State Energy Production Estimates

1960 through 2007

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Section 1. Introduction

The State energy production database provides annual time series of the production of energy sources by State, generally from 1960 forward. It is compiled by the Integrated Energy Statistics Division, Office of Energy Markets and End Use, Energy Information Administration (EIA), from data collected by EIA (and its predecessor agencies) from the energy industries. It is maintained as a part of the EIA State Energy Data System (SEDS), which provides comparable State data in time series of energy production, consumption, prices, and expenditures to Members of Congress, Federal and State agencies, and the general public.

Purpose

Energy production data in physical units are collected by various Offices in EIA that conduct energy surveys. They are published in various EIA reports and on the EIA website. They are, however, usually presented for the latest or recent time periods, and data for earlier years may not even be available electronically. Furthermore, it is not possible to compare across fuels that are reported in different units or to calculate total energy production within a State. The integrated State energy production database is developed to provide a standardized set of production data that allows comparisons over time, across fuels, and across States.

Coverage

The energy sources used to calculate total energy production in the State energy production database include:

- Coal
- Crude oil
- Natural gas, marketed production [1]
- Renewable energy and nuclear-generated electricity

Production data for coal, crude oil and natural gas are collected from EIA sources and earlier reports published by other agencies. They are converted from physical units (short tons, barrels, and cubic feet) to British thermal units (Btu) using estimated heat contents, so that different forms of energy can be compared.

Production of renewable energy is assumed to equal to consumption for all renewable energy sources except biofuels. Biofuels generally comprise fuel ethanol and biodiesel, but the latter is yet to be covered in SEDS. In the 2007 data cycle, State-level production of fuel ethanol in

[1] The State energy production database uses the concept of marketed production for natural gas, in contrast to EIA's *Annual Energy Review*, which presents production data on dry natural gas and natural gas plant liquids separately. Marketed production is the volume that goes into the natural gas processing plant. In the process, natural gas liquid constituents such as ethane, propane, and butane are removed from the natural gas stream. Since State-level data for these natural gas plant liquids are not available, marketed production is estimated instead of the two downstream products.

thousand barrels is estimated for the first time using data provided by some States and ethanol plant capacity data. Biofuel production in Btu is defined as the total heat content of biomass inputs (or feedstock) used in the production of fuel ethanol. That is, it includes the losses and co-products from the production of fuel ethanol. Section 5 discusses the new concepts and the estimate procedure.

Similarly, electricity generated from nuclear power in Btu is taken from the SEDS consumption database and input into the production database.

Sections 2 to 5 of this documentation describe in detail the data sources and the estimation methodologies used to derive the production series for each energy source.

Comparability

To maintain internal consistency, U.S. estimates are computed by summing the estimates for all States, including the District of Columbia. U.S. totals may not exactly equal the national data published in other EIA publications because of rounding differences or differences in estimation methodology. In particular, the differences between the U.S. production estimates in SEDS and the national data published in the *Annual Energy Review* (AER) are summarized in the box below.

Differences between Production Estimates in SEDS and AER

Annual time series of production data at the national level are published in the *Annual Energy Review* (AER) in both physical unit and Btu. The differences between the physical unit production data in SEDS and AER are very minor and are mostly because of rounding. Since SEDS computes the Btu production of coal and natural gas using State conversion factors, and uses the State consumption estimates for renewable and nuclear energy, the differences are more noticeable.

Coal
Using the State conversion factors from EIA Office of Coal, Nuclear, Electric and Alternate Fuels, SEDS coal production in Btu terms is 0 to 1.2 percent lower than the AER numbers in the past 30 years. Differences in the earlier period are slightly larger, with a maximum of 2.5 percent in 1971. The conversion factors for the national data and those for the States were compiled at different times based on the knowledge of the types and quality of coal produced. No attempt has been made to reconcile the two sets of estimates.

Beginning in 1989, AER's coal production in Btu also includes waste coal supplied, which is not included in the SEDS estimates.

Crude Oil
There is no noticeable difference in crude oil production data presented in SEDS and AER. A constant conversion factor of 5.8 million Btu per barrel is used to compile the heat content of crude oil.

Differences between Production Estimates in SEDS and AER (continued)

Natural Gas
The computation of average State conversion factors for marketed natural gas production is explained in Section 4. The conversion factors used in AER are computed at the national level (see Thermal Conversion Factor Source Documentation in AER). The differences between the SEDS and AER series are less than 1 percent in most years. The maximum difference is 2.5 percent in 2002. No attempt has been made to reconcile the two sets of estimates.

