Table 27. Bulk Chemical Industry Energy Consumption

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Value of Shipments (billion 2000 dollars)	224.15	227.39	231.85	236.44	239.83	243.39	245.07	245.15	245.41	245.33	245.08	243.94	243.11
Energy Consumption (trillion Btu) 1/													
Heat and Power													
Residual Fuel Oil	85.7	85.1	81.4	68.0	72.0	70.3	68.0	68.3	66.9	64.5	64.0	63.5	62.5
Distillate Fuel Oil	6.0	6.0	5.8	5.2	5.5	5.5	5.4	5.4	5.3	5.2	5.2	5.2	5.1
Liquefied Petroleum Gases	44.2	44.4	45.1	45.5	46.6	46.9	46.8	46.5	46.3	46.2	46.0	45.6	45.4
Petroleum Coke	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Petroleum 2/	326.0	325.6	307.4	233.3	251.9	244.5	235.2	239.0	233.0	222.6	221.4	220.2	215.5
Petroleum Subtotal	461.8	461.1	439.7	352.0	376.0	367.3	355.4	359.3	351.6	338.5	336.6	334.5	328.4
Natural Gas	1549.7	1535.9	1576.9	1656.3	1626.1	1622.8	1613.0	1582.7	1566.9	1555.6	1534.9	1512.3	1497.1
Steam Coal	216.0	212.7	211.5	211.3	210.9	210.3	209.5	208.5	207.6	206.7	205.7	204.6	203.6
Purchased Electricity	517.1	526.7	528.7	535.9	537.8	541.0	536.4	527.9	520.1	511.7	503.5	493.4	484.5
Total Heat and Power	2744.7	2736.3	2756.7	2755.6	2750.7	2741.4	2714.2	2678.4	2646.2	2612.5	2580.6	2544.7	2513.6
Feedstock													
Liquefied Petroleum Gases	2197.5	2181.4	2176.7	2187.6	2166.6	2153.3	2134.1	2101.8	2073.0	2045.4	2019.6	1989.4	1962.0
Petrochemical Feedstocks	1330.0	1344.2	1356.8	1380.0	1377.8	1388.9	1396.1	1390.1	1385.9	1381.4	1377.3	1368.7	1359.9
Natural Gas	592.5	565.4	560.6	539.6	541.3	535.7	532.0	525.7	519.5	512.4	503.9	492.6	483.6
Total Feedstocks	4120.0	4091.0	4094.1	4107.2	4085.7	4077.8	4062.2	4017.6	3978.4	3939.2	3900.7	3850.7	3805.5
Total	6864.6	6827.3	6850.8	6862.7	6836.4	6819.2	6776.4	6696.0	6624.6	6551.7	6481.4	6395.4	6319.1
Energy Consumption per Unit of Output (thousand Btu per 2000 dollar shipments)													
Heat and Power													
Residual Fuel Oil	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Distillate Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquefied Petroleum Gases	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Petroleum Coke	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Petroleum	1.5	1.4	1.3	1.0	1.1	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9
Petroleum Subtotal	2.1	2.0	1.9	1.5	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.4
Natural Gas	6.9	6.8	6.8	7.0	6.8	6.7	6.6	6.5	6.4	6.3	6.3	6.2	6.2
Steam Coal	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8	0.8
Purchased Electricity	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.0	2.0
Total Heat and Power	12.2	12.0	11.9	11.7	11.5	11.3	11.1	10.9	10.8	10.6	10.5	10.4	10.3
Feedstock													
Liquefied Petroleum Gases	9.8	9.6	9.4	9.3	9.0	8.8	8.7	8.6	8.4	8.3	8.2	8.2	8.1
Petrochemical Feedstocks	5.9	5.9	5.9	5.8	5.7	5.7	5.7	5.7	5.6	5.6	5.6	5.6	5.6
Natural Gas	2.6	2.5	2.4	2.3	2.3	2.2	2.2	2.1	2.1	2.1	2.1	2.0	2.0
Total Feedstocks	18.4	18.0	17.7	17.4	17.0	16.8	16.6	16.4	16.2	16.1	15.9	15.8	15.7
Total	30.6	30.0	29.5	29.0	28.5	28.0	27.7	27.3	27.0	26.7	26.4	26.2	26.0

