Table 37. Light-Duty Vehicle Energy Consumption by Technology Type and Fuel Type
(trillion Btu)

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Light-Duty Consumption by Technology Type | | | | | | | | | | | | | |
| Conventional Vehicles 1/ | | | | | | | | | | | | | |
| Gasoline ICE Vehicles | 15756.75 | 15714.29 | 15829.33 | 15672.06 | 15599.62 | 15574.71 | 15567.43 | 15629.50 | 15704.37 | 15791.17 | 15907.07 | 16023.95 | 16147.39 |
| TDI Diesel ICE | 268.34 | 270.98 | 276.70 | 281.12 | 287.08 | 294.94 | 303.72 | 313.86 | 325.61 | 337.99 | 351.68 | 366.68 | 382.70 |
| Alternative-Fuel Vehicles | | | | | | | | | | | | | |
| Alcohol Fuel Technology | | | | | | | | | | | | | |
| Methanol-Flex Fuel ICE | 0.42 | 0.35 | 0.33 | 0.31 | 0.29 | 0.27 | 0.26 | 0.24 | 0.22 | 0.20 | 0.19 | 0.17 | 0.15 |
| Ethanol-Flex Fuel ICE | 326.16 | 372.71 | 416.37 | 481.76 | 555.57 | 642.13 | 744.68 | 850.04 | 955.32 | 1060.90 | 1168.07 | 1272.26 | 1373.55 |
| Ethanol ICE | 0.32 | 0.35 | 0.39 | 0.42 | 0.45 | 0.49 | 0.54 | 0.59 | 0.64 | 0.69 | 0.75 | 0.81 | 0.88 |
| Total Alcohol | 326.90 | 373.41 | 417.08 | 482.49 | 556.31 | 642.89 | 745.48 | 850.86 | 956.18 | 1061.80 | 1169.01 | 1273.25 | 1374.58 |
| Natural Gas Technology | | | | | | | | | | | | | |
| Compressed Natural Gas ICE | 0.17 | 0.18 | 0.20 | 0.21 | 0.22 | 0.24 | 0.25 | 0.26 | 0.27 | 0.28 | 0.29 | 0.30 | 0.30 |
| Compressed Natural Gas Bi-fuel | 31.30 | 36.01 | 38.85 | 40.79 | 42.63 | 44.39 | 46.28 | 48.48 | 50.77 | 53.02 | 55.20 | 57.25 | 59.17 |
| Liquefied Petroleum Gases ICE | 0.34 | 0.35 | 0.35 | 0.36 | 0.37 | 0.39 | 0.40 | 0.41 | 0.43 | 0.45 | 0.46 | 0.48 | 0.51 |
| Liquefied Petroleum Gases Bi-fuel | 73.12 | 111.86 | 122.65 | 132.15 | 138.35 | 144.32 | 149.78 | 156.65 | 164.00 | 171.21 | 178.24 | 184.84 | 191.00 |
| Total Natural Gas Technology | 104.92 | 148.39 | 162.05 | 173.52 | 181.58 | 189.33 | 196.70 | 205.80 | 215.46 | 224.95 | 234.19 | 242.87 | 250.98 |
| Electric Technology | | | | | | | | | | | | | |
| Electric Vehicle | 3.33 | 3.90 | 4.25 | 4.51 | 4.76 | 4.99 | 5.22 | 5.47 | 5.72 | 5.96 | 6.18 | 6.39 | 6.59 |
| Plug-in Gasoline Hybrid | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electric-Diesel Hybrid | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.07 | 0.23 | 0.44 | 0.68 | 0.93 | 1.16 |
| Electric-Gasoline Hybrid | 7.44 | 18.05 | 30.55 | 43.20 | 63.29 | 83.98 | 106.94 | 130.82 | 156.60 | 184.08 | 212.64 | 244.39 | 277.88 |
| Total Electricity | 10.77 | 21.95 | 34.80 | 47.71 | 68.05 | 88.98 | 112.20 | 136.36 | 162.55 | 190.47 | 219.50 | 251.71 | 285.63 |
| Fuel Cell Technology | | | | | | | | | | | | | |
| Fuel Cell Gasoline | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fuel Cell Methanol | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fuel Cell Hydrogen | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.06 | 0.11 | 0.15 | 0.19 | 0.30 | 0.42 |
| Total Fuel Cell | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.06 | 0.11 | 0.15 | 0.19 | 0.30 | 0.42 |
| Light-Duty Consumption by Fuel Type 1/ | | | | | | | | | | | | | |
| Motor Gasoline | 16021.80 | 16024.84 | 16196.34 | 16125.03 | 16155.98 | 16247.62 | 16375.93 | 16574.04 | 16785.08 | 17009.03 | 17265.03 | 17521.53 | 17783.30 |
| Distillate Fuel Oil (diesel) | 268.34 | 270.98 | 276.70 | 281.12 | 287.08 | 294.94 | 303.72 | 313.86 | 325.61 | 337.99 | 351.68 | 366.68 | 382.70 |
| Methanol | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Ethanol | 1.09 | 1.46 | 1.89 | 1.54 | 1.77 | 2.10 | 3.13 | 3.52 | 3.80 | 4.04 | 4.18 | 4.48 | 4.82 |
| Compressed Natural Gas | 21.59 | 25.38 | 35.72 | 35.36 | 36.44 | 37.44 | 38.62 | 40.06 | 41.72 | 43.35 | 44.77 | 46.42 | 47.98 |
| Liquefied Petroleum Gases | 19.71 | 29.25 | 33.68 | 49.08 | 42.78 | 42.12 | 36.65 | 37.64 | 39.01 | 40.48 | 41.33 | 42.89 | 44.35 |
| Electricity | 3.33 | 3.90 | 4.25 | 4.51 | 4.76 | 4.99 | 5.22 | 5.47 | 5.72 | 5.96 | 6.18 | 6.39 | 6.59 |
| Liquid Hydrogen | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.04 | 0.06 | 0.11 | 0.15 | 0.19 | 0.30 | 0.42 |

