

Section 2. Coal

The State Energy Data System (SEDS) estimates coal prices for: coking coal; steam coal (all noncoking coal); and coal coke imports and exports.

Coking coal is a high-quality bituminous coal used to make coal coke in the industrial sector. Steam coal can be used by all sectors, and includes anthracite, bituminous coal, subbituminous coal, and lignite. In the industrial sector, coal consumption is the sum of coking coal and steam coal. SEDS calculates the industrial coal price as the consumption-weighted average price of those two components.

Imports and exports of coal coke are available only at the national level and SEDS assumes all of them are accounted for in the industrial sector. SEDS reports imports and exports of coal coke separately and does not average them with other coal prices or expenditures.

Coking coal

Coking coal is usually more expensive than steam coal. Coking coal prices are those paid at coke plants for coal received and include insurance, freight, and taxes. SEDS uses data from Form EIA-3, “Quarterly Survey of Industrial, Commercial & Institutional Coal Users” (and previous survey forms on coke plants), published in the *EIA Annual Coal Report*.

Physical unit prices: 2005 forward

For 2005 forward, coking coal prices are available only for the United States, the East North Central Census Division, and for some states. SEDS assigns the East North Central price to the states in that division, except for states with published data (Indiana for 2007, 2014, and 2015 and Ohio for 2011 forward). SEDS calculates a consumption-weighted price for the states in all other Census divisions using the U.S. data excluding the East North Central data.

Physical unit prices: 1970 through 2004

Source publications contain physical unit prices for states, groups of states, or Census divisions. Individual state prices are used directly for their respective states. Where individual state prices are not available, the associated group or Census division prices are assigned. Wherever

individual state, group, or Census division prices are unavailable, prices are assigned from adjacent or nearby states or Census divisions or from states with similar coal use patterns as shown in Table TN2.1.

Btu prices: all years

SEDS converts state-level coal coke prices from physical unit prices to dollars per million Btu using the state-level conversion factors for coking coal. SEDS calculates U.S. Btu prices as the consumption-weighted average of the state Btu prices, using SEDS consumption data.

Data sources

Prices

2000 forward: U.S. Energy Information Administration (EIA), *Annual Coal Report*, Table 35 (2000), Table 34 (2001 forward), <http://www.eia.gov/coal/annual/>.

1996 through 1999: EIA, *Coal Industry Annual 2000*, Table 96.

1981 through 1995: EIA, *Quarterly Coal Report*, October-December issue, Table A3 (1981-1991), Table 39 (1992-1994), and Table 31 (1995), <http://www.eia.gov/coal/production/quarterly/>.

1977 through 1980: EIA, *Coke and Coal Chemicals*, Table 19 (1977), Table 15 (1978), and Table 7 (1979, 1980).

1970 through 1976: Bureau of Mines, U.S. Department of the Interior, *Minerals Yearbook*, “Coke and Coal Chemicals” chapter, Table 22.

Consumption

1970 forward: EIA, State Energy Data System, coking coal consumption.

Conversion factors: all years

EIA, State Energy Data System, consumption technical notes, Appendix B. Data also available in CSV format at http://www.eia.gov/state/seds/sep_update/use_convfac_update.csv.

Table TN2.1. Coking coal state group price and adjacent state price assignments, 1970 through 2004

State	Years	State or division prices assigned
AL	1999, 2001–2004	East South Central
	2000	U.S.
CA	1970–1982	CA, CO, UT
CO	1970–1982	CA, CO, UT
IL	1986–1998	IN
	1999–2004	East North Central
IN	1997–2000	East North Central
KY	1970–1987	KY, MO, TN, TX
	1988–1998	OH
	1999–2004	East South Central
MD	1970, 1971	MD, NJ, NY
	1983–1991, 1993	PA
MI	1979	MI, MN, WI
	1980–1985, 1987	MI, WI
	1988–1991, 1993–1998	OH
	1999–2004	East North Central
MN	1970–1978	MN, WI
	1979	MI, MN, WI
MO	1970–1987	KY, MO, TN, TX
	1988	AL
NJ	1970, 1971	MD, NJ, NY
NY	1970, 1971	MD, NJ, NY
	1972–1982	MD, NY
	1983–1998	PA
	1999	Middle Atlantic
	2000–2004	East North Central
OH	1997–2004	East North Central
PA	1997–1999	Middle Atlantic
	2000–2004	East North Central
TN	1970–1987	KY, MO, TN, TX
	1988–1991	AL
TX	1970–1987	KY, MO, TN, TX
UT	1970–1982	CA, CO, UT
	1983–1986	TX
	1988–1998	IN
	1999–2001	East North Central
VA	1970, 1971, 1976, 1977	WV
	1978–1982	VA, WV
	1983–1986	KY
	1987–1998	OH
	1999–2004	East North Central
WI	1970–1978	MN, WI
	1979	MI, MN, WI
	1980–1985, 1987	MI, WI
WV	1978–1982	VA, WV
	1983–1986	KY
	1987–1998	OH
	1999–2004	East North Central

Steam coal

Steam coal is used in all sectors. Price data are usually available for the electric power and industrial sectors. However, no price data are available for the commercial sector before 2008 and the transportation sector, which reported coal consumption through 1977. SEDS assigns the industrial sector steam coal prices to those two sectors for those time periods. Described below are the methods and data sources used to estimate coal prices by sector. SEDS also adjusts the amount of industrial steam coal consumption to account for intermediate process fuels and avoid double counting (see the discussion in Section 7, “Consumption adjustments for calculating expenditures,” at <http://www.eia.gov/state/seds/seds-technical-notes-complete.php>).

