

CHAPTER 5

United States Energy Use

Diesel Truck Idling Reduction Program

Saving Money and Reducing Fuel Use

Wisconsin motor carriers are working with the state to reduce emissions and save fuel through reducing diesel truck idling. The highly successful Diesel Truck Idling Reduction Program provides cost-sharing for the purchase and installation of idling reduction units (IRU).

IRUs provide alternative power, heat or air conditioning to the truck so the engine does not have to idle when the truck is parked. The units provide a significant reduction in fuel consumption and air pollution emissions.

The grant program has provided funding for 2,143 IRUs, saving more than one million gallons of fuel annually and significantly reducing diesel emissions such as particulate matter (PM), hydrocarbons (HC), carbon monoxide (CO) and carbon dioxide (CO₂).

Qualified participants are eligible for reimbursement of up to 50 percent of the cost of their selected idling reduction equipment and its installation. Units include but are not limited to: auxiliary power units (APU), battery-powered (BP) units, diesel-fired heaters (DFHs), and energy recovery systems.

The program has received the Midwest Clean Diesel Initiative Leadership Award for demonstrating outstanding leadership by making significant, measurable improvements in air quality through the development and implementation of clean diesel actions.

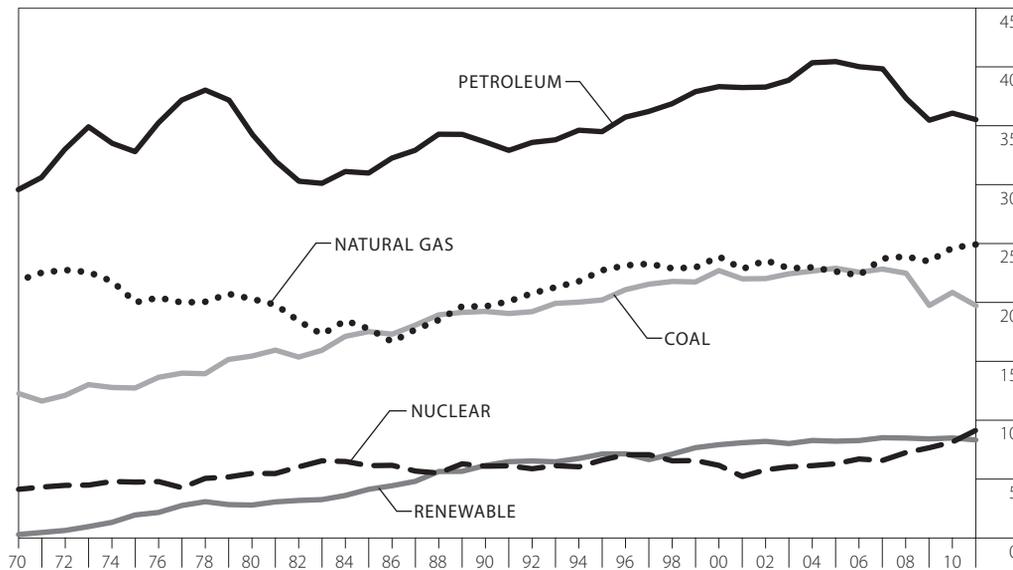


AN IDLE FREE BRAND IDLE REDUCTION UNIT INSTALLED ON A TRUCK. IDLE FREE, A WISCONSIN-BASED IRU MANUFACTURER, WAS A PARTICIPATING VENDOR THROUGH THE IDLING REDUCTION GRANT PROGRAM ADMINISTERED BY THE STATE ENERGY OFFICE.

For more information, please go to: www.stateenergyoffice.wi.gov/dieselgrantprogram. You may also email jean.beckwith@wisconsin.gov or phone 608-261-2517 for more information.

United States Resource Energy Consumption, by Type of Fuel

1970-2011 QUADRILLIONS OF BTU



1970-2011 QUADRILLIONS OF BTU AND PERCENT OF TOTAL

Year	Petroleum		Natural Gas		Coal		Nuclear		Renewable ^a		Total ^b
1970	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%	20.2	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	6.4%	101.3
2008 ^r	37.3	37.6%	23.8	24.0%	22.4	22.6%	8.4	8.5%	7.2	7.2%	99.3
2009 ^r	35.4	37.4%	23.4	24.8%	19.7	20.8%	8.4	8.8%	7.6	8.0%	94.6
2010	36.0	36.8%	24.3	25.1%	20.8	21.2%	8.4	8.6%	8.1	8.3%	97.7
2011 ^p	35.3	36.4%	24.8	25.5%	19.7	20.2%	8.3	8.5%	9.1	9.3%	97.3

^a Includes net imports of electricity.

^b Totals vary slightly from US 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 (2012/05)] (May 2012).
<http://www.eia.gov/totalenergy/data/monthly/> Complete Historical Data at: <http://www.eia.gov/totalenergy/data/annual/>

U.S. ENERGY CONSUMPTION
0.4%

In 2011, total energy consumption in the United States decreased 0.4 percent.

PETROLEUM
2.0%
 COAL
5.7%
 NUCLEAR
2.1%

There were decreases for petroleum (2.0 percent), coal (5.7 percent), and nuclear (2.1 percent).

RENEWABLES
12.9%
 NATURAL GAS
2.4%

Only renewable fuels and natural gas saw an increase in consumption of 12.9 percent and 2.4 percent, respectively.

