CHAPTER 5

United States Energy Use

United States Resource Energy Consumption, by Type of Fuel

U.S. ENERGY CONSUMPTION
2.4%

In 2012, total energy consumption in the United States decreased 2.4 percent.

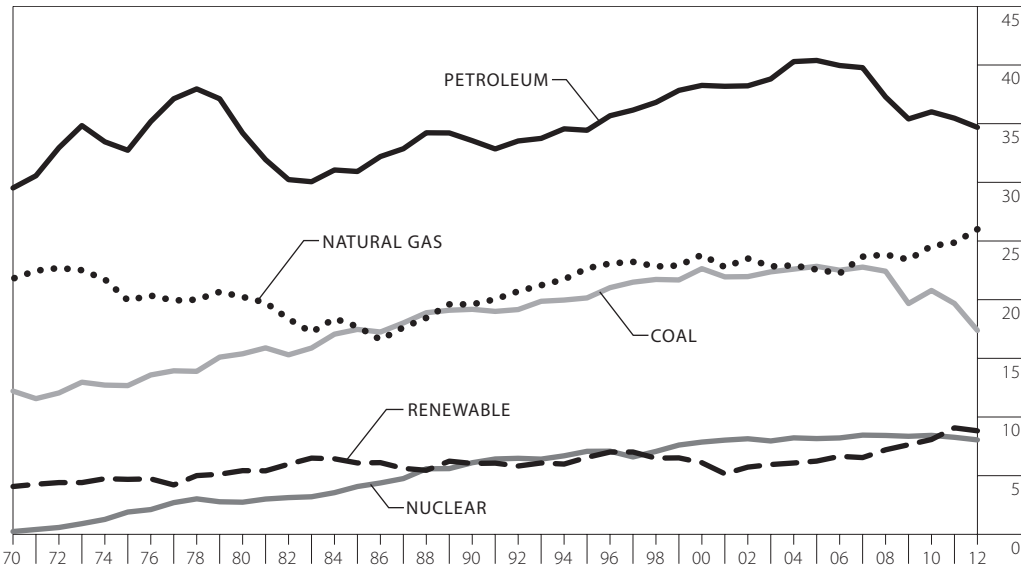
PETROLEUM
2.2%
COAL
11.7%
RENEWABLES
2.7%
NUCLEAR
2.6%

There were decreases for all fuels except for natural gas. Decreases by fuel were: petroleum, 2.2 percent; coal, 11.7 percent; renewables, 2.7 percent; and nuclear, 2.6 percent.

NATURAL GAS
4.6%

Natural gas saw an increase in consumption of 4.6 percent.

1970-2012 QUADRILLIONS OF BTU



1970-2012 QUADRILLIONS OF BTU AND PERCENT OF TOTAL

Year	Petroleum		Natural Gas		Coal		Nuclear		Renewable[a]		Total[b]
1970[r]	29.5	*43.5%*	21.8	*32.1%*	12.2	*18.0%*	0.2	*0.4%*	4.1	*6.0%*	67.8
1975[r]	32.7	*45.5%*	19.9	*27.7%*	12.7	*17.6%*	1.9	*2.6%*	4.7	*6.5%*	72.0
1980[r]	34.2	*43.8%*	20.2	*25.9%*	15.4	*19.7%*	2.7	*3.5%*	5.4	*7.0%*	78.1
1985[r]	30.9	*40.5%*	17.7	*23.2%*	17.5	*22.9%*	4.1	*5.3%*	6.1	*8.0%*	76.4
1990[r]	33.6	*39.7%*	19.6	*23.2%*	19.2	*22.7%*	6.1	*7.2%*	6.0	*7.1%*	84.5
1995[r]	34.4	*37.8%*	22.7	*24.9%*	20.1	*22.1%*	7.1	*7.8%*	6.6	*7.2%*	91.0
2000[r]	38.3	*38.7%*	23.8	*24.1%*	22.6	*22.9%*	7.9	*8.0%*	6.1	*6.2%*	98.8
2005[r]	40.4	*40.3%*	22.6	*22.5%*	22.8	*22.8%*	8.2	*8.1%*	6.2	*6.2%*	100.3
2006[r]	40.0	*40.1%*	22.2	*22.3%*	22.5	*22.6%*	8.2	*8.2%*	6.6	*6.7%*	99.6
2007[r]	39.8	*39.3%*	23.7	*23.4%*	22.8	*22.5%*	8.5	*8.3%*	6.5	*6.5%*	101.3
2008[r]	37.3	*37.6%*	23.8	*24.0%*	22.4	*22.6%*	8.4	*8.5%*	7.2	*7.3%*	99.3
2009[r]	35.4	*37.4%*	23.4	*24.8%*	19.7	*20.8%*	8.4	*8.8%*	7.6	*8.1%*	94.6
2010[r]	36.0	*36.8%*	24.6	*25.1%*	20.8	*21.2%*	8.4	*8.6%*	8.1	*8.2%*	98.0
2011[r]	35.5	*36.4%*	24.9	*25.5%*	19.7	*20.2%*	8.3	*8.5%*	9.1	*9.3%*	97.5
2012[p]	**34.7**	***36.5%***	**26.0**	***27.3%***	**17.4**	***18.3%***	**8.1**	***8.5%***	**8.8**	***9.3%***	**95.1**

a Includes net imports of electricity.

b Totals vary slightly from U.S. resource consumption totals elsewhere in this publication.

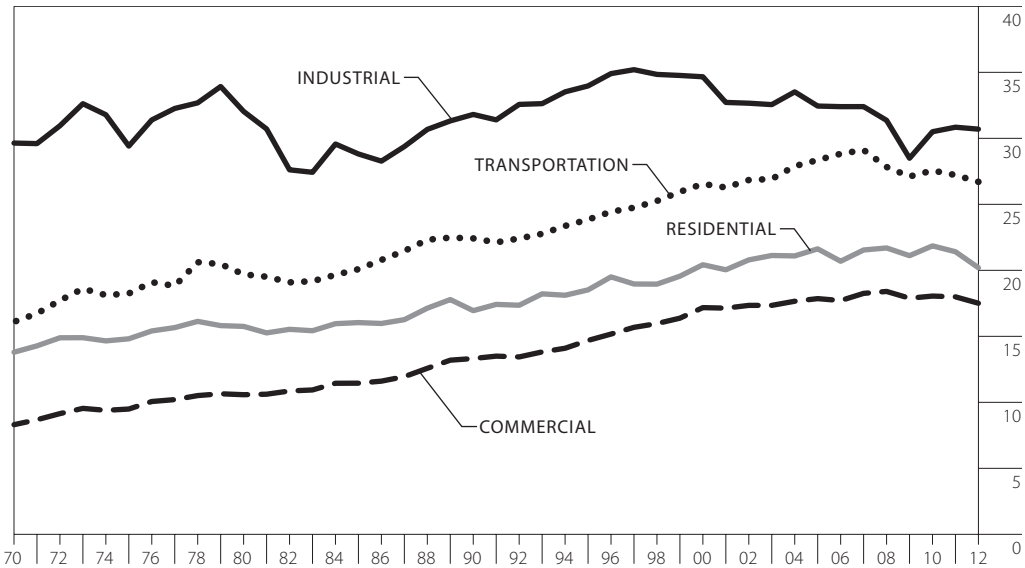
p Preliminary.

r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 1.3 [DOE/EIA-0035 (2013/04)] (March 2013). http://www.eia.gov/totalenergy/data/monthly/ Annual data in *Annual Energy Review*, Table 1.3 [DOE/EIA-0384 (2012)] (September 2012). http://www.eia.doe.gov/emeu/aer

United States Resource Energy Consumption, by Economic Sector

1970-2012 QUADRILLIONS OF BTU



INDUSTRIAL **0.5%**

COMMERCIAL **2.7%**

RESIDENTIAL **5.7%**

TRANSPORTATION **1.9%**

During 2012, all sectors saw a decrease in consumption for a total decrease of 2.4 percent. The industrial sector saw a decrease of 0.5 percent, the commercial sector saw a 2.7 percent decrease, the residential sector dropped by 5.7 percent, and the transportation sector decreased by 1.9 percent from 2011.

