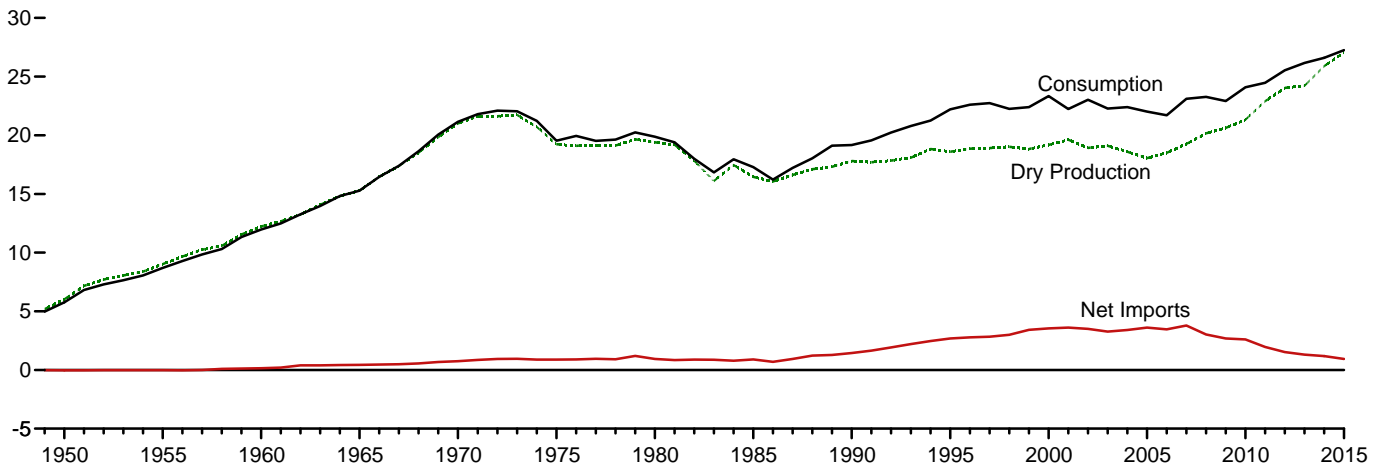


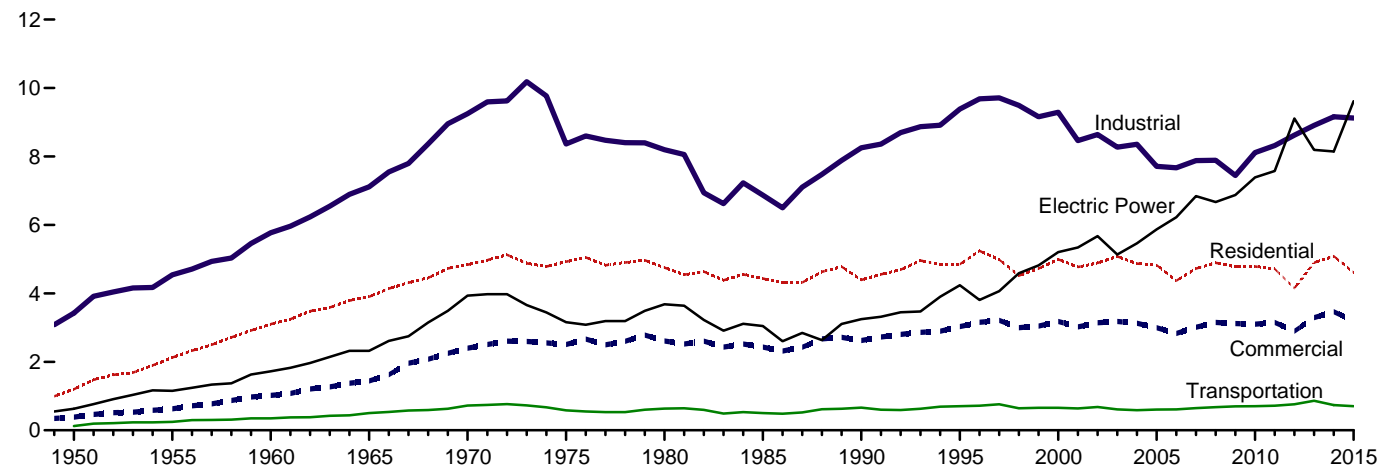
4. Natural Gas

Figure 4.1 Natural Gas
(Trillion Cubic Feet)