United States Resource Energy Consumption, by Economic Sector

INDUSTRIAL
0.9%

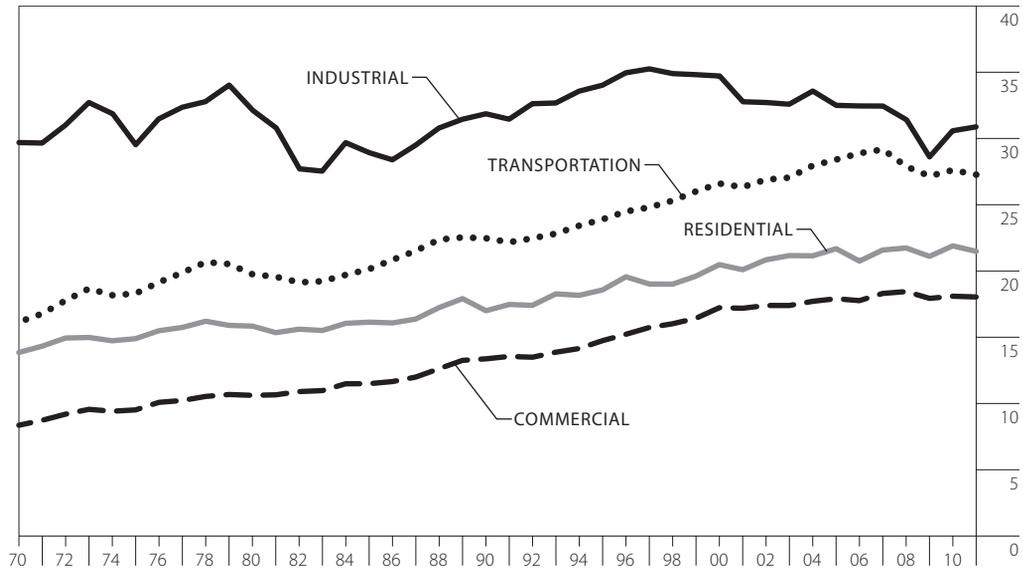
COMMERCIAL
0.3%

RESIDENTIAL
1.1%

TRANSPORTATION
1.4%

During 2011, all sectors except industrial saw a decrease in consumption. The industrial sector saw an increase (0.9 percent), while the commercial sector saw a slight decrease (0.3 percent). The residential and transportation sectors saw decreases of 1.1 percent and 1.4 percent respectively.

1970-2011 QUADRILLIONS OF BTU



1970-2011 QUADRILLIONS OF BTU AND PERCENT OF TOTAL

Year	Residential ^a		Commercial ^a		Industrial		Transportation		Total
1970	13.8	20.3%	8.3	12.2%	29.6	43.7%	16.1	23.7%	67.8
1975	14.8	20.6%	9.5	13.2%	29.4	40.9%	18.2	25.4%	72.0
1980	15.8	20.2%	10.6	13.5%	32.0	41.0%	19.7	25.2%	78.1
1985	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	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	21.6	21.8%	18.4	18.5%	31.3	31.5%	28.0	28.2%	99.3
2009 ^r	21.1	22.3%	17.9	18.9%	28.5	30.2%	27.1	28.6%	94.6
2010 ^r	21.9	22.4%	18.1	18.5%	30.3	31.0%	27.5	28.1%	97.7
2011 ^p	21.6	22.2%	18.0	18.5%	30.6	31.4%	27.1	27.8%	97.3

^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 (2012/05)] (May 2012).
<http://www.eia.gov/totalenergy/data/monthly/> Complete Historical Data at: <http://www.eia.gov/totalenergy/data/annual/>

Sources of U.S. Crude Oil and Petroleum Products

1975-2011 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
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	7,626	5,746	1,880	4,761	984	11,530	4,605	58.3%	39.9%	66.7%
2003	20,034	7,400	5,681	1,719	4,706	1,027	12,264	5,162	61.2%	42.1%	68.3%
2004	20,731	7,228	5,419	1,809	4,510	1,048	13,145	5,701	63.4%	43.4%	70.8%
2005	20,802	6,895	5,178	1,717	4,314	1,165	13,714	5,587	65.9%	40.7%	72.6%
2006	20,687	6,841	5,102	1,739	4,361	1,317	13,707	5,517	66.3%	40.2%	72.9%
2007	20,680	6,847	5,064	1,783	4,342	1,433	13,468	5,980	65.1%	44.4%	72.7%
2008	19,498	6,734	4,950	1,784	4,268	1,802	12,915	5,954	66.2%	46.1%	72.3%
2009 ^r	18,771	7,270	5,361	1,910	4,715	2,024	11,691	4,776	62.3%	40.9%	68.6%
2010 ^p	19,180	7,550	5,476	2,074	4,874	2,353	11,793	4,906	61.5%	41.6%	68.3%
2011 ^p	18,835	7,844	5,662	2,183	5,090	2,924	11,360	4,534	60.3%	39.9%	66.7%

^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 (2012/05)] (May 2012). <http://www.eia.gov/totalenergy/data/monthly/> Complete Historical Data at: <http://www.eia.gov/totalenergy/data/annual/>

U.S.
PETROLEUM USE
1.8%

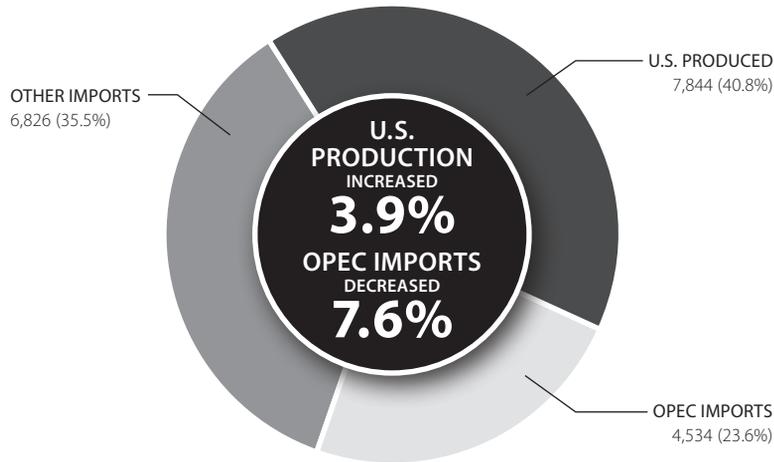
In 2011, U.S. petroleum use decreased 1.8 percent. U.S. imports of crude oil and petroleum products decreased 3.7 percent, and imports from OPEC decreased 7.6 percent.

Since 1985, U.S. consumption of petroleum products has increased almost 19.8 percent. During this same period, U.S. crude oil production has decreased 36.9 percent (lower 48 production fell 28.8 percent). This resulted in a 124.2 percent increase in imports since 1985, with a corresponding 147.8 percent increase in imports from the Organization of Petroleum Exporting Countries (OPEC).

