

Table L9. New light duty vehicle sales by technology, Reference case

thousand vehicles

Region and technology	2022	2025	2030	2035	2040	2045	2050	Average annual percentage change, 2022–2050
Americas								
Electric	850.8	1,234.3	2,170.7	2,524.5	2,765.4	2,947.6	3,262.7	4.9%
Hydrogen	2.5	2.0	3.1	3.7	3.8	3.5	3.8	1.5%
Liquefied petroleum gas	4.0	2.4	2.2	2.1	2.1	2.2	2.4	-1.7%
Natural gas	258.6	211.8	192.1	155.7	102.6	80.0	65.6	-4.8%
Diesel	445.2	506.1	622.6	592.9	574.7	597.8	651.8	1.4%
Motor gasoline	19,745.9	19,651.3	19,024.8	18,723.2	18,804.9	19,310.4	19,992.8	0.0%
Plug-in hybrid	213.8	450.9	769.0	1,222.6	1,540.6	1,819.5	1,863.7	8.0%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	21,520.8	22,058.8	22,784.5	23,224.7	23,794.2	24,761.0	25,843.0	0.7%
United States								
Electric	725.7	989.6	1,755.0	2,025.0	2,151.0	2,217.4	2,386.5	4.3%
Hydrogen	2.5	2.0	3.1	3.7	3.8	3.5	3.8	1.5%
Liquefied petroleum gas	0.5	0.9	0.9	1.0	1.2	1.4	1.9	4.9%
Natural gas	0.5	0.6	0.5	0.5	0.5	0.6	0.6	0.7%
Diesel	83.8	110.2	119.4	114.8	127.8	134.6	147.3	2.0%
Motor gasoline	13,225.6	13,763.8	12,675.8	12,284.0	12,742.4	12,969.1	13,228.8	0.0%
Plug-in hybrid	190.6	360.4	518.7	588.8	625.0	657.0	695.5	4.7%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	14,229.2	15,227.5	15,073.4	15,017.7	15,651.7	15,983.6	16,464.4	0.5%
Canada								
Electric	112.8	195.6	277.0	280.9	339.3	398.9	481.5	5.3%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5%
Liquefied petroleum gas	0.3	0.2	0.1	0.1	0.1	0.1	0.1	-4.9%
Natural gas	1.7	1.4	0.1	0.1	0.1	0.1	0.1	-9.4%
Diesel	116.6	91.8	140.0	150.0	149.8	148.6	142.9	0.7%
Motor gasoline	1,500.1	1,350.1	1,282.3	1,299.9	1,264.0	1,236.6	1,181.8	-0.8%
Plug-in hybrid	16.6	48.5	68.5	124.3	185.4	268.0	336.6	11.3%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	1,748.1	1,687.6	1,767.9	1,855.3	1,938.7	2,052.3	2,143.0	0.7%
Mexico								
Electric	7.4	25.2	57.3	86.9	106.4	126.2	145.9	11.2%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.7%
Liquefied petroleum gas	3.2	1.4	1.2	1.1	0.9	0.7	0.5	-6.4%
Natural gas	4.5	1.6	1.9	2.4	2.2	1.9	1.6	-3.7%
Diesel	6.8	5.4	5.8	6.3	6.8	7.4	7.7	0.4%
Motor gasoline	1,823.3	1,473.3	1,384.1	1,495.2	1,614.4	1,744.0	1,817.8	0.0%
Plug-in hybrid	1.5	16.7	35.8	96.4	173.8	223.8	215.2	19.4%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	1,846.8	1,523.6	1,486.0	1,688.3	1,904.5	2,103.9	2,188.6	0.6%
Brazil								
Electric	2.7	7.1	31.4	58.7	74.1	90.0	121.8	14.6%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7%
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Natural gas	125.7	83.7	85.7	85.7	55.4	42.4	34.8	-4.5%
Diesel	84.7	114.7	147.4	116.0	92.6	89.9	118.0	1.2%
Motor gasoline	2,230.3	1,989.3	2,433.5	2,432.5	2,034.0	2,089.7	2,357.9	0.2%
Plug-in hybrid	4.0	19.3	116.7	333.9	444.2	532.4	506.9	18.9%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	2,447.5	2,214.2	2,814.6	3,026.9	2,700.3	2,844.5	3,139.4	0.9%
Other Americas								

