

Section 3. Natural Gas

Natural gas prices are developed for the residential, commercial, industrial, transportation, and electric utility sectors. Reported natural gas prices are retail prices for sales of natural gas to ultimate users.

In general, taxes are included in the prices. However, taxes collected by a utility from an end user and turned over to a Government authority frequently are not included in the revenues reported in the source documents and, therefore, are not included in the prices. Taxes paid by the utility (rather than the end user) are considered operating costs and are passed on to the end user as part of the rate. Therefore, Federal, State, business, and property taxes are typically included in the prices, while sales and other point-of-purchase taxes typically are not.

Estimates of the amount of natural gas consumed by the residential, commercial, industrial, and electric utility sectors are taken from the State Energy Data System (SEDS). Estimates for the industrial sector are adjusted to remove estimated refinery consumption and lease and plant use of natural gas, and estimates of transportation sector use are adjusted to remove pipeline fuel in each State. (See the discussion in Section 7, "Consumption Adjustments for Calculating Expenditures," on page 101.)

Residential, Commercial, and Industrial Sectors

Prices: 1987 Forward

All natural gas physical unit prices by State for the residential, commercial, and industrial sectors are taken from the Energy Information Administration (EIA) *Historical Natural Gas Annual (HNGA)*.

Prices: 1970 Through 1986

All natural gas physical unit prices for the residential, commercial, and industrial sectors are calculated from value and quantity of sales data from the *HNGA* or its predecessor report, *Natural Gas Production and Consumption*. State prices are calculated directly from the data sources as average revenue per unit of sales by natural gas utilities. Prices for each of the three sectors are calculated by dividing the value of natural gas, reported in thousands of dollars, by the quantity of natural gas sold, as reported in million cubic feet.

For 1970 through 1979, both the value and quantity of sales data from the *HNGA* are reported as composites for MD and DC and for ME, NH, and VT. In each case, the combined prices are assigned to each of the States in the composite.

Btu Prices: All Years

State Btu prices for all years are calculated by using the physical unit price series and the State-level non-electric utility conversion factors. U.S. Btu prices are calculated as the average of the State Btu prices, weighted by consumption data from SEDS, adjusted for process fuel consumption in the industrial and transportation sectors.

Data Sources

Prices

1987 forward: Energy Information Administration, *Historical Natural Gas Annual, 1930 Through 2000*, http://www.eia.doe.gov/oil_gas/natural_gas/data_publications/historical_natural_gas_annual/

[hnga_historical.html](#), Table 26 (residential 1987–1994) and Table 27 (residential, 1995 forward); Table 28 (commercial 1987–1992) and Table 29 (commercial, 1993 forward); and Table 31 (industrial 1987–1992) and Table 32 (industrial, 1993 forward).

1980–1986: Calculated from quantity and value data published in the Energy Information Administration, *Natural Gas Annual, Volume 1*, Table 11 (1980), Table 14 (1981–1985), and Table 15 (1986). Comparable price data are available in the *Historical Natural Gas Annual, 1930 Through 1999*, Table 26 (residential), Table 28 (commercial), and Table 31 (industrial).

1970–1979: Calculated from quantity and value data published in the Bureau of Mines, U.S. Department of the Interior, *Natural Gas Production and Consumption*, Table 6 (1970 and 1979) and Table 7 (1971–1978). Comparable price data are available in the *Historical Natural Gas Annual, 1930 Through 1999*, Table 26 (residential), Table 28 (commercial), and Table 31 (industrial).

Consumption

1970 forward: Energy Information Administration, State Energy Data System, residential, commercial, and industrial natural gas consumption.

Conversion Factors: All Years

Energy Information Administration, factors published rounded in **State Energy Data 2000** Consumption Technical Notes, Tables B4 and B5.

Transportation Sector

Most of the natural gas used for transportation is consumed in pipeline operations and is discussed in Section 7, “Consumption Adjustments for Calculating Expenditures,” on page 101. A small but increasing portion is consumed by natural gas vehicles. Prices for natural gas consumed by vehicles are reported in the EIA *Historical Natural Gas Annual* beginning in 1990. Much of the natural gas delivered for vehicle fuel represents deliveries to fueling stations that are used primarily by fleet vehicles.

In the first years of the vehicle fuel price series, the coverage of the reporting universe is not complete. Prices are assigned, when missing, from an adjacent State with the highest percentage of reported data. Natural gas vehicle fuel consumption for NE is assigned the SD price in 1992, 1993, and 1995; NV is assigned the AZ price in 1992 and 1993; and DE is assigned the MD price in 1994. The SC price in 1998 is out of range and the average of the prices of natural gas used as vehicle fuel in SC for 1997 and 1999 is assigned to 1998.

Data Sources

Prices

1990 forward: Energy Information Administration, *Historical Natural Gas Annual, 1930 Through 2000*, http://www.eia.doe.gov/oil_gas/natural_gas/data_publications/historical_natural_gas_annual/hnga_historical.html, Table 34.

Consumption

1990 forward: Energy Information Administration, State Energy Data System, natural gas vehicle consumption.

Conversion Factors: All Years

Energy Information Administration, unrounded conversion factors as published rounded in the **State Energy Data 2000** Consumption Technical Notes, Tables B4 and B5.

