

Appendix B

Metric and Thermal Conversion Tables

Metric Conversions

Table B1 presents Summary Statistics for Natural Gas in the United States for 2007 through 2011 in metric units of measure. Volumes are shown in cubic meters instead of cubic feet. Prices are shown in nominal dollars per thousand cubic meters instead of dollars per thousand cubic feet. The data in this table have been converted from the data that appear in Table 1 of this report.

Thermal Conversions

Table B2 presents the thermal (Btu) conversion factors and the converted data for natural gas supply and disposition from 2007 through 2011. A brief documentation for the thermal conversion factors follows:

- *Marketed Production.* The conversion factor is calculated by adding the total heat content of dry production to the total heat content of extraction loss and dividing the resulting sum by the total quantity of dry production and extraction loss (see below).
- *Extraction Loss.* The conversion factor is obtained from Appendix A of this publication.
- *Dry Production.* The conversion factor is assumed to be the same as the thermal conversion factors for consumption (see below).
- *Withdrawals from Storage.* Both underground and LNG storage withdrawals are assumed to have the same heat content as consumption (see below).
- *Supplemental Gas Supplies.* This conversion factor is assumed to be the same as that for consumption (see below).
- *Balancing Item.* This conversion factor is calculated by subtracting the total heat content of all other items of supply from the heat content of total disposition (from Table B2) and dividing the difference by the balancing item quantity.
- *Consumption.* The thermal conversion factor for total consumption (lease fuel, plant fuel, pipeline fuel, and deliveries to consumers) is the average heat content for deliveries to end users as reported on the Energy Information Administration's (EIA) Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition." Average heat content of consumption in the Electric Power Sector is obtained from Form EIA-906, "Power Plant Report," prior to 2007, and from Form EIA-923, "Power Plant Operations Report," thereafter.
- *Additions to Storage.* Additions to both underground and LNG storage are assumed to have the same heat content as consumption (see above).

Table B1. Summary statistics for natural gas in the United States, metric equivalents, 2007-2011

	2007	2008	2009	2010	2011
Number of Wells Producing at End of Year	452,945	476,652	493,100	487,627	514,637
Production (million cubic meters)					
Gross Withdrawals					
From Gas Wells	R424,523	R428,565	R408,167	R375,127	348,044
From Oil Wells	R160,893	R158,841	R160,673	R165,220	167,294
From Coalbed Wells	R56,627	R57,263	R56,922	54,277	50,377
From Shale Gas Wells	56,355	R81,268	R112,087	164,723	240,721
Total	698,397	725,938	737,849	R759,347	806,436
Repressuring	103,716	103,034	99,734	97,172	95,295
Vented and Flared	4,062	4,726	4,682	4,699	5,931
Nonhydrocarbon Gases Removed	18,722	20,351	20,431	23,693	24,577
Marketed Production	571,897	597,827	613,001	R633,784	680,634
Extraction Loss	26,344	26,999	28,999	R30,196	32,125
Total Dry Production	545,553	570,828	584,003	R603,588	648,509
Supply (million cubic meters)					
Dry Production	545,553	570,828	584,003	R603,588	648,509
Receipts at U.S. Borders					
Imports	130,472	112,817	106,227	105,926	98,222
Intransit Receipts	12,904	10,788	8,348	8,959	3,136
Withdrawals from Storage					
Underground Storage	94,154	95,551	83,996	92,720	87,053
LNG Storage	1,421	1,285	1,169	R1,033	955
Supplemental Gas Supplies	1,788	1,724	1,848	1,829	1,702
Balancing Item	-5,559	948	-2,531	R3,521	-6,270
Total Supply	780,732	793,941	783,058	R817,577	833,307
Disposition (million cubic meters)					
Consumption	654,227	659,131	648,741	R682,062	690,494
Deliveries at U.S. Borders					
Exports	23,289	27,277	30,366	32,190	42,675
Intransit Deliveries	13,081	11,668	8,748	9,211	2,102
Additions to Storage					
Underground Storage	88,714	94,589	93,870	93,202	96,895
LNG Storage	1,421	1,276	1,334	912	1,142
Total Disposition	780,732	793,941	783,058	R817,577	833,307
Consumption (million cubic meters)					
Lease Fuel	24,383	24,469	25,860	25,961	26,571
Pipeline and Distribution Use ^a	17,595	18,348	18,977	R19,089	19,361
Plant Fuel	10,345	10,069	10,251	R10,444	10,881
Delivered to Consumers					
Residential	133,722	138,534	135,324	R135,423	133,477
Commercial	85,316	89,270	88,309	R87,856	89,300
Industrial	188,441	188,879	174,641	R193,296	195,523
Vehicle Fuel	698	736	772	R812	913
Electric Power	193,727	188,827	194,608	209,182	214,468
Total Delivered to Consumers	601,904	606,245	593,653	R626,568	633,682
Total Consumption	654,227	659,131	648,741	R682,062	690,494
Delivered for the Account of Others (million cubic meters)					
Residential	12,573	13,930	14,710	R15,634	15,589
Commercial	32,058	34,013	36,049	R37,297	39,481
Industrial	146,634	150,305	141,818	R160,020	163,034