Total	34,421.0	35,935.2	41,484.2	46,324.1	48,211.9	49,572.5	51,164.2	1.4%
Japan								
Electric	65.9	108.3	250.3	229.9	334.5	453.0	629.4	8.4%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.8%
Liquefied petroleum gas	5.8	4.2	4.8	4.2	4.2	3.0	2.5	-2.9%
Natural gas	1.4	1.0	0.7	0.6	0.9	0.9	0.8	-1.9%
Diesel	141.2	138.3	127.5	127.9	114.1	113.8	106.5	-1.0%
Motor gasoline	3,144.6	3,027.3	2,839.2	2,556.2	2,236.4	2,043.1	1,756.5	-2.1%
Plug-in hybrid	44.8	123.4	136.2	184.9	194.1	191.9	168.0	4.8%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	3,403.6	3,402.5	3,358.7	3,103.7	2,884.2	2,805.8	2,663.8	-0.9%
South Korea								
Electric	75.8	76.0	296.6	514.3	750.9	890.0	956.5	9.5%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.3%
Liquefied petroleum gas	49.5	23.3	34.4	30.5	20.1	13.4	9.4	-5.8%
Natural gas	49.7	24.3	31.7	30.8	15.3	7.9	4.1	-8.6%
Diesel	191.1	167.2	155.5	130.4	104.2	103.5	124.3	-1.5%
Motor gasoline	1,069.3	1,126.9	933.3	726.4	509.7	398.9	307.0	-4.4%
Plug-in hybrid	14.5	81.4	163.0	209.3	162.4	119.2	86.0	6.6%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	1,449.9	1,499.0	1,614.5	1,641.7	1,562.6	1,532.8	1,487.3	0.1%
Australia and New Zealand								
Electric	34.5	38.4	66.0	78.0	116.8	154.0	207.7	6.6%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6%
Liquefied petroleum gas	0.4	0.0	2.5	1.8	1.5	1.3	1.0	3.6%
Natural gas	2.4	0.1	0.2	0.1	0.0	0.0	0.0	-18.6%
Diesel	110.9	125.0	109.1	99.0	85.8	74.5	62.5	-2.0%
Motor gasoline	873.0	921.5	862.1	801.0	714.4	647.4	568.4	-1.5%
Plug-in hybrid	8.3	19.8	75.3	169.3	274.6	370.8	421.0	15.1%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	1,029.5	1,104.7	1,115.2	1,149.2	1,193.2	1,248.0	1,260.6	0.7%
China								
Electric	4,685.5	5,276.6	6,607.1	8,487.1	8,996.7	9,263.4	9,594.2	2.6%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3%
Liquefied petroleum gas	65.7	59.6	28.1	29.3	21.2	12.3	6.4	-8.0%
Natural gas	991.2	670.7	313.0	553.8	667.4	623.7	414.0	-3.1%
Diesel	43.9	37.4	22.3	62.0	56.0	44.5	33.8	-0.9%
Motor gasoline	13,205.3	11,342.1	8,645.3	8,466.5	7,638.9	6,273.7	5,235.2	-3.3%
Plug-in hybrid	1,006.9	1,784.7	3,773.3	2,985.8	2,932.7	2,285.3	1,835.2	2.2%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	19,998.6	19,171.1	19,389.0	20,584.5	20,312.9	18,502.9	17,118.8	-0.6%
India								
Electric	17.1	36.5	67.2	155.2	421.3	877.6	1,285.7	16.7%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8%
Liquefied petroleum gas	130.7	67.7	124.1	160.1	181.9	200.0	223.6	1.9%
Natural gas	139.2	199.1	227.7	212.7	148.8	110.2	85.0	-1.7%
Diesel	1,856.0	2,498.2	3,871.3	4,790.4	4,974.6	5,156.1	5,391.1	3.9%
Motor gasoline	2,183.5	2,999.5	4,938.1	6,306.2	6,626.6	6,938.8	7,283.8	4.4%
Plug-in hybrid	4.0	20.0	248.8	483.7	1,048.8	1,549.0	1,978.2	24.9%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	4,330.4	5,821.0	9,477.1	12,108.3	13,402.1	14,831.7	16,247.3	4.8%
Other Asia								
Electric	24.5	147.8	236.4	440.1	652.2	847.1	941.5	13.9%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8%
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1%
Natural gas	121.0	15.3	40.2	37.2	31.5	30.4	29.1	-5.0%
Diesel	1,041.9	1,266.8	1,498.1	1,589.0	1,660.5	1,945.3	2,266.9	2.8%
Motor gasoline	3,017.2	3,434.0	4,573.6	5,253.3	5,843.7	6,940.6	8,362.2	3.7%