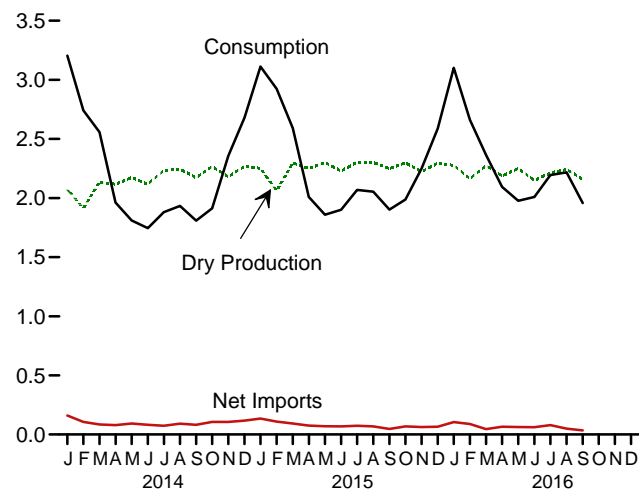
Overview, 1949–2015



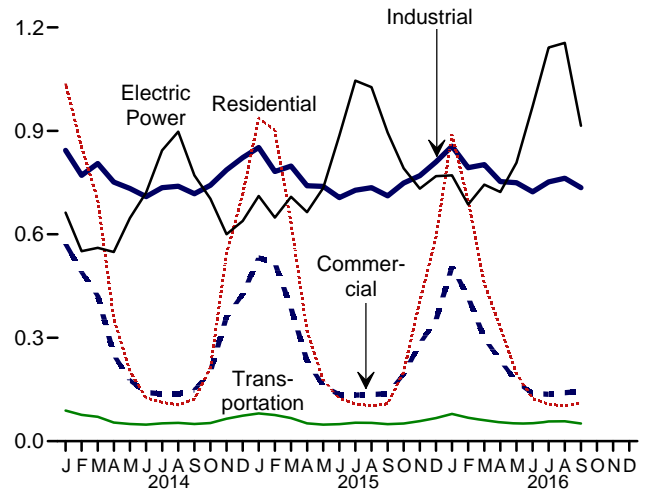
Consumption by Sector, 1949–2015



Overview, Monthly



Consumption by Sector, Monthly



Web Page: <http://www.eia.gov/totalenergy/data/monthly/#naturalgas>.
Sources: Tables 4.1 and 4.3.

Table 4.1 Natural Gas Overview
(Billion Cubic Feet)

	Gross Withdrawals ^a	Marketed Production (Wet) ^b	NGPL Production ^c	Dry Gas Production ^d	Supplemental Gaseous Fuels ^e	Trade			Net Storage Withdrawals ^f	Balancing Item ^g	Consumption ^h
						Imports	Exports	Net Imports			
1950 Total	8,480	6,282	260	6,022	NA	0	26	-26	-54	-175	5,767
1955 Total	11,720	9,405	377	9,029	NA	11	31	-20	-68	-247	8,694
1960 Total	15,088	12,771	543	12,228	NA	156	11	144	-132	-274	11,967
1965 Total	17,963	16,040	753	15,286	NA	456	26	430	-118	-319	15,280
1970 Total	23,786	21,921	906	21,014	NA	821	70	751	-398	-228	21,139
1975 Total	21,104	20,109	872	19,236	NA	953	73	880	-344	-235	19,538
1980 Total	21,870	20,180	777	19,403	155	985	49	936	23	-640	19,877
1985 Total	19,607	17,270	816	16,454	126	950	55	894	235	-428	17,281
1990 Total	21,523	18,594	784	17,810	123	1,532	86	1,447	-513	307	19,174
1995 Total	23,744	19,506	908	18,599	110	2,841	154	2,687	415	396	22,207
2000 Total	24,174	20,198	1,016	19,182	90	3,782	244	3,538	829	-306	23,333
2001 Total	24,501	20,570	954	19,616	86	3,977	373	3,604	-1,166	99	22,239
2002 Total	23,941	19,885	957	18,928	68	4,015	516	3,499	467	65	23,027
2003 Total	24,119	19,974	876	19,099	68	3,944	680	3,264	-197	44	22,277
2004 Total	23,970	19,517	927	18,591	60	4,259	854	3,404	-114	461	22,403
2005 Total	23,457	18,927	876	18,051	64	4,341	729	3,612	52	236	22,014
2006 Total	23,535	19,410	906	18,504	66	4,186	724	3,462	-436	103	21,699
2007 Total	24,664	20,196	930	19,266	63	4,608	822	3,785	192	-203	23,104
2008 Total	25,636	21,112	953	20,159	61	3,984	963	3,021	34	2	23,277
2009 Total	26,057	21,648	1,024	20,624	65	3,751	1,072	2,679	-355	-103	22,910
2010 Total	26,816	22,382	1,066	21,316	65	3,741	1,137	2,604	-13	115	24,087
2011 Total	28,479	24,036	1,134	22,902	60	3,469	1,506	1,963	-354	-94	24,477
2012 Total	29,542	25,283	1,250	24,033	61	3,138	1,619	1,519	-9	-66	25,538
2013 Total	29,523	25,562	1,357	24,206	55	2,883	1,572	1,311	546	38	26,155
2014 January	2,580	2,199	129	2,070	5	295	135	161	992	-23	3,204
February	2,357	2,033	119	1,914	4	245	139	107	745	-29	2,741
March	2,624	2,267	133	2,135	5	234	150	85	363	-30	2,558
April	2,584	2,248	131	2,116	5	201	122	79	-224	-14	1,962
May	2,633	2,310	135	2,175	5	207	114	93	-488	26	1,810
June	2,560	2,247	131	2,116	5	202	120	82	-473	16	1,745
July	2,629	2,371	139	2,233	5	201	127	74	-409	-22	1,881
August	2,645	2,384	139	2,245	5	207	115	91	-383	-26	1,933
September	2,626	2,307	135	2,172	5	202	120	82	-431	-18	1,809
October	2,736	2,407	141	2,266	5	221	115	106	-409	-55	1,913
November	2,662	2,315	135	2,179	5	227	121	107	168	-102	2,358
December	2,770	2,410	141	2,269	5	254	137	117	295	-7	2,679
Total	31,405	27,498	1,608	25,890	60	2,695	1,514	1,181	-254	-283	26,593
2015 January	2,771	2,391	141	2,250	5	279	145	135	741	R -18	R 3,113
February	2,516	2,193	129	2,063	4	254	145	109	757	R -10	R 2,924
March	2,824	2,439	144	2,296	5	257	164	93	201	R -3	R 2,592
April	2,750	2,391	141	2,251	5	205	130	75	-329	R -8	R 2,009
May	2,791	2,444	144	2,300	5	204	134	70	-508	R -8	R 1,859
June	2,669	2,368	139	2,229	5	206	138	68	-370	R -30	R 1,901
July	2,758	2,448	144	2,304	5	217	144	73	-291	R -23	R 2,069
August	2,742	2,446	144	2,302	5	214	145	69	-317	R -6	R 2,053
September	2,727	2,390	141	2,249	5	209	163	46	-381	R -17	R 1,903
October	2,801	2,441	144	2,298	5	226	159	68	-339	R -44	R 1,988
November	2,731	2,362	139	2,223	5	218	156	63	17	R -57	R 2,250
December	2,814	2,438	144	2,295	5	227	162	66	272	R -49	R 2,588
Total	32,895	28,753	1,693	27,060	59	2,718	1,784	935	-546	R -258	R 27,249
2016 January	E 2,819	E 2,424	148	E 2,275	5	274	169	105	728	R -13	R 3,101
February	E 2,668	E 2,304	140	E 2,164	5	252	163	89	403	R (s)	R 2,661
March	E 2,823	E 2,431	157	E 2,274	5	241	195	46	59	R -20	R 2,364
April	E 2,682	E 2,340	151	E 2,188	5	241	176	66	-164	R (s)	R 2,094
May	E 2,779	E 2,411	160	E 2,250	5	248	186	62	-327	R -14	R 1,976
June	E 2,635	E 2,304	156	E 2,148	2	242	181	61	-224	R 22	R 2,009
July	RE 2,710	RE 2,372	160	RE 2,213	5	265	R 186	R 79	-133	R 31	R 2,195
August	RE 2,742	RE 2,394	152	RE 2,242	5	261	212	49	-124	R 46	R 2,218
September	E 2,644	E 2,307	147	E 2,159	5	237	202	35	-263	20	1,957
9-Month Total	E 24,503	E 21,286	1,372	E 19,914	43	2,261	1,668	592	-465	72	20,576
2015 9-Month Total	24,548	21,511	1,267	20,244	44	2,046	1,308	739	-496	-108	20,423
2014 9-Month Total	23,238	20,366	1,191	19,175	44	1,993	1,141	852	-308	-120	19,644

