adopt ACT.

Comment 408: Mandates and centralized government control of economic activity always fails due to factors of the wrong granularity of the response and low sensitivity to market signals. Commenter 115.

Comment 409: It is much better, in a capitalist society, to let the MARKET reflect the true cost of a resource and then let the market participants perform the transition at their own pace. Commenter 115.

Response to Comments 408-409: The commenter is correct in stating that ACT includes a manufacturer sales mandate, however, the Department rejects the notion that this rulemaking represents centralized economic control. The ACT regulation is a technology forcing regulation with built-in flexibilities to assist manufacturer compliance. The ACT regulation has annual increases in stringency that apply to three MHD groups providing time for certain MHD ZEV applications to develop further. Manufacturers will not be compelled to produce vehicles in MHD groups or applications in which they currently do not offer product. The ACT regulation does not include a fleet purchase requirement.

Comment 410: Previously, EMA provided the DEC copies of the detailed comments that EMA filed with CARB regarding its adoption of the ACT Rule. We are attaching those comments again, and they are incorporated by reference. As they describe, EMA's over-arching concern is that the structure of CARB's ACT Regulation threatens to hinder, not promote, the emerging market for zero- emission commercial vehicles. Response to Commenter 199.

Response to Comment 410: The Department acknowledges receipt of Commenter's attachment of comments previously submitted to CARB, which are duplicative of other comments addressed in this APC.

Comment 411: The current batteries when they catch fire are next to impossible to put out!!! Also there is not current battery recycle program for such batteries! These problems must be solved first!!! Commenter 164.

Comment 412: Batteries have a finite useful life that may be shortened by rapid charging. One study suggests that battery packs could contribute 250,000 metric tons of waste to landfills for every one million retired BEVs. While this study focused on passenger vehicles, medium- and heavy-duty vehicle battery technologies are even more varied. BETs incorporate different battery chemistries depending on trade-offs in duty cycle requirements, power density, energy density, safety, and cost. To properly assess the impacts of the proposed rule, NYSDEC must quantify the impacts of disposing used batteries, including any hazardous waste disposal requirements.

Large-scale battery recycling has yet to be proven on a commercial scale and poses unique materials

handling and safety challenges. Less than five percent of lithium-ion batteries are being recycled “due in part to the complex technology of the batteries and cost of such recycling.”

Before adopting this rule, NYSDEC must quantify the lifecycle GHG emissions and environmental effects associated with both diesel and battery powered medium- and heavy-duty trucks within the state, including from battery material sourcing, BEV recharging, and end-of-life battery disposal. Focusing solely on a comparison of tailpipe emissions ignores real-world considerations that are of central relevance to this rulemaking. Commenter 266.

Response to Comments 411-412: The Department thanks you for your comment. While battery lifecycle is beyond the scope of this rulemaking, the Department acknowledges that lithium-ion batteries do present different fire-related challenges than fossil fueled vehicles. While battery lifecycle is beyond the scope of this rulemaking, the Department acknowledges that lithium-ion batteries do present different fire-related challenges than fossil fueled vehicles. Most electric vehicle manufacturers publish Emergency Response Guides (ERGs) to provide information for emergency responders so that they know how to deal with the potential electric shock hazards associated with hybrid and electric vehicles that have been damaged in an accident. Vehicle manufacturers may also provide fire departments with information and training to render electric vehicles safe and extinguish any resulting fire after a crash. Firefighting methods are likely to be refined as electric vehicles become more prevalent in the in-use fleet.

Many states, including New York, are aware of the battery recycling issue and are developing programs and regulations to address these concerns. As the number of EVs increases, there will become

increased market opportunities for vehicle dismantlers and battery recycling. DEC expects to see lithium-ion battery recycling facilities accepting lithium-ion EV batteries within New York State for recycling in the next year. Ford Motor Company and Redwood Materials recently announced plans to build out battery recycling and a domestic battery supply chain for electric vehicles³⁸.

Comment 413: There are close to 500,000 small businesses with employees in New York. These businesses employ half the state's private-sector workforce, nearly 4 million New Yorkers, and their production accounts for nearly half of the state's GDP. A strong, vibrant small business eco-system supports local tax bases, governments, and schools. Sixty-seven cents of every dollar spent at a local small business is reinvested in the community. Commenter 201, 236.

Response to Comment 413: Small businesses are an important part of the New York State economy. The proposed regulation includes a MHD vehicle manufacturer ZEV sales requirement and is not a vehicle purchase requirement. While the proposed ACT standards do mandate an increasing annual sales percentage of MHD ZEV trucks by 2035, where feasible, it does not impose a ban on the sale or continued use of internal combustion fossil-fueled vehicles. Individual small businesses will continue to have a wide selection of MHD vehicles with various power sources to consider when making a MHD vehicle purchase.

Comment 414: There is a clear opportunity to maximize the climate, public health, and economic benefits of the ACT rule by finalizing it before the end of the year. Prompt implementation will lead to

³⁸ <https://media.ford.com/content/fordmedia/fna/us/en/news/2021/09/22/ford-redwood-materials-battery-recycling.html>

lasting economic and health benefits for New York's children and help advance the state's climate agenda. Commenter 244.

Response to Comment 414: The Department thanks you for your comments. .

Comment 415: 20% of the vehicles make 80% of the emissions! Trucks are a huge part of the that 20%. Commenter 220.

Response to Comment 415: The Department cannot verify the source of the commenter's stated percentages but agrees that MHD trucks contribute a disproportionate amount of the transportation-related emissions in New York.

Comment 416: Diesel fumes carry high levels of particulate carbon which is sinister in it's (sic) role in global warming temperatures. We need to push these standards and exceed them in this generation. Commenter 227.

Response to Comment 416: The Department thanks you for your comment.

Comment 417: Adopting the ACT, alongside the policies mentioned above, will make New York a leader among U.S. states and give manufacturers like us assurance that MHD EVs are part of New York's future. Commenter 235.

Comment 418: The ACT rule was a key component of California's status as a national leader in

establishing a clean transportation network and encouraging the deployment of zero emission trucks. New York is home to some of the most iconic and high-volume road, rail, aviation and maritime transportation assets in the country. Zeem is determined to bring our business into this market and facilitate the conversion from diesel fueled transport to environmentally efficient ZEVs. Adoption of ACT would send a strong message to private partners that the Empire State is committed to stimulate investments, expand jobs in the growing green economy and improve the MHD zero emission truck market. Commenter 242.

Comment 419: As designed, the ACT regulations focus on requiring manufacturers to supply increasing numbers of medium and heavy-duty ZEVs to the market. Adoption of this program would be a significant step in the State achieving the zero emission vehicle goals of the recently passed bill S2758 that calls for 100% of the medium- and heavy-duty fleet transitioning to zero-emissions vehicles by 2045. Commenter 250.

Response to Comments 417-419: The Department thanks you for your comment. Adoption of the ACT regulation would help New York achieve its air quality goals and CLCPA requirements. New York's recently adopted Chapter 423 of the Laws of 2021 will also require all MHD truck sales to be 100% ZEV, where feasible, by 2045.

Comment 420: This bold action – along with corresponding purchase requirements, sustained vehicle and infrastructure incentives, and a Clean Fuel Standard – will cement New York's standing as a regional leader in MHD ZEV market development. Taken together, these measures can ensure that New York becomes the regional hub for the zero-emission transportation industry, cleaning the state's

air and creating high-quality jobs. Commenter 204, 260, 267-268.

Response to Comment 420: The Department thanks you for your comments. Fleet purchase requirements, incentive policy, and a New York Clean Fuel Standard are beyond the scope of this rulemaking. This proposed rule supports New York's efforts to transition to zero emission transportation and improved air quality.

Comment 421: Of course, the vehicles covered in this regulation will have to be much bigger and the impacts will be much larger. Commenter 218.

Response to Comment 421: MHD ZEV trucks will generally be comparable in size to conventional MHD diesel trucks. Battery electric MHD ZEV trucks may have slightly higher Gross Vehicle Weight Ratings (GVWR) compared to conventional trucks of the same class due to the weight of the battery packs. As outlined in the Regulatory Impact Statement, the Department completed an evaluation of impacts based on the CARB rulemaking as well as independent modeling exercises.

Comment 422: Realizing the conversion of significant portions of medium- and heavy-duty truck fleets to zero emission vehicles ("ZEVs") and near zero emission vehicles, including electric vehicles ("EVs"), requires cooperation and coordination among trucking companies, the truck manufacturing industry and the utility sector, along with adequate build-out of charging infrastructure. By joining multiple states in adopting the ACT standards, New York State will add to needed momentum to transform the freight industry and, thereby, mitigate climate change and improve public health. Commenter 246.

Response to Comment 422: The Department thanks you for your comment. Additional states adopting ACT standards, as well as installing additional charging infrastructure, would accelerate the transition to a MHD ZEV fleet. Coordination and cooperation between truck fleets is beyond the scope of this rulemaking but would likely assist in the transition to MHD ZEV and NZEV trucks operating in New York State. As part of the Multi-State Medium- and Heavy-duty ZEV MOU effort, New York State agencies and authorities are actively involved in the development of a Medium- and Heavy-duty ZEV Action Plan to formulate recommendations to advance MHD ZEV adoption. The development of the Action Plan includes the stakeholders referenced in the comment and others.

Comment 423: Climate change is already affecting New York City and is projected to have catastrophic consequences on the City in the future. The climate of the New York metropolitan region is changing—annual temperatures are hotter, heavy downpours are increasingly frequent, and the sea is rising. These trends are projected to continue and even worsen in the coming decades due to higher concentrations of greenhouse gases (“GHGs”) in the atmosphere caused, in part, by GHG emissions from automobiles. This changing climate and the resulting effects pose a grave risk to the people, economy, and infrastructure of New York City. As a large coastal city already experiencing the impacts of climate change, the City has a vested interest in ensuring that New York State emissions standards reduce emissions of GHGs and are protective as possible. Commenter 246.

Comment 424: In the past couple of years, the stakes of improving New York’s climate and public health have started to become reality. For example, flooding from increasingly rapid intensification of hurricanes Elsa, Henri, and Ida has been linked to climate change. Numerous studies, most prominently one by researchers at Harvard’s T.H. Chan School of Public Health, have demonstrated that excessive

exposure to fine particulate matter (PM2.5) increases mortality from COVID 19, and compounds existing health disparities among disadvantaged communities. Witnessing the real consequences of insufficient action has pushed some places, like New York City, to move quicker on mitigation and adaptation measures, and the state must also do the same. Commenter 251.