Renewable and Nuclear Energy
The SEDS and AER production estimates are the same for most renewable energy sources and nuclear-generated electricity. The only exception is the production of biofuels. AER covers both fuel ethanol and biodiesel in biofuels, whereas SEDS only covers fuel ethanol. Similarly, the heat content of biofuels production in AER covers biomass inputs to the production of fuel ethanol and biodiesel, and SEDS only covers biomass inputs to the production of fuel ethanol.

Section 2. Coal

Annual coal production in short tons is collected from coal producers on Form EIA-7A and its predecessor forms. State production data are available in the *Annual Coal Report* and its predecessor publications as described under Sources below. The State data for 1960 forward used in SEDS are provided by EIA's Office of Coal, Nuclear, Electric and Alternate Fuels (CNEAF). Beginning in 2001, coal production includes a small amount of refuse recovery, which is allocated to the States by CNEAF.

The State-level conversion factors in Btu per pound are also developed by CNEAF. They are based on the heat contents of coal delivered to electric power plants collected on Form EIA-423, beginning in 1972. For States that have a significant amount of their coal consumed in coke plants or other manufacturing industries or exported, their conversion factors are adjusted upward to reflect a higher Btu content of coal produced for such uses. Factors for 1960-1971 are derived from the 1972 data. Consequently, the resultant Btu production estimates for the earlier years deviate more from the national Btu estimates, which are based on average conversion factors computed at the national level.

The conversion factors are converted from Btu per pound to million Btu per thousand short ton before they are imported into the database.

Variable Names and Definitions

The independent data series identifying codes for coal data are as follows (the two-letter State code is represented by "ZZ" in the variable names):

CLPRPZZ = Coal production, thousand short tons, by State
CLPRKZZ = Factor for converting coal production from thousand short tons to billion Btu, by State

Coal production in billion Btu is calculated by the following formula:

CLPRBZZ = CLPRPZZ x CLPRKZZ

The U.S. total production, CLPRPUS and CLPRBUS, are calculated as the sum of the States' values. And the average conversion factor for the U.S. total is derived:

CLPRKUS = CLPRBUS / CLPRPUS

Sources

CLPRPZZ — Coal production in short tons by State

- 1960-1975: Bureau of Mines, *Minerals Yearbook,* "Coal—Bituminous and Lignite" and "Coal—Pennsylvania Anthracite" chapters.
- 1976: Energy Information Administration (EIA), *Energy Data Reports*, "Coal—Bituminous and Lignite in 1976" and "Coal—Pennsylvania Anthracite 1976."
- 1977 and 1978: EIA, *Energy Data Reports*, "Bituminous Coal and Lignite Production and Mine Operations," "Coal—Pennsylvania Anthracite" and "Coal Production," annual reports.
- 1979 and 1980: EIA, *Energy Data Reports*, "Weekly Coal Report and Coal Production," annual reports.
- 1981-1988: EIA, *Weekly Coal Production* and *Coal Production,* annual reports.
- 1989-2000: EIA, *Coal Industry Annual*, annual reports, Table 1.
- 2001 forward: EIA, *Annual Coal Report*, annual reports, Table 1.

CLPRKZZ — Factor for converting coal production from thousand short tons to billion Btu, by State

- 1960-1971: No data available. Used 1972 factors.
- 1972-1988: Based on Federal Energy Regulatory Commission, Form FERC-423.
- 1989 forward: Based on Forms FERC-423 (1989-2001) and EIA-423 (2002 forward) (http://www.eia.doe.gov/cneaf/electricity/page/eia423.html) and Platts COALdat database.

Section 3. Crude Oil

Production of crude oil (including lease condensate) in thousand barrels is compiled by EIA's Office of Oil and Gas. Before 1976, it was compiled by the U.S. Department of the Interior, Bureau of Mines. Annual data at the State level from 1981 forward are extracted from EIA, Petroleum Navigator, http://tonto.eia.doe.gov/dnav/pet/pet_crd_crpdn_adc_mbbl_a.htm. Data before 1981 are extracted from the publications described in Sources below.

Data in thousand barrels are converted into billion Btu using a fixed conversion factor of 5.8 million Btu per barrel.

Federal Offshore Production

Federal offshore crude oil production in Petroleum Administration for Defense (PAD) Districts 3 and 5 are reported separately in the Petroleum Navigator. For the purpose of computing State production estimates in SEDS, Federal offshore production is allocated to the appropriate States in the area.