^a Gases withdrawn from natural gas, crude oil, coalbed, and shale gas wells. Includes natural gas, natural gas plant liquids, and nonhydrocarbon gases; but excludes lease condensate.

^b Gross withdrawals minus repressuring, nonhydrocarbon gases removed, and vented and flared. See Note 1, "Natural Gas Production," at end of section.

^c Natural gas plant liquids (NGPL) production, gaseous equivalent. This data series was previously called "Extraction Loss." See Note 2, "Natural Gas Plant Liquids Production," at end of section.

^d Marketed production (wet) minus NGPL production.

^e See Note 3, "Supplemental Gaseous Fuels," at end of section.

^f Net withdrawals from underground storage. For 1980–2014, also includes net withdrawals of liquefied natural gas in above-ground tanks. See Note 4, "Natural Gas Storage," at end of section.

^g See Note 5, "Natural Gas Balancing Item," at end of section. Beginning in 1980, excludes transit shipments that cross the U.S.-Canada border (i.e., natural gas delivered to its destination via the other country).

^h See Note 6, "Natural Gas Consumption," at end of section.

ⁱ Through 1979, may include unknown quantities of nonhydrocarbon gases.

^j For 1989–1992, a small amount of consumption at independent power producers may be counted in both "Other Industrial" and "Electric Power Sector" on

Table 4.3. See Note 7, "Natural Gas Consumption, 1989–1992," at end of section. R=Revised. E=Estimate. (s)=Less than 0.5 billion cubic feet and greater than -0.5 billion cubic feet. NA=Not available.

Notes: • See Note 8, "Natural Gas Data Adjustments, 1993–2000," at end of section. • Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia (except Alaska, for which underground storage is excluded from "Net Storage Withdrawals" through 2012).

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#naturalgas> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • **Imports and Exports:** Table 4.2. • **Consumption:** Table 4.3. • **Balancing Item:** Calculated as consumption minus dry gas production, supplemental gaseous fuels, net imports, and net storage withdrawals. • **All Other Data: 1949–2013—**U.S. Energy Information Administration (EIA), *Natural Gas Annual*, annual reports. **2014 forward—**EIA, *Natural Gas Monthly*, November 2016, Table 1.