Response to Comments 423-424: The Department thanks you for your comment. The proposed rule supports New York's efforts to improve the public health and mitigate the effects of climate change.

Comment 425: In furtherance of its emission reduction goals, the City has committed billions of dollars to reduce its own carbon footprint with investments in energy efficiency for municipal buildings and transitioning its vehicle fleet toward low and zero-emission technologies, and is aggressively pursuing numerous other strategies to reduce citywide emissions. For example, NYC Clean Fleet is a comprehensive and ambitious blueprint for municipal fleet sustainability. Unveiled by Mayor de Blasio in December 2015, Clean Fleet expands on the City's already substantial strides in sustainability by setting concrete targets to reduce the Fleet's consumption of GHG-emitting petroleum-based fuels—50 percent by 2025 and 80 percent by 2035. In the near term, Clean Fleet committed New York City to add 2,000 EVs to its sedan fleet by 2025. In April 2016, the City reinforced its EV commitment by announcing it would only purchase plug-in vehicles for all non-emergency sedan orders beginning in fiscal year 2017. The proposed amendments will assist the City in expanding these initiatives to medium and heavy vehicles. To date, the City operates over 2,260 on-road EVs and plug-in hybrids, has installed over 1,000 electric charging stations and 87 solar car ports. Commenter 246.

Response to Comment 425: The Department thanks you for your comment and supports New York

City's commitment to ZEV adoption.

Comment 426: E2's community of business leaders work throughout the state's economy and understand that

climate change is a business risk. With transportation representing New York's largest source of greenhouse gas emissions, meaningful action to decarbonize the state's medium- and heavy-duty vehicles is paramount. Adopting the ACT will slash transportation pollution by accelerating the shift towards zero-emission medium- and heavy-duty vehicles, create the market structures needed to drive local job growth and investment and spur the innovation needed to address our looming air pollution and climate crises.

Thanks to smart state clean energy policies, emissions from New York's electric sector have been cut in half from 1990 levels and clean energy employs New Yorkers in all 62 counties. In fact, as E2's recent Clean Jobs America 2021 report shows, New York now ranks third in the nation for clean energy jobs with more than 153,000 New Yorkers working in the clean energy industry. Yet this economic growth and job creation represents only a fraction of New York's clean energy potential.

By adopting the ACT to complement existing clean transportation policies, like the Transition to 100% Zero-Emission Vehicles legislation recently signed into law and the Truck Voucher Incentive Program, New York can establish an even stronger foundation to further accelerate job growth while simultaneously meeting the emission reduction goals as mandated by the Climate Leadership and Community Protection Act (CLCPA). Commenter 248, 2316.

Response to Comment 426: The Department thanks you for your comment.

Comment 427: The infrastructure issue not only relates to cost but also availability. The California Energy

Commission has forecast that approximately 157,000 additional chargers are needed statewide to support 180,000 electric medium and heavy-duty vehicles by 2030. In the New York-Newark-Jersey City area there only 869 of these types of chargers. Commenter 249.

Response to Comment 427: Additional Electric Vehicle Supply Equipment (EVSE) will be required by 2030 to support this proposed rule in the long-term. Charging and refueling locations for MHD ZEV trucks will require investment by private businesses and public government funding. The Department anticipates that the proposed rule will provide regulatory certainty to support the market stability needed for long term charging/refueling business decisions. The federal Infrastructure Investment and Jobs Act signed by President Biden on November 15, 2021 includes state formula and potential competitive grant funding for MHD fueling and charging infrastructure. The Department will join other New York State agencies and authorities to review and seek, as appropriate any future federal funding provided by the Infrastructure Investment and Jobs Act to promote development of MHD ZEV infrastructure in New York State.

Comment 428: There are also growing concerns about the ability of the grid to handle vehicle electrification efforts. A recent article in the Washington Post noted that “in New York City this summer, the utility Con Edison

appealed to customers to cut back on their electricity usage during the strain of five separate heat

waves, while Tropical Storms Elsa, Henri and Ida cut power to thousands.” The article goes on to state, “By 2050, the state projects, electric cars, trucks and buses will use 14 percent of New York’s total output. That’s equivalent to half of all the electricity used in New York City in 2019 — so it’s like powering a new city of four million people.” Commenter 249.

Response to Comment 428: The Department is actively engaged with other State agencies, authorities and electric service providers in anticipation of needed upgrades to the electric grid required for the expansion of the number of EVs operating in New York State. The Department anticipates that the proposed rule will provide regulatory certainty to support the market stability needed for long term charging/refueling business decisions. The CLCPA requires the statewide electrical demand system to be zero emissions by 2040 and to address the impacts of the program on safe and adequate electric service in the state under reasonably foreseeable conditions.

Comment 429: This policy is a critical step in truck electrification, which would allow New Yorkers to breathe more freely, cut down on climate pollution, and makes economic sense from a fleet, grid, and ratepayer standpoint. Commenter 251.

Response to Comment 429: The Department thanks you for your comment.

Comment 430: New York is at a crucial point where it can strengthen its leadership on climate and air pollution and join several other Northeast states (New Jersey, Massachusetts, Connecticut, Maine) that are on the cusp of either adopting this rule or announcing intent to move through the rulemaking. Every year without this rule comes with additional dirty diesel trucks hitting the road to start their long lifetimes,

so it is imperative that DEC adopt this rule without delay. Commenter 251.

Response to Comment 430: The Department thanks you for your comment.

Comment 431: It should be noted that in New York, the trucking industry is primarily small businesses operating less than 20 trucks, but the small businesses have a significant impact on New York's economy. Nearly 90 percent of New York communities depend exclusively on trucks to move their goods and 94 percent of all manufactured goods are transported by trucks. Commenter 2320.

Response to Comment 431: The Department thanks you for comment. Please see the Department's Regulatory Impact Statement and Regulatory Flexibility Analysis for Small Businesses and Local Governments for more information.

Comment 432: Forty-five percent of New York's fleet of heavy-duty diesel vehicles use the newest generation diesel technology, which meets the latest Environmental Protection Agency (EPA) emissions standards for particulate matter (PM) and nitrogen oxides (NOx). Commenter 266.

Response to Comment 432: A large portion of MHD trucks operating in New York meet the latest EPA standards for PM and NOx. The transition to MHD ZEV trucks in New York is needed to reduce greenhouse gases (GHG), achieve climate change goals, and to meet the emission reductions requirements of the CLCPA and Chapter 423 of the Laws of 2021.

Comment 433: Additionally, temperature significantly impacts battery performance and vehicle range.

New York should consider the significant and deleterious impacts that both hot and cold weather have on EV battery performance and associated charging requirements and emissions. Commenter 266.

Response to Comment 433: The Department thanks you for your comment. Temperature extremes can impact battery performance. Fleet operators need to account for weather extremes for any fuel type. Fleets need to consider the vocation and duty cycle when purchasing MHD ZEVs and many MHD ZEVs offer varying battery options. Battery performance continues to improve as the technology advances.

Beyond the Scope

Comment 434: Those of us who live in NY's adjacent states want cleaner trucks and cars IF they are going to be traveling in our states. To do less is to trespass against us, and we think that even if we are supposed to FORGIVE your trespasses, it is harming our states' public health and contributing to common (shared) problems. Commenter 19.

Comment 435: We want to electrify transportation across the entire national economy, but public AND private sectors need to generate knowledge-based solutions and not continue relying primarily on intuition and their faint memories of how things were done in the past. Commenter 19.

Comment 436: This regulation is intended to help save the planet's ecosystem. Commenter 90.

Comment 437: Therefore, my proposal is that the government end all gasoline taxes, which are artificial price modifiers, and instead add back the estimated cost of remediation for the hydrocarbons being

burnt. An appropriate government role would be to support the development of electric vehicle infrastructure, while realizing that burning hydrocarbons will always be part of the mix. The U.S. has lots of natural gas, and alcohol is a renewable hydrocarbon fuel. The scarcity of rare earth minerals for electric vehicles, and the advantages of portability relative energy density will often make hydrocarbon fuels the best choice. Commenter 115.

Comment 438: There is no group or agency that can move quick enough to turn around our entire economy to create a sustainable planet for our grandchildren. But we must act dramatically for certain. Commenter 128.

Comment 439: One of the things to be considered is the power supply. We need to maintain tax credits on home solar. Home solar should be allowed to feed into the power grid with a payback to the homeowners. Home and commercial buildings. There will be greater demands on the power grid, this makes us economically stronger and from a terrorism point, a lot safer. Commenter 158.

Comment 440: I'VE REDUCED MY FOSSIL FUEL CONSUMPTION AT MY HOUSE BY 80%, BUT I NEED POLICYMAKERS TO WORK AT THE COMMUNITY LEVEL. AND THE COMMUNITY IS 'EARTH', ALL 7 BILLION OF US. Commenter 169.

Comment 441: According to a recent survey by NFIB, 74% of small businesses have not seen their sales volume return to pre-COVID levels and 50% anticipate that their local community will not return to pre-crisis level of economic activity until sometime in the second half of 2022 or later. Additionally, the New York State Comptroller released a report finding that four out of five small businesses continue to suffer from a negative overall impact of COVID-19. These are sobering numbers for the state's

economy, local communities, and our Main Streets which bring life and vibrancy to our neighborhoods.

Commenter 201.Comment : New York's small businesses have suffered enormous damage as a result of the COVID-19 pandemic. Thousands of small businesses closed their doors permanently due to COVID-related restrictions resulting in suppressed consumer demand, decreased cash flow, and great uncertainty in the state and local economies. According to a recent survey by NFIB, 73percent of small businesses have not seen their sales volume return to pre-COVID levels and 59 percent anticipate that their local community will not return to pre-crisis level of economic activity until sometime in the second half of 2022 or later. Additionally, the New York State Comptroller released a report finding that four out of five small businesses continue to suffer from a negative overall impact of COVID-19. New York's small businesses that are still in operation continue to face unprecedented challenges while trying to recover. Small businesses have seen dramatic labor shortages, unpredictable supply chain disruptions, and unrelenting inflation, which continues to raise costs for consumers an small business owners alike. Small, independent businesses cannot afford to absorb any new cost increases as they try to shift to recovery mode. Commenter 236.