Residential sector

SEDS residential sector steam coal price estimates represent the average prices of coal purchased by residential customers and include taxes. For 2008 forward, EIA assumes there is zero residential sector coal consumption in the United States, and SEDS does not estimate a price.

Physical unit prices: 1979 through 2007

Residential steam coal Btu prices for 1979 forward are not available. State-level spot prices for coal paid by the electric power sector are used in a regression equation to estimate state-level residential steam coal prices for 1979 forward. The residential steam coal prices calculated for 1974 through 1978 from the American Gas Association *Gas Househeating Survey* (GHS) and the average Btu spot prices from the EIA *Cost and Quality of Fuels for Electric Utility Plants* (C&Q) for 1974 through 1978 are used to develop the regression equation. Electric power coal spot prices from the C&Q for 1979 forward are converted from cents per million Btu to dollars per million Btu.

Some states have GHS residential prices during the 1974 through 1978 period to use in the regression analysis, but are missing electric power sector prices in the 1979 forward data used to calculate prices. For these missing data, spot prices are assigned from other states for use in the regression, as shown in Table TN2.2. C&Q prices for ND and MT for some years result in a negative price when used in the regression; therefore MN spot prices are assigned to ND for use in the regression and the WY final residential sector steam coal price is assigned to MT as shown in Table TN2.2 and Table TN2.3.

Table TN2.2. Residential sector: electric power coal spot price assignments, 1979 through 2007

State	Years	State prices assigned	State	Years	State prices assigned
CO	1979, 1981	KS	NH	1974, 1975, 1981, 1983	VT
CT	1975	NY		1984, 1985	MA
	1976–1979, 2001–2007	NH	NJ	2007	NY
	1980–1987, 1993–1995, 2000	MA	NV	1975–1978, 1983–1989, 1992, 1993, 1995	CO
DC	1976–1999	MD		2006	UT
	2001–2005, 2007	VA	PA	2006, 2007	OH
DE	2006, 2007	VA	RI	1974	CT
ID	1974, 1979–1982, 1996–2005	NV		1975	VT
	1975–1977	SD		1976–1979, 2001–2007	NH
	1978	ND		1980–2000	MA
	1983–1995	CO	SD	1978, 1984	ND
	2006, 2007	UT		1979–1983, 1986, 1987, 1989,	MN
MA	1975	VT		1991–2001	
	1976–1979, 2001, 2007	NH		2005, 2007	IA
MD	2001–2007	VA	UT	1975–1978, 1980, 1983, 2000	CO
ME	1974, 1975, 1981, 1983	VT		1979	NV
	1976–1980, 1982, 1986, 1996–2007	NH	VT	1976, 1980, 2001–2007	NH
		MA		1984–2000	MA
MN	2005, 2006	IA	WA	1970, 2001–2007	OR
MT	1974, 1975, 1978	ND		1974–1978, 1983–1985	CO
	1976, 1977	SD		1979–1982	NV
	1979–1982	NV	WY	1974–1976, 1978, 1982, 1985,	CO
ND	1976, 1977	SD		2005–2007	
	1979–2001	MN			

Price estimates for 1974 through 1978 for some states are not available because there was no consumption. To calculate prices for 1979 forward, these states are assigned the final prices from selected states as shown in Table TN2.3. In addition, several states are assigned the simple average of the final prices of adjacent states as shown in Table TN2.3. Alaska residential coal prices are estimated by using a different methodology, described below.

Physical unit prices: 1971 through 1978

For 1971 through 1978, Btu steam coal prices are calculated by using data from GHS. The price for a state is equal to the simple average of the city/utility price observations for that state. For 1971 and 1972, GHS reports physical unit prices rather than Btu prices (as published for 1973 through 1978) and, therefore, the state-level conversion factors for this sector from SEDS are used to convert to Btu prices for those years. AK

residential coal prices are estimated by using a different methodology, described below.

A simple average of price observations in CT, MA, ME, NH, RI, and VT is assigned to each of these states. To impute other missing prices in the 1971 through 1978 period, states are assigned simple averages of adjacent state prices or are directly assigned the single price of an adjacent or nearby state as listed in Table TN2.4.

Physical unit prices: 1970

Because state-level coal price data for 1970 are not available from either GHS or C&Q, the 1970 residential sector coal prices are calculated by using the 1971 through 1978 data from the Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry*, for the 39 states, with some reported coal use from 1971 through 1983 and regression analysis.