See footnotes at end of table.

Table B1. Summary statistics for natural gas in the United states, metric equivalents, 2007-2011 – continued

	2007	2008	2009	2010	2011
Number of Consumers					
Residential	64,964,769	65,073,996	65,329,582	^R 65,542,345	65,938,523
Commercial	5,308,785	5,444,335	5,322,332	^R 5,301,576	5,319,405
Industrial	198,289	225,044	207,624	^R 192,730	189,097
Average Annual Consumption per Consumer (thousand cubic meters)					
Commercial	16	16	17	17	17
Industrial	950	839	841	^R 1,003	1,034
Average Price for Natural Gas (dollars per thousand cubic meters)					
Imports	242.62	307.15	147.92	159.59	149.91
Exports	244.21	303.18	157.71	177.23	164.06
Citygate	288.12	324.29	228.91	218.26	198.99
Delivered to Consumers					
Residential	462.08	490.54	428.78	^R 402.38	389.51
Commercial	400.54	431.82	355.37	^R 334.39	315.03
Industrial	271.17	340.76	188.18	^R 193.99	180.58
Vehicle Fuel	300.34	415.05	287.00	220.70	257.33
Electric Power	258.15	327.01	174.10	186.11	172.69

^R Revised data.

^a Beginning in 2009, Pipeline and Distribution Use volumes now include Line Loss, defined as known volumes of natural gas that were the result of leaks, damage, accidents, migration, and/or blow down.

Notes: The United States equals the 50 states and District of Columbia. Totals may not add due to independent rounding. Prices are in nominal dollars.

Sources: Energy Information Administration (EIA), Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"; Form EIA-895, "Annual Quantity and Value of Natural Gas Production Report"; Form EIA-914, "Monthly Natural Gas Production Report"; Form EIA-857, "Monthly Report of Natural Gas Purchases and Deliveries to Consumers"; Form EIA-910, "Monthly Natural Gas Marketer Survey"; Form EIA-816, "Monthly Natural Gas Liquids Report"; Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production"; FERC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants"; Form EIA-423, "Monthly Cost and Quality of Fuels for Electric Plants Report"; Form EIA-191M, "Monthly Underground Gas Storage Report"; Office of Fossil Energy, U.S. Department of Energy, Natural Gas Imports and Exports; the Bureau of Safety and Environmental Enforcement, and predecessor agencies; Form EIA-906, "Power Plant Report"; Form EIA-920, "Combined Heat and Power Plant Report"; Form EIA-923, "Power Plant Operations Report"; Form EIA-886, "Annual Survey of Alternative Fueled Vehicles"; state agencies; Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves"; LCI; Ventyx; BENTEK Energy; and EIA estimates based on historical data.