For 1981 through 1986, the *Petroleum Supply Annual* reports have allocated the Federal offshore production in PAD District 3 to Louisiana and Texas, and that of PAD District 5 to California. These data are used in place of the Navigator data.

Beginning in 1987, Federal offshore production in PAD District 3 is assigned to Alabama, Louisiana, and Texas using offshore oil production information published by the U.S. Minerals Management Service. Monthly data for the Eastern, Central, and Western planning areas of the Gulf of Mexico (GOM) are processed. The annual share of the Eastern GOM is used to calculate Alabama's share of the PAD District 3 production; the Central GOM share is assigned to Louisiana; and the Western GOM share to Texas. Federal offshore production in PAD District 5 is assigned to California.

Variable Names and Definitions

The independent data series identifying codes for crude oil data are as follows (the two-letter State code is represented by "ZZ" in the variable names):

PAPRPZZ	=	Crude oil production (including lease condensate), thousand barrels, by State
COPRKZZ	=	Factor for converting crude oil production from thousand barrels to billion Btu, by State

Crude oil production in billion Btu is calculated by the following formula:

PAPRBZZ = PAPRPZZ x COPRKZZ

The U.S. total production, PAPRPUS and PAPRBUS, are calculated as the sum of the States' values.

Sources

PAPRPZZ – Crude oil production (including lease condensate), thousand barrels, by State

- 1960-1965: U.S. Department of the Interior, Bureau of Mines, *Crude Petroleum and Petroleum Products*, Table 5, "Production of Crude Petroleum in the United States."
- 1966: U.S. Department of the Interior, Bureau of Mines, *Crude Petroleum, Petroleum Products and Natural Gas Liquids,* Table 5, "Production of Crude Petroleum in the United States."
- 1967-1980: EIA, Energy Data Reports, *Crude Petroleum, Petroleum Products and Natural Gas Liquids,* Table 5, "Production of Crude Petroleum (including Lease Condensate) by PAD District and State."
- 1981 forward: EIA, *Petroleum Supply Annual*, table on "Production of Crude Oil by PAD District and State," also available in the Petroleum Navigator, http://tonto.eia.doe.gov/dnav/pet/pet_crd_crpdn_adc_mbbl_a.htm.

COPRKZZ – Factor for converting crude oil production from thousand barrels to billion Btu, by State

- EIA adopted the thermal conversion factor of 5.8 million Btu per barrel as reported in a Bureau of Mines internal memorandum, "Bureau of Mines Standard Average Heating Values of Various Fuels, Adopted January 3, 1950."

Section 4. Natural Gas (Marketed Production)

Natural gas production data in cubic feet are collected and compiled by EIA's Office of Oil and Gas (OOG).

There are several concepts that can be used to measure natural gas production. *Gross withdrawals* cover full well-stream volume extracted from oil and gas wells, including all natural gas plant liquids (NGPL) and all nonhydrocarbon gases. *Marketed production* is defined as gross withdrawals less repressuring, quantities vented and flared, and with nonhydrocarbon gases removed. The gas is then processed in natural gas processing plants that remove natural gas liquid constituents such as ethane, propane and butane (natural gas plant liquids) from the gas stream. *Dry natural gas* is the resultant product that is ready for transmission and distribution. Extraction loss is the reduction in volume of natural gas due to the removal of the liquid constituents. Information on terms and definitions, sources, and explanatory notes can be found at http://tonto.eia.doe.gov/dnav/ng/TblDefs/ng_prod_sum_tbldef2.asp.

The State energy production database in SEDS uses the concept of marketed production (see footnote 1 on page 1). Average heat content factors for marketed production at the State level are not available. By definition, however, marketed production is the sum of dry natural gas production and extraction loss. Therefore, data for dry production and extraction loss in cubic feet are converted to Btu using separate heat content factors for dry natural gas extraction loss. They are then combined to form marketed production at the State-level.

Dry Production

Annual dry natural gas production data at the State level from 1982 forward are extracted from EIA, Natural Gas Navigator, http://tonto.eia.doe.gov/dnav/ng/xls/ng_prod_sum_a_EPG0_FPD_mmcf_a.xls. Data for 1967 through 1981 are extracted from EIA, *Historical Natural Gas Annual 1930 Through 2000*. Data before 1967 are not available.