Table 27. Bulk Chemical Industry Energy Consumption

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Carbon Dioxide Emissions 3/ (million metric tons)	314.9	312.9	313.3	311.4	311.5	310.2	307.8	303.9	300.3	296.4	292.7	288.2	284.5
Combined Heat and Power 4/													
Generating Capacity (gigawatts)													
Petroleum	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Natural Gas	7.34	7.22	7.56	7.65	7.75	7.85	7.96	8.07	8.17	8.28	8.38	8.49	8.59
Coal	0.51	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49
Other 5/	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Total	8.87	8.69	9.03	9.12	9.22	9.33	9.43	9.54	9.64	9.75	9.85	9.96	10.06
Net Generation (billion kilowatthours)													
Petroleum	0.18	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
Natural Gas	38.40	38.20	40.65	41.34	42.08	42.88	43.69	44.51	45.33	46.13	46.94	47.72	48.48
Coal	2.67	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Other 5/	7.73	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63
Total	48.98	48.48	50.92	51.62	52.35	53.16	53.96	54.79	55.61	56.41	57.21	58.00	58.76
Disposition													
Sales to the Grid	8.22	8.22	8.73	8.93	9.15	9.39	9.62	9.86	10.10	10.34	10.58	10.81	11.03
Generation for Own Use	40.76	40.26	42.20	42.69	43.21	43.77	44.34	44.92	45.50	46.07	46.64	47.19	47.73

Table 27. Bulk Chemical Industry Energy Consumption

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2006-2030
Value of Shipments (billion 2000 dollars)	241.45	239.03	237.30	235.54	233.91	232.22	230.60	229.27	227.88	226.58	224.99	223.16	221.56	-0.1%
Energy Consumption (trillion Btu) 1/														
Heat and Power														
Residual Fuel Oil	61.2	60.1	58.6	57.0	56.9	55.2	54.0	53.5	52.6	52.5	52.8	52.6	52.2	-2.0%
Distillate Fuel Oil	5.0	4.9	4.7	4.6	4.6	4.5	4.4	4.3	4.2	4.2	4.2	4.1	4.0	-1.6%
Liquefied Petroleum Gases	44.9	44.4	44.1	43.7	43.4	43.0	42.7	42.5	42.4	42.3	42.1	41.9	41.7	-0.3%
Petroleum Coke	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	- -
Other Petroleum 2/	209.4	204.1	196.3	188.4	188.3	181.5	176.2	173.8	169.8	170.0	171.0	170.2	168.6	-2.7%
Petroleum Subtotal	320.6	313.5	303.7	293.7	293.2	284.2	277.3	274.1	268.9	269.0	270.1	268.7	266.6	-2.3%
Natural Gas	1485.3	1476.2	1477.2	1477.7	1468.3	1459.6	1448.1	1440.2	1435.5	1426.3	1414.3	1404.1	1395.7	-0.4%
Steam Coal	202.8	202.2	201.7	201.1	200.7	199.8	198.9	198.5	198.1	197.7	197.3	196.9	196.5	-0.3%
Purchased Electricity	473.4	461.1	450.8	440.3	431.1	421.4	412.8	404.9	396.6	389.3	380.7	372.8	364.9	-1.5%
Total Heat and Power	2482.1	2453.1	2433.4	2412.9	2393.3	2365.0	2337.1	2317.6	2299.1	2282.2	2262.5	2242.5	2223.7	-0.9%
Feedstock														
Liquefied Petroleum Gases	1929.7	1891.6	1868.9	1852.9	1841.1	1829.9	1820.2	1812.2	1804.1	1796.2	1787.8	1777.0	1768.0	-0.9%
Petrochemical Feedstocks	1346.5	1327.0	1311.7	1297.2	1285.8	1275.8	1266.8	1259.4	1251.7	1244.6	1236.1	1226.4	1218.0	-0.4%
Natural Gas	473.6	464.4	460.4	455.9	449.9	443.3	436.1	429.6	422.9	416.6	408.9	401.6	394.6	-1.5%
Total Feedstocks	3749.8	3683.0	3641.0	3606.0	3576.8	3549.1	3523.1	3501.2	3478.7	3457.4	3432.9	3405.0	3380.6	-0.8%
Total	6231.9	6136.1	6074.5	6018.8	5970.1	5914.0	5860.2	5818.9	5777.9	5739.7	5695.3	5647.5	5604.3	-0.8%
Energy Consumption per Unit of Output (thousand Btu per 2000 dollar shipments)														
Heat and Power														
Residual Fuel Oil	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-1.9%
Distillate Fuel Oil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.5%
Liquefied Petroleum Gases	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	-0.2%
Petroleum Coke	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	- -
Other Petroleum	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	-2.6%
Petroleum Subtotal	1.3	1.3	1.3	1.2	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-2.2%
Natural Gas	6.2	6.2	6.2	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	-0.3%
Steam Coal	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	-0.2%
Purchased Electricity	2.0	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	-1.4%
Total Heat and Power	10.3	10.3	10.3	10.2	10.2	10.2	10.1	10.1	10.1	10.1	10.1	10.0	10.0	-0.8%
Feedstock														
Liquefied Petroleum Gases	8.0	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	8.0	8.0	-0.8%
Petrochemical Feedstocks	5.6	5.6	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	-0.3%
Natural Gas	2.0	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	-1.4%
Total Feedstocks	15.5	15.4	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	-0.7%
Total	25.8	25.7	25.6	25.6	25.5	25.5	25.4	25.4	25.4	25.3	25.3	25.3	25.3	-0.7%