Comment 442: Adopt fleet purchase requirements upon final publication of California Air Resources Board's (CARB) Advanced Clean Fleets rule (expected 2023). This policy sets zero-emission vehicle adoption targets for large private fleets, public fleets, and drayage trucks. Passage of this rule will provide manufacturers certainty that their increased vehicle production will be received with real demand from fleets. Commenter 204.

Comment 443: Create a ramp up to the rule via sustained and sufficient investments in incentives for vehicle acquisition and charging infrastructure, including expansion of the New York Truck Voucher

Incentive Program (NYTVIP) to make incentives more broadly attainable by fleets and provide multi-year certainty in this program's funding, and include the resale MHD market, where many small and minority-owned fleets procure trucks.

Leveraging market-based funding sources, such as from a Clean Fuel Standard, to extend the program would

allow a wider cross-section of fleets to access incentives because this funding is not tied to specific requirements regarding vehicle scrappage. Sustained and stable incentives to bring down upfront costs of

vehicle acquisition will make the ACT rule's objectives achievable. Commenter 204.

Comment 444: Adopt a Clean Fuel Standard that sets a progressively lower requirements (sic) for the carbon intensity of fuels and improves the operating economics for zero-emission fleets relative to diesel fleets. Such a policy will improve the operating economics for zero-emission fleets relative to diesel fleets and put in place a beneficial TCO environment while generating millions in annual revenues to keep clean and equitable transportation priorities well-funded. Commenter 204.

Comment 445: Adopting a Clean Fuel Standard to lower requirements for the carbon intensity of fuels and make zero-emission vehicles more competitive to diesel incumbents. Commenter 235.

Comment 446: CFS policies, also known as low carbon fuels standards (LCFS), are powerful enablers of transportation electrification—so much so that the Transportation Advisory Panel of the state's Climate Action Council recommended that New York implement one. In the MHD sector, specifically, CFS policies can create revenue streams that help support fleet investments in the very vehicles

required by the ACT rule. Typically, when fleets charge their vehicles centrally at a depot or dispatching center and they own the charger, they can capture the credits generated by the charging events. Selling those credits in turn generates revenue with direct benefits for total cost of ownership. In this way, CFS programs inherently incentivize fleet switching and the accompanying charger installation. This is a significant feature of existing CFS policies. In California, for example, regulators designing the ACT assumed that commercial vehicle owners/operators would realize CFS revenue during operation and that it would help support MHD EV adoption under the rule. Ensuring that similar incentives and revenue opportunities are available in New York is crucial. Commenter 247, 2309.

Comment 447: To incentivize hydrogen refueling station development, New York should move forward in passing legislation such as A.862-A/Woerner, S.2962-A/Parker which proposes adopting a Clean Fuel Standard similar to the Low Carbon Fuel Standard (LCFS) programs in place in California, Oregon and most recently Washington State. The LCFS program implementation has been overwhelmingly successful in incentivizing the network buildout of retail hydrogen refueling stations in California. Commenter 250.

Comment 448: Namely, we urge that you consider supporting the establishment of a clean fuel standard for New York, such as proposed in A. 862/S. 2962 (Woerner/Parker). A clean fuel standard, also referred to as a low carbon fuel standard, works by first setting benchmarks or standards for the carbon intensity of transportation fuels based on lifecycle emissions. Fuels that fall below the carbon intensity standard generate credits. These credits are purchased by manufacturers and importers of fuels that pollute more than the carbon intensity standard and thus create credit deficits. The clean fuel standard is therefore designed to make polluters pay for investments in the clean fuel economy, including

renewable liquid fuels and EV charging infrastructure that will undoubtedly be key to supporting an increased number of zero-emission trucks, in addition to the 100% zero-emission new vehicle sale.

A clean fuel standard has already gained traction as a viable policy option for New York. There is currently legislation to establish a clean fuel standard in both the Senate and Assembly Environmental Conservation Committees. Furthermore, the Transportation Advisory Panel included adopting a clean fuel standard in its recommendations to the Climate Action Council, recognizing it as a key strategy to achieving the CLCPA's transportation decarbonization goals. Given the importance of this policy mechanism to making New York's current and potential future zero-emission vehicle laws more feasible and affordable, we strongly urge DEC to support a clean fuel standard for New York as part of its ACT rule-making. Commenter 258.

Comment 449: A.862-A/S.2952-A is legislation that would implement a Clean Fuel Standard ("CFS") in New York. A CFS would require fuel suppliers like oil refiners and importers to reduce the GHG associated with their fuels while encouraging the production and use of low-carbon alternative fuels and expanded transportation electrification. These initiatives would help create a dependable, long-term market for clean fuels and drive investment into these industries, without additional cost to the state or taxpayers. The standard will improve the operating economics for zero-emission fleets relative to diesel fleets while generating millions in annual revenue to clean transportation. Commenter 265.

Comment 450: It's important to note that CFS in California and Oregon has led to over 80 million tons of transportation GHG reductions, or 112% of New York's emissions from transportation in 2016. With the adoption of a CFS, New York will see a significant improvement in public health, especially in our

most vulnerable communities that live near highways or fleet depots and have been harmed by pollution for decades. Commenter 265.

Comment 451: In the past I have spent much time developing detailed comments on New York State Department of Environmental Conservation regulations but they have never had any effect. The answer is in the back of the book and this proceeding is simply following the rules to pretend to listen to the public. As a consequence, these comments are not detailed. Commenter 218.

Comment 452: The Climate Act mandates that the life-cycle impacts of fossil fuels used in the state be included.

However, there is no consideration of those impacts like this proposed strategies. “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” but the reality is that New York is exporting those burdens to much more disadvantaged communities in jurisdictions where the environmental standards are much lower if they exist at all. Commenter 218.

Comment 453: As it stands the Climate Act supports child slave labor in the Congo to produce cobalt, encourages devastation of tropical rainforests to produce nickel and promotes totalitarianism for lithium battery production in China. Commenter 218.

Comment 454: We also urge NYSDEC to adopt California’s Low NOx Omnibus standard to ensure combustion trucks clean up while the transition to zero-emissions under ACT occurs. Commenter 233.

Comment 455: Adopting an Advanced Clean Fleets rule, currently under review in California, which would progressively mandate fleet owners and operators to purchase zero-emission vehicles, which will further drive demand and maximize the benefits of ACT. Commenter 235.

Comment 456: In addition, DEC should consider adopting the comprehensive California Advanced Clean Fleet regulations once they are promulgated in California. Commenter 250.

Comment 457: Consider additional complementary policies (such as the HDO and Advanced Clean Fleet Rules) to ensure direct emissions reductions in environmental justice communities. Commenter 248.

Comment 458: Coupling the ACT with a fleet purchase requirement would only compound the problem. Burdening the goods movement industry with an electric truck purchasing requirement before reliable and affordable trucks and a network of heavy-duty charging stations are available, sets the stage for a statewide economic quagmire. Commenter 249.

Comment 459: Complementary policies can help New York get even closer to its emissions goals—for example, adopting the HDO rule as well would strengthen annual MHDV fleet NOx emissions reductions to 19,730 metric tons (87 percent) by 2050 from baseline. Commenter 251.

Comment 460: We believe that the ideal structure for a regulatory regime for MHD ZEVs would also involve promulgating fleet requirements (once promulgated by CARB) that correspond to ACT vehicle

sales targets, using a segmented approach as we have advocated to CARB staff as it develops the Advanced Clean Fleets rule. We look forward to engaging with DEC to support adoption of fleet regulations once CARB has finalized that rule. Commenter 260.

Comment 461: In addition, once it is finalized, New York should adopt California's Heavy-Duty Omnibus rule and forthcoming Advanced Clean Fleets rule, which are vital complements to the ACT rule and support the state's goals of achieving near-term emission reductions while transitioning to a zero-emission truck and bus fleet by 2045 statewide. Commenter 264.

Comment 462: Expansion and extension of incentive programs including the New York Truck Voucher Incentive Program operated by NYSERDA to make incentives more widely available which will contribute to affordability. Commenter 235.

Comment 463: Modernizing the state's auto franchise laws to enable direct sales in state of vehicles made by EV-only manufacturers, which will help bring down the costs and enable competition. Commenter 235.

Comment 464: Considering adopting California's first-in-the-nation Energize Commercial Vehicles program, which works with operators to help plan and fund the purchase of charging infrastructure. Commenter 235.

Comment 465: NYSERDA's New York Truck Voucher Incentive Program (NYTVIP) is a leading nationwide example of a state program that drives down the costs of zero-emission trucks and buses

through accessible point-of-sale rebates. We support recent commitments to NYTVIP through additional Volkswagen settlement funds, including \$2.5 million for cleaner school buses announced at the end of 2020. Commenter 244.

Comment 466: Simple and reliable purchase incentives are key to support fleet switching, especially in the MHD sector where upfront purchase prices can be substantial. Unfortunately, New York's existing program does not

fully reflect the best practices for EV incentives. Its existing funding sources, including finite Volkswagen Settlement funds and highly limited federal Congestion Mitigation and Air Quality (CMAQ) dollars, are insufficient to the task and can contribute to "on again, off again" uncertainty in voucher availability.

Limiting the reach and impact of the program, New York also currently makes eligible various technologies

that while incrementally cleaner than conventional vehicles—such as compressed natural gas and hybrid or plug-in hybrid powertrains—are not truly zero-emission solutions. Additionally, the state imposes a potentially burdensome scrappage requirement on most participating fleets and curtails availability of Class 3 vouchers to certain counties only. While perhaps well intentioned, such provisions introduce barriers to participation.

Rivian recommends that New York streamline and enhance the Truck Voucher Incentive Program. To make

it as effective as possible and an impactful tool in achieving the goals of the ACT regulation, we encourage the state to commit to substantial and sustained funding, support ZEVs only, eliminate scrappage requirements, and make rebates available to all MHD segments across the state.

Commenter 247, 2309.

Comment 467: To incentivize demand, New York should consider expanding existing programs, such as 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 the New York State Public Service Commission's medium- and heavy-duty fleet make-ready pilot program, and further adding purchase incentive programs for fleets across the state. Commenter 250.