Table TN2.3. Residential sector coal final price assignments, 1979 through 2007

State	Years	State and averaged final prices assigned
AR	1980, 1982, 1984, 1985, 1987–1995, 1998, 2002, 2004–2007	AL
	1999	MO
	1981	MO, OK, TN, TX
	1983	MO, MS, OK, TN
AZ	1982, 1984, 1985	CA, NM, NV, UT
	1987, 1988, 1990–1995, 1998–2007	UT
CA	1979–1985	NV
	1987–2004	WA
	2005, 2006	UT
FL	1980–1996, 1998, 1999–2002	GA
	2003–2007	AL
LA	1980, 1982, 1984, 1986, 1988, 1991, 1993, 1995, 1997, 2000, 2007	AL
MS	1979, 1980, 1983, 1984, 1986–1995, 1997	AL
	1985	AL, AR, TN
MT	1986–2002	WY
NM	1979–2007	CO
OK	1979–1999, 2001–2007	CO
OR	1979, 1980, 1982–2000	WA
	1981	CA, ID, NV, WA
TX	1980–1982, 1985–2007	CO

For estimating the 1970 prices, states missing *Statistical Yearbook* data are assigned prices as follows: ID for 1970 through 1978 from MT; MA for 1976 through 1978 from CT; ME for 1970 through 1978 from NH; RI for 1973 and 1975 through 1978 from CT; and WA for 1970 through 1972 from OR. DC, DE, and MD are all assigned the combined *Statistical Yearbook* price for those states. Wherever individual state prices are unavailable, prices are assigned from an adjacent or nearby state as follows: CA from NV; NM from CO; OK from CO; OR from WA; and TX from CO. AK residential coal prices are estimated by using a different methodology, described as follows.

Alaska prices: all years

For 1994 through 2007, SEDS estimates Alaska’s residential coal prices using an informal survey of the state’s only coal supplier. For 1978

Table TN2.4. Residential sector spot coal price assignments, 1971 through 1978

State	Years	State assigned or averaged prices
AL	1971	TN
AR	1977, 1978	AL
CA	1971, 1972, 1974, 1978	NV
DC	1971–1978	MD
DE	1971, 1972, 1974, 1976, 1977	MD
GA	1971	NC, TN
	1972	AL, NC, TN
ID	1977	MT, UT, WY
KS	1971, 1972	CO, MO
MN	1971	IA, ND, WI
	1972	IA, WI
MS	1978	AL
MT	1971	ID, ND, WY
	1972, 1973	ID, WY
ND	1972	IA, WI
	1973	MN, SD
	1974	MN, MT, SD
NE	1971, 1972	CO, IA, MO, WY
	1975	CO, IA, KS, MO, SD, WY
NJ	1971, 1972, 1974, 1977, 1978	DE, NY, PA
NM	1971	CO
NV	1971, 1972, 1975	ID, UT
	1973	ID, OR, UT
OK	1971–1978	CO
OR	1971–1978	WA
SC	1971, 1972	NC
SD	1971	IA, ND, WY
	1972	IA, WY
TX	1971–1974, 1977	CO
UT	1974, 1978	CO, ID, NV, WY
WA	1971, 1972, 1974	ID
	1977	MT, UT, WY
WV	1971, 1972	KY, MD, OH, PA, VA

through 1993, SEDS estimates Alaska’s residential prices as the product of the Washington residential prices and the average ratio of Alaska-to-Washington prices during 1970 through 1977. For 1970 through 1977, SEDS estimates Alaska’s residential prices using the ratio of Alaska-to-

U.S.-total electric utility sector prices.

Btu prices: all years

SEDS converts state-level residential coal prices from physical unit prices to dollars per million Btu using the state-level conversion factors for coal consumed by the residential and commercial sectors. SEDS calculates U.S. Btu prices as the consumption-weighted average of the state Btu prices, using SEDS consumption data.

Data sources

Prices

1974 through 2007: EIA, *Cost and Quality of Fuels for Electric Plants*, average spot coal prices, Table 2 (1974-1979), Table 44 (1980 through 1982), Table 49 (1983, 1984), Table 39 (1985-1989), Table 8 (1990, 1991), and Table 3 (1992 through 2007), <http://www.eia.gov/electricity/data/eia423/> and <http://www.eia.gov/electricity/data/eia923/eia906u.html>.

1994 through 2007: Alaska price estimated from informal discussions with Usibelli Coal Mine Co., the only coal supplier in Alaska.

1971 through 1978: American Gas Association, *Gas Househeating Survey*, table titled “Competitive Fuel Prices.”

1970 through 1978: Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry*, Table 43S.

Consumption

1970 through 2007: EIA, State Energy Data System, residential sector coal consumption.

Conversion factors: 1971, 1972

EIA, State Energy Data System, consumption technical notes, Appendix B. Data also available in CSV format at http://www.eia.gov/state/seds/sep_update/use_convfac_update.csv.

Commercial sector

Physical unit prices: 2008 forward

For 2008 forward, SEDS uses commercial coal prices from Form EIA-3, “Quarterly Survey of Industrial, Commercial & Institutional Coal Users,” published in EIA’s *Annual Coal Report*. Prices include insurance, freight,

Table TN2.5. Commercial sector final price assignments, 1970 through 2007

State	Years	State prices assigned
CT	1980	NY
	1995–2004, 2006, 2007	MA
DC	1980–2005, 2007	MD
NH	1994, 1996–2007	MA
NJ	2007	NY
OK	1970	KS
OR	1999, 2000	WA
RI	1982, 1983, 1991–2007	MA
VT	1993–1997, 2000, 2005–2007	MA

and taxes.