2011 U.S. Petroleum Use Domestically Produced and Imported

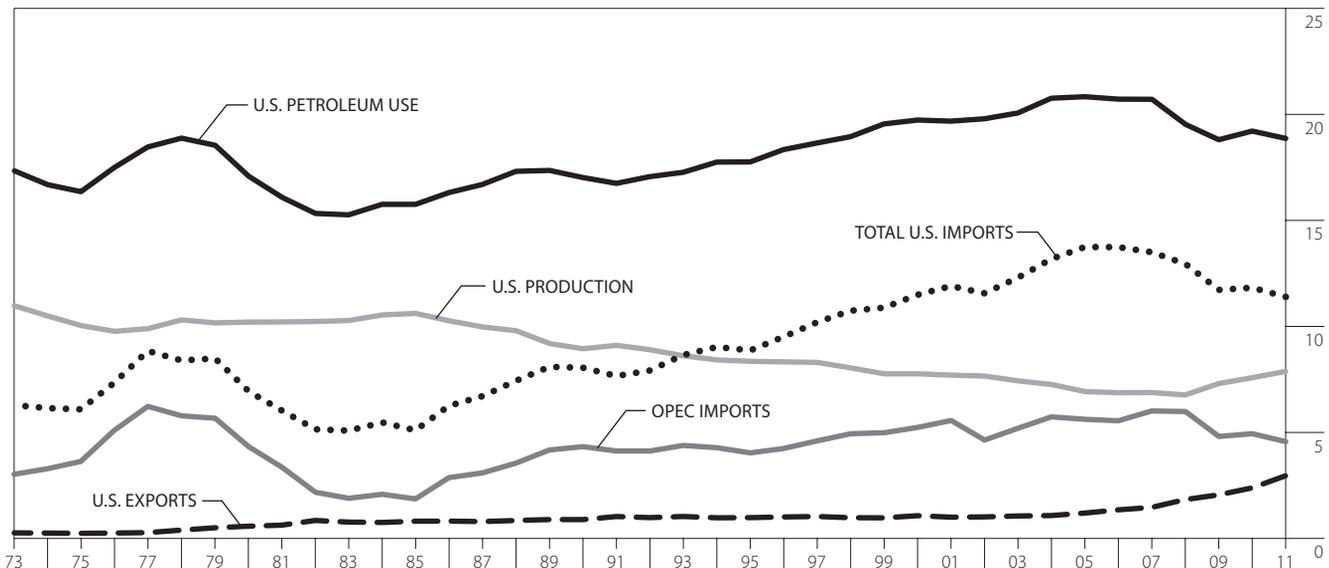
In 2011, U.S. petroleum production^a increased 3.9 percent. OPEC imports decreased 7.6 percent.

2011 THOUSANDS OF BARRELS PER DAY



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

1973-2011 MILLIONS OF BARRELS PER DAY

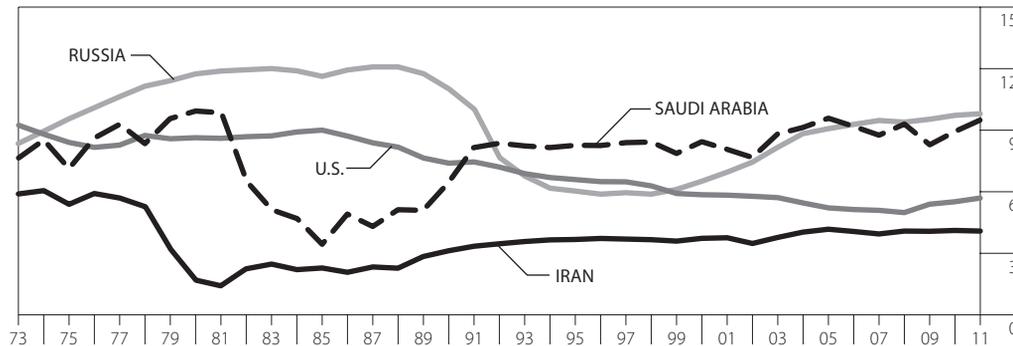
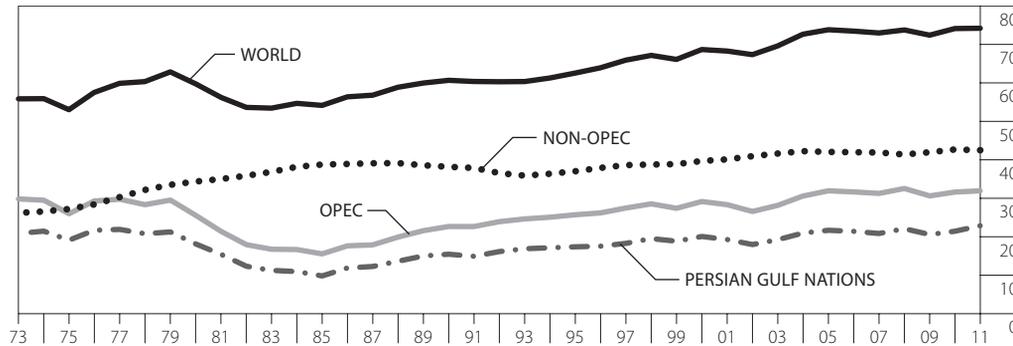


^a Includes crude oil, natural gas plant liquids and a small amount of other hydrocarbons and alcohol.

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

World Crude Oil Production

1973-2011 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
1973	55.68	26.02	29.66	20.67	9.21	7.60	5.86	8.32
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	60.49	38.00	22.49	15.28	7.36	6.41	3.09	10.98
1995 ^r	62.38	36.85	25.54	17.21	6.56	8.23	3.64	6.00
2000 ^r	68.49	39.52	28.98	19.89	5.82	8.40	3.70	6.48
2005 ^r	73.64	41.87	31.77	21.50	5.18	9.55	4.14	9.04
2010 ^r	73.95	42.51	31.44	21.26	5.48	8.90	4.08	9.69
2011 ^p	74.03	42.32	31.77	22.69	5.66	9.46	4.05	9.77

^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 (2012/05)] (May 2012). <http://www.eia.gov/totalenergy/data/monthly/> Complete Historical Data at: <http://www.eia.gov/totalenergy/data/annual/>

**WORLD
CRUDE OIL
0.1%**

In 2011, world production of crude oil was 74.03 million barrels per day, an increase of 0.1 percent from a year ago^d. The Organization of Petroleum Exporting Countries (OPEC) produced 42.9 percent of the world's crude oil in 2011.

