

## Appendix B

### Metric and Thermal Conversion Tables

#### Metric Conversions

Table B1 presents Summary Statistics for Natural Gas in the United States for 2016 through 2020 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 2016 through 2020. 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 natural gas plant liquids (NGPL) production and dividing the resulting sum by the total quantity of dry production and NGPL Production (see below).
- *Natural Gas Plant Liquids Production.* 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-923, *Power Plant Operations Report*.
- *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, 2016-2020

	2016	2017	2018	2019	2020
<b>Number of Wells Producing Natural Gas at End of Year</b>					
Oil Wells	205,277	191,131	347,050	R333,454	325,213
Gas Wells	571,659	539,875	512,675	R498,072	483,326
<b>Production (million cubic meters)</b>					
Gross Withdrawals					
From Gas Wells	206,369	174,472	222,685	R210,487	191,120
From Oil Wells	180,806	176,058	127,525	R130,358	130,597
From Coalbed Wells	30,329	27,911	27,771	R25,557	23,252
From Shale Gas Wells	505,386	564,287	678,960	R788,365	805,084
<b>Total</b>	<b>922,891</b>	<b>942,728</b>	<b>1,056,942</b>	<b>R1,154,767</b>	<b>1,150,054</b>
Repressuring	100,471	100,206	101,583	R99,730	105,253
Vented and Flared	6,524	7,235	13,326	R15,276	11,885
Nonhydrocarbon Gases Removed	11,695	7,364	7,326	R7,699	7,776
Marketed Production	804,200	827,923	934,707	R1,032,062	1,025,139
NGPL Production	51,195	53,724	63,277	R72,148	76,942
<b>Total Dry Production</b>	<b>753,005</b>	<b>774,199</b>	<b>871,430</b>	<b>R959,913</b>	<b>948,197</b>
<b>Supply (million cubic meters)</b>					
Dry Production	753,005	774,199	871,430	R959,913	948,197
Receipts at U.S. Borders					
Imports	85,135	85,891	81,803	77,637	72,246
Intransit Receipts	2,101	387	372	R5,876	5,750
Withdrawals from Storage					
Underground Storage	94,151	101,671	113,251	103,436	96,614
LNG Storage	1,133	1,214	1,429	R1,353	964
Supplemental Gas Supplies	1,619	1,860	1,964	R1,721	1,788
Balancing Item	-8,104	-11,713	-8,162	R-11,339	-3,963
<b>Total Supply</b>	<b>929,040</b>	<b>953,510</b>	<b>1,062,087</b>	<b>R1,138,596</b>	<b>1,121,597</b>
<b>Disposition (million cubic meters)</b>					
Consumption	777,134	768,511	853,439	R881,561	862,877
Deliveries at U.S. Borders					
Exports	66,133	89,306	102,163	R131,890	149,615
Intransit Deliveries	129	4	704	R6,101	6,436
Additions to Storage					
Underground Storage	84,291	94,483	104,090	117,586	101,652
LNG Storage	1,354	1,207	1,691	R1,458	1,017
<b>Total Disposition</b>	<b>929,040</b>	<b>953,510</b>	<b>1,062,087</b>	<b>R1,138,596</b>	<b>1,121,597</b>
<b>Consumption (million cubic meters)</b>					
Lease Fuel	31,887	32,844	35,341	R37,732	36,544
Pipeline and Distribution Use <sup>a</sup>	19,446	20,446	24,821	R28,829	28,518
Plant Fuel	11,872	11,980	12,635	R13,888	14,560
Delivered to Consumers					
Residential	123,082	124,971	141,515	R142,109	132,362
Commercial	88,054	89,612	99,504	R99,521	89,771
Industrial	218,852	224,921	238,351	R238,333	230,803
Vehicle Fuel	1,190	1,365	1,428	R1,505	1,391
Electric Power	282,751	262,371	299,845	R319,643	328,928
<b>Total Delivered to Consumers</b>	<b>713,929</b>	<b>703,241</b>	<b>780,643</b>	<b>R801,112</b>	<b>783,255</b>
<b>Total Consumption</b>	<b>777,134</b>	<b>768,511</b>	<b>853,439</b>	<b>R881,561</b>	<b>862,877</b>
<b>Delivered for the Account of Others (million cubic meters)</b>					
Residential	17,111	17,135	19,590	18,597	17,211
Commercial	41,734	41,861	45,784	R45,756	42,059
Industrial	186,275	191,663	203,728	R207,428	200,412

See footnotes at end of table.

Table B1. Summary statistics for natural gas in the United States, metric equivalents, 2016-2020 – continued

	2016	2017	2018	2019	2020
<b>Number of Consumers</b>					
Residential	68,433,125	69,067,541	69,737,549	<sup>R</sup> 70,431,299	71,534,412
Commercial	5,474,701	5,499,932	5,518,358	<sup>R</sup> 5,551,599	5,626,925
Industrial	188,836	184,959	185,009	<sup>R</sup> 183,507	184,011
<b>Average Annual Consumption per Consumer (thousand cubic meters)</b>					
Commercial	16	16	18	18	16
Industrial	1,159	1,216	1,288	<sup>R</sup> 1,299	1,254
<b>Average Price for Natural Gas (dollars per thousand cubic meters)</b>					
Imports	79.01	91.82	94.95	90.16	72.98
Exports	98.62	124.97	137.53	<sup>R</sup> 128.72	130.79
Citygate	131.18	146.88	149.44	134.71	121.18
<b>Delivered to Consumers</b>					
Residential	354.79	385.45	370.93	<sup>R</sup> 370.98	380.56
Commercial	257.07	278.27	274.94	<sup>R</sup> 268.72	264.43
Industrial	123.83	144.22	148.03	<sup>R</sup> 137.67	117.18
Electric Power	105.59	123.95	129.96	105.59	87.58

<sup>R</sup> Revised data.