Federal Offshore Production

Beginning in 2001, Federal offshore production in the Gulf of Mexico (GOM) is reported separately in the Natural Gas Navigator. For the purpose of computing State production estimates in SEDS, Federal offshore production is allocated to Alabama, Louisiana, and Texas using offshore natural gas production information published by the U.S. Minerals Management Service. Monthly data for the Eastern, Central, and Western planning areas of the GOM are used to derive annual values. The annual share of the Eastern GOM to total GOM is used to calculate Alabama's share of the Federal Offshore dry production; the Central GOM share is assigned to Louisiana; and the Western GOM share to Texas.

Conversion Factors

State-level heat content factors for natural gas delivered to consumers are compiled by OOG. They are used to convert dry production of natural gas from million cubic feet to billion Btu.

They are available in SEDS at
http://www.eia.doe.gov/emeu/states/sep_use/total/csv/use_convfac.csv.

Extraction Loss

Annual extraction loss data at the State level from 1970 forward are extracted from EIA, Natural Gas Navigator, http://tonto.eia.doe.gov/dnav/ng/xls/ng_prod_sum_a_EPG0_VG9_mmcf_a.xls.

Conversion Factors

A series of weighted average conversion factors for the five major products that comprise NGPL is calculated for each State to convert extraction loss into Btu terms.

The five major NGPL and their heat content factors used to calculate the extraction loss weighted average conversion factor in million Btu per barrel are as follows:

Ethane	3.082
Propane	3.836
Butane	4.326
Isobutane	3.974
Pentanes Plus	4.620

OOG publishes production data for each NGPL product only by Petroleum Administration for Defense (PAD) Districts and Refining Districts[2]. These data are used to compute a weighted average NGPL conversion factor for each District.

Since extraction loss is reported in cubic feet, it is necessary to convert the District conversion factors from million Btu per barrel to thousand Btu per cubic foot. To do this, an annual ratio of U.S. total NGPL production in barrels and U.S. total extraction loss in thousand cubic feet is applied to the weighted District conversion factors. The resultant conversion factors in thousand Btu per cubic foot are then used to estimate the heat content of the extraction loss for each State within the District.

Variable Names and Definitions

The independent data series identifying codes for natural gas data are as follows (the two-letter State code is represented by "ZZ" in the variable names):

NGPRPZZ	=	Dry natural gas production, million cubic feet, by State
NGTCKZZ	=	Factor for converting dry natural gas production from million cubic feet to billion Btu, by State
NGELPZZ	=	Natural gas extraction loss, million cubic feet, by State
NGELKZZ	=	Factor for converting extraction loss from million cubic feet to billion Btu, by State

Dry production and extraction loss in Btu are calculated:

[2] For description and maps of PAD Districts and Refining Districts, see *Petroleum Supply Monthly*, Appendix A.

NGPRBZZ = NGPRPZZ x NGTCKZZ
NGELBZZ = NGELPZZ x NGELKZZ

Marketed production is the sum of dry production and extraction loss:

NGMPPZZ = Marketed natural gas production, million cubic feet, by State
= NGPRPZZ + NGELPZZ

NGMPBZZ = Marketed natural gas production, billion Btu, by State
= NGPRBZZ + NGELBZZ

NGMPKZZ = Derived conversion factor for marketed production
= NGMPBZZ / NGMPPZZ

The U.S. marketed production, NGMPPUS and NGMPBUS, are calculated as the sum of the States' values, and the U.S. conversion factor, NGMPKUS, is derived using the same formula for the States.

Additional Notes

Because of the complexity in accounting for interstate flow of "raw" natural gas, there are a few cases in which extraction loss is greater than marketed production at the State-level. Most of the cases are in Illinois and Nevada in the early years. For these cases, a simple average of the conversion factors for dry production and extraction loss for the specific State and year is used to convert the marketed production from cubic feet to Btu.

Sources

NGPRPZZ – Dry natural gas production, million cubic feet, by State
NGELPZZ – Natural gas extraction loss, million cubic feet, by State

- 1967-2000: EIA, *Historical Natural Gas Annual 1930 Through 2000*. Sources for the data are:
  - 1967-1975: Data are based on reports received from State agencies' responses to informal data requests and the United States Geological Survey (USGS).
  - 1980-1981: EIA, Form EIA-627, "Annual Quantity and Value of Natural Gas Report," and the USGS.
  - 1982-1995: EIA, Form EIA-627, and the United States Minerals Management Service; West Virginia.
  - 1995: EIA, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 1996 Annual Report*, DOE/EIA-0216(96); and EIA computations.
  - 1996-2000: Form EIA-895, "Monthly Quantity and Value of Natural Gas Report;" and the U.S. Minerals Management Service; West Virginia, 2000: EIA, *U.S. Crude Oil, Natural Gas and Natural Gas Liquids Reserves, Annual Reports*, DOE/EIA-0216.
- 2001 forward: EIA, *Natural Gas Annual*, State summaries. Also available from the Natural Gas Navigator (including revised data for earlier years.) Sources for the *NGA* data are:

- Form EIA-895, "Monthly Quantity and Value of Natural Gas Report;" and the U.S. Minerals Management Service; West Virginia, 2000: EIA, *U.S. Crude Oil, Natural Gas and Natural Gas Liquids Reserves, Annual Reports*, DOE/EIA-0216.

NGTCKZZ – Factor for converting natural gas production from million cubic feet to billion Btu, by State

- 1960 through 1962: EIA adopted the thermal conversion factor of 1.035 Btu per cubic foot as estimated by the Bureau of Mines and first published in the *Petroleum Statement, Annual, 1956*.
- 1963 through 1979: EIA adopted the thermal conversion factors calculated annually by the American Gas Association and published in *Gas Facts*.
- 1980 through 1996: EIA, *Historical Natural Gas Annual 1930 Through 2000*, Table 16.
- 1997 forward: EIA, *Natural Gas Annual*, Table 16, and unpublished revisions.

Section 5. Renewable Energy and Nuclear Energy

For the purpose of estimating total energy production by State, energy produced by non-fossil sources – renewable energy and nuclear energy – are included in the database. Since most of the renewable energy sources and nuclear energy are used for generating electric power, production is assumed to equal consumption of those resources in power generation. With the exception of biofuels, renewable energy sources not used for power generation (such as wood used in wood stove) are also assumed to be produced when they are consumed. Consumption of biofuels, however, is not a good approximation for production.

Biofuels

Biofuels generally comprise fuel ethanol and biodiesel, but only fuel ethanol is covered in SEDS. In the 2007 data cycle, State-level production of fuel ethanol in thousand barrels is estimated and presented separately.

Fuel Ethanol Production in Physical Unit

National fuel ethanol production data from 1981 forward are published in EIA *Annual Energy Review* and on the EIA petroleum data website. But State-level data are scarce. Time-series data for fuel ethanol production are collected for Iowa, Minnesota, Nebraska, South Dakota, and Wisconsin.[3] These five States account for about two-third of total U.S. production.

The remaining portion of the fuel ethanol production is allocated to all other States using State-level production capacity estimates. Production capacity data are not available for all years. The Renewable Fuels Association compiles online capacity data by plant from 2005 forward[4]. SEDS uses the version edited by the Nebraska Energy Office, which allocates multi-state production capacity reported by companies into the individual States. December capacity data are used to represent capacity for the year. Capacity data for January 2005 are used for 2004.

Operating capacity data for January 1, 1993 through 1995 are published in *Petroleum Supply Annual*, 1992 through 1994. They are used to represent production capacity for 1992 through 1994. For the remaining years, data on individual plants are collected from various sources. When no information is available for a State, capacity data for 1995 through 2003 are estimated using straight-line interpolation, and capacity data before 1992 are assumed to be the same as 1992.

With a complete set of production capacity estimates for all the States with no production data, a set of annual State shares are calculated and applied onto the residual (national less the five States) production data to produce production estimates for those States.

[3] Some data in the earlier years for four States are not available and are estimated using plant capacity information or by assumption.

[4] Capacity data for 2002-2004 are also available but they cannot be used since they include capacity under construction.

Heat Content of Biomass used in Fuel Ethanol Production

EIA adopts the thermal conversion factor of 3.539 million Btu per barrel for fuel ethanol. However, since fuel ethanol is produced from corn and other biomass inputs, EIA defines the heat content of the biofuel to be the total biomass inputs (feedstock) used to produce fuel ethanol. At the national level, EIA uses corn input to the production of fuel ethanol (million Btu corn per barrel denatured ethanol) as the factor to estimate total biomass inputs. The difference between total biomass inputs and fuel ethanol produced is the losses and co-products from fuel ethanol production.[5]

Fuel ethanol production in physical unit is converted to Btu using the fixed conversion factor of 3.539. Estimates for losses and co-products at the State level are calculated by applying the State fuel ethanol production shares to the national losses and co-products. The sum of the Btu values of fuel ethanol production and losses and co-products gives the heat content of the biomass inputs to the production of fuel ethanol.