The top four producers of crude oil in 2011 were Russia (13.2 percent), Saudi Arabia (12.8 percent), the U.S. (7.6 percent) and Iran (5.5 percent).

United States Natural Gas Production, Imports, Consumption and Storage

CONSUMPTION
2.5%

In 2011, U.S. natural gas consumption increased 2.5 percent.

PRODUCTION
7.8%

Domestic natural gas production increased 7.8 percent.

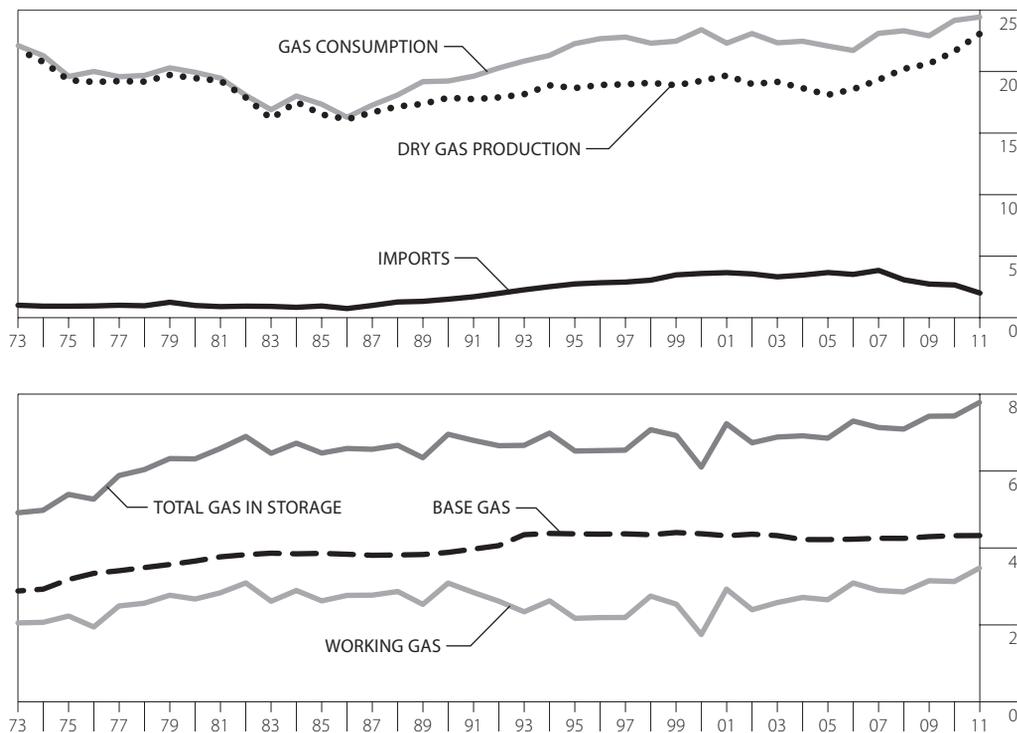
NET IMPORTS
25.2%

Net imports, primarily from Canada, decreased 25.2 percent.

GAS IN STORAGE
11.3%

Working gas^c in storage increased 11.3 percent.

1973-2011 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
1973	21.7	1.0	22.0	2.864	2.034	4.898
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	18.1	3.6	22.0	4.200	2.635	6.835
2010 ^r	21.3	2.6	23.8	4.301	3.111	7.412
2011 ^p	23.0	1.9	24.4	4.305	3.462	7.767

^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.

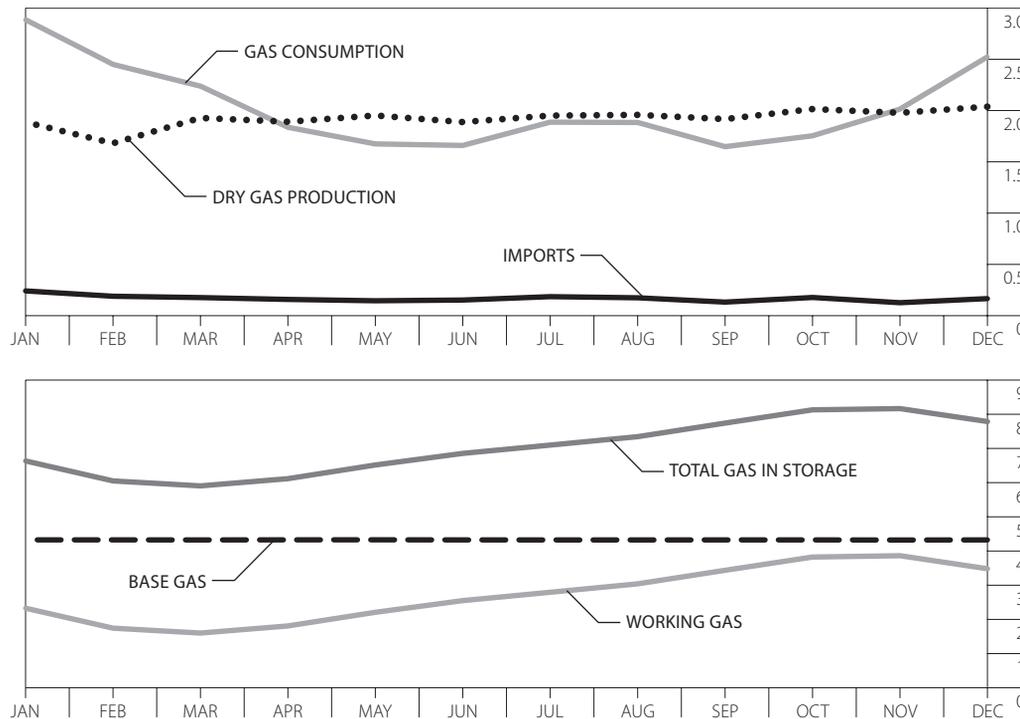
^p Preliminary.

^r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 4.1 and 4.4 [DOE/EIA-0035 (2012/05)] (May 2012). <http://www.eia.gov/totalenergy/data/monthly/> Complete Historical Data at: <http://www.eia.gov/totalenergy/data/annual/>

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

2011 TRILLIONS OF CUBIC FEET



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.