<sup>a</sup> Pipeline and Distribution Use volumes 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:** U.S. Energy Information Administration (EIA), Form EIA-176, *Annual Report of Natural and Supplemental Gas Supply and Disposition*; Form EIA-857, *Monthly Report of Natural Gas Purchases and Deliveries to Consumers*; Form EIA-914, *Monthly Crude Oil, Lease Condensate, and Natural Gas Production Report*; 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*; Form EIA-191, *Monthly Underground Gas Storage Report*; Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*; Form EIA-923, *Power Plant Operations Report*; the Bureau of Safety and Environmental Enforcement (BSEE); Form EIA-886, *Annual Survey of Alternative Fueled Vehicles (2016-2017)*; state and federal agencies; state-sponsored public record databases; Form EIA-23, *Annual Survey of Domestic Oil and Gas Reserves*; PointLogic Energy; Enverus; and EIA estimates based on historical data.

Table B2. Thermal conversion factors and data, 2016-2020

	2016	2017	2018	2019	2020
<b>Conversion Factor (Btu per cubic foot)</b>					
<b>Production</b>					
Marketed	1,128	1,129	1,134	1,140	1,146
NGPL Production	2,461	2,471	2,482	2,493	2,492
<b>Total Dry Production</b>	<b>1,037</b>	<b>1,036</b>	<b>1,036</b>	<b>1,038</b>	<b>1,037</b>
<b>Supply</b>					
Dry Production	1,037	1,036	1,036	1,038	1,037
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	1,037	1,036	1,036	1,038	1,037
LNG Storage	1,037	1,036	1,036	1,038	1,037
Supplemental Gas Supplies	1,037	1,036	1,036	1,038	1,037
Balancing Item	1,037	1,036	1,036	1,038	1,037
<b>Total Supply</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>Disposition</b>					
Consumption	1,037	1,036	1,036	1,038	1,037
(Electric Power)	1,034	1,033	1,033	1,034	1,033
(Other Sectors)	1,039	1,038	1,038	R1,040	1,037
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	1,037	1,036	1,036	1,038	1,037
LNG Storage	1,037	1,036	1,036	1,038	1,037
<b>Total Disposition</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
<b>Summary Data (billion Btu)</b>					
<b>Production</b>					
Marketed	32,025,819	33,012,616	37,428,144	R41,538,075	41,494,409
NGPL Production	4,449,796	4,687,771	5,545,996	6,350,892	6,770,191
<b>Total Dry Production</b>	<b>27,576,023</b>	<b>28,324,844</b>	<b>31,882,148</b>	<b>R35,187,183</b>	<b>34,724,219</b>
<b>Supply</b>					
Dry Production	27,576,023	28,324,844	31,882,148	R35,187,183	34,724,219
Receipts at U.S. Borders					
Imports	3,081,659	3,109,057	2,961,068	2,810,259	2,615,125
Intransit Receipts	76,049	14,002	13,470	R212,702	208,138
Withdrawals from Storage					
Underground Storage	3,447,942	3,719,736	4,143,403	3,791,609	3,538,146
LNG Storage	41,496	44,412	52,270	R49,584	35,302
Supplemental Gas Supplies	59,304	68,061	71,839	R63,075	65,482
Balancing Item	-325,321	-480,167	-364,771	R-518,642	-266,381
<b>Total Supply</b>	<b>33,957,152</b>	<b>34,799,944</b>	<b>38,759,427</b>	<b>R41,595,770</b>	<b>40,920,031</b>
<b>Disposition</b>					
Consumption	28,459,657	28,116,728	31,223,931	R32,315,058	31,599,684
(Electric Power)	10,324,769	9,571,318	10,938,372	R11,671,891	11,999,315
(Other Sectors)	18,134,887	18,545,410	20,285,559	R20,643,167	19,600,369
Deliveries at U.S. Borders					
Exports	2,356,467	3,182,188	3,640,312	R4,699,576	5,331,160
Intransit Deliveries	4,591	128	25,087	R217,379	229,321
Additions to Storage					
Underground Storage	3,086,861	3,456,753	3,808,246	4,310,317	3,722,613
LNG Storage	49,577	44,147	61,851	R53,440	37,252
<b>Total Disposition</b>	<b>33,957,152</b>	<b>34,799,944</b>	<b>38,759,427</b>	<b>R41,595,770</b>	<b>40,920,031</b>

<sup>NA</sup> Not available.

<sup>R</sup> Revised data.

<sup>a</sup> Pipeline and Distribution Use volumes 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:** U.S. Energy Information Administration (EIA), Form EIA-176, *Annual Report of Natural and Supplemental Gas Supply and Disposition*; Form EIA-857, *Monthly Report of Natural Gas Purchases and Deliveries to Consumers*; Form EIA-914, *Monthly Crude Oil, Lease Condensate, and Natural Gas Production Report*; Form EIA-816, *Monthly Natural Gas Liquids Report*; Form EIA-64A, *Annual Report of the Origin of Natural Gas Liquids Production*; Form EIA-191, *Monthly Underground Gas Storage Report*; Office of Fossil Energy, U.S. Department of Energy, *Natural Gas Imports and Exports*; Form EIA-923, *Power Plant Operations Report*; the Bureau of Safety and Environmental Enforcement (BSEE); Form EIA-886, *Annual Survey of Alternative Fueled Vehicles (2016-2017)*; state and federal agencies; state-sponsored public record databases; Form EIA-23, *Annual Survey of Domestic Oil and Gas Reserves*; PointLogic Energy; Enverus; and EIA estimates based on historical data.