Table 4.2 Natural Gas Trade by Country
(Billion Cubic Feet)

	Imports								Exports ^a				
	Algeria ^b	Canada ^c	Egypt ^b	Mexico ^c	Nigeria ^b	Qatar ^b	Trinidad and Tobago ^b	Other ^{b,d}	Total	Canada ^c	Japan ^b	Mexico ^c	Other ^{b,e}
1950 Total	0	0	0	0	0	0	0	0	3	0	23	0	26
1955 Total	0	11	0	(s)	0	0	0	11	11	0	20	0	31
1960 Total	0	109	0	47	0	0	0	156	6	0	6	0	11
1965 Total	0	405	0	52	0	0	0	456	18	0	8	0	26
1970 Total	1	779	0	(s)	0	0	0	821	11	44	15	0	70
1975 Total	5	948	0	0	0	0	0	953	10	53	9	0	73
1980 Total	86	797	0	102	0	0	0	985	(s)	45	4	0	49
1985 Total	24	926	0	0	0	0	0	950	(s)	53	2	0	55
1990 Total	84	1,448	0	0	0	0	0	1,532	17	53	16	0	86
1995 Total	18	2,816	0	7	0	0	0	2,841	28	65	61	0	154
2000 Total	47	3,544	0	12	13	46	99	3,782	73	66	106	0	244
2001 Total	65	3,729	0	10	38	23	98	3,977	167	66	141	0	373
2002 Total	27	3,785	0	2	8	35	151	4,015	189	63	263	0	516
2003 Total	53	3,437	0	0	50	14	378	3,944	271	66	343	0	680
2004 Total	120	3,607	0	0	12	12	462	4,259	395	62	397	0	854
2005 Total	97	3,700	73	9	8	3	439	4,341	358	65	305	0	729
2006 Total	17	3,590	120	13	57	0	389	4,186	341	61	322	0	724
2007 Total	77	3,783	115	54	95	18	448	4,608	482	47	292	2	822
2008 Total	0	3,589	55	43	12	3	267	3,984	559	39	365	0	963
2009 Total	0	3,271	160	28	13	13	236	3,751	701	31	338	3	1,072
2010 Total	0	3,280	73	30	42	46	190	3,741	739	33	333	32	1,137
2011 Total	0	3,117	35	3	2	91	129	3,469	937	18	499	52	1,506
2012 Total	0	2,963	3	0	0	34	112	3,138	971	14	620	14	1,619
2013 Total	0	2,786	0	1	3	7	70	2,883	911	0	661	0	1,572
2014 January	0	287	0	(s)	0	0	6	295	82	0	53	0	135
February	0	242	0	(s)	0	0	4	245	85	0	51	3	139
March	0	231	0	(s)	0	0	3	234	91	0	58	0	150
April	0	198	0	(s)	0	0	3	201	65	0	57	0	122
May	0	204	0	(s)	0	0	3	207	50	2	62	0	114
June	0	192	0	(s)	0	0	7	202	55	0	65	0	120
July	0	195	0	(s)	0	0	6	201	55	3	69	0	127
August	0	205	0	(s)	0	0	2	207	47	3	66	0	115
September	0	196	0	(s)	0	0	3	202	52	3	65	0	120
October	0	214	0	(s)	0	0	4	221	52	3	60	0	115
November	0	227	0	(s)	0	0	0	227	62	0	59	0	121
December	0	246	0	(s)	0	0	5	254	73	0	64	0	137
Total	0	2,635	0	1	0	0	43	2,695	770	13	729	3	1,514
2015 January	0	268	0	(s)	0	0	9	279	73	0	69	3	145
February	0	242	0	(s)	0	0	10	254	78	0	65	3	145
March	0	243	0	(s)	0	0	12	257	90	0	74	0	164
April	0	202	0	(s)	0	0	3	205	53	0	77	0	130
May	0	203	0	(s)	0	0	2	204	45	0	87	3	134
June	0	204	0	(s)	0	0	3	206	45	0	91	3	138
July	0	210	0	(s)	0	0	7	217	40	3	101	0	144
August	0	203	0	(s)	0	0	11	214	41	3	101	0	145
September	0	203	0	(s)	0	0	6	209	60	0	100	3	163
October	0	218	0	(s)	0	0	3	226	57	3	98	0	159
November	0	211	0	(s)	0	0	4	218	61	0	92	3	156
December	0	222	0	(s)	0	0	2	227	59	0	100	3	162
Total	0	2,626	0	1	0	0	71	2,718	701	8	1,054	20	1,784
2016 January	0	262	0	(s)	0	0	12	274	70	0	99	0	169
February	0	242	0	(s)	0	0	10	252	62	0	97	3	163
March	0	232	0	(s)	0	0	9	241	81	0	103	10	195
April	0	237	0	(s)	0	0	5	241	63	0	103	10	176
May	0	243	0	(s)	0	0	5	248	63	0	113	10	186
June	0	234	0	(s)	0	0	8	242	51	0	114	16	181
July	0	259	0	(s)	0	0	6	265	50	0	120	16	186
August	0	253	0	(s)	0	0	8	261	55	0	134	23	212
September	0	234	0	(s)	0	0	3	237	61	0	127	13	202
9-Month Total	0	2,196	0	1	0	0	64	2,261	556	0	1,010	102	1,668
2015 9-Month Total	0	1,976	0	1	0	0	62	2,046	524	6	765	14	1,308
2014 9-Month Total	0	1,948	0	1	0	0	34	1,993	582	10	546	3	1,141

^a Includes re-exports.