Table 37. Light-Duty Vehicle Energy Consumption by Technology Type and Fuel Type
(trillion Btu)

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2005-2030 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Light-Duty Consumption by Technology Type | | | | | | | | | | | | | | | |
| Conventional Vehicles 1/ | | | | | | | | | | | | | | | |
| Gasoline ICE Vehicles | 16277.47 | 16412.08 | 16534.75 | 16676.86 | 16823.53 | 16960.65 | 17116.53 | 17269.41 | 17419.82 | 17595.18 | 17770.03 | 17937.75 | 18114.75 | 18282.68 | 0.6% |
| TDI Diesel ICE | 400.94 | 421.47 | 444.40 | 470.13 | 498.93 | 530.39 | 565.18 | 603.12 | 643.85 | 686.23 | 731.42 | 778.92 | 829.17 | 882.91 | 4.8% |
| Alternative-Fuel Vehicles | | | | | | | | | | | | | | | |
| Alcohol Fuel Technology | | | | | | | | | | | | | | | |
| Methanol-Flex Fuel ICE | 0.14 | 0.12 | 0.11 | 0.13 | 0.11 | 0.10 | 0.09 | 0.08 | 0.07 | 0.06 | 0.06 | 0.05 | 0.04 | 0.04 | -8.4% |
| Ethanol-Flex Fuel ICE | 1472.00 | 1566.81 | 1656.31 | 1744.87 | 1828.48 | 1905.68 | 1982.53 | 2054.88 | 2122.51 | 2189.70 | 2252.64 | 2310.52 | 2366.41 | 2417.90 | 7.8% |
| Ethanol ICE | 0.95 | 1.03 | 1.11 | 1.20 | 1.29 | 1.38 | 1.48 | 1.59 | 1.69 | 1.80 | 1.90 | 2.01 | 2.12 | 2.23 | 7.7% |
| Total Alcohol | 1473.10 | 1567.96 | 1657.53 | 1746.20 | 1829.88 | 1907.16 | 1984.10 | 2056.54 | 2124.27 | 2191.56 | 2254.60 | 2312.59 | 2368.57 | 2420.17 | 7.8% |
| Natural Gas Technology | | | | | | | | | | | | | | | |
| Compressed Natural Gas ICE | 0.31 | 0.32 | 0.33 | 0.34 | 0.35 | 0.36 | 0.38 | 0.39 | 0.40 | 0.41 | 0.43 | 0.44 | 0.46 | 0.47 | 3.9% |
| Compressed Natural Gas Bi-fuel | 61.00 | 62.74 | 64.41 | 66.11 | 67.80 | 69.40 | 71.00 | 72.55 | 74.05 | 75.59 | 77.15 | 78.64 | 80.14 | 81.62 | 3.3% |
| Liquefied Petroleum Gases ICE | 0.53 | 0.56 | 0.61 | 0.65 | 0.70 | 0.76 | 0.82 | 0.88 | 0.95 | 1.02 | 1.09 | 1.17 | 1.24 | 1.31 | 5.5% |
| Liquefied Petroleum Gases Bi-fuel | 196.88 | 202.50 | 207.92 | 213.46 | 219.00 | 224.22 | 229.37 | 234.43 | 239.29 | 244.23 | 249.21 | 253.98 | 258.73 | 263.46 | 3.5% |
| Total Natural Gas Technology | 258.72 | 266.13 | 273.27 | 280.56 | 287.85 | 294.75 | 301.56 | 308.26 | 314.68 | 321.26 | 327.88 | 334.23 | 340.56 | 346.87 | 3.5% |
| Electric Technology | | | | | | | | | | | | | | | |
| Electric Vehicle | 6.78 | 6.96 | 7.14 | 7.31 | 7.49 | 7.65 | 7.82 | 7.98 | 8.15 | 8.32 | 8.49 | 8.65 | 8.82 | 8.98 | 3.4% |
| Plug-in Gasoline Hybrid | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | N/A |