SEDS estimates prices for states that have withheld or unavailable data by applying the ratio between the U.S. commercial steam coal price and the U.S. industrial steam coal price to the state’s industrial steam coal price. For the District of Columbia, which does not have any commercial or industrial steam coal prices, SEDS uses Maryland’s industrial steam coal prices for 2008 through 2015 and Virginia’s commercial steam coal prices for 2016 forward.

Btu prices: 2008 forward

SEDS converts state-level commercial coal prices from physical unit prices to dollars per million Btu using the state-level conversion factors for coal consumed by the commercial sector. SEDS estimates the Alaska prices using an informal survey from the state’s only coal supplier. SEDS calculates U.S. Btu prices as the consumption-weighted average of the state Btu prices, using SEDS consumption data.

Btu prices: 1970 through 2007

Commercial sector prices are assigned industrial steam coal prices. States without Btu industrial steam coal prices are assigned the prices from adjacent states, as shown in Table TN2.5. The Alaska prices for 1994 through 2007 are estimated from an informal survey of the single coal supplier in the state. U.S. Btu prices are calculated as the average of all states’ Btu prices, weighted by consumption data from SEDS.

Data sources

Prices

2008 forward: EIA, *Annual Coal Report*, Table 34, <http://www.eia.gov/>

[coal/annual/](#). Also available at the Coal Data Browser at <http://www.eia.gov/coal/data/browser/> for 2008 forward.

1970 through 2007: Assigned industrial steam coal prices.

Consumption

1970 forward: EIA, State Energy Data System, commercial sector coal consumption.

Conversion factors: 2008 forward

EIA, State Energy Data System, consumption technical notes, Appendix B. Data also available in CSV format at http://www.eia.gov/state/seds/sep_update/use_convfac_update.csv.

Industrial sector

For 1980 forward, SEDS uses quarterly industrial coal prices from Form EIA-3, “Quarterly Survey of Industrial, Commercial & Institutional Coal Users” and predecessor forms, which collects manufacturers’ coal stocks, receipts, prices, and consumption. From 1980 through 1988, all manufacturers that consumed coal were required to respond to Form EIA-3. For 1989 forward, EIA only collects data from manufacturers that consumed 1,000 or more tons per year. Data prior to 1980 are based on the monthly average cost of coal sold to manufacturing firms.

Physical unit prices: 1980 forward

For 1984 forward, EIA’s *Annual Coal Report* and predecessor publications publish state prices, including insurance, freight, and taxes. For 1980 through 1983, SEDS uses data directly from Form EIA-3, and predecessor forms.

SEDS usually estimates industrial prices for states that have withheld or unavailable data using available growth rates, simple averages of the published data for adjacent states, or published Census division prices. Table TN2.6 shows the adjacent state and Census division price assignments.

The source withholds Washington’s prices for 1999 forward. Usually Washington prices are higher than the Census division price. For 1999 forward, SEDS estimates the Washington prices as the product of the Pacific Division prices and the average ratio of Washington-to-Pacific Division prices for 1995 through 1998. In 2002, the price for the Pacific Division is withheld and SEDS uses the average Pacific Division price from 1999 through 2001.

North Dakota has the largest coal consumption among the states in the West North Central Division, but the source withholds its price data for 1984 through 2000. SEDS estimates North Dakota’s prices by subtracting the calculated expenditure (the product of consumption and price) of the states in the West North Central Division with reported prices from the Division’s calculated expenditure. SEDS divides this difference with the consumption of the remaining states.

For 2013 forward, SEDS estimates the price for Maryland as the product of the U.S. price and the previous year’s ratio of the Maryland price to U.S. price. For 2019, SEDS derives the price for New York by subtracting the calculated expenditure of Pennsylvania from that of the Middle Atlantic Division and dividing it by New York’s consumption. For 2020, SEDS estimates the price for West Virginia using the growth rate of the South Atlantic Census Division price.

For 1998 through 2000 and 2002, the source withholds prices for the New England Division. SEDS estimates the New England Division prices as the average ratio of the New England to the East North Central price from 1995 through 1997 applied to the East North Central prices for those years. The source also withholds the New England Division prices for 2006 and 2008 through 2011. SEDS estimates the New England Division prices as the average ratio of the New England to the East North Central price from 2003 through 2005 applied to the East North Central prices for those years. For 2013 forward, the source also withholds the New England Division prices. SEDS calculates a consumption-weighted annual percent change for the New England Division using the annual percent changes for Massachusetts and Maine, which are available in the *Annual Coal Report*, and applies it to the previous year’s New England Division price.

Physical unit prices: 1971, 1974 through 1979

For 1971, and 1974 through 1979, available cost and quantity of bituminous coal, lignite, and anthracite from the *Annual Survey of Manufactures* (ASM) or *Census of Manufactures* (CM) are used to calculate prices as average cost per unit of sales for covered states. (States with undisclosed data are not considered covered.) Although it is not clear from the data sources, the prices probably include taxes.