^b As liquefied natural gas.

^c By pipeline, except for small amounts of: liquefied natural gas (LNG) imported from Canada in 1973, 1977, 1981, and 2013 forward; LNG exported to Canada in 2007 and 2012 forward; compressed natural gas (CNG) imported from Canada in 2014 forward; CNG exported to Canada in 2013 forward; and LNG exported to Mexico beginning in 1998. See Note 9, "Natural Gas Imports and Exports," at end of section.

^d Australia in 1997–2001 and 2004; Brunei in 2002; Equatorial Guinea in 2007; Indonesia in 1986 and 2000; Malaysia in 1999 and 2002–2005; Norway in 1996–2000; Oman in 2000–2005; Peru in 2010 and 2011; United Arab Emirates in 1996–2000; Yemen in 2010–2015; and Other (unassigned) in 2004–2015.

^e Argentina in 2016; Barbados in 2016; Brazil in 2010–2012, and 2014 forward; Chile in 2011 and 2016; China in 2011 and 2016; Dominican Republic in 2016; Egypt in 2015; India in 2010–2012, and 2016; Jordan in 2016; Kuwait in 2016; Portugal in 2012 and 2016; Russia in 2007; South Korea in 2009–2011; Spain in 2010–2011 and 2016; Taiwan in 2015; Turkey in 2015 and 2016; United Arab Emirates in 2016; and United Kingdom in 2010 and 2011.

R=Revised. (s)=Less than 500 million cubic feet.

Notes: • See Note 9, "Natural Gas Imports and Exports," at end of section.

• Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • U.S. geographic coverage is the 50 states and the District of Columbia.

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#naturalgas> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data beginning in 1973.

Sources: • 1949–1954: U.S. Energy Information Administration (EIA) estimates based on Bureau of Mines, Minerals Yearbook, "Natural Gas" chapter. • 1955–1971: Federal Power Commission data. • 1972–1987: EIA, Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas." • 1988–2013: EIA, *Natural Gas Annual*, annual reports. • 2014 forward: EIA, *Natural Gas Monthly*, November 2016, Tables 4 and 5; and U.S. Department of Energy, Office of Fossil Energy, "Natural Gas Imports and Exports."

Table 4.4 Natural Gas in Underground Storage
(Volumes in Billion Cubic Feet)

	Natural Gas in Underground Storage, End of Period			Change in Working Gas From Same Period Previous Year		Storage Activity		
	Base Gas	Working Gas	Total ^a	Volume	Percent	Withdrawals	Injections	Net ^{b,c}
1950 Total	NA	NA	NA	NA	NA	175	230	-54
1955 Total	863	505	1,368	40	8.7	437	505	-68
1960 Total	NA	NA	2,184	NA	NA	713	844	-132
1965 Total	1,648	1,242	3,090	83	7.2	960	1,078	-118
1970 Total	2,326	1,678	4,004	257	18.1	1,459	1,857	-398
1975 Total	3,162	2,212	5,374	162	7.9	1,760	2,104	-344
1980 Total	3,642	2,655	6,297	-99	-3.6	1,910	1,896	14
1985 Total	3,842	2,607	6,448	-270	-9.4	2,359	2,128	231
1990 Total	3,868	3,068	6,936	555	22.1	1,934	2,433	-499
1995 Total	4,349	2,153	6,503	-453	-17.4	2,974	2,566	408
2000 Total	4,352	1,719	6,071	-806	-31.9	3,498	2,684	814
2001 Total	4,301	2,904	7,204	1,185	68.9	2,309	3,464	-1,156
2002 Total	4,340	2,375	6,715	-528	-18.2	3,138	2,670	468
2003 Total	4,303	2,563	6,866	187	7.9	3,099	3,292	-193
2004 Total	4,201	2,696	6,897	133	5.2	3,037	3,150	-113
2005 Total	4,200	2,635	6,835	-61	-2.3	3,057	3,002	55
2006 Total	4,211	3,070	7,281	435	16.5	2,493	2,924	-431
2007 Total	4,234	2,879	7,113	-191	-6.2	3,325	3,133	192
2008 Total	4,232	2,840	7,073	-39	-1.4	3,374	3,340	34
2009 Total	4,277	3,130	7,407	290	10.2	2,966	3,315	-349
2010 Total	4,301	3,111	7,412	-19	-6	3,274	3,291	-17
2011 Total	4,302	3,462	7,764	351	11.3	3,074	3,422	-348
2012 Total	4,372	3,413	7,785	-49	-1.4	2,818	2,825	-7
2013 Total	4,365	2,890	7,255	-523	-15.3	3,702	3,156	546
2014 January	4,363	1,925	6,288	-774	-28.7	1,039	68	971
February	4,360	1,200	5,560	-899	-42.8	833	104	728
March	4,350	857	5,207	-863	-50.2	488	134	353
April	4,357	1,066	5,423	-789	-42.5	105	323	-217
May	4,353	1,548	5,901	-722	-31.8	51	529	-478
June	4,358	2,005	6,364	-637	-24.1	44	506	-463
July	4,361	2,400	6,761	-537	-18.3	63	463	-400
August	4,366	2,768	7,135	-444	-13.8	73	447	-374
September	4,369	3,187	7,556	-377	-10.6	47	469	-422
October	4,367	3,587	7,955	-230	-6.0	52	452	-400
November	4,367	3,427	7,794	-178	-5.0	361	200	161
December	4,365	3,141	7,506	251	8.7	429	143	286
Total	4,365	3,141	7,506	251	8.7	3,586	3,839	-253
2015 January	4,361	2,415	6,776	490	25.5	795	70	725
February	4,360	1,674	6,034	474	39.5	803	62	742
March	4,361	1,480	5,841	623	72.6	376	182	193
April	4,360	1,802	6,162	736	69.0	84	405	-321
May	4,363	2,296	6,659	748	48.3	44	542	-497
June	4,367	2,656	7,023	650	32.4	68	430	-362
July	4,372	2,933	7,305	533	22.2	96	379	-283
August	4,364	3,250	7,614	482	17.4	85	394	-309
September	4,365	3,622	7,987	435	13.7	63	435	-372
October	4,365	3,951	8,316	363	10.1	70	401	-331
November	4,368	3,935	8,303	508	14.8	214	201	12
December	4,363	3,675	8,038	534	17.0	403	138	264
Total	4,363	3,675	8,038	534	17.0	3,101	3,639	-538
2016 January	4,361	2,949	7,311	534	22.1	795	66	728
February	4,361	2,546	6,907	872	52.1	515	111	403
March	4,352	2,496	6,848	1,016	68.6	274	215	59
April	4,356	2,654	7,010	852	47.3	130	294	-164
May	4,358	2,975	7,333	679	29.6	75	402	-327
June	4,360	3,197	7,557	541	20.4	94	318	-224
July	4,360	3,329	7,689	396	13.5	150	284	-133
August	4,361	3,453	7,814	203	6.2	162	286	-124
September	4,360	3,717	8,077	94	2.6	88	351	-263
9-Month Total	--	--	--	--	--	2,283	2,328	-45
2015 9-Month Total	--	--	--	--	--	2,414	2,899	-484
2014 9-Month Total	--	--	--	--	--	2,743	3,043	-300