Comment 468: We strongly encourage New York State to explore opportunities to ensure the ongoing availability of truck voucher incentives once the current funding is exhausted. In particular, New York should identify funding streams that will be self-sustaining and more accessible to a wider cross-section of truck fleets by virtue of fewer regulatory eligibility requirements (e.g., scrappage). Funding to support such a flexible ongoing incentive framework could be derived from a Clean Fuel Standard (discussed in greater detail below), or as in New Jersey and Massachusetts from Regional Greenhouse Gas Initiative (RGGI) auction proceeds. Broader availability of sustained and stable truck incentives will be integral to ensuring that manufacturers can meet the sales targets required by the ACT rule. Commenter 260.

Comment 469: To incentivize hydrogen fuel production and supply, New York should consider establishing tax credit incentives to promote the development and deployment of hydrogen hubs with large-scale low or zero carbon hydrogen production capacity to meet the expected needs of the transportation and other industries as they decarbonize. In California, the California Alternative Energy

and Advanced Transportation Financing Authority (CAEATFA) works collaboratively with private partners to provide innovative financing and tax credit solutions for clean energy initiatives and promote economic development and jobs. Commenter 250

Comment 470: Further, electricity supply reliability and costs are concerning as the state accelerates its dependence on intermittent renewables and they become a greater percentage of the energy supply. The reconfiguration of the electric grid needs more time to mature to ensure power is available to meet the increased demand throughout the regions where ZEV trucks will be in operation. Commenter 255.

Comment 471: A.3876/S.3929 is critical legislation that would require electric utilizes to develop alternatives to traditional, demand-based rates in support of statewide goals for transportation electrification. By enacting A3876/S3929, Gov. Hochul will help the State overcome the most significant barrier to deploying high powered electric vehicle charging stations: outdated electricity rate designs that make the procurement of power cost prohibitive to the deployment of charging stations for MHDV fleets. Traditional, demand-based electricity rates do not reflect customer needs or reflect the beneficial nature of the new load brought by transportation electrification to the electric distribution grid. New York's electric transportation strategies must support MHDV charging to create benefits for the grid, municipalities, public and private fleets, and ratepayers. Commenter 265.

Comment 472: These clear signals from leading green U.S. fleets are not going unnoticed by policymakers. The

South Coast Air Quality Management District (SCAQMD), which is responsible for improving air quality in the most challenging air basin in California, enacted a warehouse indirect source rule (ISR) in May

of this year which includes RNG trucks as a key strategy. The ISR requires warehouse owner and operators to decrease emissions, primarily associated with truck traffic, or to pay a significant mitigation fee. In lieu of paying the mitigation fee, owners and operators may utilize either RNG or zero-emission medium and heavy-duty trucks to improve air quality. We believe this rule is an indicator of the future direction of transportation emission reduction policy as it acknowledges the need for near-term solutions and diverse options. Commenter 249.

Comment 473: The good news is that the recently passed, and just signed into law, Infrastructure Investment and Jobs Act, 1 provides billions in new funding to support cleaner trucks. This funding should be put to work deploying readily available, cost-effective technologies to maximize emission reduction benefits now. Commenter 254.

Comment 474: The new fleet requirements contemplated under Advanced Clean Fleets would complement regulations California has already promulgated for zero-emission vehicle procurement for transit fleets in the form of the Innovative Clean Transit (ICT) rule. While tracking progress on Advanced Clean Fleets closely, we also encourage DEC to fully explore adopting the ICT rule alongside the ACT. A similar policy in New York could codify the requirement for five of the largest transit agencies in the state to electrify 25% of their bus fleets by 2025 and 100% by 2035, announced in the 2020 State of the State address, as well as the independent commitment by the Metropolitan Transportation Authority to electrify its entire 5700-bus fleet by 2040. Commenter 260.

Comment 475: Putting such policies in place, the state has an opportunity to ensure that we live up to the principles of a just transition, by helping foster a clean energy economy that creates green jobs that

improve the livelihood and security of the new and existing workforce. Policies should be put in place that will provide resources to retrain and support workers that could be impacted as we transition to a zero-emission transportation sector, including mechanics and drivers. To the extent possible, new infrastructure and assets should be owned and operated by those in the communities they serve, and priority given to businesses from disadvantaged communities. And there are opportunities to leverage state funds to improve the working conditions for drivers and other workers that do not benefit from the current economy. In addition, utilizing a “best value” procurement policy, such as the U.S. Employment Plan, would encourage bidders for government purchases of electric MHDVs, such as electric school buses, to compete up by earning extra credit for good wages, training and retraining programs. Commenter 262.

Comment 476: And while implementing new MHDV emission standards will lead to a boost in clean energy jobs, the state must ensure that workers in affected industries do not shoulder the short-term costs of transitioning to a zero-emissions transportation sector, and that new workers in the zero-emissions transportation sector can expect good wages and benefits. New York must also continue its efforts to ensure that the new jobs created by this transition offer good, family sustaining wages and benefits. Commenter 264.

Comment 477: Shed light on exploitative labor practices, such as misclassifying drivers as independent contractors. Misclassification is rampant in the trucking industry, particularly in the drayage segment. These trucks are among the oldest and dirtiest vehicles on the road and are excellent for zero-emission technology given their short-haul, idling, and stop-and-go operations. Due to misclassification, many drivers lack financial resources to upgrade their equipment to reduce diesel

pollution or buy a zero-emission truck. DEC will need the most granular information possible to direct funding and regulations towards entities that control fleets to make sure they comply with emissions reductions and electrification goals rather than shifting the responsibility to drivers who often do not have the resources to comply. Adopting the rule could turn a historically polluting industry into a source of high quality, green jobs in trucking, manufacturing, and charging infrastructure installation. Commenter 264.

Comment 478: To tackle climate change and traffic congestion and the road rage that goes along with it, we do not need more cars on the road even if they are electric cars.· Especially since those who receive their incentives to buy their electric cars will likely sell their gas-guzzling cars to those who can't afford new cars. Commenter 2319.

Comment 479: Encouraging public transit is a better route to take than electric cars especially for suburban areas and smaller cities that were designed around the car. People in these areas -- Rockland County being a perfect example -- are stuck with the idea that home and car ownership are part of the American dream and public transit is relegated to the poorest of the poor. We need to improve our public transit with electric buses but better service too, and we also need a huge marketing campaign to convince the car owners that taking public transit would result in fewer cars on the road, reduce pollution, reduce road rage, fewer traffic accidents, and more equitable communities. Perhaps this could begin with Governor Hochul biking or taking trains and buses to get around the state. Commenter 2319.

Comment 480: To date, there has been no concerted effort yet on the part of manufacturers to reach

out to local highway departments to solicit input on their equipment needs and designs, explain electric charging infrastructure characteristics, identify available transitional clean fuel choices or to estimate price points. Commenter 255.

Comment 481: Importantly, Tesla will be manufacturing its Semi charging systems in its factory in Buffalo, New York. Commenter 269.

Comment 482: But we know that medium- and heavy-duty vehicles are about 25 percent of the problem, and the other 75 percent may be more challenging to tackle because it involves individuals changing their lifestyles especially in suburbia and municipalities and communities planning and designing for that change. Commenter 2319.

Comment 483: Eighty percent of the federal funding on transportation is devoted to highways. Twenty percent that goes to transit, public transit. New York City also leads the nation in public transit. Let the state lead in public transit too. Commenter 2319.

Response to comments 434-483: These comments are beyond the scope of this rulemaking.

List of Commenters

1. Alok Disa, Senior Research & Policy Analyst, Earthjustice
2. Barry Carr, Executive Director, Clean Communities of CNY
3. Amanda Sachs
4. Louisa Solomon

5. Joshua Malbin
6. Mary Suda
7. Matthew Eager
8. Chris Proctor
9. Joseph Varon
10. William Morel
11. Bill Nowak
12. Regina Riesenburger
13. Joy Smiley
14. James Cooper
15. Robin Spiegelman
16. Nora Gaines
17. Andrew Kurzweil
18. Laura Silverman
19. Maynard Clark
20. Ellen Neumaier
21. Jennifer Hagens
22. Eila Kokkinen
23. Isabelle Kanz
24. Timothy Raymond
25. Robert Kolodny
26. JoAnne Metzler
27. Caroline Sévilla

28. Nivo Rovedo
29. Jane Young
30. Nadine Godwin
31. Wendy Ryden
32. Timon Malloy
33. Soretta Rodack
34. John Perrone
35. Brian Slosek
36. Mary Fleming
37. Terry Frank
38. Jessica Thompson
39. Robert Sweeney
40. Robert Verity
41. Cheryl Carnahan
42. Brenda Frey
43. Joyce Shiffrin
44. David Riccardi-Zhu
45. Joseph Lawson
46. Eric Wessman
47. Anita Maldonado
48. Paul Ghenoiu
49. Beth Darlington
50. Cathy McConnell

51. George Dillmann
52. Michael Gold
53. Edward Scovell
54. Karen Cotterell
55. Edwin Ward
56. Karen Carini
57. Brenda Lee
58. Lilli Ross
59. Kate Skolnick
60. Kristina Younger
61. Jacqueline Birnbaum
62. Susan Holland
63. Walter Simpson
64. Susan Mufson
65. Ned Milligan
66. Paul Mendelsohn
67. Thomas Pritchard
68. Frankie DeMarco
69. Katherine Bini
70. Derinda Nilsson
71. Cheryl Schwartz
72. Arrie Hammel
73. Nerissa Russell

- 74. Gertrude Battaly
- 75. L Wojcik
- 76. Jacalyn Dinhofer
- 77. Stephen MacNish
- 78. Phillip Hope
- 79. Joan Stanton
- 80. Kathy Levine
- 81. Steve Bloom
- 82. Alexis Brownstein
- 83. Dawn Kenyon
- 84. Joseph Quirk
- 85. M.E. Scullard
- 86. Diane Gaertner
- 87. Diane Guendel
- 88. Michael Pryor
- 89. Seth Silverman
- 90. David Stout
- 91. S. Nam
- 92. Claudia Devinney
- 93. David Samer
- 94. Guy Jacob
- 95. Fernando Rivera
- 96. Jeffrey Levitt