For states with industrial steam coal use and for which ASM or CM data are not available in 1971 and 1974 through 1979, adjacent state simple averages of available ASM/CM data are used to impute prices. The assigned prices from adjacent states are shown in Table TN2.7.

Table TN2.6. Industrial sector steam coal price assignments, 1980 forward

State	Years	Prices used in the assignment	State	Years	Prices used in the assignment	
AR	2010, 2012–2014	TX		1991, 1993–1999	CO, IA, KS, MO, SD, WY	
	2015–2022	MO, OK, TN, TX		2000	IA, MO, SD, WY	
AZ	1980	CA, UT	NH	1980–1983	NY	
	1981, 1984–1986	CA, CO, UT		1984–1993, 1995	New England	
	2013–2018	CA, CO, NV, UT	NJ	1980–1997, 2000–2006	NY, PA	
	2019–2022	CA, NV, UT		1998, 1999	PA	
CO	1980	KS, UT	NM	1980, 2013, 2014	TX, UT	
	2000	UT, WY		1981	CO, OK, TX	
	2001	KS, NE, OK, UT, WY	1982, 1983	AZ, CO, OK, TX		
	2002, 2003	KS, NE, UT, WY	1984–1986, 2015–2018	CO, OK, TX, UT		
	2004–2007	AZ, KS, NE, OK, UT, WY	1987	AZ, CO, OK, TX, UT		
	2008	AZ, NE, OK, UT, WY	1988–1999	AZ, CO, TX, UT		
	2009–2011	AZ, NE, UT, WY	2000, 2002, 2003, 2009–2012	AZ, TX, UT		
	2019–2022	Mountain	2001, 2004–2008	AZ, OK, TX, UT		
	CT	1981–1994, 2005, 2006	New England		2019–2022	OK, TX, UT
DC	1980, 1981	MD	NV	1980, 1981, 1984–1986	CA, ID, UT	
DE	1980–2003	MD		1983, 1987–1998, 2000–2011	AZ, CA, ID, UT	
	2004–2009	MD, PA	1999	AZ, CA, UT		
	2016	PA	NY	1998, 1999	PA	
FL	1980	AL, GA	OK	1980	AR, KS, MO, TX	
HI	1982, 1983, 1987–2016	CA		1984–1999	AR, CO, KS, MO, TX	
ID	1999	UT, WY	OR	2000	AR, MO, TX	
	2016–2021	MT, NV, UT, WY		1980, 1981, 1983–1998	CA, ID, WA	
IL	2022	IA, IN, KY, MO, WI		1982	CA, ID, NV, WA	
KS	2000, 2008–2014	MO		2002–2014	CA, ID	
	2015–2018	CO, MO, NE, OK		2015	CA, ID, NV	
	2019–2022	MO, NE, OK		2017–2022	CA, NV	
LA	1980–2009	AR, TX	RI	1980, 1981	NY	
	2010–2022	TX		1984–1990	New England	
MA	1980–1983	NY	SD	1980	IA, MN, MT	
	1984–2019	New England		1981	IA, MN, MT, NE	
ME	1980–1983	NY		1982	IA, MN, MT, WY	
	1984–2020	New England		1983, 1987–1990, 1992–1995	IA, MN, WY	
MS	1980–2009	AL, AR, TN		1984–1986	IA, MN, NE	
	2010–2015, 2019–2022	AL, TN		2003–2014	IA, MN, NE, WY	
				2015–2022	IA, MN, MT, ND, NE, WY	
MT	1983, 1987–1990, 1992, 2003–2011	ID, WY	VT	1980–1983	NY	
	1984–1986	ID		1984–1992, 1997–1999	New England	
	1991, 1993–1998, 2000–2002	ID, SD, WY	WV	1980	KY, MD, OH, PA, VA	
	1999	SD, WY		1981	ID, MT, UT	
ND	1980–1982	MN, MT	WY	1980	CO, ID, MT, NE, UT	
	1983	MN		1984–1986	CO, ID, NE, UT	
NE	1980	IA, KS, MO				
	1982, 1983, 1987–1990, 1992	CO, IA, KS, MO, WY				

Table TN2.7. Industrial sector steam coal price assignments for 1971 and 1974 through 1979

State	Years	State prices used in the assignment	State	Years	State prices used in the assignment
AR	1971, 1974, 1975	MO, TN	NE	1979	IA, MO
	1979	MO, TN, TX	NH	1971, 1974–1979	MA
AZ	1971	CA, NV, UT	NM	1971	CO, OK, TX, UT
	1974–1978	CA, UT		1974, 1976–1978	KS, UT
CO	1974–1978	KS, NE, UT		1979	UT
	1979	UT	NV	1974	CA, OR, UT
CT	1974–1978	MA, NY		1975–1979	CA, UT
	1979	NY	OK	1974, 1975	KS, MO
DC	1971, 1974–1979	MD, VA		1976–1978	AR, KS, MO
DE	1971, 1974–1979	MD, NJ, PA		1979	MO, TX
FL	1979	AL, GA	OR	1975–1978	CA
ID	1974	OR, UT		1979	CA, WA
	1975–1978	UT	RI	1971, 1974–1978	MA
	1979	UT, WA		1979	NY
KS	1979	MO	SD	1971, 1974	IA
LA	1978	AR		1975–1978	IA, MN, NE
	1979	TX		1979	IA, MN
MA	1979	NY	TX	1974, 1975	KS
ME	1975–1978	MA		1976–1978	AR, KS
	1979	NY	VT	1971, 1974–1978	MA
MS	1971, 1974, 1975, 1979	AL, TN		1979	NY
	1976–1978	AL, AR, TN	WA	1974	CA, OR
MT	1974–1978	MN, NE, UT		1975–1978	CA
	1979	MN, UT	WY	1974–1978	NE, UT
ND	1974–1979	MN		1979	UT