^a For total underground storage capacity at the end of each calendar year, see Note 4, "Natural Gas Storage," at end of section.

^b For 1980–2015, data differ from those shown on Table 4.1, which includes liquefied natural gas storage for that period.

^c Positive numbers indicate that withdrawals are greater than injections. Negative numbers indicate that injections are greater than withdrawals. Net withdrawals or injections may not equal the difference between applicable ending stocks. See Note 4, "Natural Gas Storage," at end of section.

NA=Not available. -- =Not applicable.

Notes: • Through 1964, all volumes are shown on a pressure base of 14.65 psia (pounds per square inch absolute) at 60° Fahrenheit; beginning in 1965, the pressure base is 14.73 psia at 60° Fahrenheit. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 states and the District of Columbia (except Alaska, which is excluded through 2012).

Web Page: See <http://www.eia.gov/totalenergy/data/monthly/#naturalgas> (Excel and CSV files) for all available annual data beginning in 1949 and monthly data

beginning in 1973.

Sources: • **Storage Activity: 1949–1975**—U.S. Energy Information Administration (EIA), *Natural Gas Annual 1994, Volume 2*, Table 9. **1976–1979**—EIA, *Natural Gas Production and Consumption 1979*, Table 1. **1980–1995**—EIA, *Historical Natural Gas Annual 1930 Through 2000*, Table 11. **1996–2013**—EIA, *Natural Gas Monthly (NGM)*, monthly issues. **2014 forward**—EIA, NGM, November 2016, Table 8. • **All Other Data: 1954–1974**—American Gas Association, *Gas Facts*, annual issues. **1975 and 1976**—Federal Energy Administration (FEA), Form FEA-G318-M-0, "Underground Gas Storage Report," and Federal Power Commission (FPC), Form FPC-8, "Underground Gas Storage Report." **1977 and 1978**—EIA, Form FEA-G318-M-0, "Underground Gas Storage Report," and Federal Energy Regulatory Commission (FERC), Form FERC-8, "Underground Gas Storage Report." **1979–1995**—EIA, Form EIA-191, "Underground Gas Storage Report," and FERC, Form FERC-8, "Underground Gas Storage Report." **1996–2013**—EIA, NGA, annual reports. **2014 forward**—EIA, NGM, November 2016, Table 8.

Natural Gas

Note 1. Natural Gas Production. Final annual data are from the U.S. Energy Information Administration's (EIA) *Natural Gas Annual (NGA)*.

Data for the two most recent months presented are estimated. Some of the data for earlier months are also estimated or computed. For a discussion of computation and estimation procedures, see EIA's *Natural Gas Monthly (NGM)*.