Plug-in hybrid	4.3	73.0	181.3	417.1	669.0	888.0	786.6	20.5%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	4,209.0	4,936.9	6,529.7	7,736.7	8,856.9	10,651.4	12,386.3	3.9%
Africa and Middle East								
Electric	30.0	89.2	120.4	181.4	230.6	286.6	350.3	9.2%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3%
Liquefied petroleum gas	9.1	9.0	1.5	0.3	0.1	0.1	0.0	-17.1%
Natural gas	105.2	62.9	69.6	48.5	52.5	43.2	36.5	-3.7%
Diesel	100.2	115.3	144.8	159.1	169.2	200.7	234.8	3.1%
Motor gasoline	3,292.2	3,844.8	4,472.0	4,686.8	4,642.9	5,333.9	6,186.0	2.3%
Plug-in hybrid	9.8	42.8	149.0	378.0	624.4	780.8	676.3	16.3%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	3,546.5	4,164.1	4,957.2	5,454.2	5,719.8	6,645.3	7,483.9	2.7%
Africa								
Electric	2.2	10.5	32.4	62.8	70.4	90.5	126.7	15.5%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7%
Liquefied petroleum gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.1%
Natural gas	8.8	8.3	8.3	4.8	2.8	2.0	1.4	-6.3%
Diesel	73.8	86.2	114.1	133.9	147.1	182.3	219.6	4.0%
Motor gasoline	661.9	822.9	1,077.1	1,235.3	1,348.0	1,662.1	1,991.0	4.0%
Plug-in hybrid	1.0	5.0	19.9	40.8	65.0	79.5	75.1	16.7%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	747.8	932.9	1,251.9	1,477.6	1,633.3	2,016.4	2,413.9	4.3%
Middle East								
Electric	27.8	78.7	88.0	118.6	160.2	196.1	223.6	7.7%
Hydrogen	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1%
Liquefied petroleum gas	9.1	9.0	1.5	0.3	0.1	0.1	0.0	-17.2%
Natural gas	96.4	54.6	61.3	43.7	49.7	41.2	35.1	-3.5%
Diesel	26.3	29.1	30.6	25.3	22.2	18.4	15.2	-1.9%
Motor gasoline	2,630.4	3,021.9	3,394.9	3,451.5	3,295.0	3,671.9	4,195.0	1.7%
Plug-in hybrid	8.8	37.8	129.0	337.2	559.4	701.3	601.1	16.3%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	2,798.8	3,231.2	3,705.4	3,976.5	4,086.5	4,628.9	5,070.0	2.1%
World								
Electric	7,805.6	9,279.3	14,775.1	21,532.5	24,087.6	27,135.4	30,014.7	4.9%
Hydrogen	2.5	2.0	3.1	3.7	3.8	3.5	3.8	1.5%
Liquefied petroleum gas	529.5	281.5	502.0	497.8	538.7	527.5	539.0	0.1%
Natural gas	2,156.6	1,588.4	1,116.3	1,213.4	1,169.6	1,042.9	789.5	-3.5%
Diesel	8,526.1	9,445.2	11,705.1	10,201.2	10,961.5	11,563.9	11,634.4	1.1%
Motor gasoline	58,662.1	57,714.6	54,239.0	53,406.4	53,590.6	53,538.2	55,136.8	-0.2%
Plug-in hybrid	2,327.8	4,863.8	7,744.3	9,132.5	9,122.0	9,654.7	9,091.8	5.0%
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0%
Total	80,010.0	83,174.8	90,084.9	95,987.5	99,473.9	103,466.1	107,210.0	1.1%

Data source: U.S. Energy Information Administration, World Energy Projection System (2023), run r_230822.081459 and Annual Energy Outlook 2023 (March 2023), www.eia.gov/aeo

Note: Totals may not equal sum of components due to independent rounding.