

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

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Light-Duty Consumption by Technology Type													
Conventional Vehicles 1/													
Gasoline ICE Vehicles	15613.12	15743.84	15788.64	15643.91	15548.17	15465.04	15343.64	15287.93	15210.74	15088.97	14933.46	14761.27	14559.45
TDI Diesel ICE	246.77	253.63	256.72	265.92	278.34	293.58	313.77	337.36	362.67	389.75	418.55	451.37	488.52
Alternative-Fuel Vehicles													
Alcohol Fuel Technology													
Methanol-Flex Fuel ICE	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-Flex Fuel ICE	350.69	380.41	436.17	495.67	565.40	656.14	767.86	896.80	1034.60	1189.79	1335.95	1501.81	1645.43
Ethanol ICE	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
Total Alcohol	350.69	380.41	436.17	495.67	565.40	656.14	767.86	896.80	1034.60	1189.79	1335.95	1501.81	1645.43
Natural Gas Technology													
Compressed Natural Gas ICE	2.85	3.14	3.30	3.42	3.45	3.53	3.57	3.58	3.57	3.54	3.48	3.42	3.36
Compressed Natural Gas Bi-fuel	5.86	6.75	7.32	7.78	8.04	8.33	8.54	8.64	8.69	8.67	8.58	8.47	8.37
Liquefied Petroleum Gases ICE	2.01	1.90	1.78	1.63	1.47	1.33	1.20	1.08	0.98	0.89	0.83	0.77	0.72
Liquefied Petroleum Gases Bi-fuel	10.42	10.14	9.26	8.13	7.22	6.09	5.34	4.61	3.99	3.50	3.10	2.76	2.48
Total Natural Gas Technology	21.14	21.93	21.67	20.95	20.18	19.27	18.66	17.90	17.23	16.60	15.98	15.42	14.93
Electric Technology													
Electric Vehicle	0.70	0.68	0.64	0.61	0.58	0.55	0.52	0.49	0.46	0.43	0.41	0.38	0.37
Plug-in Gasoline Hybrid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.05	0.07	0.10
Electric-Diesel Hybrid	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.07	0.16	0.24	0.31	0.39	0.48
Electric-Gasoline Hybrid	11.44	25.00	41.27	60.54	81.85	106.56	136.94	173.84	215.85	261.65	315.87	376.33	443.08
Total Electricity	12.15	25.68	41.91	61.14	82.42	107.14	137.51	174.41	216.49	262.35	316.63	377.18	444.03
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	0.02	0.03	0.05	0.10	0.14	0.18	0.28	0.39	0.49
Total Fuel Cell	0.00	0.00	0.00	0.00	0.02	0.03	0.05	0.10	0.14	0.18	0.28	0.39	0.49
Light-Duty Consumption by Fuel Type 1/													
Motor Gasoline	15966.23	16134.44	16246.66	16176.08	16172.91	16204.86	16225.82	16336.46	16439.09	16478.04	16394.23	16349.91	16250.01
Distillate Fuel Oil (diesel)	246.77	253.63	256.72	265.92	278.34	293.58	313.77	337.36	362.67	389.75	418.55	451.37	488.52
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	1.06	1.31	1.74	3.62	2.31	2.72	3.65	4.20	4.39	45.24	178.41	277.62	389.29
Compressed Natural Gas	6.88	9.87	10.62	11.20	11.49	11.86	12.11	12.21	12.24	12.20	12.04	11.85	11.69
Liquefied Petroleum Gases	5.15	7.26	6.88	8.79	4.63	2.94	2.60	2.26	1.98	1.78	1.59	1.43	1.32
Electricity	0.70	0.68	0.64	0.61	0.58	0.55	0.52	0.49	0.46	0.44	0.41	0.38	0.37
Liquid Hydrogen	0.00	0.00	0.00	0.00	0.02	0.03	0.05	0.10	0.14	0.18	0.28	0.39	0.49