Monthly data are considered preliminary until after publication of the NGA. Preliminary monthly data are gathered from reports to the Interstate Oil Compact Commission and the U.S. Minerals Management Service. Volumetric data are converted, as necessary, to a standard pressure base of 14.73 psia (pounds per square inch absolute) at 60° Fahrenheit. Unless there are major changes, data are not revised until after publication of the NGA.

Differences between annual data in the NGA and the sum of preliminary monthly data (January–December) are allocated proportionally to the months to create final monthly data.

Note 2. Natural Gas Plant Liquids Production. Natural gas plant liquids (NGPL) production is the reduction in volume of natural gas resulting from the removal of natural gas liquid constituents at natural gas processing plants—these natural gas plant liquids are transferred to petroleum supply.

Annual data are from EIA's *Natural Gas Annual (NGA)*, where they are estimated on the basis of the type and quantity of liquid products extracted from the gas stream and the calculated volume of such products at standard conditions. For a detailed explanation of the calculations used to derive estimated NGPL production, see the NGA.

Through 2006, preliminary monthly data are estimated on the basis of NGPL production as an annual percentage of marketed production. Beginning in 2007, preliminary monthly data are estimated on the basis of NGPL production reported on Form EIA-816, "Monthly Natural Gas Liquids Report."

Monthly data are revised and considered final after publication of the NGA. Final monthly data are estimated by allocating annual NGPL production data to the months on the basis of total natural gas marketed production data from the NGA.

Note 3. Supplemental Gaseous Fuels. Supplemental gaseous fuels are any substances that, introduced into or commingled with natural gas, increase the volume available for disposition. Such substances include, but are not limited to, propane-air, refinery gas, coke oven gas, still gas, manufactured gas, biomass gas, and air or inert gases added for Btu stabilization.

Annual data beginning with 1980 are from EIA's *Natural Gas Annual (NGA)*. Unknown quantities of supplemental gaseous fuels are included in consumption data for 1979 and earlier years. Monthly data are considered preliminary until after publication of the NGA. Monthly estimates are based on

the annual ratio of supplemental gaseous fuels to the sum of dry gas production, net imports, and net withdrawals from storage. The ratio is applied to the monthly sum of the three elements to compute a monthly supplemental gaseous fuels figure.

Although the total amount of supplemental gaseous fuels consumed is known for 1980 forward, the amount consumed by each energy-use sector is estimated by EIA. These estimates are used to create natural gas (without supplemental gaseous fuels) data for Tables 1.3, 2.2, 2.3, 2.4, and 2.6 (note: to avoid double-counting in these tables, supplemental gaseous fuels are accounted for in their primary energy category: "Coal," "Petroleum," or "Biomass"). It is assumed that supplemental gaseous fuels are commingled with natural gas consumed by the residential, commercial, other industrial, and electric power sectors, but are not commingled with natural gas used for lease and plant fuel, pipelines and distribution, or vehicle fuel. The estimated consumption of supplemental gaseous fuels by each sector (residential, commercial, other industrial, and electric power) is calculated as that sector's natural gas consumption (see Table 4.3) divided by the sum of natural gas consumption by the residential, commercial, other industrial, and electric power sectors (see Table 4.3), and then multiplied by total supplemental gaseous fuels consumption (see Table 4.1). For estimated sectoral consumption of supplemental gaseous fuels in Btu, the residential, commercial, and other industrial values in cubic feet are multiplied by the "End-Use Sectors" conversion factors (see Table A4), and the electric power values in cubic feet are multiplied by the "Electric Power Sector" conversion factors (see Table A4). Total supplemental gaseous fuels consumption in Btu is calculated as the sum of the Btu values for the sectors.

Note 4. Natural Gas Storage. Natural gas in storage at the end of a reporting period may not equal the quantity derived by adding or subtracting net injections or withdrawals from the quantity in storage at the end of the previous period. Injection and withdrawal data from the FERC-8/EIA-191 survey may be adjusted to correspond to data from Form EIA-176 for publication of EIA's *Natural Gas Annual (NGA)*.

Total underground storage capacity, which includes both active and inactive fields, at the end of each calendar year since 1975 (first year data were available), in billion cubic feet, was:

1975 ...	6,280	1989 ...	8,120	2003 ...	8,206
1976 ...	6,544	1990 ...	7,794	2004 ...	8,255
1977 ...	6,678	1991 ...	7,993	2005 ...	8,268
1978 ...	6,890	1992 ...	7,932	2006 ...	8,330
1979 ...	6,929	1993 ...	7,989	2007 ...	8,402
1980 ...	7,434	1994 ...	8,043	2008 ...	8,499
1981 ...	7,805	1995 ...	7,953	2009 ...	8,656
1982 ...	7,915	1996 ...	7,980	2010 ...	8,764
1983 ...	7,985	1997 ...	8,332	2011 ...	8,849
1984 ...	8,043	1998 ...	8,179	2012 ...	8,991
1985 ...	8,087	1999 ...	8,229	2013 ...	9,173
1986 ...	8,145	2000 ...	8,241	2014 ...	9,233
1987 ...	8,124	2001 ...	8,182	2015 ...	9,231
1988 ...	8,124	2002 ...	8,207		

Through 1990, monthly underground storage data are collected from the Federal Energy Regulatory Commission Form FERC-8 (interstate data) and EIA Form EIA-191 (intrastate data). Beginning in 1991, all data are collected on the revised Form EIA-191. Injection and withdrawal data from the EIA-191 survey may be adjusted to correspond to data from Form EIA-176 following publication of EIA's NGA.