Electric Utility Sector

Prices: 1973, 1974, 1983 Forward

Prices for States are reported by *Cost and Quality of Fuels for Electric Utility Plants (C&Q)* for gas consumed at steam-electric plants only. Btu prices are taken from C&Q, converted from cents to dollars per million Btu.

Table TN11. Natural Gas Electric Utility Sector Prices Assigned from *Historical Natural Gas Annual*, 1973 Forward

State	Years
AK	1973–1990
CT	1974–1976
ID	1983–1986
MD	1973, 1974, 1983–1985
NC	1983–1990
ND	1973, 1974, 1976–1986
NH	1973, 1974, 1977, 1987–1989
PA	1973
RI	1976, 1980
SC	1977
SD	1983–1990
TN	1976, 1980, 1981, 1983, 1988–1996
UT	1988, 1989
VT	1983–1985, 1989, 1990
WA	1978, 1983–1985, 1988, 1989
WY	1973, 1975

Where individual State prices are unavailable from *C&Q*, they are developed from the *HNGA*. Physical unit prices prior to 1987 are calculated by dividing the value of natural gas, reported in thousands of dollars, by the quantity of natural gas sold, reported in million cubic feet. For 1987 forward, physical unit prices are taken directly from the *HNGA*. Table TN11 lists the States and years for which *HNGA* data are used. Btu prices are calculated from the physical unit prices by using State-level electric utility conversion factors.

Prices are not available from either *C&Q* or *HNGA* for CT in 1973; ID in 1974, 1987; NH in 1983, 1996, 1998; OR in 1983, 1984, 1986, 1989, 1990; SD in 1997; TN in 1997 through 1999; and WA in 1999. In these cases, quantity-weighted Census division prices from *C&Q* are assigned. In addition, prices for MT in 1997; VT in 1986; and WA in 1986, 1987, 1990, and 1997 use quantity-weighted Census division prices from *C&Q* for more consistent prices than those available from the *HNGA* or more consistent with values in previous and later years.

Prices: 1980 Through 1982

State Btu and physical unit prices for 1980 through 1982 are taken from *C&Q* for all reporting plants. Physical unit prices are taken directly from the data source, while Btu prices are converted from cents to dollars per million Btu.

Prices: 1975 Through 1979

State prices are reported separately by *C&Q* for gas consumed at steam-electric plants and gas consumed at combustion turbine and internal combustion units. Weighted-average Btu prices are calculated by using the two *C&Q* prices and the respective gas deliveries for steam-electric and combustion use. The NH price in 1977 is not available from *C&Q*. A combined price is computed from value and quantity of sales data from the *HNGA* for ME, NH, and VT and assigned to NH for 1977.

Prices: 1970 Through 1972

State prices for 1970 through 1972 are taken from *Natural Gas Production and Consumption* and are calculated similarly to the way prices for the residential, commercial, and industrial sectors are calculated. Prices, as average revenue per unit of sales, are computed from value and quantity of sales data from the source reports. A combined price is reported for NH and VT for 1971 and 1972, and each of these States is assigned the combined price. State Btu prices are calculated from the physical unit prices by using the State-level electric utility conversion factors.

U.S. Prices: All Years

U.S. Btu prices are calculated as the average of the State Btu prices, weighted by consumption data from SEDS.

Data Sources

Prices

1973 forward: Energy Information Administration, *Cost and Quality of Fuels for Electric Utility Plants*,

Table TN12. Tables from EIA *Cost and Quality of Fuels for Electric Utility Plants Used as Data Sources*

Years	Price Data	Volume Data
1973, 1974	Table 10	Table 9
1975–1979	Table 10, 16	Table 9, 15
1980–1982	Table 48	-
1983, 1984	Table 53	-
1985–1987	Table 43	-
1988, 1989	Table 44	-
1990–1994	Table 12 (1994 edition)	-
1995–1999	Table 12 (1999 edition)	-
2000	Table 12 (2000 edition)	-

<http://www.eia.doe.gov/cneaf/electricity/cq/backissues.html>, tables shown in Table 12 or Table A12.

1990 forward: Energy Information Administration, *Historical Natural Gas Annual 1930 Through 2000*, http://www.eia.doe.gov/oil_gas/natural_gas/data_publications/historical_natural_gas_annual/hnga_historical.html, Table 31.

1980–1989: Energy Information Administration, *Natural Gas Annual 1992, Volume 2*, Table 23.

1976–1979: Energy Information Administration, Energy Data Reports, *Natural Gas Production and Consumption*, Table 7 (1976–1978) and Table 6 (1979). Comparable price data are available in the *Historical Natural Gas Annual, 1930 Through 1999*, Table 35.

1970–1975: Bureau of Mines, U.S. Department of the Interior, *Natural Gas Production and Consumption*, Table 6 (1970) and Table 7 (1971–1975). Comparable price data are available in the *Historical Natural Gas Annual, 1930 Through 1999*, Table 35.

Consumption

1970 forward: Energy Information Administration, State Energy Data System, electric utility natural gas consumption.

Conversion Factors

Btu prices that are calculated directly from *Cost and Quality of Fuels for Electric Utility Plants (C&Q)* require no conversion factors. When *Natural Gas Annual (HNGA)* data are used to develop prices that are missing from *C&Q*, conversion factors are used from the following source:

1970 forward: Energy Information Administration, **State Energy Data 2000** Consumption Technical Notes, Tables B2 and B3.