97. James Cronin
98. Wendy Seligson
99. Kimberly Wade
100. Michelle Weber
101. David Sayer
102. Matthew McCarty
103. Christy Pennoyer
104. Peter Callaway
105. Peter Callaway 2
106. Mary Lahovitch
107. Susan Cox
108. Christy McElligott
109. Cal Mendelsohn
110. Acadia Cutschall
111. Richard Guier
112. Ann Loeding
113. Dominick Calsolaro
114. M Lewis
115. Clark Burdick
116. Phylis Katz
117. Kendra Shedenhelm
118. Sarh Young
119. Joel Schuman

- 120. Jose Contreras
- 121. Philip Rose
- 122. Christopher Pelham
- 123. Madeline Frank
- 124. Stephen Ring
- 125. Sasha Silverstein
- 126. Mark Christensen
- 127. Buffy Turner
- 128. Daniel Spilman
- 129. Noreen Boyle
- 130. Elizabeth Adamson
- 131. Dorian Fulvio
- 132. Joanne Witty
- 133. Dara Murray
- 134. Keith Loomis
- 135. Agnes Chao
- 136. David Buck
- 137. Susan Drouin
- 138. Portia Zwicker
- 139. Marilyn Oser
- 140. Carol Milano
- 141. Marta Schaaf
- 142. Ginger Comstock

143. Emily Griffin
144. Lucian Cohen
145. Alexandra Tumarkin
146. Elizabeth Rowland
147. Alice Jena
148. Enid Cardinal
149. Tom Koster
150. Terry Tiernan
151. Jean Post
152. Stephanie Kob
153. Craig Herron, President, Kenworth Northeast Group, Inc.
154. Dennis Vecchiarello
155. Donald Dobesh
156. Morgan Davies
157. Debbie Stein
158. Joseph Wagner
159. Jackie Raven
160. Rita Coon
161. Laura Shapiro
162. Marc Wanner
163. Sandra Kaplan
164. Patrick Cleveland
165. Krista Topp

166. Elizabeth Shafer
167. Genji Siraisi
168. Nancy D'Angelo
169. Melissa Carlson
170. Hamilton Fish
171. Sandra Meier, Ph.D., Director, Environmental Energy Alliance of New York
172. Michele Temple
173. Carol Elias
174. Anne ProudFire
175. Linda Valente
176. Gwendolyn Hoeffel
177. Leanora Fallon
178. Denise Edelson
179. Steven Nasta
180. Margaret Hurley
181. Kevin Conley
182. Laura Koulish
183. Laura Koulish 2
184. Jack Pliskin
185. Doreen Tignanelli
186. Juli Shields
187. Daniel Morrison
188. Sarah Buttrick

189. Laurence Kirby
190. Donna Seymour
191. Elizabeth Stoumen
192. Andrew Robbins
193. Samantha Wright
194. Mona Perrotti
195. Kristin Mosher
196. Mary-Alice Shemo
197. Susanna Levin
198. Karen Zilber
199. Timothy French, Truck & Engine Manufacturers Association
200. Michael Durant, President & CEO, Food Industry Alliance of New York, Inc.
201. Greg Biryła, NFIB Sr. State Director – NY; Ashley Ranslow, NFIB Assistant State Director - NY
202. Mary Neilson
203. Angie Mendoza
204. The Lion Electric Co.
205. Ann Sprayregen
206. Kirsten Andersen
207. Ellen Reznick
208. Mark Maloof
209. Thea Hetzner
210. Emil Swiatek
211. Margot VanEtten

- 212. Barry Spielvogel
- 213. Ceres
- 214. Evan Romer
- 215. Catherine McCabe
- 216. David Clayman
- 217. Carol Michelson
- 218. Roger Calazza
- 219. Karena Wells
- 220. Steve Finkelstein
- 221. Liz Tormes
- 222. Carol Myers
- 223. Mark Hollinrake
- 224. Ruth Karpel
- 225. Abi Buddington
- 226. Rebecca Johnson
- 227. Jonathan Flynn
- 228. Susan Lawrence
- 229. Keith Loomis 2
- 230. Daniel Grassi
- 231. Meghan Aagaard
- 232. Leslie Judd
- 233. Trevor Summerfield, Director, Advocacy, New York American Lung Association
- 234. Steven Lee

- 235. Suzanne Merkelson, Director of Public Policy and Government Affairs, Arrival
- 236. Ashley Ranslow, NFIB, Assistant State Director – NY
- 237. Judith Zingher
- 238. Judith Zingher 2
- 239. Laura Castro
- 240. A. Gwaltney
- 241. Paulina Muratore, Union of Concerned Scientists
- 242. Nicholas Raspanti, Government and Regulatory Affairs Manager, Zeem Solutions, Inc.
- 243. Vincent Pellecchia, Strategic Account Manager, BYD Motors LLC
- 244. Sue Gander, Director, Electric School Bus Initiative, World Resources Institute
- 245. Elizabeth Wolters, Deputy Director of Public Policy, New York Farm Bureau (NYFB)
- 246. Alice Baker, Senior Counsel, Environmental Law Division, New York City (NYC)
- 247. Tom Van Heeke, Senior Environmental Policy Advisor, Rivian Automotive, LLC
- 248. Uchenna Bright, Northeast Advocate, E2
- 249. Clean Energy
- 250. Eric Guter, Vice President, Hydrogen Mobility Solutions, Air Products and Chemicals, Inc.
- 251. Kevin Shen, Northeast Transportation Policy Analyst/Advocate, Union of Concerned Scientists
- 252. Barbara Anger
- 253. John Bartow Jr., Empire State Forest Products Association
- 254. Daniel Gage, President, NGVAmerica
- 255. Joseph Wisinski, President, New York State County Highway Superintendents Association
- 256. Partners for a Zero Emission Vehicle Future
- 257. Bruce Geiger, Bruce Geiger & Associates; Jeanette Marvin, Administrator New York State

Agribusiness Association

- 258. Clean Fuels New York
- 259. American Petroleum Institute
- 260. CALSTART
- 261. Ola May
- 262. ElectrifyNY
- 263. Navistar International
- 264. Earthjustice
- 265. ChargePoint
- 266. American Fuel & Petrochemical Manufacturers
- 267. Calstart 2
- 268. Calstart 3
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- 601. Cathy Hamilton

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- 708. Joyce Flora
- 709. Joyce Flora
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- 736. Hector Roldan
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- 765. Grace Messina
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1152. Rena P
1153. Alexandra Zarzycka

1154. Tova Cohen
1155. Melissa Barnard
1156. Jane Sherman
1157. Vaishnavi Bhatt
1158. Anne Huibregtse
1159. Sue Nuccio
1160. Susan Santilli
1161. Amelia Hoy
1162. Michele Temple
1163. Caridad Romaine
1164. Deborah Bushey
1165. Michael Laird
1166. Camala Projansky
1167. X O
1168. S Bowden
1169. Karen Evert
1170. Kathleen Roberts
1171. Elizabeth Hegarty
1172. Janet Duran
1173. Marjorie Berk
1174. Elliot Pliner
1175. Jennifer Alberghini
1176. Ann Hawkins

1177. Elaine Shuster
1178. Colette Flake
1179. Enid Cardinal
1180. Laurence Reilly
1181. Amy Lund
1182. Eva Marks
1183. Phillip Hope
1184. Lou Priem
1185. Nathan Beck
1186. Tom Calderone
1187. Steven Belfield
1188. Joel Elio
1189. Barbara Vaccaro
1190. Gordon Metz
1191. Greg Paxton
1192. Arleen Johnson
1193. Michael Shaw
1194. Steven Brambrut
1195. Nidhi Khanna
1196. Michael Machado
1197. Myra Dremeaux
1198. Francisco Velez
1199. Adele Shtern

- 1200. Chris Saia
- 1201. Mitchell Stachowicz
- 1202. Diane Gaertner
- 1203. Tammy Lindsay
- 1204. Isabella Ornaf
- 1205. Debra Naumovitz
- 1206. Ellen Ross
- 1207. Rita Jaskowitz
- 1208. Matthew Miller
- 1209. Nancy Vigyikan
- 1210. Eric Lehman
- 1211. Kahlil Goodwyn
- 1212. Harold Whitman
- 1213. Robert Verity
- 1214. Sophia Sattar
- 1215. Andre McMahon
- 1216. Rhoda Levine
- 1217. Nick Byrne
- 1218. Mark Sonderskov
- 1219. J Saunderson
- 1220. Randy Gyory
- 1221. Patricia Ioannides
- 1222. Fern Wachtel

1223. John Rybicki
1224. Emmet Ryan
1225. James O'Dowd
1226. Susan Emery
1227. Caren Flashner
1228. Wendy Ryden
1229. Marion Corbin
1230. Jack Savage
1231. Cindy Schultz
1232. Vernetta Taylor
1233. Natalya Cummings
1234. Will S
1235. Joseph Quirk
1236. Artie Kunhardt
1237. Scott Heinze
1238. James Maloney
1239. Maria Humbert
1240. michael villanova
1241. Mark Hochman
1242. Victoria Khazzam
1243. Catherine Sullivan
1244. Claudia Leff
1245. Becky Moroney

- 1246. Susan Emery
- 1247. Judith Lasko
- 1248. Dara Murray
- 1249. Elisabeth Youngclaus
- 1250. Rosemarie Pace
- 1251. Sharyn Furman
- 1252. Mike Hudak
- 1253. Ellen Fleishman
- 1254. Gerald Wolfe
- 1255. Martha Perlmutter
- 1256. Mikki Chalker
- 1257. Richard Stern
- 1258. Pat Wagner
- 1259. Paul Kalka
- 1260. John Papandrea
- 1261. Helene Stoller
- 1262. Gordon Abrams
- 1263. Kristin Crage
- 1264. Seth Schneider
- 1265. Michelle Christenson
- 1266. Millie Schaefer
- 1267. Aidan Leitch
- 1268. Joseph Ambat

1269. Kathleen Corby
1270. BARBARA Jordan
1271. Peter Winkler
1272. Kathryn Kassner
1273. Zoe Strassfield
1274. Aubrae Lamparella
1275. Marissa Harris
1276. J Diamond
1277. Andrei Harabadji
1278. Laura Silverman
1279. Sylvia O
1280. Sheila Out
1281. Robert Grace
1282. William Mancini
1283. Danny M.
1284. Robert Loveday
1285. Megan Ryan
1286. Glenda Liling
1287. Michelle Richards
1288. Rob Puc
1289. June Lum
1290. Ken Baer
1291. Kimberly Badger