1970-2012 QUADRILLIONS OF BTU AND PERCENT OF TOTAL

Year	Residential[a]		Commercial[a]		Industrial		Transportation		Total
1970[r]	13.8	*20.3%*	8.3	*12.2%*	29.6	*43.7%*	16.1	*23.7%*	67.8
1975[r]	14.8	*20.6%*	9.5	*13.2%*	29.4	*40.9%*	18.2	*25.4%*	72.0
1980[r]	15.8	*20.2%*	10.6	*13.6%*	32.0	*41.0%*	19.7	*25.2%*	78.1
1985[r]	16.0	*21.0%*	11.5	*15.0%*	28.8	*37.7%*	20.1	*26.3%*	76.4
1990[r]	16.9	*20.1%*	13.3	*15.8%*	31.8	*37.7%*	22.4	*26.5%*	84.5
1995[r]	18.5	*20.3%*	14.7	*16.1%*	34.0	*37.3%*	23.8	*26.2%*	91.0
2000[r]	20.4	*20.7%*	17.2	*17.4%*	34.7	*35.1%*	26.5	*26.9%*	98.8
2005[r]	21.6	*21.6%*	17.9	*17.8%*	32.4	*32.4%*	28.4	*28.3%*	100.3
2006[r]	20.7	*20.8%*	17.7	*17.8%*	32.4	*32.5%*	28.8	*28.9%*	99.6
2007[r]	21.5	*21.3%*	18.3	*18.0%*	32.4	*32.0%*	29.1	*28.7%*	101.3
2008[r]	21.7	*21.9%*	18.4	*18.5%*	31.4	*31.6%*	27.8	*28.0%*	99.3
2009[r]	21.1	*22.3%*	17.9	*18.9%*	28.5	*30.1%*	27.1	*28.7%*	94.6
2010	21.9	*22.3%*	18.1	*18.4%*	30.5	*31.1%*	27.6	*28.1%*	98.0
2011	21.4	*22.0%*	18.0	*18.5%*	30.8	*31.6%*	27.2	*27.9%*	97.5
2012[p]	**20.2**	***21.2%***	**17.5**	***18.4%***	**30.7**	***32.3%***	**26.7**	***28.1%***	**95.1**

a Numbers may not match with previous pages due to independent rounding.

p Preliminary.

r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 2.1 [DOE/EIA-0035 (2013/03)] (March 2013). http://www.eia.gov/totalenergy/data/monthly/ Annual data in *Annual Energy Review*, Table 2.1 [DOE/EIA-0384 (2012)] (September 2012). http://www.eia.doe.gov/emeu/aer

Sources of U.S. Crude Oil and Petroleum Products

U.S. PETROLEUM USE 2.1%

In 2012, U.S. petroleum use decreased 2.1 percent. U.S. imports of crude oil and petroleum products decreased 7.9 percent, and imports from OPEC decreased 6.6 percent.

Since 1985, U.S. consumption of petroleum products has increased almost 18.0 percent. During this same period, U.S. crude oil production has decreased 27.9 percent (lower 48 production fell 16.9 percent). This resulted in a 109.1 percent increase in imports since 1985, with a corresponding 132.6 percent increase in imports from the Organization of Petroleum Exporting Countries (OPEC).

1970-2012 THOUSANDS OF BARRELS PER DAY

Year	U.S. Petroleum Use	U.S. Field Production[a]	U.S. Crude Oil Production from Oil Wells	Natural Gas Plant Liquids from U.S. Natural Gas Wells[b]	Crude Oil from Wells in Lower 48 States	U.S. Crude Oil & Product Exports	U.S. Crude Oil & Product Imports (Total)[c]	U.S. Crude Oil and Product Imports from OPEC	Imports as a Percent of U.S. Petroleum Use	OPEC Imports as a Percent of U.S. Imports	Imports as a Percent of U.S. Crude Oil Production & Imports
1970[r]	14,697	11,297	9,637	1,660	9,408	259	3,419	1,294	23.3%	37.8%	26.2%
1975	16,322	10,007	8,375	1,633	8,183	209	6,056	3,601	37.1%	59.5%	42.0%
1980	17,056	10,170	8,597	1,573	6,980	544	6,909	4,300	40.5%	62.2%	44.6%
1985	15,726	10,581	8,971	1,609	7,146	781	5,067	1,830	32.2%	36.1%	36.1%
1990	16,988	8,914	7,355	1,559	5,582	857	8,018	4,296	47.2%	53.6%	52.2%
1995	17,725	8,322	6,560	1,762	5,076	949	8,835	4,002	49.8%	45.3%	57.4%
1996	18,309	8,295	6,465	1,830	5,071	981	9,478	4,211	51.8%	44.4%	59.4%
1997	18,620	8,269	6,452	1,817	5,156	1,003	10,162	4,569	54.6%	45.0%	61.2%
1998	18,917	8,011	6,252	1,759	5,077	945	10,708	4,905	56.6%	45.8%	63.1%
1999	19,519	7,731	5,881	1,850	4,832	940	10,852	4,953	55.6%	45.6%	64.9%
2000	19,701	7,733	5,822	1,911	4,851	1,040	11,459	5,203	58.2%	45.4%	66.3%
2001	19,649	7,670	5,801	1,868	4,839	971	11,871	5,528	60.4%	46.6%	67.2%
2002	19,761	7,624	5,744	1,880	4,759	984	11,530	4,605	58.3%	39.9%	66.7%
2003	20,034	7,363	5,644	1,719	4,670	1,027	12,264	5,162	61.2%	42.1%	68.5%
2004	20,731	7,244	5,435	1,809	4,527	1,048	13,145	5,701	63.4%	43.4%	70.7%
2005	20,802	6,903	5,186	1,717	4,322	1,165	13,714	5,587	65.9%	40.7%	72.6%
2006	20,687	6,827	5,089	1,739	4,348	1,317	13,707	5,517	66.3%	40.2%	72.9%
2007	20,680	6,859	5,077	1,783	4,355	1,433	13,468	5,980	65.1%	44.4%	72.6%
2008	19,498	6,784	5,000	1,784	4,318	1,802	12,915	5,954	66.2%	46.1%	72.1%
2009[r]	18,771	7,262	5,353	1,910	4,708	2,024	11,691	4,776	62.3%	40.9%	68.6%
2010[r]	19,180	7,553	5,479	2,074	4,877	2,353	11,793	4,906	61.5%	41.6%	68.3%
2011	18,949	7,848	5,652	2,216	5,091	2,985	11,504	4,555	60.7%	39.6%	67.1%
2012[p]	**18,555**	**8,867**	**6,467**	**2,399**	**5,942**	**3,184**	**10,596**	**4,256**	**57.1%**	**40.2%**	**62.1%**

a Includes crude oil, natural gas plant liquids and a small amount of other hydrocarbons and alcohol.

b Natural gas liquids recovered from natural gas in gas processing plants and, in some situations, from natural gas field facilities.

c Includes crude oil imports for the Strategic Petroleum Reserve (SPR).

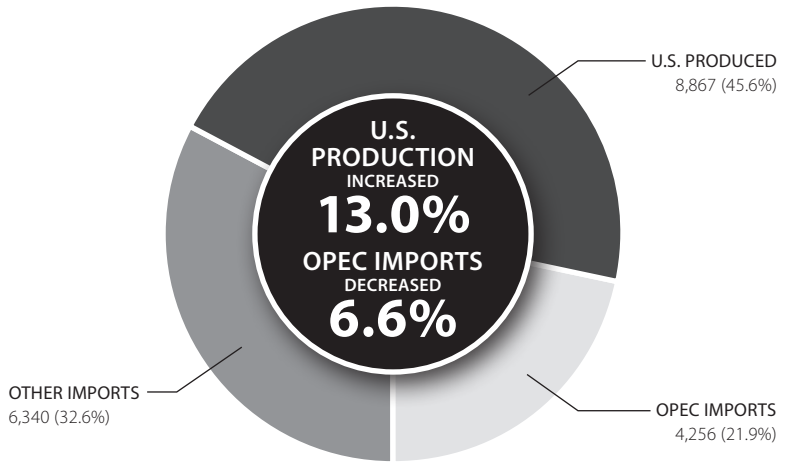
p Preliminary.

r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 3.1, 3.3a and 3.3b [DOE/EIA-0035 (2013/03)] (March 2013). http://www.eia.gov/totalenergy/data/monthly/

2012 U.S. Petroleum Use Domestically Produced and Imported

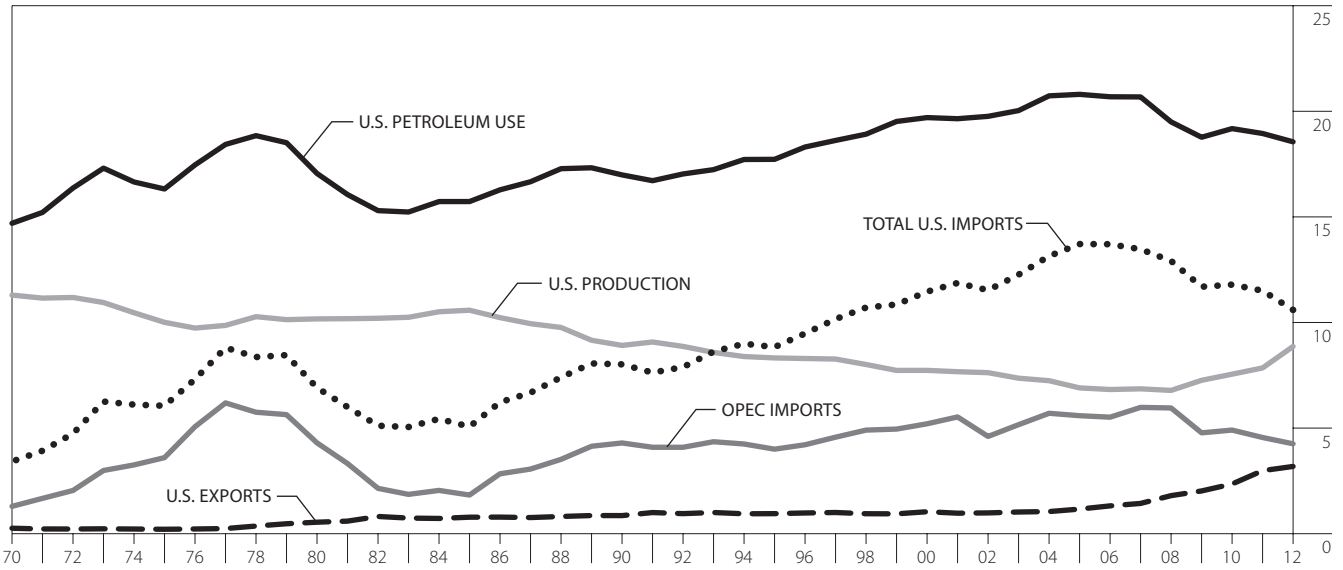
2012 THOUSANDS OF BARRELS PER DAY



In 2012, U.S. petroleum production[a] increased 13.0 percent. OPEC imports decreased 6.6 percent.