Physical unit prices: 1970, 1972, 1973

Steam coal industrial sector prices for 1970, 1972, and 1973 (years for which no ASM/CM prices are available) are estimated by using regression techniques. Values for the independent variable are steam coal electric utility sector physical unit prices, and values for the dependent variable are the steam coal industrial physical unit prices (from ASM or estimated, as described above) for 1971 and 1974 through 1977. A few states are assigned electric utility prices for the dependent variable in the regression, as shown in Table TN2.8. Wherever individual state prices remain unavailable after the estimation that used the above regression techniques, prices are assigned from adjacent or nearby states, as shown in Table TN2.9.

Physical unit prices: Alaska, all years

For 1994 and 1996 forward, SEDS estimates the Alaska steam coal industrial sector prices using an informal survey from the state’s only coal supplier. There is no steam coal consumption reported for Alaska’s industrial sector for 1995. For all other years with industrial steam coal use in Alaska (1993, and 1970 through 1977), SEDS assumes the ratio of industrial Alaska to the U.S. prices are the same as the ratio of the Alaska and U.S. prices in the electric power sector.

Btu prices: all years

SEDS converts state-level commercial coal prices from physical unit prices to dollars per million Btu using the conversion factors for steam coal consumed by the industrial sector. SEDS calculates the U.S. Btu

Table TN2.8. Industrial sector price assignments used in the regression equation for 1971 and 1974 through 1979

State	Years	State prices assigned
AR	1973–1977	MO
CA	1970–1977	NV
CT	1975–1977	NY
DC	1976, 1977	MD
ID	1970–1977	MT
MA	1976, 1977	NH
ME	1970–1977	NH
OK	1973–1975	KS
OR	1973–1977	WA
TX	1970	NM
WA	1970–1972	OR

prices as the consumption-weighted average of all states' Btu prices, adjusted for process fuel and coking coal consumption.

Data sources

Prices

2000 forward: EIA, *Annual Coal Report*, Table 35 (2000), Table 34 (2001 forward), <http://www.eia.gov/coal/annual/>. Also available at the Coal Data Browser at <http://www.eia.gov/coal/data/browser/> for 2001 forward.

1991, 1996 through 1999: EIA, *Coal Industry Annual 2000*, Table 94.

1988, 1993 through 1995: EIA, *Coal Industry Annual 1997*, Table 94.

1987 and 1992: EIA, *Coal Industry Annual 1996*, Table 94.

1985 and 1990: EIA, *Coal Industry Annual 1994*, Table 94.

1984 and 1989: EIA, *Coal Industry Annual 1993*, Table 94.

1986: EIA, *Coal Industry Annual 1995*, Table 94.

1980 through 1983: Form EIA-3, "Quarterly Coal Consumption Report-Manufacturing Plants," Table 25 (1980), Table 11 (1981 and 1982), and Table 2 (1983).

1971, 1974 through 1979: Census Bureau, U.S. Department of Commerce, *Annual Survey of Manufactures and Census of Manufactures*, Table 4 (1971) and Table 3 (1974-1979).

1970, 1972, 1973: Steam coal electric utility sector physical unit prices used in a regression equation with industrial sector prices from 1971 and 1974 through 1979.

Table TN2.9. Industrial sector final price assignments for 1970, 1972, and 1973

State	Years	State prices assigned
AR	1972	MO, TN
NH	1970, 1972, 1973	MA
RI	1970, 1972, 1973	MA
SD	1970, 1972, 1973	IA
VT	1970, 1972, 1973	MA

Consumption

1970 forward: EIA, State Energy Data System, industrial (other than coke plants) coal consumption.

Conversion factors: all years

EIA, State Energy Data System, consumption technical notes, Appendix B. Data also available in CSV format at http://www.eia.gov/state/seds/sep_update/use_convfac_update.csv.

Transportation sector

In 1970, transportation use of coal accounted for 298 of the 523,231 thousand short tons of total coal consumed in the United States and no coal was used for transportation after 1977. For all years, SEDS assumes transportation sector steam coal prices are the same as industrial sector steam coal prices. SEDS calculates U.S. Btu prices as the consumption-weighted average of the state Btu prices, using SEDS consumption data.

Electric power sector

Btu prices: 2002 forward

SEDS estimates most state Btu prices, including insurance, freight, and taxes, using unpublished cost data from Form EIA-923, "Power Plant Operations Report," and predecessor forms. When the source does not have state prices for the electric power sector, then SEDS uses the state's electric utility sector coal prices or the Census division prices, as shown in Table TN2.10. See the "Alaska prices: all years" section below for how SEDS estimates Alaska prices.