1292. Karla Reganold
1293. Mary Noll
1294. Jacalyn Dinhofer
1295. Rachelle Fredette
1296. Arlene Scovotti
1297. Deni Mack
1298. Stephen Davie Fort
1299. Michelle Monaco
1300. Henry Westmoreland
1301. Emily Sun
1302. Kate Ritter
1303. Rehana Huq
1304. Jared Brenner
1305. M Lopez
1306. Richard Glinski
1307. Dorothy Donovan
1308. Margo Moulin
1309. David Kornreich
1310. Carey Sheck
1311. Gregory Marks
1312. Kirsten Egenes
1313. Ned Overton
1314. Leona Newman

1315. George Riggs
1316. Null Null
1317. Gabriel J. Gomes
1318. Kerry Burkhardt
1319. Patricia Harlow
1320. BARBARA TETRO
1321. Ward Giblin
1322. Elizabeth Shepherd
1323. Jeffrey Moran
1324. Nancy Schulman
1325. Katie Miles
1326. Rob Hill
1327. Kate Skolnick
1328. Adam Cooper
1329. Maria Asteinza
1330. Kevin Lopez
1331. Irving Lee
1332. June Balish
1333. Fay Leader
1334. Lilli Ross
1335. Rose Marie Wilson
1336. Jonathan Abrams
1337. John Markowitz

- 1338. Ralph Ferrara
- 1339. Robert Snyder
- 1340. Alex Stavis
- 1341. Marc Dorwitt
- 1342. Sheila Palevsky
- 1343. Joseph Crymes
- 1344. Sharon Nanos
- 1345. Brady Fergusson
- 1346. Ruth Talley
- 1347. Sharon Longyear
- 1348. Jessica Barrett
- 1349. Than Hansen
- 1350. Paul Hofheins
- 1351. Russell Chiappa
- 1352. Joy Smiley
- 1353. Irene Franck
- 1354. Joanne Metzler
- 1355. Pablo Bobe
- 1356. William Corry
- 1357. Alfred Wheaton
- 1358. Susan Alice Mufson
- 1359. Paul Mccarthy
- 1360. Scott Davis

- 1361. Elizabeth Schwartz
- 1362. William Roberson
- 1363. William Wurtz
- 1364. Toni Scofield
- 1365. Robert Liebman
- 1366. Ljubica Stefancic
- 1367. Deb Tirone
- 1368. Margaret Gryska
- 1369. Marleen Schussler
- 1370. Alfred Cammisa
- 1371. Lynne Teplin
- 1372. Pat Foster
- 1373. Jeri Patterson
- 1374. Heather Turbush
- 1375. Kathleen Wittenborn
- 1376. Kathryn Schneider
- 1377. Zachary Gosse
- 1378. Kelly DeVine
- 1379. Vincent Castellano
- 1380. Amy Griffin
- 1381. Anastasia Hanifan
- 1382. Amy Harlib
- 1383. Audrey Peltz

- 1384. Jerome McNerney
- 1385. Sophie Kyriacou
- 1386. Alexandra Tumarkin
- 1387. k t
- 1388. Roger Woodard
- 1389. Eric Esposito
- 1390. Jennifer Harris
- 1391. Richard Guier
- 1392. Linda Shapiro
- 1393. Janet Moser
- 1394. James Mulder
- 1395. Harriet Cohen
- 1396. Edgar Cid
- 1397. Tristan Sheridan
- 1398. Destiny Orantes
- 1399. Marina Barry
- 1400. Chris Proctor
- 1401. Michael Spitz
- 1402. Ela Thomas
- 1403. Maribel Jerez
- 1404. Marlene Frihman-Fels
- 1405. Arthur Schurr
- 1406. Chris Ness

1407. Barbara Rosen
1408. Robert Williams
1409. Jessica Thompson
1410. Leslie Mlawski
1411. Michael Andrea
1412. Ilene Budin
1413. Katherine White
1414. Stacey Skole
1415. Jennifer Fox
1416. Jane Zimmerman
1417. Shirley Smith
1418. Deb Tirone
1419. Steven Menhorn
1420. Mary Loughran
1421. Beau Bushor
1422. Byron Connell
1423. Gary Paddock
1424. Antonio Rivera
1425. Michelle Rogers
1426. Jeffrey Surovell
1427. Peter Gradoni
1428. Mark Daitsman
1429. Gail Sullivan

1430. Michael Howard
1431. Alphonse Leonette
1432. Anne Bozza
1433. Jacqueline Bittner
1434. Michael Gelfer
1435. Rebecca Berlant
1436. Cary Appenzeller
1437. Hal Pillinger
1438. Marie Young
1439. Philippe Chambadal
1440. Nicole Bohlman
1441. Robin Blakesley
1442. Camille Doucet
1443. Kevin Scutt
1444. Diane Slowik
1445. Susan Farmer
1446. Mark Deka
1447. Lakshmi Banerjee
1448. Patricia Packer
1449. Catherine Knight
1450. Greg Benson
1451. Lauren Kirkwood
1452. Paula Neville

1453. Elaine Sperbeck
1454. sandra Taggart
1455. Joshua Konheim
1456. Meagan Fastuca
1457. Millie Schaefer
1458. Jaiden Capozzi
1459. Patricia Oshaughnessy
1460. Frank Silagy
1461. Alice Henkin
1462. Roseanne Gough
1463. Laura Ubriaco
1464. Doug Seidman
1465. Kimberly Wade
1466. Shaun Knutsen
1467. Aidan Leitch
1468. Nancy Ward
1469. Carol Michelson
1470. Janet Forman
1471. Katie Garton
1472. Teresa Kotturan
1473. Nancy Prowell
1474. Julianne Chen
1475. Kelly Armour

1476. Clinton Dawkins
1477. Al Wheaton
1478. Toni Danielson
1479. Edward Rengers
1480. Diane Gaertner
1481. Hannah Leshaw
1482. Deborah Long
1483. Kasey Jueds
1484. Jackie Purpura
1485. Barbara Brasel
1486. John Miller
1487. Jenny Defino
1488. Gerald Kline
1489. Rosemary Agonito
1490. Jerry Rivers
1491. Cynthia Skandis
1492. Natalka Palczynski
1493. Rai Montalvo
1494. Carol Vericker
1495. Brittany Barringer
1496. Gianluca Delvecchio
1497. Leroy Smith
1498. Peter Enders

1499. Esther Devito
1500. Rand Carter
1501. Betsy Kennedy
1502. Charlotte Baltus
1503. Pat Foster
1504. David Middleton
1505. Roland D'amour
1506. Ann Rolya
1507. Carol Accorsi
1508. Virginia Bottorff
1509. Julianne Wiesner-Chianese
1510. Jane Edsall
1511. Lori Alicie
1512. Obie Hunt
1513. Peter Mathews
1514. Bonita Martin
1515. Joanna Bagatta
1516. Cave Man
1517. Patricia Eberhard
1518. John Kastner
1519. Rashida Paul
1520. Lilly Knuth
1521. Jamie Cooney

1522. Anthony Ferranto
1523. Paola Cruz
1524. Melissa Chitwood
1525. Jennifer Barton
1526. Wendy Fleischer
1527. Peter Nicholas
1528. Fern Gnesin
1529. Laura Nichols
1530. Eileen Miller
1531. Michelle Anderson
1532. Karen Thomas
1533. Wendi Cohen
1534. Amy Pick
1535. Paul Hofheins
1536. Martin Schaub
1537. Paul S. Lipton
1538. Mark Gorsetman
1539. Larry Berke
1540. Claire Stenger
1541. Lisa Somerville
1542. Yvonne Simmons
1543. A. W.
1544. Mary Palladino

1545. Kathleen Van Schaick
1546. Susan Wood
1547. Helen Beichel
1548. Joanne Sheldon
1549. Gail G.
1550. Alyson Shotz
1551. Kevin Mcdaniel
1552. Sarah Fecht
1553. Stephanie Kob
1554. F. Braio
1555. Arthur Schurr
1556. Joanne Lubchenko
1557. Michelle Christenson
1558. Marina Morrone
1559. Ronni Ascagni
1560. Patricia Harris
1561. Gene Polito
1562. Joyce Shiffrin
1563. Nivo Rovedo
1564. Stephanie Randall
1565. Mary Anna Jun-Morris
1566. Scott Sasso
1567. Emily Kloda

1568. Tim Cook
1569. Jill Greenberg
1570. Vicki Obrien
1571. Laurie Bracco
1572. Tom Koster
1573. Timothy Raymond
1574. James & Yvonne Tittle
1575. Kevin Kurtz
1576. John Kim
1577. Gery Kouni
1578. Jack Polonka
1579. Elizabeth Eich
1580. Linda Agoston
1581. Anita Sterns
1582. Linda Seaver
1583. David Elman
1584. Cindy Schultz
1585. Kristin Winkler
1586. Paulette Henderson
1587. Sheila Out
1588. Nancy Sheehan
1589. Susan Welti
1590. George Boziwick

1591. S. M.
1592. Marilu Zahn
1593. Linda Ng
1594. Dolores O'Dowd
1595. Sheila Kelley
1596. Matthew Eager
1597. Kate Kenney
1598. Priscilla Drake
1599. John Surface
1600. Didi Magnin
1601. Mar Carr
1602. Laura Pitt
1603. Carly Dupuis
1604. Seth Schneider
1605. Ally Jones
1606. Thadeus Dziekonski
1607. Janet Muir
1608. Zoe Strassfield
1609. Lisle Raught
1610. Nancy Vincent
1611. Susan Storch
1612. Jacalyn Dinhofer
1613. Cory Rouillard

1614. John Stanton

1615. Marley McDermott

1616. Ibe Bonilla

1617. Edgar Cid

1618. Ann Hollinger

1619. Claire Laborde

1620. Harley Fox

1621. Dan Battles

1622. Andrew Joncus

1623. Matthew Hartnett

1624. Michael Baglio

1625. Melissa Barnard

1626. Mary Lahovitch

1627. Daniel Grulich

1628. Scott Davis

1629. William Roberson

1630. Suresh Dianand

1631. Claire Monier

1632. David Bly

1633. Susan Santilli

1634. Vitus Wieser

1635. Becky Lechner

1636. Tova Cohen

1637. Xoxenia Harris
1638. Elena Schaef
1639. Gilda Carrington
1640. William Melaney
1641. Greg Coutinho
1642. William Malmros
1643. X. O.
1644. Barry Spielvogel
1645. Enid Cardinal
1646. Matthew Miller
1647. P.F. Bauer
1648. Robin Blakesley
1649. Peter Mikolaitis
1650. Bonnie Watson
1651. Juan Antillon
1652. Patricia Baecker
1653. Charles Neidich
1654. Joel Leitner
1655. Andrew Weisman
1656. Ronald Sonnenberg
1657. Andrew Marallo
1658. Andy Ettinger
1659. Ann Wenzel