U.S. Petroleum Use, Production, Imports and Exports

1970-2012 MILLIONS OF BARRELS PER DAY



a Includes crude oil, natural gas plant liquids and a small amount of other hydrocarbons and alcohol.

Source: Table "Sources of U.S. Crude Oil and Petroleum Products" in this publication.

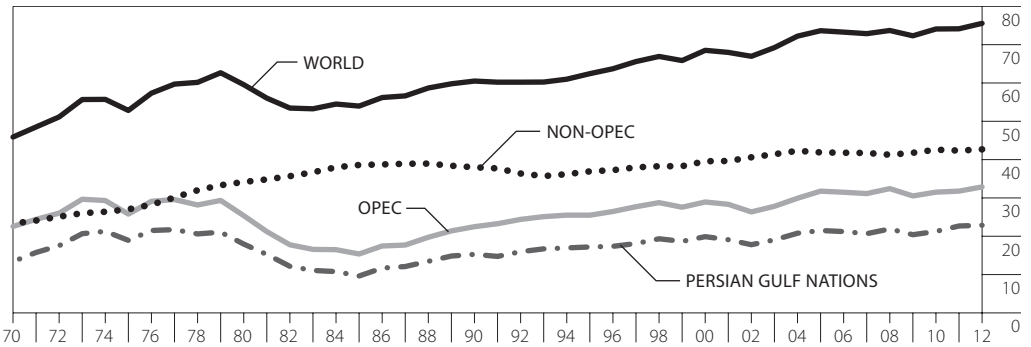
World Crude Oil Production

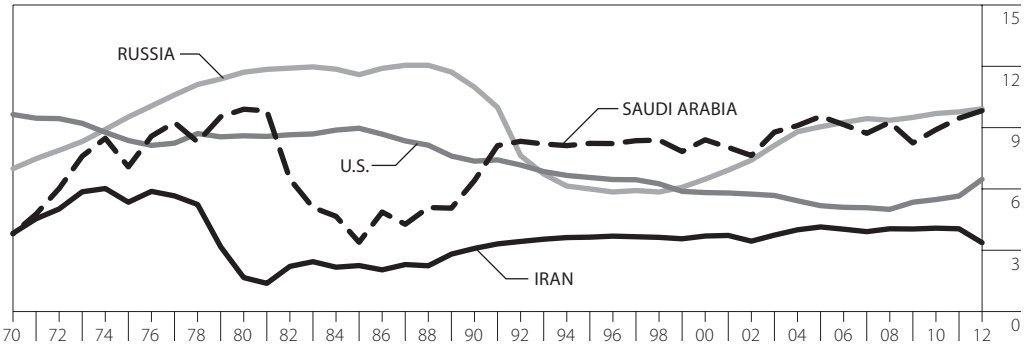
WORLD CRUDE OIL 1.9%

In 2012, world production of crude oil was 75.6 million barrels per day, an increase of 1.9 percent from a year ago[d]. The Organization of Petroleum Exporting Countries (OPEC) produced 43.5 percent of the world's crude oil in 2012.

The top four producers of crude oil in 2012 were Russia (13.1 percent), Saudi Arabia (13.0 percent), the U.S. (8.6 percent) and Iran (4.5 percent).

1970-2012 MILLION BARRELS PER DAY





Year	World	Non-OPEC	OPEC[b]	Persian Gulf Nations[c]	Major Crude Oil Producers			
					U.S.	Saudi Arabia	Iran	Russia[a]
1970[r]	45.89	23.32	22.56	13.39	9.64	3.80	3.83	6.99
1975	52.83	27.04	25.79	18.93	8.37	7.08	5.35	9.52
1980[r]	59.56	34.17	25.38	17.96	8.60	9.90	1.66	11.71
1985	53.97	38.60	15.37	9.63	8.97	3.39	2.25	11.59
1990	60.50	38.00	22.50	15.28	7.36	6.41	3.09	10.98
1995[r]	62.43	36.93	25.50	17.21	6.56	8.23	3.64	6.00
2000[r]	68.52	39.58	28.94	19.89	5.82	8.40	3.70	6.48
2005[r]	73.64	41.88	31.77	21.50	5.18	9.55	4.14	9.04
2010[r]	74.09	42.59	31.51	21.26	5.48	8.90	4.08	9.69
2011	74.14	42.35	31.78	22.68	5.65	9.46	4.05	9.77
2012[p]	**75.56**	**42.68**	**32.88**	**22.87**	**6.47**	**9.83**	**3.37**	**9.92**

a Prior to 1992, production was for the former U.S.S.R.

b The OPEC countries include the Persian Gulf nations (with the exception of Bahrain) and Algeria, Indonesia, Libya, Nigeria and Venezuela. Ecuador rejoined OPEC in 2007 while Indonesia left OPEC at the end of 2008.

c The Persian Gulf nations are Bahrain, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, the United Arab Emirates, and the Neutral Zone.

d This figure does not include oil sands or other unconventional oil sources.

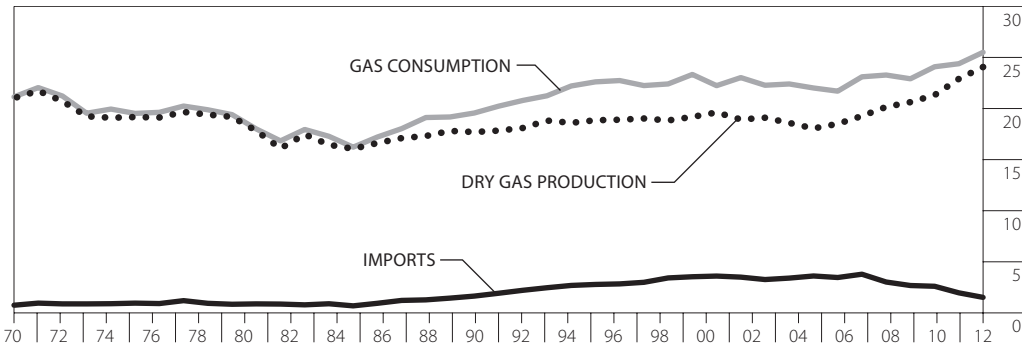
p Preliminary.

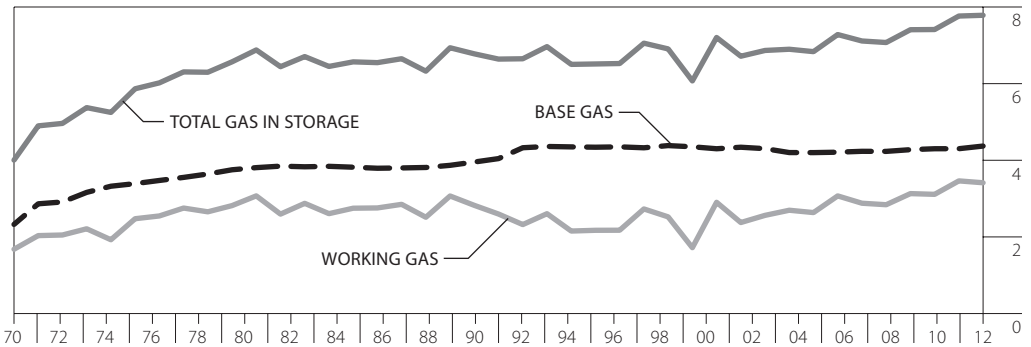
r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 11.1a and 11.1b [DOE/EIA-0035 (2013/03)] (March 2013). http://www.eia.gov/totalenergy/data/monthly/

United States Natural Gas Production, Imports, Consumption and Storage

1970-2012 TRILLIONS OF CUBIC FEET





Year	U.S. Dry Natural Gas Production[a]	Net Imports	Consumption	Natural Gas in Underground Storage – Year End		
				Base Gas[b]	Working Gas[c]	Total
1970	21.0	0.8	21.1	2.326	1.678	4.004
1975	19.2	0.9	19.5	3.162	2.212	5.374
1980	19.4	0.9	19.9	3.642	2.655	6.297
1985	16.5	0.9	17.3	3.842	2.607	6.449
1990	17.8	1.4	19.2	3.868	3.068	6.936
1995	18.6	2.7	22.2	4.349	2.153	6.503
2000	19.2	3.5	23.3	4.352	1.719	6.071
2005[r]	18.1	3.6	22.0	4.200	2.635	6.835
2010[r]	21.3	2.6	24.1	4.301	3.111	7.412
2011[r]	22.9	2.0	24.4	4.302	3.462	7.764
2012[p]	**24.1**	**1.5**	**25.5**	**4.371**	**3.413**	**7.784**

a Dry Natural Gas Production is natural gas used to heat homes and buildings, and to power industry after the natural gas liquids, such as liquid propane, are removed.

b Base Gas is the volume of gas needed as permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates during the withdrawal season.

c Working Gas is the gas that can be withdrawn from storage to heat buildings and power industry.

p Preliminary.

r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 4.1 and 4.4 [DOE/EIA-0035 (2013/03)] (March 2013). http://www.eia.gov/totalenergy/data/monthly/. Annual data in *Annual Energy Review*, Tables 6.1 and 6.6 [DOE/EIA-0384 (2012)] (September 2012). http://www.eia.doe.gov/emeu/aer.