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

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2006-2030
Light-Duty Consumption by Technology Type														
Conventional Vehicles 1/														
Gasoline ICE Vehicles	14321.61	14039.31	13725.41	13446.11	13179.44	12943.43	12730.73	12532.61	12361.13	12210.49	12079.83	11970.28	11881.56	-1.2%
TDI Diesel ICE	530.07	578.10	630.16	681.79	737.37	798.85	863.52	929.62	999.46	1072.79	1150.40	1232.06	1315.64	7.1%
Alternative-Fuel Vehicles														
Alcohol Fuel Technology														
Methanol-Flex Fuel ICE	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-Flex Fuel ICE	1787.58	1941.74	2060.53	2211.50	2321.09	2421.49	2493.26	2522.42	2593.82	2657.84	2712.25	2759.90	2799.89	8.7%
Ethanol ICE	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	--
Total Alcohol	1787.58	1941.74	2060.53	2211.50	2321.09	2421.49	2493.26	2522.42	2593.82	2657.84	2712.25	2759.90	2799.89	8.7%
Natural Gas Technology														
Compressed Natural Gas ICE	3.30	3.23	3.17	3.12	3.09	3.07	3.07	3.07	3.08	3.09	3.10	3.12	3.13	0.0%
Compressed Natural Gas Bi-fuel	8.25	8.13	8.02	7.91	7.85	7.83	7.82	7.84	7.87	7.90	7.93	7.97	8.01	0.7%
Liquefied Petroleum Gases ICE	0.68	0.66	0.62	0.59	0.56	0.53	0.51	0.49	0.47	0.46	0.44	0.43	0.42	-6.1%
Liquefied Petroleum Gases Bi-fuel	2.19	1.95	1.81	1.62	1.46	1.31	1.18	1.06	0.96	0.87	0.79	0.72	0.66	-10.8%
Total Natural Gas Technology	14.42	13.98	13.63	13.25	12.95	12.74	12.58	12.46	12.38	12.31	12.26	12.23	12.22	-2.4%
Electric Technology														
Electric Vehicle	0.35	0.32	0.30	0.28	0.25	0.63	0.57	0.53	0.48	0.43	0.39	0.35	0.32	-3.1%
Plug-in Gasoline Hybrid	0.12	0.14	0.17	0.20	0.24	0.28	0.32	0.37	0.42	0.48	0.55	0.63	0.72	--
Electric-Diesel Hybrid	0.56	0.63	0.70	0.76	0.82	0.88	0.93	0.98	1.03	1.07	1.11	1.14	1.17	--
Electric-Gasoline Hybrid	516.04	595.33	677.93	762.89	847.77	933.08	1018.44	1102.58	1185.88	1267.90	1348.03	1426.24	1502.95	18.6%
Total Electricity	517.07	596.42	679.10	764.13	849.08	934.87	1020.26	1104.46	1187.81	1269.88	1350.07	1428.36	1505.16	18.5%
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	0.72	0.93	1.14	1.37	1.59	1.81	2.06	2.30	2.55	2.80	3.04	3.29	3.53	44.8%
Total Fuel Cell	0.72	0.93	1.14	1.37	1.59	1.81	2.06	2.30	2.55	2.80	3.04	3.29	3.53	44.8%
Light-Duty Consumption by Fuel Type 1/														
Motor Gasoline	16139.73	15827.25	15488.16	15171.63	14707.44	14723.22	14721.14	14746.20	14774.31	14756.67	14779.00	14841.96	14845.51	-0.3%
Distillate Fuel Oil (diesel)	530.07	578.10	630.16	681.79	737.37	798.85	863.52	929.62	999.46	1072.79	1150.40	1232.06	1315.64	7.1%
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	478.54	742.26	971.55	1245.16	1642.66	1574.55	1521.61	1416.71	1370.87	1383.78	1365.13	1317.89	1343.05	33.5%
Compressed Natural Gas	11.52	11.36	11.19	11.03	10.94	10.90	10.88	10.91	10.94	10.98	11.03	11.08	11.13	0.5%
Liquefied Petroleum Gases	1.21	1.14	1.09	1.00	0.93	0.87	0.81	0.76	0.71	0.68	0.64	0.61	0.59	-9.9%
Electricity	0.35	0.33	0.31	0.29	0.26	0.65	0.58	0.55	0.50	0.45	0.41	0.38	0.35	-2.7%
Liquid Hydrogen	0.72	0.93	1.14	1.37	1.59	1.81	2.06	2.30	2.55	2.80	3.04	3.29	3.53	44.8%

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.

-- = Not applicable.

Source: Energy Information Administration, AEO2008 National Energy Modeling System run aeo2008.d030208f.