The final monthly and annual storage and withdrawal data for 1980–2015 include both underground and liquefied natural gas (LNG) storage. Annual data on LNG additions and withdrawals are from Form EIA-176. Monthly data are estimated by computing the ratio of each month's underground storage additions and withdrawals to annual underground storage additions and withdrawals and applying the ratio to the annual LNG data.

Note 5. Natural Gas Balancing Item. The balancing item for natural gas represents the difference between the sum of the components of natural gas supply and the sum of components of natural gas disposition. The differences may be due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperature and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar period time frames; and imbalances resulting from the merger of data reporting systems that vary in scope, format, definitions, and type of respondents.

Note 6. Natural Gas Consumption. Natural gas consumption statistics include data for the following: "Residential Sector": residential deliveries; "Commercial Sector": commercial deliveries, including to commercial combined-heat-and-power (CHP) and commercial electricity-only plants; "Industrial Sector": lease and plant fuel use, and other industrial deliveries, including to industrial CHP and industrial electricity-only plants; "Transportation Sector": pipelines and distribution use, and vehicle fuel use; and "Electric Power Sector": electric utility and independent power producer use.

Final data for series other than "Other Industrial CHP" and "Electric Power Sector" are from EIA's *Natural Gas Annual* (NGA). Monthly data are considered preliminary until after publication of the NGA. For more detailed information on the methods of estimating preliminary and final monthly data, see EIA's *Natural Gas Monthly*.

Note 7. Natural Gas Consumption, 1989–1992. Prior to 1993, deliveries to nonutility generators were not separately collected from natural gas companies on Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." As a result, for 1989–1992, those volumes are probably included in both the industrial and electric power sectors and double-counted in total consumption. In 1993, 0.28 trillion cubic feet was reported as delivered to nonutility generators.

Note 8. Natural Gas Data Adjustments, 1993–2000. For 1993–2000, the original data for natural gas delivered to industrial consumers (now "Other Industrial" in Table 4.3) included deliveries to both industrial users and independent power producers (IPPs). These data were adjusted to remove the estimated consumption at IPPs from "Other Industrial" and include it with electric utilities under "Electric Power Sector." (To estimate the monthly IPP consumption, the monthly pattern for Other Industrial CHP in Table 4.3 was used.)

For 1996–2000, monthly data for several natural gas series shown in EIA's Natural Gas Navigator (see http://www.eia.gov/dnav/ng/ng_cons_sum_dcu_nus_m.htm) were not reconciled and updated to be consistent with the final annual data in EIA's *Natural Gas Annual*. In the *Monthly Energy Review*, monthly data for these series were adjusted so that the monthly data sum to the final annual values. The Table 4.1 data series (and years) that were adjusted are: Gross Withdrawals (1996, 1997), Marketed Production (1997), NGPL Production (1997, 1998, 2000), Dry Gas Production (1996, 1997), Supplemental Gaseous Fuels (1997–2000), Balancing Item (1997–2000), and Total Consumption (1997–2000). The Table 4.3 data series (and years) that were adjusted are: Lease and Plant Fuel (1997–2000), Total Industrial (1997–2000), Pipelines and Distribution (2000), Total Transportation (2000), and Total Consumption (1997–2000).

Note 9. Natural Gas Imports and Exports. The United States imports natural gas via pipeline from Canada and Mexico; and imports liquefied natural gas (LNG) via tanker from Algeria, Australia, Brunei, Egypt, Equatorial Guinea, Indonesia, Malaysia, Nigeria, Norway, Oman, Peru, Qatar, Trinidad and Tobago, the United Arab Emirates, and Yemen. In addition, small amounts of LNG arrived from Canada in 1973 (667 million cubic feet), 1977 (572 million cubic feet), 1981 (6 million cubic feet), 2013 (555 million cubic feet), 2014 (132 million cubic feet), 2015 (437 million cubic feet), and 2016 (810 million cubic feet). Also, small amounts of compressed natural gas (CNG) were imported from Canada in 2014 forward. The United States exports natural gas via pipeline to Canada and Mexico; and exports LNG via tanker to Argentina, Barbados, Brazil, Chile, China, Dominican Republic, Egypt, India, Japan, Jordan, Kuwait, Portugal, Russia, South Korea, Spain, Taiwan, Turkey, United Arab Emirates, and United Kingdom. Also, small amounts of LNG have gone to Mexico since 1998 and to Canada in 2007 and 2012 forward. Small amounts of CNG have been exported to Canada since 2013.

Annual and final monthly data are from the annual EIA Form FPC-14, "Annual Report for Importers and Exporters of Natural Gas," which requires data to be reported by month for the calendar year.

Preliminary monthly data are EIA estimates. For a discussion of estimation procedures, see EIA's *Natural Gas Monthly*. Preliminary data are revised after publication of EIA's *U.S. Imports and Exports of Natural Gas*.