CONSUMPTION
4.6%

In 2012, U.S. natural gas consumption increased 4.6 percent.

PRODUCTION
5.1%

Domestic natural gas production increased 5.1 percent.

NET IMPORTS
22.6%

Net imports, primarily from Canada, decreased 22.6 percent.

GAS IN STORAGE
0.3%

Working gas[c] in storage increased 0.3 percent.

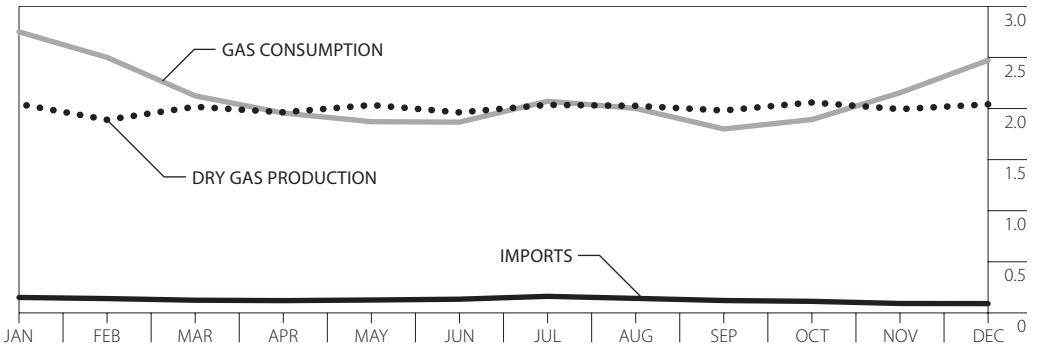
United States Monthly Natural Gas Production, Imports, Consumption and Storage

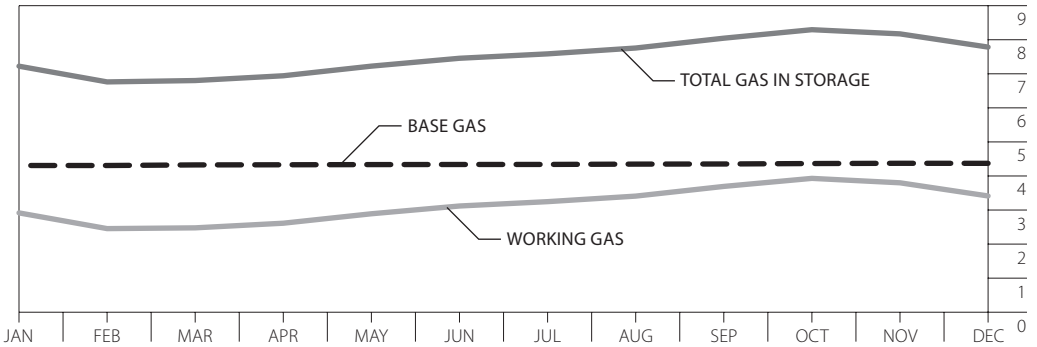
100
CUBIC FEET OF NATURAL GAS = 1 THERM

1 THERM = 100,000 BRITISH THERMAL UNITS (BTU)

Domestic natural gas production and imports remain relatively constant throughout the year. However, consumption increases significantly during the winter heating months. To provide sufficient natural gas for the winter heating months, the working gas in storage is withdrawn during these months, while natural gas is injected into storage during the non-heating months. Therefore, natural gas in storage generally peaks in October or November and is at a minimum in March.

2012 TRILLIONS OF CUBIC FEET





2012	U.S. Dry Natural Gas Production[a]	Net Imports	Consumption		Natural Gas in Underground Storage – Month End		
					Base Gas[b]	Working Gas[c]	Total[d]
January	2.044	0.151	2.750		4.307	2.916	7.223
February	1.890	0.140	2.500		4.307	2.455	6.762
March	2.017	0.124	2.124		4.325	2.477	6.802
April	1.963	0.120	1.956		4.329	2.613	6.942
May	2.034	0.126	1.871		4.334	2.890	7.225
June	1.962	0.134	1.867		4.337	3.118	7.456
July	2.036	0.162	2.071		4.339	3.246	7.585
August	2.026	0.142	2.001		4.348	3.409	7.757
September	1.981	0.121	1.800		4.352	3.693	8.045
October	2.059	0.113	1.892		4.365	3.930	8.295
November	1.994	0.092	2.154		4.372	3.799	8.172
December	2.041	0.091	2.472		4.371	3.413	7.784
Total[d]	**24.047**	**1.516**	**25.458**	**Average**	**4.340**	**3.163**	**7.504**

a Dry Natural Gas Production is natural gas used to heat homes and buildings, and to power industry after the natural gas liquids, such as liquid propane, are removed.

b Base Gas is the volume of gas needed as permanent inventory to maintain adequate underground storage reservoir pressures and deliverability rates during the withdrawal season.

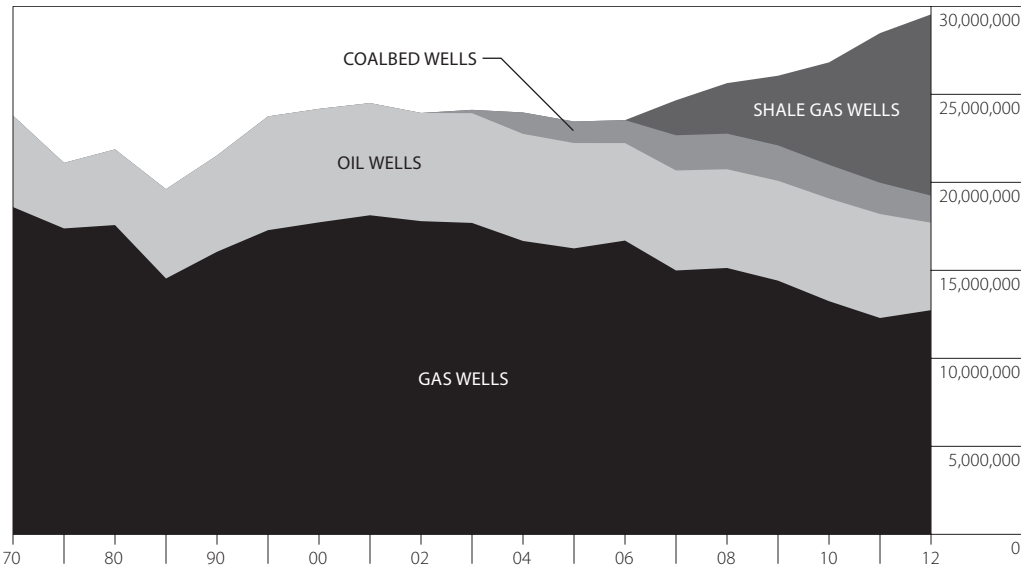
c Working Gas is the gas that can be withdrawn from storage to heat buildings and power industry.

d Totals may not add due to rounding.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 4.1 and 4.4 [DOE/EIA-0035 (2013/03)] (March 2013). http://www.eia.gov/totalenergy/data/monthly/ Annual data in *Annual Energy Review*, Tables 6.1 and 6.6 [DOE/EIA-0384 (2012)] (September 2012). http://www.eia.doe.gov/emeu/aer.