Variable Names and Definitions

The independent data series identifying codes for fuel ethanol data are as follows (the two-letter State code is represented by "ZZ" in the variable names):

ENPRPUS	=	Fuel ethanol production, thousand barrels, United States
ENPRPZZ	=	Fuel ethanol production, thousand barrels, by State
ENPRKZZ	=	Factor for converting fuel ethanol from thousand barrels to billion Btu, by State
ENLCBUS	=	Losses and co-products from the production of fuel ethanol, billion Btu, United States

The heat content data series in billion Btu are defined as follows:

ENPRBZZ	=	Fuel ethanol production, billion Btu, by State
	=	ENPRPZZ x ENPRKZZ
ENLCBZZ	=	Losses and co-products from fuel ethanol production, billion Btu, by State
	=	ENLCBUS x (ENPRPZZ / ENPRPUS)
ENFDBZZ	=	Biomass inputs to the production of fuel ethanol
	=	ENPRBZZ + ENLCBZZ

The U.S. totals are calculated as the sum of the States' values.

Sources

ENPRPUS – Fuel ethanol production, thousand barrels, United States
ENLCBUS – Losses and co-products from the production of fuel ethanol, billion Btu, United States

- 1981 forward: EIA, *Annual Energy Review*, Table 10.3.

[5] See footnotes in Table 10.3 of *Annual Energy Review*.

ENPRPZZ – Fuel ethanol production, thousand barrels, by State

- 1981 forward: Based on production data supplied by Iowa, Minnesota, Nebraska, South Dakota, and Wisconsin, and production capacity data from Nebraska Energy Office (http://www.neo.ne.gov/statshtml/122.htm), *Petroleum Supply Annual*, 1992, 1993, and 1994, and other sources.

ENPRKZZ – Factor for converting fuel ethanol production from thousand barrels to billion Btu, by State

- EIA adopted the thermal conversion factor of 3.539 million Btu per barrel.

Other Renewable Energy

Other renewable energy sources covered in SEDS include:

- Geothermal energy
- Conventional hydroelectric power
- Solar thermal and photovoltaic energy
- Wind
- Wood and biomass waste

The definition, data sources, and estimation methodologies for each of these energy sources are described in Section 5: Renewable Energy, SEDS Consumption Technical Notes,

Variable Names and Definitions

The independent data series identifying codes for renewable energy data are as follows (the two-letter State code is represented by "ZZ" in the variable names):

GETCBZZ	=	Geothermal energy total consumption, billion Btu
HYTCBZZ	=	Electricity produced from conventional hydroelectric power, billion Btu
SOTCBZZ	=	Solar thermal and photovoltaic energy total consumption, billion Btu
WYTCBZZ	=	Electricity produced from wind energy, billion Btu
WWTCBZZ	=	Wood and biomass waste energy total consumption, billion Btu

Renewable energy production series in billion Btu are defined as follows:

RORPBZZ	=	Renewable energy production, other than fuel ethanol, billion Btu
	=	GETCBZZ + HYTCBZZ + SOTCBZZ + WYTCBZZ + WWTCBZZ
REPRBZZ	=	Renewable energy production, billion Btu
	=	ENPRBZZ + ROPRBZZ

The U.S. totals are calculated as the sum of the States' values.

Sources

Btu consumption estimates from SEDS are available in comma-separated value (CSV) format: http://www.eia.doe.gov/emeu/states/sep_use/total/csv/use_all_btu.csv.

Nuclear Energy

State-level electricity generation from nuclear energy sources are used to represent nuclear energy production. The definition, data sources, and estimation methodology are described in Section 6: Electricity, SEDS Consumption Technical Notes.

Consumption estimates in billion Btu are extracted from the SEDS consumption database for incorporation into the production database.

Variable Names and Definitions

The independent data series identifying codes for renewable energy data are as follows (the two-letter State code is represented by "ZZ" in the variable names):

NUETBZZ = Electricity total produced from nuclear power, billion Btu, by State

Sources

Btu consumption estimates from SEDS are available in comma-separated value (CSV) format: http://www.eia.doe.gov/emeu/states/sep_use/total/csv/use_all_btu.csv.

Additional Notes

1. Data for electric power generation are net generation data. Negative generation denotes that electric power consumed for plant use exceeds gross generation. A few such cases can be found in electric power generated by nuclear and hydroelectric power.

2. Estimates for renewable energy production are revised from 1981 forward because of the introduction of the new fuel ethanol production estimates and the inclusion of losses and co-products from the production of fuel ethanol.