2011	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	1.880	0.235	2.878	4.306	2.308	6.614
February	1.674	0.183	2.443	4.306	1.724	6.030
March	1.921	0.170	2.231	4.304	1.581	5.885
April	1.884	0.152	1.830	4.307	1.789	6.096
May	1.945	0.139	1.668	4.308	2.188	6.496
June	1.881	0.146	1.653	4.305	2.530	6.835
July	1.944	0.179	1.880	4.304	2.774	7.078
August	1.951	0.168	1.877	4.304	3.020	7.324
September	1.910	0.126	1.641	4.305	3.416	7.721
October	2.008	0.171	1.747	4.305	3.804	8.109
November	1.971	0.120	2.007	4.302	3.843	8.145
December	2.031	0.160	2.515	4.305	3.462	7.767
Total^d	23.000	1.949	24.370	Average	4.305	7.008

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 (2012/05)] (May 2012).
<http://www.eia.gov/totalenergy/data/monthly/> Complete Historical Data at: <http://www.eia.gov/totalenergy/data/annual/>

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

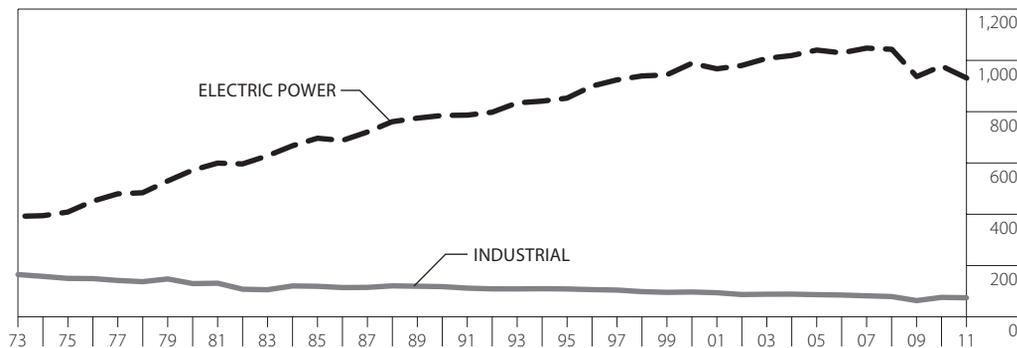
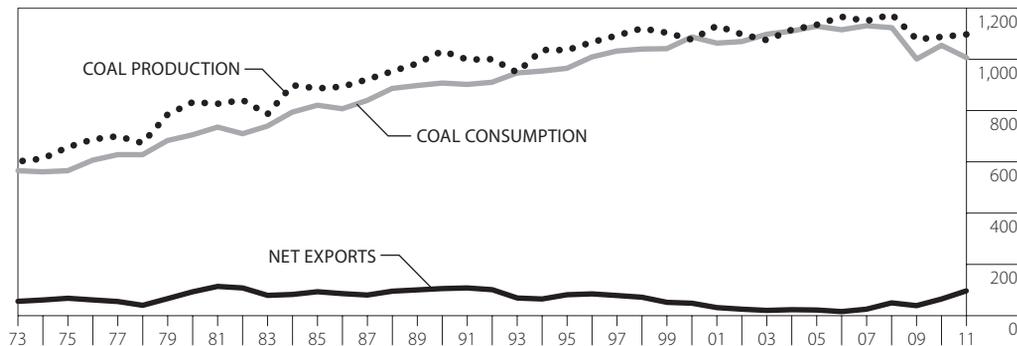
DOMESTIC PRODUCTION EXCEEDS DEMAND

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 used in the U.S., 92.6 percent goes to generating electric power, but 87.2 percent of Wisconsin's utility electricity is generated with coal. The Industrial sector uses 7.2 percent, with the residential and commercial sectors combined using 0.3 percent of total domestic consumption.

1973-2011 MILLIONS OF TONS



Year	Coal Production	Net Exports	Consumption	Coal Use by Sector		
				Res. & Com. ^a	Industrial	Electric Power
1973 ^r	598.6	53.5	562.6	11.1	162.1	389.2
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	1,051.3	3.1	73.2	975.1
2011 ^p	1,094.3	94.2	1,003.1	2.8	71.7	928.6

^a Res. & Com. represents residential and commercial.

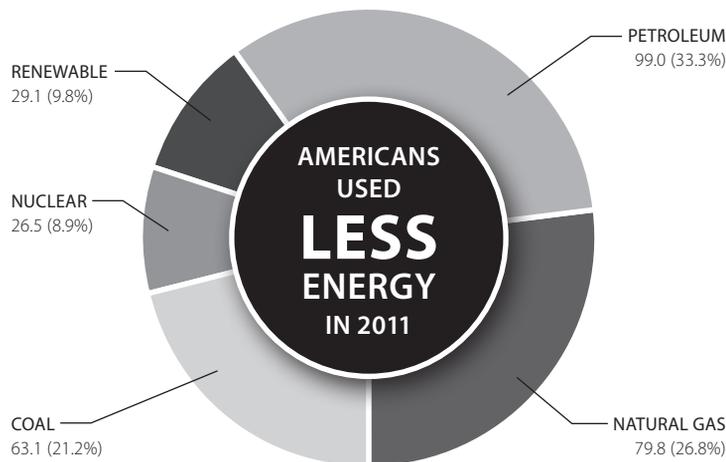
^p Preliminary.

^r Revised.

Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review*, Table 6.1 and 6.2 [DOE/EIA-0035 (2012/05)] (May 2012).
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United States Per Capita Resource Energy Consumption, by Type of Fuel

2011 MILLIONS OF BTU AND PERCENT OF TOTAL



U.S. PER CAPITA ENERGY CONSUMPTION
1.2%

In 2011, U.S. per capita energy consumption decreased 1.2 percent.

1970-2011 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	35.8%	78.7	24.8%	76.9	24.2%	27.4	8.6%	20.6	6.5%	317.5
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	6.8%	316.2
2008 ^r	105.3	34.1%	78.4	25.4%	73.6	23.9%	27.7	9.0%	23.6	7.7%	308.6
2009 ^r	100.1	34.2%	76.3	26.1%	64.2	21.9%	27.2	9.3%	24.8	8.5%	292.7
2010	100.9	33.5%	79.4	26.4%	67.2	22.3%	27.3	9.1%	26.2	8.7%	301.0
2011 ^p	99.0	33.3%	79.8	26.8%	63.1	21.2%	26.5	8.9%	29.1	9.8%	297.6

^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.