1660. Ned Durkovic
1661. Laura Anastasio
1662. Robert Davies
1663. Rebeccca Seise
1664. Martha D. Perlmutter
1665. Jackie Stolfi
1666. MaryGrace Brown
1667. Patricia Altro
1668. Alex Zackrone
1669. Debra Naumovitz
1670. Dean Gallea
1671. Stephanie Cuellar
1672. Bill Nowak
1673. Stephanie Llinas
1674. Jason Smith
1675. Elizabeth Hegarty
1676. Tatyana Syrova
1677. G. Paxton
1678. Kris Berner
1679. Sarah Hamilton
1680. Cheryl Ritch
1681. Anna Mancini
1682. Robin Blier

1683. Charles Gates
1684. John Skelly
1685. Patricia Duran
1686. Adrian Burke
1687. Michael Madden
1688. Michael Madden
1689. Judith Lasko
1690. May Ze
1691. Gerd Zeibig
1692. Lisa Stimpson
1693. Catherine Nettesheim
1694. Myra Dremeaux
1695. B. R. Lemonik
1696. Audrey Huzenis
1697. Rob Puc
1698. Paul Kalka
1699. Elyse Mallin
1700. Deborah Dewey
1701. Ward Giblin
1702. Richard Meyer
1703. Radka Yang
1704. Evelyn Malone
1705. Marleen Schussler

1706. Lawrence Midura
1707. Vernetta Taylor
1708. Janet McGarry
1709. Charlotte Honess
1710. Karen Biesanz
1711. Emmet Ryan
1712. Charlie Ferguson
1713. Seth Silverman
1714. R. Fain
1715. Stephanie Cybulski
1716. Jon Nelson
1717. Michael Prince
1718. Philippe Chambadal
1719. Patricia Sullivan
1720. Tina Johnson
1721. Fern Wachtel
1722. Gordon Reilling
1723. Wendy Scherer
1724. Kevin Lopez
1725. Arthur Hayner
1726. John Twohig
1727. Phillip Hope
1728. Jane Zimmerman

1729. William Demo
1730. Lisa Reinhold
1731. Marsha Korotyk
1732. Helen Shaskan
1733. Cathy Marczyk
1734. Katheryn Cortes
1735. John Cerullo
1736. John Rybicki
1737. Judith Gentleman
1738. Franco De Nicola
1739. Michael Gelfer
1740. Arleen Johnson
1741. Daniel Olson
1742. Kerry Burkhardt
1743. Eric Bare
1744. Douig Russell
1745. Leola Specht
1746. Henry Westmoreland
1747. Sharon Pataky
1748. Mark Sanchez
1749. Margaret Hartley
1750. Kara Huberman
1751. Marie Garescher

1752. Joyce McDonald
1753. Mary Lou Bailey-Smith
1754. Gregory V.
1755. Lorraine Avallone
1756. Lauren Bell
1757. Arlene Scovotti
1758. Beth Carr
1759. Ellen Fleishman
1760. Gary Dube
1761. Robin Buco
1762. Marion Lakatos
1763. Kathryn Kassner
1764. Lynn Skibinski
1765. Alix Keast
1766. Eileen Brophy
1767. M. Elisabeth Magone
1768. Sandra Sobanski
1769. Ronald Carter
1770. Carol Lipsky
1771. Vincent Castellano
1772. Aubrae Lamparella
1773. Gregory Marks
1774. Eva Curatolo

1775. Ron Przybycien
1776. Michael Howard
1777. Rita Racioppo
1778. Fran Malsheimer
1779. Michael Brandes
1780. Robin and Michael Owen
1781. R. Farer
1782. Chris Proctor
1783. Daniel O'Brien
1784. Thomas Pienkos
1785. Gordon Abrams
1786. Stephen Russell
1787. Kirsten White
1788. Pease Guy
1789. Kate Lenthall
1790. Claire Fishman
1791. Derrick Tingley
1792. Karen Desmond
1793. Walter Alton
1794. Jessica Summers
1795. Susan Alice Mufson
1796. Anna Surban
1797. Christine Schwenker

1798. Jared Brenner

1799. Anne Bozza

1800. Sharyn Furman

1801. Robert Waters

1802. Alexandra Tumarkin

1803. Mark Gold

1804. Daniel Borchard

1805. Jennifer Alden

1806. Donald J. Shaw

1807. Chandra Darice

1808. Lee Margulies

1809. Donald Lathrop

1810. James and Lina Harrington

1811. Carolyn Clark

1812. Sharon Longyear

1813. Sharon Goel

1814. Marija Stroke

1815. Paul Ghenoiu

1816. Irene Franck

1817. Wendy Ryden

1818. Michael Dones

1819. Alan Stein

1820. Michael Jaffe

1821. Denise Anzelmo
1822. M. S. Worrell
1823. Robin Stein
1824. Eric Esposito
1825. Kristin Mosher
1826. Eric Newman
1827. Barbara Rosen
1828. Nicole Gallagher
1829. Larry M.
1830. Loretta Ryan
1831. Jon Abrams
1832. N. Debono
1833. Tonya Eza
1834. Raymond Berrios
1835. Maggie d'Arcy
1836. Theresa Wiecezak
1837. Mark Daitsman
1838. Andrew Frantz
1839. Claudia Leff
1840. Karen Prowda
1841. Laurie Cozza
1842. Elizabeth Maxwell
1843. Pablo Bobe

1844. Carol Mccord
1845. Elizabeth Koltun
1846. Veronica Schweyen
1847. Jacy Good
1848. Shawn Lewis
1849. Beth Prewitt
1850. Andrew Fader
1851. Mara Lopez
1852. Jessica Thompson
1853. Helen Brown
1854. Duncan Brown
1855. Dante Varrasso
1856. Saahir Ganti-Agrawal
1857. Robert Manning
1858. Christina D.
1859. Mary Loomba
1860. Robert Dentan
1861. Aimee Bartelt
1862. Janet Moser
1863. Vicki Burns
1864. Nona Spitzner
1865. Ellen Lowitt
1866. Steven Nasta

1867. Donna Noyes
1868. Gregory Danzker
1869. Tara Mae
1870. Phillip Hope
1871. Courtney Stefano
1872. Ruka Kato
1873. Olga Kachook
1874. Domingo Garcia
1875. Martin Gromulat
1876. Birgitt Krisatis
1877. Susan Alice Mufson
1878. Marlene Phelan
1879. Meagan Fastuca
1880. Monika Buffamonti
1881. Marissa Ferraro
1882. Jennifer Perlaki
1883. Stephen Burns
1884. Virginia Myung
1885. Grace Betts
1886. Pedro J. Camacho
1887. Andrew Shymkiw
1888. Jessica Cabrera
1889. Jason Caramico

1890. Maria Kordes
1891. Lois Cartmell
1892. Vaish B.
1893. Heather Turbush
1894. Daniel Stribick
1895. Olivia Busuttill-Cashman
1896. Andrea Zinn
1897. Melissa Paige
1898. Christine Lemme
1899. Scott Thomas
1900. Susan Carey
1901. Shaun Knutsen
1902. Cindy Lamb
1903. Mark Westcott
1904. James Schaad
1905. Josh Heffron
1906. Janet Forman
1907. Dante Varrasso
1908. Paul McCarthy
1909. Laura Lee
1910. Katie Garton
1911. Tara Sumner
1912. Jay Blackman

1913. Ellen Wertheim
1914. Alex Stavis
1915. Joseph Quirk
1916. Helen O'Regan
1917. John Heyneman
1918. Madeleine Glick
1919. Laurie Puca
1920. James Moore
1921. Julianne Yao
1922. Marianne Dietrich
1923. Kathy Burch
1924. Angelo Madrigale
1925. Tavia Gilbert
1926. Alexander Goasdoue
1927. Oliver Yourke
1928. David Samer
1929. Carol Yost
1930. Maura Puscheck
1931. Melvin Siegel
1932. J. S.
1933. Mary Lahovitch
1934. Deborah Stein
1935. Ian Hannon

1936. Nona Spitzner
1937. Judi Bird
1938. Irene Best
1939. Kim Young
1940. John Rybicki
1941. Mary Anne Tokar
1942. Mark Gorsetman
1943. Pete Klosterman
1944. Leticia Lamagna
1945. Marcia Caban
1946. Seth Schneider
1947. N. B.
1948. Glenn Bowman
1949. Cindy Mullen
1950. Catherine Tsarouhtsis
1951. Kevin Kurtz
1952. Pamela Tishman
1953. Margery Schiff
1954. Rita Persichetty
1955. Martin Lupowitz
1956. Barbara Drucker
1957. Scott Sasso
1958. Sheila Kelley

1959. Mary Sullivan
1960. Ellen Hand
1961. Robert Tefft
1962. Ben Indig
1963. Tim Cook
1964. Felicia Ali
1965. Cynthia Lopreto
1966. Kevin Lopez
1967. Melissa Barnard
1968. Richard Baker
1969. Thomas Gibling
1970. Karen Desmond
1971. Raymond Cranell
1972. C. Saunders
1973. Kenneth Baer
1974. S. Norris
1975. Anne Bozza
1976. Sherita Wilson
1977. Patricia Baecker
1978. Martha D. Perlmutter
1979. Eve Grissinger
1980. Sonia Goldstein
1981. Rena P.