Table 27. Bulk Chemical Industry Energy Consumption

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2006-2030
Carbon Dioxide Emissions 3/ (million metric tons)	280.2	275.5	271.9	268.7	265.8	262.4	259.1	256.5	253.9	251.7	249.1	246.5	244.3	-1.0%
Combined Heat and Power 4/														
Generating Capacity (gigawatts)														
Petroleum	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.0%
Natural Gas	8.68	8.77	8.86	8.94	9.01	9.08	9.14	9.19	9.25	9.29	9.34	9.39	9.43	1.1%
Coal	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.0%
Other 5/	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.0%
Total	10.15	10.24	10.33	10.41	10.48	10.55	10.61	10.66	10.72	10.77	10.81	10.86	10.90	0.9%
Net Generation (billion kilowatthours)														
Petroleum	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.0%
Natural Gas	49.20	49.90	50.55	51.17	51.74	52.25	52.72	53.15	53.55	53.92	54.29	54.64	54.98	1.5%
Coal	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	0.0%
Other 5/	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	7.63	0.0%
Total	59.48	60.18	60.83	61.45	62.02	62.53	63.00	63.42	63.83	64.20	64.56	64.92	65.26	1.2%
Disposition														
Sales to the Grid	11.24	11.45	11.64	11.82	11.99	12.14	12.27	12.40	12.52	12.63	12.73	12.84	12.94	1.9%
Generation for Own Use	48.24	48.73	49.19	49.63	50.03	50.39	50.72	51.02	51.31	51.57	51.83	52.08	52.32	1.1%

Table 27. Bulk Chemical Industry Energy Consumption

1/ Fuel consumption includes consumption for combined heat and power.
2/ Includes lubricants, and miscellaneous petroleum products.
3/ Includes emissions attributable to the fuels consumed to generate the purchased electricity.
4/ Includes industrial-owned generators not classified as combined heat and power, such as standby generators.
5/ Includes wood and other biomass, waste heat, municipal solid waste, and renewable sources.
6/ Efficiency is calculated as the sum of the thermal output and electrical generation in Btus divided by the energy input.
7/ Power-to-Heat is calculated as the electrical generation in Btus divided by the thermal output.
Btu = British thermal unit.
- - = Not applicable.
Note: Totals may not equal sum of components due to independent rounding. Data for 2006 are model results and may differ slightly from official EIA data reports.
Source: 2005 and 2006 nonutility and CHP summer capacity, net generation, fuel use, and thermal output: Energy Information Administration (EIA), Form EIA-860: "Annual Electric Generator Report," (preliminary). Other 2005 and 2006 data based on: EIA, Manufacturing Energy Consumption Survey, 1998. Projections: EIA, AEO2008 National Energy Modeling System run aeo2008.d030208f.