Natural Gas Withdrawals by Source

1970-2012 MILLIONS OF CUBIC FEET



1970-2012 MILLIONS OF CUBIC FEET AND PERCENT OF TOTAL

Year	Gas Wells		Oil Wells		Shale Gas Wells		Coalbed Wells		Natural Gas, Gross Withdrawals, All Wells
1970	18,594,658	*78.17%*	5,191,795	*21.83%*	0	*0.00%*	0	*0.00%*	23,786,453
1980	17,572,526	*80.35%*	4,297,166	*18.07%*	0	*0.00%*	0	*0.00%*	21,869,692
1990	16,053,566	*74.59%*	5,469,055	*22.99%*	0	*0.00%*	0	*0.00%*	21,522,621
2000	17,726,056	*73.33%*	6,447,820	*27.11%*	0	*0.00%*	0	*0.00%*	24,173,876
2001	18,129,408	*74.00%*	6,371,371	*26.79%*	0	*0.00%*	0	*0.00%*	24,500,779
2002	17,794,858	*74.33%*	6,146,420	*25.84%*	0	*0.00%*	0	*0.00%*	23,941,278
2003	17,693,053	*73.36%*	6,237,176	*26.22%*	0	*0.00%*	188,749	*0.79%*	24,118,978
2004	16,669,139	*69.54%*	6,084,431	*25.58%*	0	*0.00%*	1,216,108	*5.11%*	23,969,678
2005	16,246,904	*69.26%*	5,984,975	*25.16%*	0	*0.00%*	1,224,943	*5.15%*	23,456,822
2006	16,691,061	*70.92%*	5,539,464	*23.29%*	0	*0.00%*	1,304,493	*5.48%*	23,535,018
2007	14,991,891	*60.79%*	5,681,871	*23.89%*	1,990,145	*8.37%*	1,999,748	*8.41%*	24,663,655
2008	15,134,644	*59.04%*	5,609,425	*23.58%*	2,869,960	*12.07%*	2,022,228	*8.50%*	25,636,257
2009	14,414,287	*55.32%*	5,674,120	*23.85%*	3,958,315	*16.64%*	2,010,171	*8.45%*	26,056,893
2010	13,247,498	*49.40%*	5,834,703	*24.53%*	5,817,122	*24.46%*	1,916,762	*8.06%*	26,816,085
2011	12,291,070	*43.16%*	5,907,919	*24.84%*	8,500,983	*35.74%*	1,779,055	*7.48%*	28,479,027
2012p	**12,736,678**	***43.11%***	**4,969,668**	***20.89%***	**10,296,572**	***43.29%***	**1,539,395**	***6.47%***	**29,542,313**

p Preliminary.

Source: U.S. Department of Energy, Energy Information Administration, *Natural Gas Gross Withdrawals and Production*, http://www.eia.gov/dnav/ng/ng_prod_sum_dcu_NUS_a.htm (April 2014).

Natural Gas production in the United States was significantly changed when shale gas resources and coalbed wells became available. Without shale natural gas production due to fracking, and coalbed mines, natural gas withdrawals would have declined to levels not seen since 1965.

In 2012, the percent of total natural gas withdrawals from shale wells increased 21.1 percent over 2011. The availability of natural gas from coalbed wells is gradually decreasing and flattening out, because the available gas is finite, and due to decreased activity in the underground mining industry.

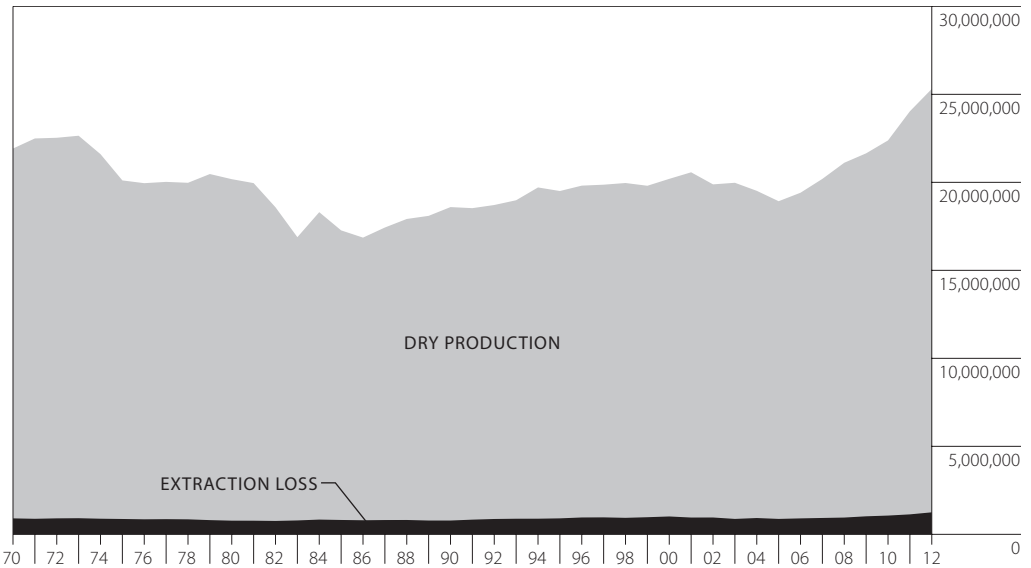
The Gross Withdrawals shows all of the sources of natural gas production.

Natural Gas Production

A co-product of oil production, natural gas occurs naturally in oil as a dissolved gas under pressure. During the oil extraction process, this gas is freed up and then reinserted—or, repressured—into the oil well to enhance or maintain oil production from the well. When the natural gas cannot be captured for market delivery, or repressured, the gas may be flared (burned) or vented into the atmosphere. Non-hydrocarbon, naturally occurring gasses such as carbon dioxide, helium, hydrogen sulfide and nitrogen are removed.

The Marketed Production is the gas available after repressuring, flaring/venting and the removal of non-hydrocarbon gasses. When this gas is compressed it can be pumped and shipped via pipeline, hydrocarbon gasses such as ethane, propane and butane are removed and the remaining Dry Production is available for sale on the market.

1970-2012 MILLIONS OF CUBIC FEET



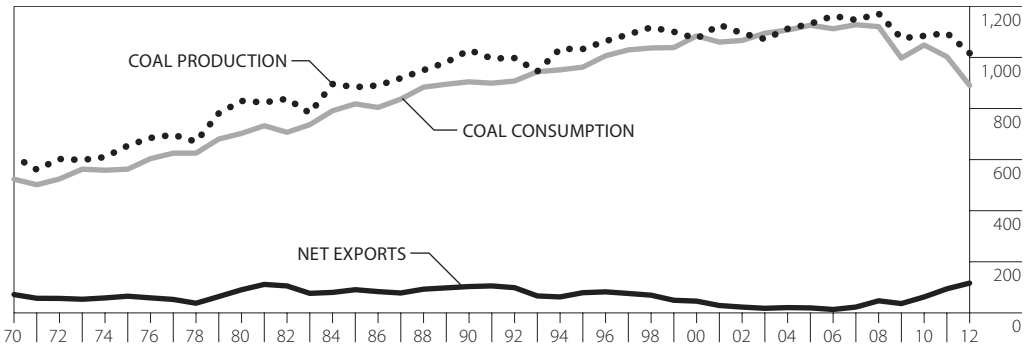
Year	Marketed Production	Repressuring	Vented and Flared	Non-Hydrocarbon Gases Removed	Extraction Loss	Dry Production
1970	21,920,642	1,376,351	489,460	0	906,413	21,014,229
1975	20,108,661	860,956	133,913	0	872,282	19,236,379
1980	20,179,724	1,365,454	125,451	199,063	776,605	19,403,119
1985	17,270,223	1,915,197	94,778	326,497	816,370	16,453,853
1990	18,593,792	2,489,040	150,415	289,374	784,118	17,809,674
1995	19,506,474	3,565,023	283,739	388,392	907,795	18,598,679
2000	20,197,511	3,379,661	91,232	505,472	1,015,542	19,181,980
2001	20,570,295	3,370,832	96,913	462,738	953,984	19,616,311
2002	19,884,780	3,455,145	99,178	502,176	956,992	18,927,788
2003	19,974,360	3,547,781	98,113	498,724	875,816	19,098,544
2004	19,517,491	3,701,656	96,408	654,124	926,600	18,590,891
2005	18,927,095	3,699,535	119,097	711,095	876,497	18,050,598
2006	19,409,674	3,264,929	129,469	730,946	906,069	18,503,605
2007	20,196,346	3,662,685	143,457	661,168	930,320	19,266,026
2008	21,112,053	3,638,622	166,909	718,674	953,451	20,158,602
2009	21,647,936	3,522,090	165,360	721,507	1,024,082	20,623,854
2010	22,381,873	3,431,587	165,928	836,698	1,066,366	21,315,507
2011	24,036,352	3,365,313	209,439	867,922	1,134,473	22,901,879
2012p	**25,307,949**	**3,259,680**	**212,848**	**761,836**	**1,250,340**	**24,057,609**

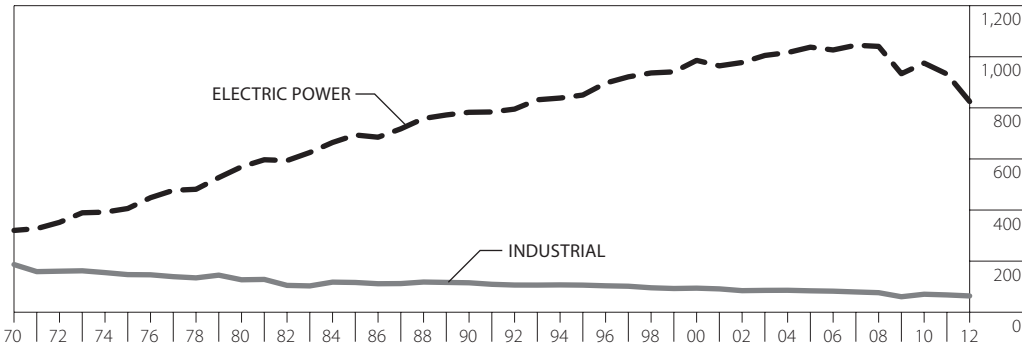
p Preliminary.

Source: U.S. Department of Energy, Energy Information Administration, *Natural Gas Gross Withdrawals and Production*, http://www.eia.gov/dnav/ng/ng_prod_sum_dcu_NUS_a.htm (April 2014).