1982. James Colotti
1983. Janet McGarry
1984. James Derungs
1985. Rashida Paul
1986. Leslie Martin
1987. Michael Gorr
1988. Charles Wittman
1989. Kay Olan
1990. Eva Welchman
1991. Lou Priem
1992. Suresh Dianand
1993. Jack David Marcus
1994. Ward Giblin
1995. Alexandra Bonomo
1996. Carla Gonzalez-Christian
1997. Alix Keast
1998. Sarah Miller
1999. Eric Esposito
2000. Pedro Mier
2001. Hope Carr
2002. Jim Derzon
2003. Paul Kalka
2004. Renee Arnett

2005. Eric Newman

2006. Suzanne Pataki

2007. Donald Lathrop

2008. Edwin Brooks

2009. Seth Silverman

2010. Colette Flake-Bunz

2011. Zoe Strassfield

2012. Paul Hofheins

2013. Jared Brenner

2014. Javier Rivera-Diaz

2015. Lynn Skibinski

2016. Sarah Fecht

2017. Summer Downing

2018. Sheila Out

2019. Carolyn Koelmel

2020. Jordan Shapiro

2021. Eddie Ward

2022. Edward Rengers

2023. Jeannine Lowenkron

2024. Jennifer Horowitz

2025. Michael Farley

2026. Jerry Rivers

2027. Kerry Burkhardt

2028. John Stanton

2029. Linda Fighera

2030. G. Paxton

2031. Suzanne Bremmer

2032. Samantha Orszulak

2033. Ron Sonnenberg

2034. Janice Cechony

2035. Stacey M.

2036. Sandy Dalcais

2037. Kathryn Kassner

2038. Martha Gifford

2039. Robert Verity

2040. Patti Weinberg

2041. Nancy Preston

2042. June Balish

2043. Douglas Conant

2044. Cathy Marczyk

2045. Carlos Luna

2046. Robert Verity

2047. Robin Buco

2048. Vincent Castellano

2049. Thomas Reilly

2050. Orna Safer

2051. Peter Shurman
2052. Victoria Gershon
2053. Chelsea Kennedy-Snodgrass
2054. Charlene DeForest
2055. Stephanie Llinas
2056. John Miller
2057. Bill Rosenthal
2058. Jill Greenberg
2059. Lilly Knuth
2060. Michelle Christenson
2061. Arthur Kendy
2062. Lisa Somerville
2063. Mil Drysdale
2064. Greg Singer
2065. Nile Nugnez
2066. Kenneth Strong
2067. Carol Michelson
2068. Lawrence Midura
2069. Arthur Heubner
2070. Mimi Rosenfeld
2071. Candela Prol
2072. Irving Lee
2073. Liz Piercey

2074. Susan Santilli
2075. Bonnie Watson
2076. Arlene Scovotti
2077. Jackie Purpura
2078. Mary Christy
2079. Catherine Mcmanus
2080. Edward Collaku
2081. Barbara Behar
2082. Joan Heilman
2083. Jane Fritz
2084. Wendy Ryden
2085. Caren Flashner
2086. Laurie Cozza
2087. Daryl Odhner
2088. Nora Walker
2089. Lauren Bond
2090. Tess Dernbach
2091. Joslyn Pine
2092. Vernetta Taylor
2093. Michael Muscato
2094. Matthew Miller
2095. Laxmi Banerjee
2096. William Ryan

2097. Vincent Bracy
2098. Catherine Newkirk
2099. Jack Simel
2100. Jacalyn Dinhofer
2101. Susan Castelli-Hill
2102. Arielle Beckman
2103. Steven Brambrut
2104. Lynn Slonaker
2105. Alice Didomizio
2106. Karl Hildenbrand
2107. Gregory Danzker
2108. Christine Wallace
2109. Rai Montalvo
2110. Allison Delvecchio
2111. Scott Bernstein
2112. Lauren Virtuoso
2113. Susan Goldman
2114. Audrey Gurtman
2115. Julie Hoffer
2116. Mary Loomba
2117. Al Wheaton
2118. Tess Fraad
2119. Rev L. Cline

2120. Ira Cohen
2121. Valerie Molof
2122. Karen Prowda
2123. Michael Gelfer
2124. Autumn Tarleton
2125. Julianne Chen
2126. Mary Ahland
2127. Joan Wilce
2128. Danny M.
2129. Tova Cohen
2130. Kay Johnson
2131. Marie Uffelmann Burns
2132. Kathy Rusch
2133. Kris Berner
2134. Linda Agoson
2135. Perry Harris
2136. Robert Pawloski
2137. Joyce Shiffrin
2138. Ruth Moy
2139. Regina Riesenburger
2140. Marlena Lange
2141. Robert Madorran
2142. Claire Laborde

2143. Regina Carragher
2144. Nivo Rovedo
2145. Paul Rothman
2146. Giannie Couji
2147. Jackie Stolfi
2148. Kirsten White
2149. Donald Shaw
2150. Mary Buchwald
2151. Romani Bays
2152. Kevin Fraleigh
2153. Nancy Schulman
2154. Misha Fredericks
2155. Kara Huberman
2156. Gregory Marks
2157. Paul Burnsunkown
2158. Pat Wagner
2159. Arthur Schurr
2160. Melissa Schultzahearn
2161. Ann Hollinger
2162. Theresa Wiecezak
2163. Edna deBeer
2164. Jen Scibetta
2165. Natalka Roumeliotis

2166. Richard & Joyce Gilbert
2167. Norman Krebs
2168. Robin Blakesley
2169. Rob Thanks
2170. Franco De Nicola
2171. Fran Malsheimer
2172. Pablo Bobe
2173. William Demo
2174. Adam Cooper
2175. Rob Puc
2176. Scott Davis
2177. Marion Lakatos
2178. Mark Daitsman
2179. Jane Lalone
2180. Sasha Gibbons
2181. Harold Jacobowitz
2182. Kenneth Krynicki
2183. B. R. Lemonik
2184. C. Ezra
2185. Jacqueline Palumbo
2186. M. S. Worrell
2187. Judith Walters
2188. Alex Desantis

2189. Daniel O'brien
2190. Tonya Eza
2191. Mrs. Won Ng
2192. Mark Forsyth
2193. Lorraine Best
2194. Fern H. Wachtel
2195. Frances McCarthy
2196. Janet Wyland
2197. Rosemary Agonito
2198. Sharon Goel
2199. Anne McAllister
2200. David Sears
2201. Debi Holt
2202. Peter E. Suter
2203. Jacy Good
2204. Laura Taylor
2205. Rita-Ann FitzGerald
2206. Peggy Garner
2207. Barbara Rosen
2208. Marc Waters
2209. Judith Lasko
2210. Al Krause
2211. Donna Stoddard

2212. Karen Biesanz
2213. Philippe Chambadal
2214. Hollis Milark
2215. D. Day
2216. Monroe Head
2217. Ethel Sussman
2218. Stephanie Randall
2219. Michael Noyes
2220. Patricia Mader
2221. Saralee Edwards
2222. Allen Shifrin
2223. Stephen Heinzelman
2224. Susan Ford
2225. Eileen Miller
2226. X. O.
2227. Diane Martella
2228. David Middleton
2229. Mary Ellen Frye
2230. Christine Bensché
2231. Robert Grace
2232. Pat Foster
2233. Ron Przybycien
2234. Jimmy Aquino

2235. Cynthia Hart
2236. Claire Fishman
2237. Chris Proctor
2238. James Mulder
2239. William Mancini
2240. Walter Alton
2241. Rebeca Torres
2242. Laura Quigley
2243. Irene Franck
2244. Anita Sterns
2245. Kelly Devine
2246. Marcia Ruiz
2247. Tami Shaloum
2248. George Dillmann
2249. Lizbeth Giletto
2250. Donna Quiros
2251. Susan Demark
2252. Gail Melhado
2253. Christy Sacks
2254. Nina Glasgow
2255. Phyllis Tarlow
2256. Leslie Mlawski
2257. Marley Mcdermott

2258. Michael Brandes
2259. William Stover
2260. Nati Camus
2261. Elysee Price
2262. Dara Murray
2263. Heidi Cleven
2264. Lee Margulies
2265. Sarah Plumer-Holzman
2266. Peter Smith
2267. Stacey Skole
2268. Brian Allen
2269. Anthony Straka
2270. Scott Korman
2271. Jim Taft
2272. Jill Levy
2273. Joshua Eisen
2274. Gregory Barrett
2275. Christopher Dohrmann
2276. Sandra Sobanski
2277. Brigid Vele
2278. Lorraine West
2279. Ellen Lowitt
2280. Eric Bare

2281. Ellen Fleishman

2282. Mikki Chalker

2283. Derinda Nilsson

2284. Trixie Brunson

2285. Edward Palone

2286. Noelene Hutchinson

2287. Susan Baxter

2288. Ismet Kipchak

2289. Michael Howard

2290. Joanna Taylor

2291. Justin Cohen

2292. Jacob Shipley

2293. Deb Halliday

2294. Michael Zamm

2295. Ned Milligan

2296. Autumn Blanchard

2297. Jessica Thompson

2298. Alla Sobel

2299. Patricia Altro

2300. Sue Anne Johnson

2301. Lakshmi Banerjee

2302. Alok Disa, Senior Research & Policy Analyst, Earthjustice

2303. Benjamin Mandel, Northeast Regional Director, CALSTART

- 2304. Kevin Shen, Northeast Transportation Policy Analyst, Union of Concerned Scientists
- 2305. Jessica Enzmann, Sierra Club
- 2306. Kathy Harris, Clean Vehicles & Fuels Advocate, National Resources Defense Council
- 2307. Laura Bozzi, Director of Programs, Yale Center on Climate Change and Health
- 2308. Melvin Norris, Senior Director of Government Affairs, Business Council of New York State
- 2309. Tom Van Heeke, Senior Policy Advisor, Rivian
- 2310. Jeff Schumann
- 2311. Kevin Maggay, Navistar
- 2312. Jack McGivern, Partners for Zero Emission Vehicle Future
- 2313. George Miller, BYD Motors, LLC
- 2314. Larissa Koehler, Senior Attorney, Environmental Defense Fund
- 2315. Zach Kahn, Heavy-Duty Policy Lead, Tesla
- 2316. Uchenna Bright, Northeast Advocate, E2 Environmental Entrepreneurs
- 2317. Martha Upton
- 2318. Tim French, Truck and Engine Manufacturers Association
- 2319. Katherine Schwarz, public health professional
- 2320. Kendra Hems, President, Trucking Association of New York
- 2321. Gail Pisha
- 2322. John Carlson, Ceres
- 2323. Ron Kamen, Chapter Director, E2 Environmental Entrepreneurs