Table B2. Thermal conversion factors and data, 2007-2011

	2007	2008	2009	2010	2011
Conversion Factor (Btu per cubic foot)					
Production					
Marketed	1,102	1,100	1,101	^R 1,098	1,094
Extraction Loss	2,648	2,643	2,627	^R 2,598	2,550
Total Dry Production	1,027	1,027	1,025	1,023	1,022
Supply					
Dry Production	1,027	1,027	1,025	1,023	1,022
Receipts at U.S. Borders					
Imports	1,025	1,025	1,025	1,025	1,025
Intransit Receipts	1,025	1,025	1,025	1,025	1,025
Withdrawals from Storage					
Underground Storage	1,027	1,027	1,025	1,023	1,022
LNG Storage	1,027	1,027	1,025	1,023	1,022
Supplemental Gas Supplies	1,027	1,027	1,025	1,023	1,022
Balancing Item	1,093	548	1,272	^R 793	1,163
Total Supply	NA	NA	NA	NA	NA
Disposition					
Consumption	1,027	1,027	1,025	1,023	1,022
(Electric Power)	1,027	1,027	1,025	1,022	1,021
(Other Sectors)	1,027	1,027	1,025	1,023	1,022
Deliveries at U.S. Borders					
Exports	1,009	1,009	1,009	1,009	1,009
Intransit Deliveries	1,009	1,009	1,009	1,009	1,009
Additions to Storage					
Underground Storage	1,027	1,027	1,025	1,023	1,022
LNG Storage	1,027	1,027	1,025	1,023	1,022
Total Disposition	NA	NA	NA	NA	NA
Summary Data (billion Btu)					
Production					
Marketed	^R 22,250,101	23,223,155	23,829,534	^R 24,576,620	26,299,101
Extraction Loss	2,463,893	2,520,271	2,690,084	2,770,856	2,893,381
Total Dry Production	^R19,786,208	20,702,884	21,139,450	^R21,805,763	23,405,720
Supply					
Dry Production	^R 19,786,208	20,702,884	21,139,450	^R 21,805,763	23,405,720
Receipts at U.S. Borders					
Imports	4,722,771	4,083,704	3,845,144	3,834,276	3,555,410
Intransit Receipts	467,082	390,511	302,160	324,310	113,509
Withdrawals from Storage					
Underground Storage	3,414,788	3,465,445	3,040,434	3,349,696	3,141,885
LNG Storage	51,521	46,587	42,331	^R 37,327	34,482
Supplemental Gas Supplies	64,837	62,533	66,890	66,061	61,410
Balancing Item	-214,616	18,350	-113,727	^R 98,635	-257,585
Total Supply	28,292,591	28,770,014	28,322,682	^R29,516,068	30,054,831
Disposition					
Consumption	23,727,595	23,905,487	23,482,830	^R 24,640,793	24,921,016
(Electric Power)	7,028,179	6,849,092	7,043,659	7,550,441	7,733,672
(Other Sectors)	16,699,416	17,056,395	16,439,171	^R 17,090,352	17,187,345
Deliveries at U.S. Borders					
Exports	829,856	971,932	1,082,008	1,147,020	1,520,622
Intransit Deliveries	466,096	415,763	311,699	328,211	74,900
Additions to Storage					
Underground Storage	3,217,509	3,430,555	3,397,872	3,367,097	3,497,093
LNG Storage	51,535	46,277	48,273	32,946	41,200
Total Disposition	28,292,591	28,770,014	28,322,682	^R29,516,068	30,054,831

^{NA} Not available.^R Revised data.

^a Beginning in 2009, Pipeline and Distribution Use volumes now include Line Loss, defined as known volumes of natural gas that were the result of leaks, damage, accidents, migration, and/or blow down.

Notes: See accompanying text for conversion factor documentation. Items appearing in parentheses are subsets of other items for which data are shown in this table and are not involved in the summing of supply and disposition. Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration (EIA), Form EIA-895, "Annual Quantity and Value of Natural Gas Production Report"; Form EIA-914, "Monthly Natural Gas Production Report"; Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition"; Form EIA-64A, "Annual Report of the Origin of Natural Gas Liquids Production"; Office of Fossil Energy, U.S. Department of Energy, Natural Gas Imports and Exports; Form EIA-191M, "Monthly Underground Gas Storage Report"; Form EIA-906, "Power Plant Report"; Form EIA-920, "Combined Heat and Power Plant Report"; Form EIA-923, "Power Plant Operations Report"; the Bureau of Safety and Environmental Enforcement; Form EIA-886, "Annual Survey of Alternative Fueled Vehicles"; state agencies; Form EIA-23, "Annual Survey of Domestic Oil and Gas Reserves"; LCI; Ventyx; BENTEK Energy; and EIA estimates based on historical data.