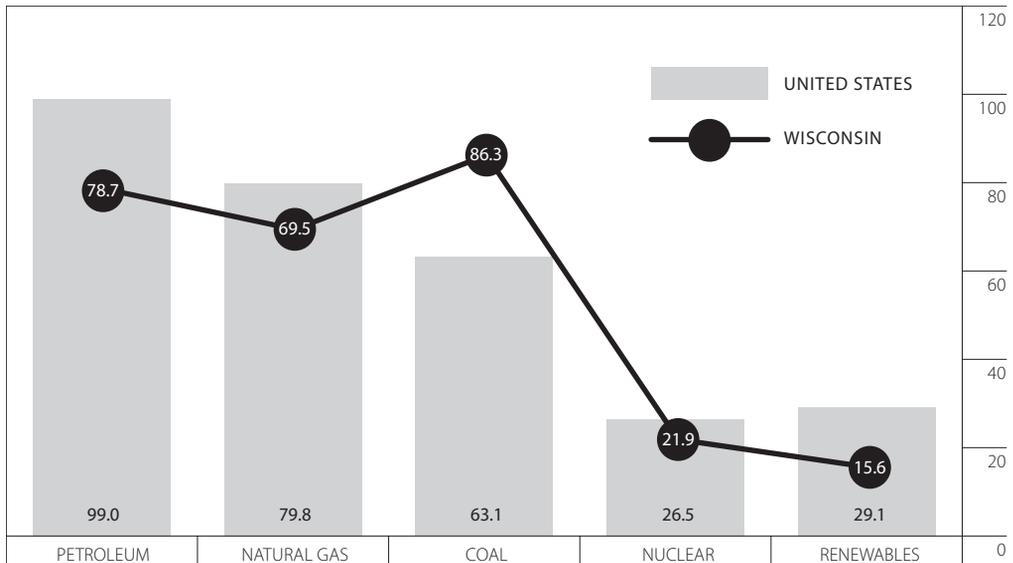
Source: U.S. Department of Energy, Energy Information Administration, *Monthly Energy Review* [DOE/EIA-0035 (2012/03)] (March 2012) Table 3.6. <http://www.eia.doe.gov/emeu/mer>. Annual data in *Annual Energy Review*, Tables 1.3 and 5.12 [DOE/EIA-0384 (2011)] (March 2012) <http://www.eia.doe.gov/emeu/aer>. US 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

IN 2011
WISCONSIN USED 97.2%
 AS MUCH ENERGY PER CAPITA AS THE NATIONAL AVERAGE

In 2011, Wisconsin used 97.2 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.

2011 PER CAPITA RESOURCE ENERGY CONSUMPTION – MILLIONS OF BTU



1970-2011 WISCONSIN PER CAPITA RESOURCE ENERGY CONSUMPTION AS A PERCENT OF U.S.

Year ^r	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	276.7	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	42.8	87.8
1990	79.0	79.8	109.5	101.3	42.4	91.1
1995	82.8	87.2	119.7	86.9	39.2	97.0
2000	80.7	86.9	121.0	82.8	47.5	95.6
2001	81.5	83.3	125.4	81.5	55.1	98.1
2002	82.9	86.1	122.3	86.9	52.7	97.3
2003	82.1	91.1	124.6	87.5	52.2	98.2
2004	80.8	88.2	126.4	82.5	53.6	97.2
2005	77.1	96.6	123.4	53.0	53.0	96.3
2006	77.6	89.2	122.0	85.4	51.9	94.5
2007	78.3	90.4	121.0	88.0	59.4	97.8
2008	80.1	92.8	129.6	83.5	59.7	99.9
2009	79.2	90.1	132.9	88.5	57.1	98.8
2010	79.3	82.7	136.8	92.5	57.1	97.0
2011 ^p	79.5	87.1	136.7	82.6	53.5	97.2

^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.

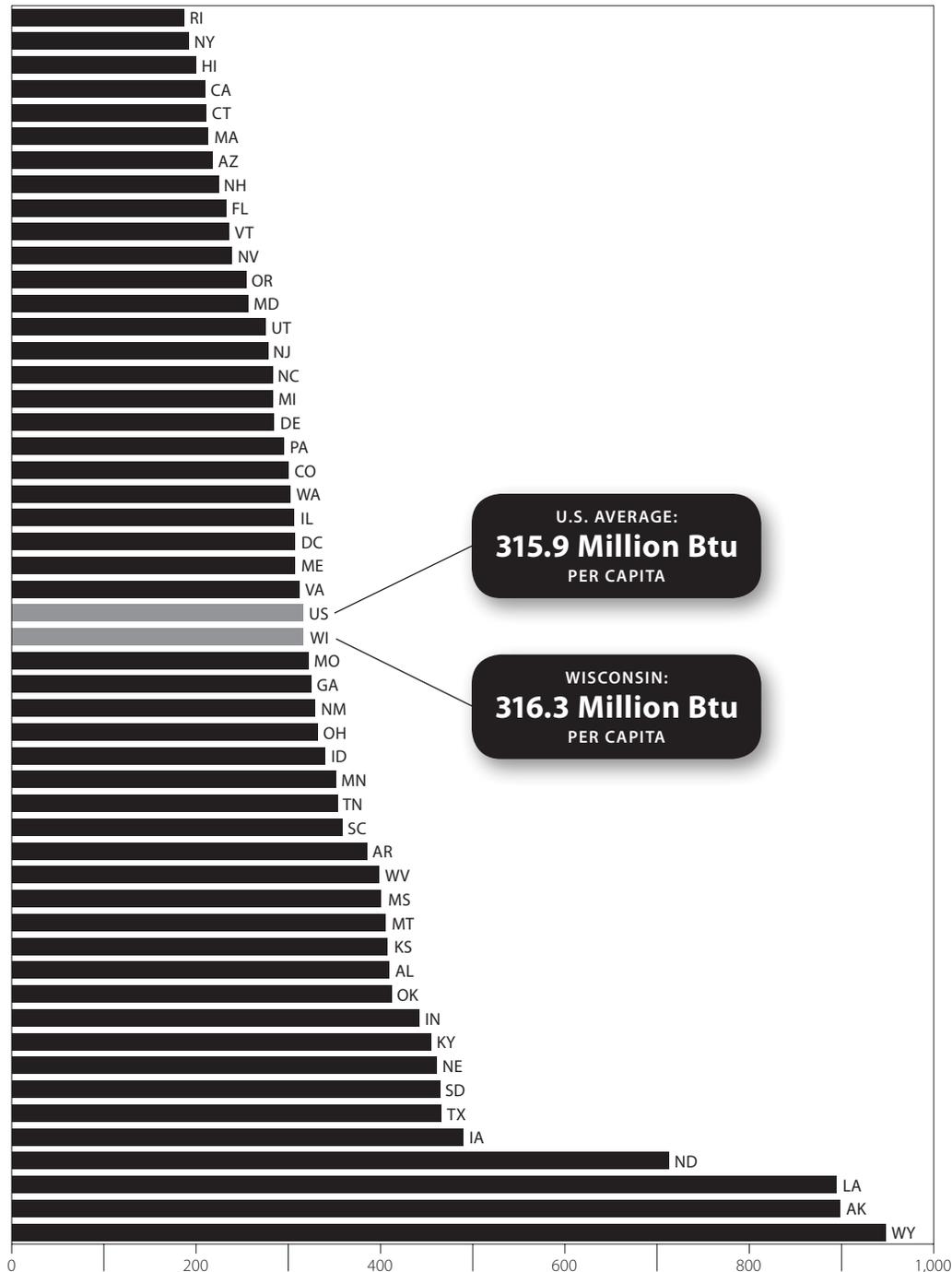
^p Preliminary estimates.