For 2016 forward, the source does not have prices for New Jersey or New York. Instead of assigning the Middle Atlantic Division price, SEDS estimates New Jersey and New York prices using the annual growth rate of the Middle Atlantic Division price applied to the 2015 price.

Table TN2.10. Electric power sector price assignments, 2002 forward

State	Years	Prices assigned	State	Years	Prices assigned
AL	2002, 2005, 2008–2011	Electric utility	MI	2002, 2005–2022	Electric utility
AR	2010–2022	Electric utility	MN	2005, 2008, 2009	Electric utility
CA	2005–2010	Electric power sector, Pacific	MS	2002, 2005–2022	Electric utility
	2011	Electric power sector, Pacific Contiguous	MT	2002, 2005–2021	Electric utility
	2012–2014	Electric utility, Pacific Contiguous		2022	Electric power sector, Mountain
CO	2008, 2010	Electric utility	NC	2002, 2005, 2006, 2016,	Electric utility
CT	2002, 2005–2012, 2015	Electric power sector, New England		2019, 2021	
	2013, 2014, 2016–2020	Electric utility, New England	NV	2008–2022	Electric utility
DE	2002, 2005–2022	Electric power sector, South Atlantic	OH	2002, 2005, 2012–2015,	Electric utility
FL	2013–2017	Electric utility		2018, 2022	
HI	2002, 2005–2010	Electric power sector, Pacific	OK	2002, 2005–2018	Electric utility
	2011, 2015–2022	Electric utility, Pacific Noncontiguous	PA	2019, 2020, 2022	Electric power sector, Middle Atlantic
	2012–2014	Electric utility, Pacific		2021	Electric utility
IL	2016, 2017, 2019–2021	Electric utility	SC	2008–2012, 2019–2022	Electric utility
IN	2002, 2005–2007,	Electric utility	TX	2005–2009, 2019–2022	Electric utility
	2009–2022		UT	2005–2011	Electric utility
KY	2005–2008	Electric utility	VA	2011, 2012, 2016–2019	Electric utility
LA	2002, 2005–2022	Electric utility	WA	2002, 2005–2010	Electric power sector, Pacific
MA	2005, 2010–2012, 2015	Electric power sector, New England		2011	Electric power sector, Pacific Contiguous
	2013, 2014, 2016, 2017	Electric utility, New England		2012–2020	Electric utility, Pacific Contiguous
MD	2020–2022	Electric power sector, South Atlantic	WI	2005–2009	Electric utility
ME	2002, 2005–2012, 2015	Electric power sector, New England	WV	2007–2010	Electric utility
	2013, 2014, 2016–2020	Electric utility, New England	WY	2006–2022	Electric utility

For 2021 forward, the source does not have prices for Connecticut, Maine, New Hampshire, or the New England Division. Where necessary, SEDS estimates prices for these states using the annual growth rate of the United States price applied to the 2020 New England Division price. For 2021 forward, the source does not have a price for Washington or the Pacific Contiguous Division. SEDS estimates the Washington price using the annual growth rate of the United States price applied to the 2020 Pacific Contiguous Division price.

Btu prices: 1973 through 2001

State Btu prices, including insurance, freight, and taxes, are taken from the EIA *Cost and Quality of Fuels for Electric Utility Plants* for 1973 through 2001 and are converted from cents to dollars per million Btu. Where individual state prices are withheld or unavailable, quantity-weighted Census division prices are assigned as shown in Table TN2.11. Price estimates for Alaska are explained below.

Btu prices: 1970 through 1972

Btu prices for states are taken from the Edison Electric Institute's *Statistical Yearbook* and are converted from cents to dollars. Delaware, DC, and Maryland are each assigned the combined price for the three states. The steam coal electric utility sector Alaska price for 1971 is estimated as discussed below.

Alaska prices: all years

For 2008 through 2011 and for 2015 forward, the EIA-923 source has prices for Alaska, as published in Table 6 of EIA's *State Electricity Profiles*. For 2012 through 2014, SEDS applies the annual price growth rate provided by the state's only coal supplier (Usibelli Coal Mine) to the previous year price.

Before 2008, the sources do not have prices for Alaska. For 1994 through 2007, SEDS estimates the Alaska prices using an unpublished informal

Table TN2.11. Electric power sector price assignments, 1973 through 2001

State	Years	State/Census division prices assigned
CA	1989–2001	Pacific
CT	1975–1979, 2000, 2001	New England
DC	1976	MD, VA
HI	1990–2001	Pacific
MA	2001	New England
MD	2001	South Atlantic
ME	1990–2001	New England
OK	1973, 1974	West South Central
	1975	CO, KS, MO, NM, TX
OR	1983, 1989	Pacific
RI	1974	MA
VT	1980, 1983–1986	New England
WA	2001	Pacific

survey from Usibelli Coal Mine. For 1970 through 1993, SEDS estimates the Alaska Btu prices using data from the Edison Electric Institute’s *Statistical Yearbook*. For 1970, 1972, 1974, 1976, 1977, and 1979 through 1993, SEDS directly uses prices from the *Statistical Yearbook*. SEDS estimates the 1971, 1973, 1975, and 1978 prices using the average ratio of Alaska to U.S. prices applied to the *Statistical Yearbook* prices. SEDS uses the 1970 and 1972 average ratio to estimate the 1971 and 1973 prices; the 1974 and 1976 average ratio for the 1975 price; and the 1977 and 1979 average ratio for the 1978 price.