| Electric-Diesel Hybrid | 1.46 | 1.73 | 2.00 | 2.31 | 2.60 | 2.87 | 3.12 | 3.35 | 3.56 | 3.75 | 3.90 | 4.04 | 4.15 | 4.24 | N/A |
| Electric-Gasoline Hybrid | 312.88 | 349.45 | 387.86 | 427.61 | 469.05 | 511.94 | 555.62 | 600.58 | 646.98 | 694.53 | 743.60 | 794.15 | 846.51 | 900.50 | 16.9% |
| Total Electricity | 321.11 | 358.15 | 397.00 | 437.23 | 479.13 | 522.46 | 566.56 | 611.92 | 658.68 | 706.59 | 755.99 | 806.84 | 859.47 | 913.72 | 16.1% |
| Fuel Cell Technology | | | | | | | | | | | | | | | |
| Fuel Cell Gasoline | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | N/A |
| Fuel Cell Methanol | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | N/A |
| Fuel Cell Hydrogen | 0.54 | 0.79 | 1.05 | 1.30 | 1.57 | 1.84 | 2.10 | 2.40 | 2.68 | 2.97 | 3.27 | 3.56 | 3.85 | 4.13 | 43.1% |
| Total Fuel Cell | 0.54 | 0.79 | 1.05 | 1.30 | 1.57 | 1.84 | 2.10 | 2.40 | 2.68 | 2.97 | 3.27 | 3.56 | 3.85 | 4.13 | 43.1% |
| Light-Duty Consumption by Fuel Type 1/ | | | | | | | | | | | | | | | |
| Motor Gasoline | 18050.38 | 18319.48 | 18572.04 | 18844.39 | 19116.92 | 19375.09 | 19653.09 | 19923.44 | 20188.91 | 20480.60 | 20768.01 | 21043.68 | 21330.25 | 21603.58 | 1.2% |
| Distillate Fuel Oil (diesel) | 400.94 | 421.47 | 444.40 | 470.13 | 498.93 | 530.39 | 565.18 | 603.12 | 643.85 | 686.23 | 731.42 | 778.92 | 829.17 | 882.91 | 4.8% |
| Methanol | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -8.4% |
| Ethanol | 5.10 | 5.58 | 6.43 | 7.57 | 9.19 | 10.31 | 11.61 | 13.93 | 15.28 | 16.86 | 18.63 | 21.25 | 22.42 | 24.13 | 11.9% |
| Compressed Natural Gas | 49.60 | 51.05 | 52.71 | 54.08 | 55.56 | 57.13 | 58.33 | 59.79 | 61.22 | 62.34 | 63.75 | 65.23 | 66.48 | 67.95 | 4.0% |
| Liquefied Petroleum Gases | 45.66 | 47.29 | 49.41 | 50.50 | 52.15 | 53.97 | 54.67 | 56.14 | 58.04 | 58.76 | 60.18 | 61.84 | 62.75 | 64.63 | 3.2% |
| Electricity | 6.78 | 6.96 | 7.14 | 7.31 | 7.49 | 7.65 | 7.82 | 7.98 | 8.15 | 8.32 | 8.49 | 8.65 | 8.82 | 8.98 | 3.4% |
| Liquid Hydrogen | 0.54 | 0.79 | 1.05 | 1.30 | 1.57 | 1.84 | 2.10 | 2.40 | 2.68 | 2.97 | 3.27 | 3.56 | 3.85 | 4.13 | 43.1% |

Table 37. Light-Duty Vehicle Energy Consumption by Technology Type and Fuel Type
(trillion Btu)

1/ Includes personal vehicles and fleet vehicles. Includes both cars and trucks.
Btu = British thermal unit.
ICE = Internal combustion engine.
N/A = Not applicable.
Source: Energy Information Administration, AEO2007 National Energy Modeling System run aeo2007.d112106a.