United States Coal Production, Net Exports, Consumption and Sector Usage

1970-2012 MILLIONS OF TONS





Year	Coal Production	Net Exports	Consumption	Coal Use by Sector		
				Res. & Com.[a]	Industrial	Electric Power
1970[r]	612.7	71.7	523.2	16.1	186.6	320.2
1975[r]	654.6	65.4	562.6	9.4	147.2	406.0
1980[r]	829.7	90.5	702.7	6.5	127.0	569.3
1985[r]	883.6	90.7	818.0	7.8	116.4	693.8
1990[r]	1,029.1	103.1	904.5	6.7	115.2	782.6
1995[r]	1,033.0	79.1	962.1	5.8	106.1	850.2
2000[r]	1,073.6	46.0	1,084.1	4.1	94.1	985.8
2005[r]	1,131.5	19.5	1,126.0	4.7	83.8	1,037.5
2006[r]	1,162.7	13.4	1,112.3	3.2	82.4	1,026.6
2007[r]	1,146.6	22.8	1,128.0	3.5	79.3	1,045.1
2008[r]	1,171.8	47.3	1,120.5	3.5	76.5	1,040.6
2009[r]	1,074.9	36.5	997.5	3.2	60.6	933.6
2010[r]	1,084.4	62.4	1,048.5	3.1	70.4	975.1
2011	1,095.6	94.2	1,002.9	2.8	67.7	932.5
2012[p]	**1,016.4**	**116.6**	**890.5**	**2.0**	**63.7**	**824.8**

a Res. & Com. represents residential and commercial.

p Preliminary.

r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 6.1 and 6.2 [DOE/EIA-0035 (2013/03)] (March 2013). http://www.eia.gov/totalenergy/data/monthly/

DOMESTIC PRODUCTION EXCEEDS DEMAND

Unlike petroleum or natural gas, domestic production of coal exceeds demand, and the U.S. is a net exporter of coal.

IN THE U.S. 92.6% OF COAL GENERATES ELECTRIC POWER

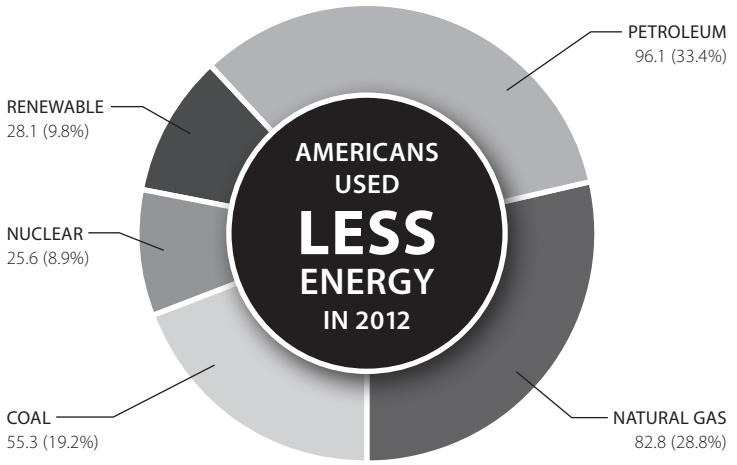
Of the coal consumed in the United States, 92.6 percent is used in the electric sector which accounts for 37.4 percent of all electricity generation. In Wisconsin, coal accounts for 74.0 percent of all electricity generation. The industrial sector uses 7.2 percent, with the residential and commercial sectors combined using 0.22 percent of total domestic consumption.

United States Per Capita Resource Energy Consumption, by Type of Fuel

U.S. PER CAPITA
ENERGY
CONSUMPTION
3.2%

In 2012, U.S. per capita energy consumption decreased 3.2 percent.

2012 MILLIONS OF BTU AND PERCENT OF TOTAL



1970-2012 MILLIONS OF BTU AND PERCENT OF TOTAL

Year	Petroleum[a]		Natural Gas		Coal		Nuclear		Renewables[b]		Total
1970[r]	126.1	*40.3%*	106.3	*33.9%*	59.8	*19.1%*	1.2	*0.4%*	19.9	*6.3%*	313.2
1975[r]	133.2	*42.3%*	92.4	*29.4%*	58.6	*18.6%*	8.8	*2.8%*	21.7	*6.9%*	314.7
1980[r]	128.0	*39.9%*	89.1	*27.8%*	67.9	*21.2%*	12.1	*3.8%*	23.9	*7.4%*	320.9
1985[r]	112.8	*37.2%*	74.4	*24.5%*	73.5	*24.2%*	17.1	*5.6%*	25.6	*8.4%*	303.4
1990[r]	113.9	*35.8%*	78.5	*24.7%*	76.8	*24.2%*	24.5	*7.7%*	24.2	*7.6%*	317.9
1995[r]	109.9	*34.2%*	85.1	*26.5%*	75.4	*23.4%*	26.6	*8.3%*	24.6	*7.7%*	321.7
2000[r]	116.0	*35.2%*	84.4	*25.6%*	80.0	*24.2%*	27.9	*8.4%*	21.6	*6.6%*	330.0
2001[r]	114.3	*36.0%*	79.9	*25.2%*	76.9	*24.2%*	28.2	*8.9%*	18.1	*5.7%*	317.4
2002[r]	113.3	*35.5%*	81.7	*25.6%*	76.2	*23.8%*	28.3	*8.9%*	19.9	*6.2%*	319.4
2003[r]	113.8	*35.9%*	78.7	*24.8%*	76.9	*24.2%*	27.4	*8.6%*	20.5	*6.5%*	317.4
2004[r]	116.4	*36.4%*	78.3	*24.4%*	76.7	*24.0%*	28.1	*8.8%*	20.8	*6.5%*	320.3
2005[r]	116.1	*36.5%*	76.4	*24.0%*	77.1	*24.2%*	27.6	*8.7%*	21.1	*6.6%*	318.3
2006[r]	113.4	*36.2%*	74.5	*23.8%*	75.2	*24.0%*	27.5	*8.8%*	22.3	*7.1%*	312.9
2007[r]	112.4	*35.6%*	78.6	*24.8%*	75.5	*23.9%*	28.1	*8.9%*	21.7	*6.9%*	316.3
2008[r]	105.3	*34.1%*	78.4	*25.4%*	73.6	*23.8%*	27.7	*9.0%*	23.7	*7.7%*	308.7
2009[r]	100.1	*34.2%*	76.3	*26.1%*	64.2	*21.9%*	27.2	*9.3%*	24.9	*8.5%*	292.8
2010[r]	100.9	*33.5%*	79.4	*26.4%*	67.2	*22.3%*	27.3	*9.1%*	26.1	*8.7%*	301.0
2011[r]	99.0	*33.3%*	79.8	*26.8%*	63.1	*21.2%*	26.5	*8.9%*	29.1	*9.8%*	297.6
2012[p]	**96.1**	***33.4%***	**82.8**	***28.8%***	**55.3**	***19.2%***	**25.6**	***8.9%***	**28.1**	***9.8%***	**288.0**

a To allow a more direct comparison with Wisconsin data, this figure excludes asphalt, road oil, lubricants, waxes, petroleum feedstocks and other petroleum products not used as energy sources.

b Renewables includes biomass, hydro power, wood, solar, wind and geothermal.

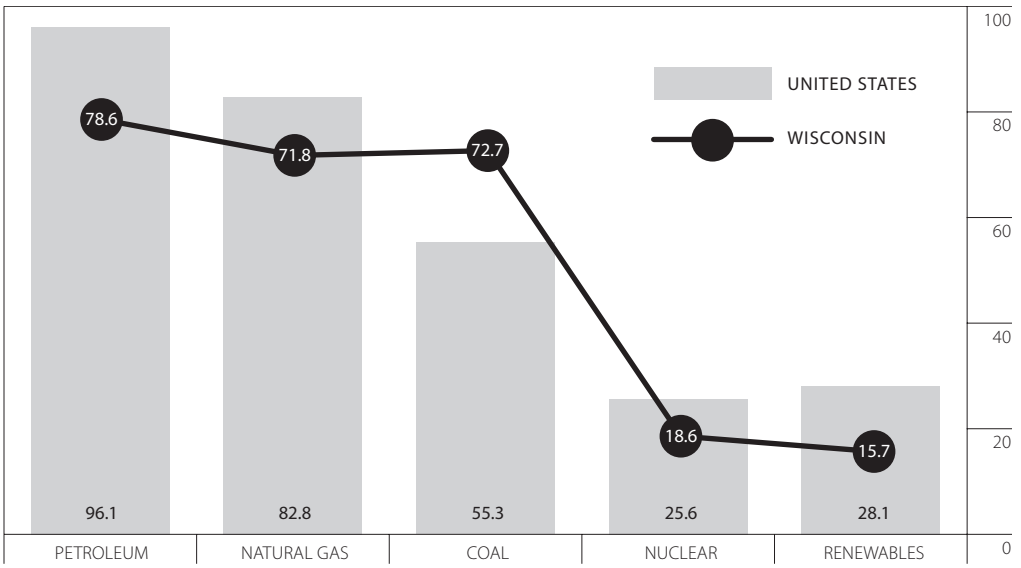
p Preliminary.

r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review* [DOE/EIA-0035 (2013/03)] (March 2013) Table 3.6. http://www.eia.doe.gov/emeu/mer. Annual data in *Annual Energy Review*, Tables 1.3 and 5.12 [DOE/EIA-0384 (2012)] (September 2012) http://www.eia.doe/gov/emeu/aer. U.S. Census Bureau, Population Division, Release 3/2012, *Table 1: Preliminary Annual Estimate of the Resident Population of the United States*. http://www.census.gov/popest/eval-estimates/eval-est2010.html

Wisconsin Per Capita Resource Energy Consumption as Percent of United States, by Type of Fuel

2012 PER CAPITA RESOURCE ENERGY CONSUMPTION – MILLIONS OF BTU



1970-2012 WISCONSIN PER CAPITA RESOURCE ENERGY CONSUMPTION AS A PERCENT OF U.S.