^r Revised.

Source: Compiled from tables in this publication for United States and Wisconsin per capita resource energy use.

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

2010 MILLIONS OF BTU PER CAPITA



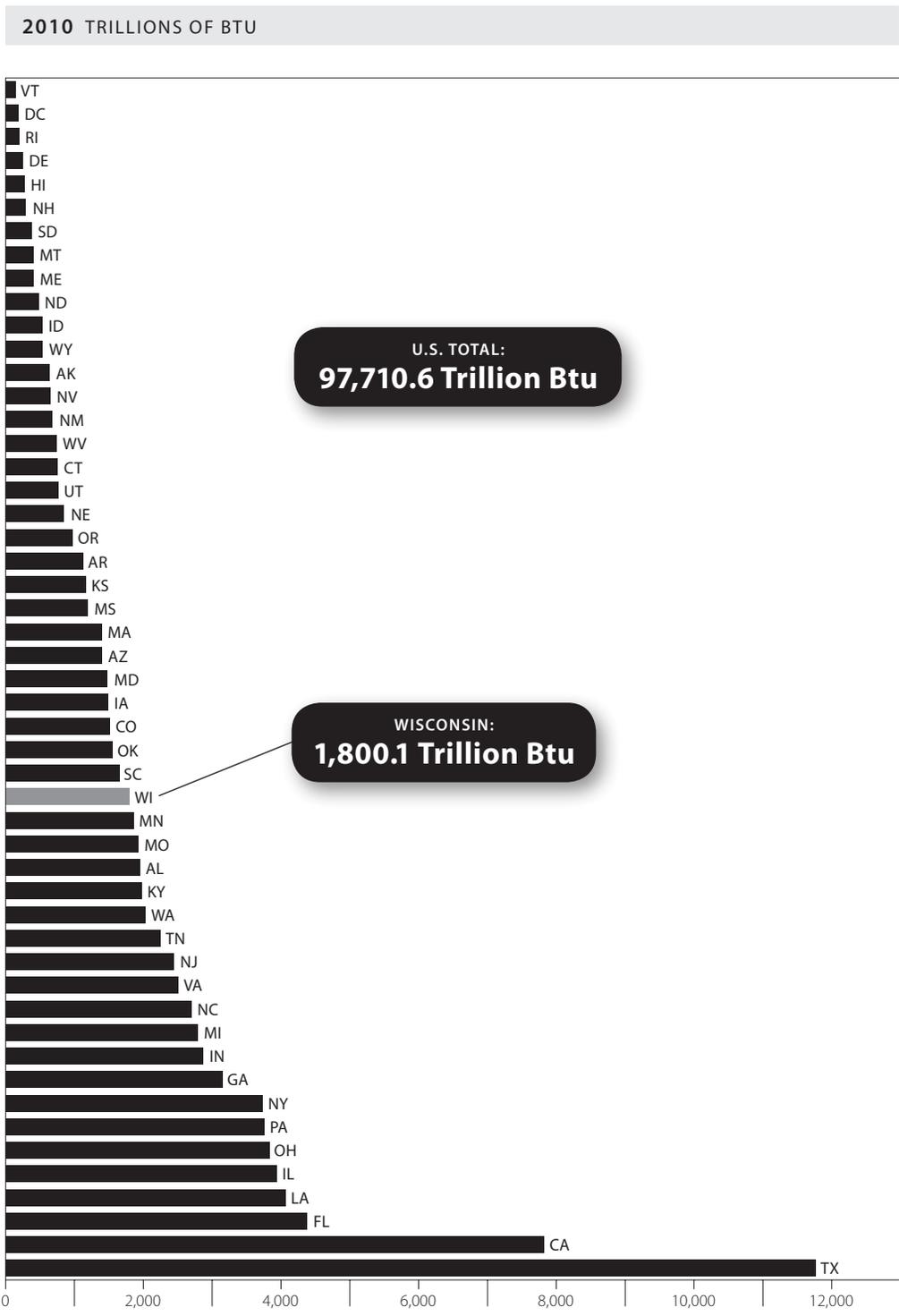
In 2010, when non-energy uses of petroleum are included (such as road oil, asphalt and lubricants), Wisconsin was the 26th largest state user in the nation, including the District of Columbia, in per capita energy consumption^a. At 316.3 million Btu per capita, Wisconsin's consumption was 100.1 percent of the U.S. consumption at 315.9 million Btu per capita. This is a decrease of 0.10 percent from 2009 when Wisconsin's per capita consumption was 100.2 percent of the U.S. per capita consumption.