U.S. prices: all years

SEDS calculates the U.S. Btu prices as the consumption-weighted average of the state Btu prices, using SEDS consumption data.

Data sources

Prices

2002 forward: For all states except Alaska, unpublished data from EIA, Form EIA-923, “Power Plant Operations Report,” and predecessor forms.

2008 through 2011 and for 2015 forward: Alaska price data from EIA-923, *State Electricity Profiles*, Table 6.

1994 through 2007 and 2012 through 2014: Alaska price estimated from informal discussions with Usibelli Coal Mine Co., the only coal supplier in Alaska.

2001: FERC Form 423, “Monthly Report of Cost and Quality of Fuels for Electric Plants,” database, available via the EIA website at <http://www.eia.gov/electricity/data/eia423/>.

1973 through 2000: EIA, *Cost and Quality of Fuels for Electric Utility Plants*, <http://www.eia.gov/electricity/data/eia923/eia906u.html>, Table 3 (1973-1979), Table 51 (1980-1982), Table 50 (1983, 1984), Table 40 (1985-1989), Table 7 (1990, 1991), and Table 2 (1992 through 2000).

1970 through 1993: Edison Electric Institute, *Statistical Yearbook of the Electric Utility Industry*, table titled “Analysis of Fuel for Electric Generation: Total Electric Utility Industry” (1970-1988), Table 29 (1989-1993).

Consumption

1970 forward: EIA, State Energy Data System, electric power sector coal consumption.

Conversion factors: all years

SEDS directly uses Btu prices from the data sources; no explicit conversion factors are used.

Coal coke imports and exports

Imports and exports of coal coke are components of total U.S. energy consumption and are accounted for in the industrial sector. Prices and values of imports and exports are developed only for the United States; no attempt is made to estimate state-level prices or expenditures. The quantities of U.S. coal coke imports and exports are taken from SEDS.

Physical unit prices: all years

For 1980 forward, the EIA *Coke Plant Report*, the EIA *Quarterly Coal Report*, and the U.S. Census Bureau provide physical unit coal coke import and export prices in dollars per short ton. For 1970 through 1979, *Coke and Coal Chemicals*, *International Coal*, and the *Minerals Yearbook* provide coal coke import and export physical unit quantities and values in short tons and dollars, respectively. Values are equivalent to expenditures.

Btu prices: all years

For 1980 forward, Btu prices are computed by dividing the physical unit prices by the conversion factor to calculate prices in dollars per million Btu. For 1970 through 1979, physical unit prices are computed by dividing the import and export values by their respective quantities, and Btu prices are computed by dividing the physical unit prices by the conversion factor.

Data sources

Prices

2012 forward: EIA, Coal Data Browser, total world price for coke exports http://www.eia.gov/coal/data/browser/#/topic/42?agg=2,1,0&rank=ok&linechart=~COAL.EXPORT_PRICE.COK-TOT-TOT.A&columnchart=COAL.EXPORT_PRICE.TOT-TOT-TOT.A&map=COAL.EXPORT_QTY.TOT-TOT-TOT.A&freq=A&start=2000&end=2022&ctype=linechart<ype=pin&rtype=s&maptype=0&rse=0&pin= and imports http://www.eia.gov/coal/data/browser/#/topic/40?agg=2,1,0&rank=ok&linechart=~COAL.IMPORT_PRICE.COK-TOT-TOT.A&columnchart=COAL.IMPORT_PRICE.TOT-TOT-TOT.A&map=COAL.EXPORT_QTY.TOT-TOT-TOT.A&freq=A&start=2000&end=2022&ctype=linechart<ype=pin&rtype=s&pin=&rse=0&maptype=0. Calculated using data from the Census Bureau, U.S. Department of Commerce, “Monthly Report IM 145” and “Monthly Report EM 545.”

1989 through 2011: Calculated by EIA using data from the Census Bureau, U.S. Department of Commerce, “Monthly Report IM 145” and “Monthly Report EM 545.”

1981 through 1988: EIA, *Quarterly Coal Report*, October-December issues, Tables A11 and A13 (1981-1985) and Tables A10 and A12 (1986-1988).

1980: EIA, *Coke Plant Report*, Tables 7 and 8.

1978 through 1979: EIA, *Coke and Coal Chemicals 1979*, Tables 5 and 6.

1977: National Coal Association, *International Coal 1980*, tables titled “U.S. Imports of Solid Fuels and Customs Value” and “U.S. Exports of Coke and Value.”

1976: EIA, *Coke and Coal Chemicals*, Tables 19 and 20.

1970 through 1975: Bureau of Mines, U.S. Department of the Interior, *Minerals Yearbook*, “Coke and Coal Chemicals” chapter, Tables 19 and 20.

Consumption

1970 forward: EIA, State Energy Data System, U.S. imports and exports of coal coke.

Conversion factors: all years

24.8 million Btu per short ton.