Year	Petroleum[a]	Natural Gas	Coal	Nuclear	Renewables[b]	Total
1970	82.2	69.7	134.5	32.5	31.1	82.5
1975	78.1	87.3	98.0	276.8	29.7	85.3
1980	75.4	82.1	101.6	188.7	43.5	84.3
1985	77.7	86.2	107.4	145.9	42.7	87.8
1990	78.5	79.8	109.5	101.3	42.5	90.9
1995	83.1	87.8	120.5	87.4	39.7	97.6
2000	79.8	86.9	121.0	82.8	47.7	95.3
2005	76.8	91.6	123.5	53.1	53.3	96.3
2006	77.2	90.5	122.0	85.4	52.1	93.0
2007	78.0	84.9	120.9	87.9	59.5	95.9
2008	79.5	88.0	129.5	83.5	59.8	97.7
2009	78.9	86.9	132.7	88.4	57.0	96.7
2010	78.7	83.5	136.6	92.4	57.3	94.9
2011	79.2	86.2	136.8	82.7	53.8	95.4
2012[p]	**81.8**	**91.3**	**131.4**	**72.4**	**55.8**	**95.8**

a This list excludes asphalt, road oil, lubricants, waxes, petroleum feedstocks and other petroleum products not used as energy sources.
b Renewables includes biomass, biogas, hydro power, wood, solar and wind.
p Preliminary estimates.
Source: Compiled from tables in this publication for United States and Wisconsin per capita resource energy use.

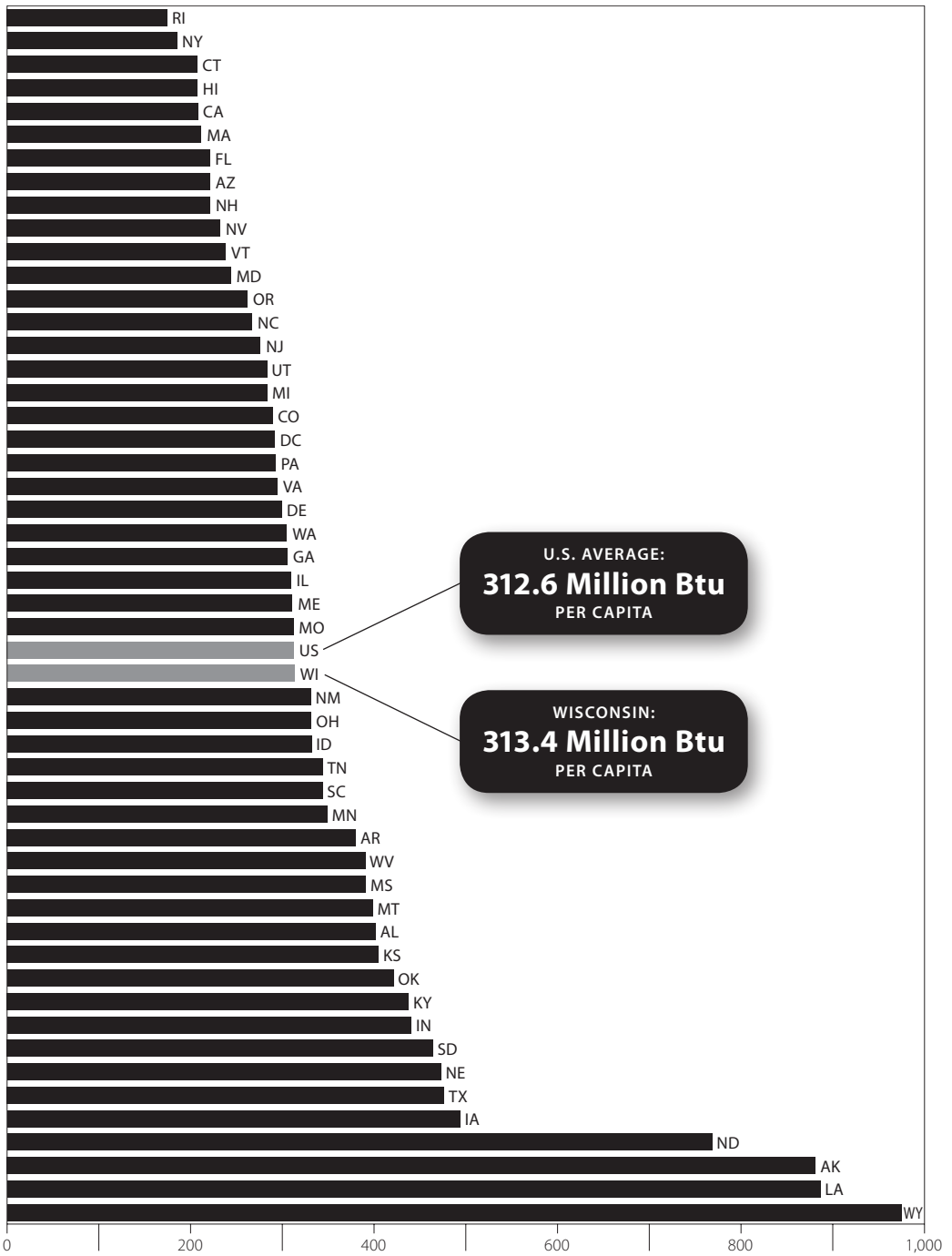
IN 2012 **WISCONSIN** USED **95.8%** AS MUCH ENERGY **PER CAPITA** AS THE **NATIONAL AVERAGE**

In 2012, Wisconsin used 95.8 percent as much energy per capita as the national average. Wisconsin used significantly more coal than the national average because of the state's high use of electricity generated from coal. Wisconsin used less petroleum, natural gas, renewable and nuclear energy per capita than the national average.

U.S. Per Capita Resource Energy Consumption, by State

In 2011, when non-energy uses of petroleum are included (such as road oil, asphalt and lubricants), Wisconsin was the 24th largest state user in the nation, including the District of Columbia, in per capita energy consumption[a]. At 313.4 Million Btu (MMBtu) per capita, Wisconsin's consumption was 100.3 percent of the U.S. consumption at 312.6 MMBtu per capita. This is an increase of 0.13 percent from 2010 when Wisconsin's per capita consumption was 100.1 percent of the U.S. per capita consumption.