^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 C11. http://www.eia.doe.gov/emeu/states/_seds.html

U.S. Resource Energy Consumption, by State

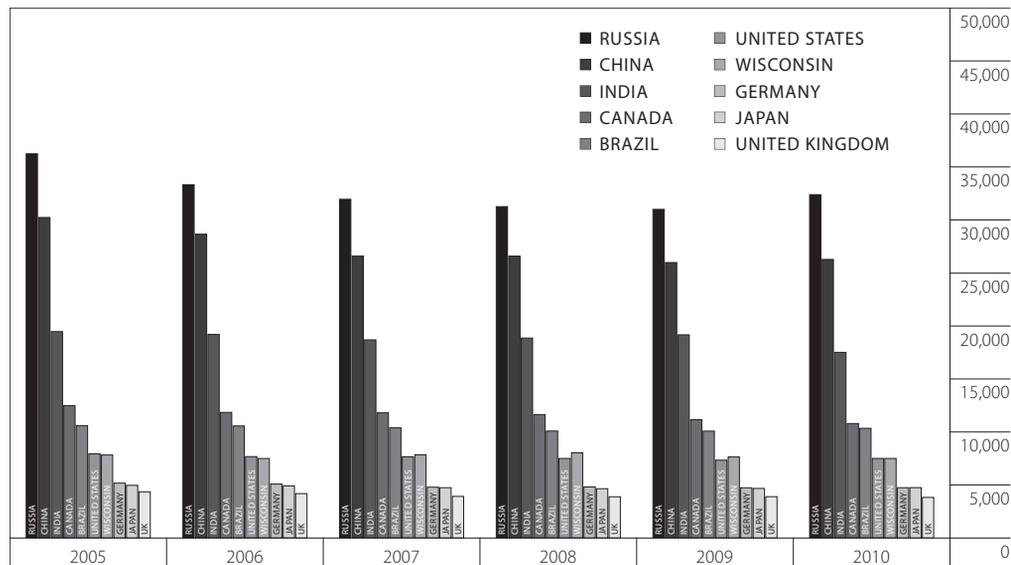
In 2010, when non-energy uses of petroleum are included (such as road oil, asphalt and lubricants), Wisconsin used 1.8 percent of total energy consumed in the United States^a. This is the same as 2009 when Wisconsin used 1.8 percent of the total U.S. energy consumption.



^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/emeu/states/_seds.html

Primary Energy Intensity, by Country and Region

2005-2010 BTU PER 2005 U.S. DOLLARS



WORLD WIDE AVERAGE
10.0
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 worldwide average is 10.0 kBtu/\$GDP. The United States and Wisconsin are more efficient than the world at 7.5 kBtu/\$GDP.

	2005	2006	2007	2008	2009	2010
State						
Wisconsin	7,831	7,500	7,848	8,036	7,645	7,503
Country						
Canada	12,492	11,849	11,807	11,646	11,162	10,796
United States	7,935	7,679	7,659	7,505	7,340	7,505
Brazil	10,601	10,567	10,391	10,087	10,081	10,346
France	5,294	5,180	4,981	5,019	4,862	5,001
Germany	5,177	5,088	4,792	4,815	4,736	4,744
Italy	4,550	4,417	4,289	4,320	4,249	4,380
United Kingdom	4,355	4,184	3,924	3,888	3,898	3,827
Russia	36,238	33,326	31,950	31,260	31,001	32,390
China	30,236	28,656	26,607	26,596	25,982	26,274
India	19,468	19,204	18,691	18,860	19,166	17,513
Japan	4,970	4,914	4,744	4,649	4,675	4,752
Region						
North America	8,285	8,030	7,989	7,841	7,674	7,788
Central and South America	11,817	11,733	11,183	11,109	10,980	11,053
Europe	5,723	5,574	5,369	5,334	5,266	5,347
Eurasia	40,532	36,994	35,287	34,306	33,187	33,679
Middle East	21,152	20,543	19,424	20,064	21,172	20,203
Africa	14,547	13,830	13,528	13,757	13,352	12,843
Asia and Oceania	13,402	13,330	13,051	13,397	13,779	13,996
World	10,021	9,825	9,654	9,751	9,803	9,992

Source: U.S. Department of Energy, Energy Information Administration, International Energy Statistics, (2011)
<http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm>

Primary Energy Usage and GDP, by Country and Region

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 19.2 percent.

Developing nations such as Russia (5.7 percent), China (19.8 percent) and India (4.3 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.

2010 QUADRILLION BTUs AND BILLIONS OF 2005 U.S. DOLLARS

Country	2010		Gross Domestic Product ^a		Primary Energy Intensity
	Quadrillion Btu	Percent of World Total	Billions of 2005 U. S. Dollars	Percent of World Total	Btu per 2005 U. S. Dollars
Brazil	11.30	2.2%	1,092	2.1%	10,346
Canada	13.00	2.5%	1,204	2.4%	10,796
China	100.88	19.8%	3,840	7.5%	26,274
France	11.03	2.2%	2,206	4.3%	5,001
Germany	13.94	2.7%	2,938	5.8%	4,744
India	21.92	4.3%	1,252	2.4%	17,513
Italy	7.63	1.5%	1,742	3.4%	4,380
Japan	21.77	4.3%	4,581	9.0%	4,752
Russia	29.32	5.7%	905	1.8%	32,390
United Kingdom	8.91	1.7%	2,328	4.6%	3,827
United States	98.04	19.2%	13,063	25.6%	7,505
Region					
Africa	16.33	3.2%	1,271	2.5%	12,843
Asia and Oceania	193.62	37.9%	13,834	27.1%	13,996
Central and South America	26.87	5.3%	2,431	4.8%	11,053
Eurasia	42.84	8.4%	1,272	2.5%	33,679
Europe	83.82	16.4%	15,675	30.7%	5,347
Middle East	28.73	5.6%	1,422	2.8%	20,203
North America	118.35	23.2%	15,197	29.7%	7,788
World	510.55		51,098		9,992

^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, (2011)
<http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm>.