2011 MILLIONS OF BTU PER CAPITA

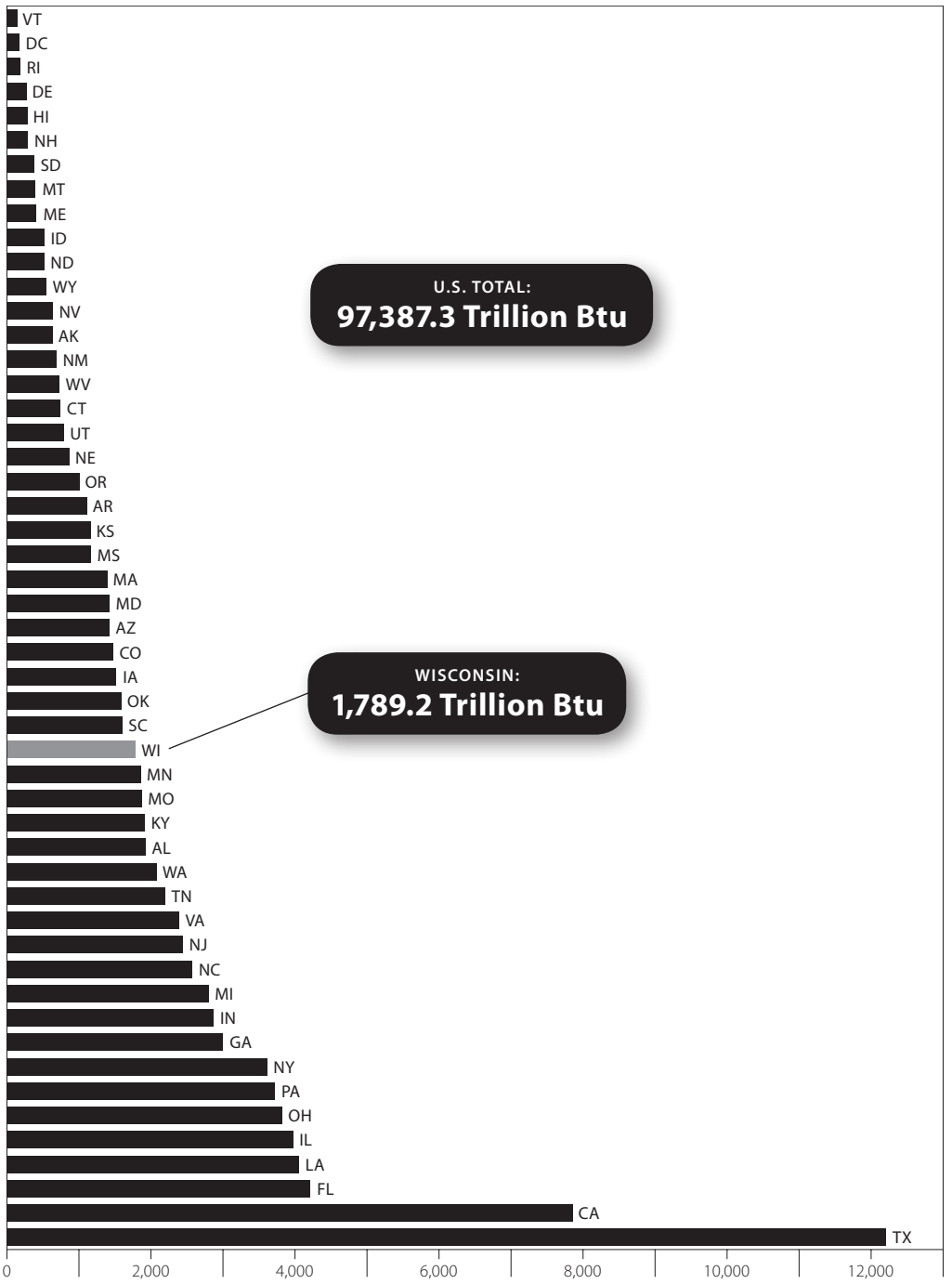


a Data reported in this table may differ from other tables because of different sources.

Source: U.S. Department of Energy, Energy Information Administration, *State Energy Data 2011: Consumption*, Table C11. http://www.eia.doe.gov/state/seds/sep_use/notes/use_print2011.pdf

U.S. Resource Energy Consumption, by State

2011 TRILLIONS OF BTU



From 2009 until 2011, when non-energy uses of petroleum are included (such as road oil, asphalt and lubricants), Wisconsin used 1.8 percent of total energy consumed in the United States[a].

a Data reported in this table may differ from other tables because of different sources.

Source: U.S. Department of Energy, Energy Information Administration, *State Energy Data 2010: Consumption*, Table C10. http://www.eia.doe.gov/state/seds/sep_use/notes/use_print2011.pdf

Primary Energy Intensity, by Country and Region

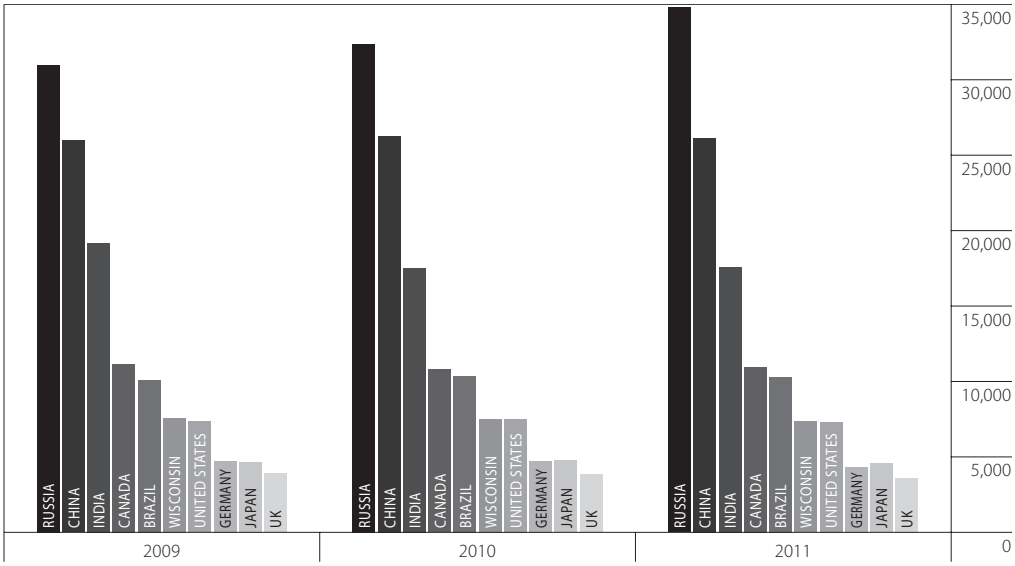
WORLD WIDE AVERAGE 9.8 kBtu/$GDP

Energy intensity demonstrates the efficiency with which a country uses the energy it consumes, relative to its economic activity, the country's Gross Domestic Product (GDP).

The chart and graph below show energy intensity as a factor of Btu per 2005 U.S. Dollars. The higher the intensity, the less efficiently energy is used, while lower intensity numbers show efficient energy consumption relative to other nations. Another way to describe energy intensity is that it measures how much energy a country requires to produce a dollar of GDP.

The world wide average is 9.8 kBtu/$GDP. The United States and Wisconsin are more efficient than the world at 7.3 and 7.4 kBtu/$GDP, respectively.

2006-2011 BTU PER 2005 U.S. DOLLARS



	2006	2007	2008	2009	2010	2011
State						
Wisconsin	7,463	7,794	8,063	7,543	7,516	7,400
Country						
Canada	11,850	11,769	11,289	11,225	10,796	10,962
United States	7,688	7,670	7,543	7,412	7,505	7,329
Brazil	10,582	10,416	10,109	10,262	10,346	10,312
France	5,198	5,047	5,057	4,936	5,001	4,816
Germany	5,121	4,799	4,818	4,768	4,744	4,325
Italy	4,415	4,372	4,320	4,275	4,380	4,228
United Kingdom	4,159	3,950	3,880	3,838	3,827	3,624
Russia	33,506	31,990	31,393	31,821	32,390	34,797
China	29,205	27,326	26,685	27,144	26,274	26,131
India	19,270	18,725	18,878	18,619	17,513	17,581
Japan	4,922	4,849	4,660	4,702	4,752	4,554
Region						
North America	8,039	8,017	7,850	7,742	7,788	7,667
Central and South America	11,735	11,190	11,116	10,990	11,053	11,000
Europe	5,583	5,431	5,350	5,289	5,347	5,250
Eurasia	37,078	35,207	34,333	33,142	33,679	34,000
Middle East	19,543	18,564	19,258	20,116	20,203	20,100
Africa	13,694	13,274	13,519	13,109	12,843	12,500
Asia and Oceania	13,483	13,310	13,412	14,188	13,996	14,000
World	**9,860**	**9,734**	**9,756**	**9,911**	**9,992**	**9,800**

Source: U.S. Department of Energy, Energy Information Administration, International Energy Statistics, (2012) http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm.

Primary Energy Usage and GDP, by Country and Region

2011 QUADRILLION BTUs AND BILLIONS OF 2005 U.S. DOLLARS

	2011		Gross Domestic Product[a]		Primary Energy Intensity
	Quadrillion Btu	Percent of Wold Total	Billions of 2005 U.S. Dollars	Percent of Wold Total	Btu per 2005 U.S. Dollars
Country					
Brazil	11.66	2.3%	1,131	2.2%	10,312
Canada	13.50	2.7%	1,231	2.4%	10,962
China	109.62	21.9%	4,195	8.2%	26,131
France	10.78	2.2%	2,238	4.4%	4,816
Germany	13.08	2.6%	3,024	5.9%	4,325
India	23.61	4.7%	1,343	2.6%	17,581
Italy	7.41	1.5%	1,753	3.4%	4,228
Japan	20.86	4.2%	4,581	9.0%	4,554
Russia	32.77	6.6%	942	1.8%	34,797
United Kingdom	8.52	1.7%	2,351	4.6%	3,624
United States	97.47	19.5%	13,299	26.1%	7,329
Region					
Africa	15.00	3.0%	1,200	2.4%	12,500
Asia and Oceania	200.00	40.0%	14,286	28.0%	14,000
Central and South America	25.00	5.0%	2,273	4.5%	11,000
Eurasia	40.00	8.0%	1,176	2.3%	34,000
Europe	85.00	17.0%	16,190	31.7%	5,250
Middle East	30.00	6.0%	1,493	2.9%	20,100
North America	118.79	23.8%	15,493	30.4%	7,667
World	**500.00**		**51,020**		**9,800**

a Gross Domestic Product is calculated using available data from the Energy Information Administration, International Energy Statistics data.

Source: U.S. Department of Energy, Energy Information Administration, International Energy Statistics, (2012) http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm.

Primary Resource energy use varies widely from country to country. Industrialized countries such as those in North America and Western Europe each use about 2 percent of the annual worldwide primary energy consumption, while the U.S. uses significantly more at 19.5 percent.

Developing nations such as Russia (6.6 percent), China (21.9 percent) and India (4.7 percent) use a significantly larger share of the annual, worldwide primary energy with a smaller Gross Domestic Product.

Although the U.S. has a much larger economy, uses more energy and is more developed in terms of economic activity, the countries of Western Europe use energy more efficiently to drive their economy.