

Summary of Changes Reflected in These State Energy Data System Price and Expenditure Data

Revisions to prices and expenditures contained in the State Energy Data System (SEDS) and incorporated in this 2005 data edition of the State Energy Data are summarized in this appendix. The portable document file (PDF) tables and hypertext markup language (HTML) tables contain rounded data for the most recent year. The comma-separated-value (CSV) files provide the data for all years in the full precision contained in the SEDS database. The information in this appendix covers revisions to all data, full precision and rounded, for all years 1970 through 2004.

Price revisions occur for several reasons: new price series are added; data sources for prices change; price estimation methodologies are revised or price assignment and estimation procedures are updated; data entries are corrected; or consumption estimates are revised. The first four kinds of changes affect State-level and U.S. prices directly. The fifth, a revised consumption value, affects the State prices that are estimated as consumption-weighted averages of other States' data and, similarly, affects all the consumption-weighted U.S. average prices.

Consumption estimates used to calculate expenditures in the price and expenditure tables are developed from the SEDS consumption data. Full documentation of the consumption estimation procedures can be found in the Consumption Technical Notes at http://www.eia.doe.gov/emeu/states/seds_tech_notes.html. Since energy expenditure estimates depend on both the price and consumption estimates (including the consumption adjustments for process fuel and intermediate products), revision of either or both may cause revisions to the expenditures series.

Coal

Electric Power Sector, 2002. A change in the methodology for estimating electric power prices described in the coal section of the SEDS Price and Expenditure Technical Notes (http://www.eia.doe.gov/emeu/states/sep_prices/notes/pr_coal.pdf) causes revisions to the estimates for 2002. Prices for 12 States are revised, ranging from a 1-percent decrease for Michigan to a 47-percent decrease for Hawaii. Proportional revisions occur in expenditure estimates for the 12 States for which prices are revised. These changes also cause small decreases in the U.S. total electric power sector price and expenditure estimates. All changes can be seen in the PDF and HTML tables and can be found in the greater-precision CSV data files.

Residential, Commercial, Industrial and Electric Power Sectors, 2004. Prices of coal delivered to the residential, commercial, industrial and electric power sectors in Alaska in 2004 were revised by the data source, an informal survey of the single coal supplier in the State. The revisions cause a 2-percent increase in the commercial and industrial sectors and a 3-percent increase in the residential and electric power sectors. Expenditure estimates for Alaska in these sectors increased proportionately. Changes to Alaska's price estimates cause U.S. average coal price estimates for the residential and commercial sectors to increase by 1 cent, while revisions in U.S. prices in the industrial and electric power sectors are not noticeable in the rounded data in the PDF and HTML tables. All changes, including the U.S. price and expenditure estimates, can be seen in the greater-precision CSV data files.

In addition, revisions to conversion factors for coal consumed by coke plants as described in the SEDS Consumption Technical Notes (http://www.eia.doe.gov/emeu/states/sep_use/notes/use_coal.pdf)

cause revisions to prices in the industrial sector for 2004 for the 10 States in which coal is consumed by coke plants (Alabama, Illinois, Indiana, Kentucky, Michigan, New York, Ohio, Pennsylvania, Virginia, and West Virginia). All revisions are by 0.01 percent or less and cannot be seen in the PDF and HTML tables.

Electricity Imports and Exports

Electricity Imports and Exports, 1970 forward. The implementation of a new data source for prices of electricity imports and exports, described in the electricity section of the SEDS Price and Expenditure Technical Notes (http://www.eia.doe.gov/emeu/states/sep_prices/notes/pr_elec.pdf), causes revisions to the electricity imports price estimates for 1970 forward. The new electricity imports prices cause increases ranging from \$0.61 per million Btu in 1970 to \$17.22 per million Btu in 2001. Proportional revisions occur in the expenditure estimates for electricity trade although for States with very small quantities of electricity imports the revisions are too small to be seen in the PDF and HTML tables and can only be seen in the greater-precision CSV data files.

Electricity Retail Sales

Residential, Commercial, Industrial, and Transportation Sectors, 2001 through 2004. Prices for electricity in the residential, commercial, industrial, and transportation sectors of California in 2001 through 2004 are revised in the data source, EIA, Form EIA-861 "Annual Electric Power Industry Report." The California price revisions range from an 11-percent increase in the transportation sector in 2004 to a 6-percent decrease in the industrial sector in 2002. While incorporating the revised data for California, data for other States were also revised by small amounts due to rounding to a different level of precision. The revisions to other States prices are too small to be seen in the PDF and HTML tables but could be noticed in the greater precision CSV data files. The resulting revisions to the U.S. average prices are large enough to be seen in both the tables and the data files. Expenditures for electricity calculated with these revised prices and with the revised electricity sales quantities documented in the SEDS Consumption Technical Notes at

http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf), show proportional revisions.

Natural Gas

Residential, Commercial, Industrial, and Transportation Sectors, Louisiana, 2002. Natural gas prices in the residential, commercial, industrial, and transportation sectors of Louisiana in 2002 are corrected to reflect revisions in the factor used to convert prices from dollars per cubic foot to dollars per British thermal units that were made in the last SEDS data cycle. These revisions cause expenditures in the residential, commercial, and industrial sectors to increase slightly (consumption in the transportation sector is so small that expenditures were unchanged at the level of rounding in SEDS). The increase in industrial expenditures is the only revision large enough to be seen in the rounded data in the PDF and HTML tables (all of the revisions can be seen in the higher-precision CSV files). This change also contributes to the revisions to the U.S. total expenditures for the affected sectors for 2002.

Residential, Commercial, and Industrial Sectors, 2001, 2003, and 2004. Revisions to the factor used to convert prices from dollars per cubic foot to dollars per British thermal units (Btu) in 2001, 2003, and 2004, described in the SEDS Consumption Technical Notes (http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf), cause revisions to natural gas prices in all sectors other than the electric power sector. In the cases where the conversion factor is revised downward, the consumption estimate in Btu decreases by the same proportion that the price in dollars per million Btu increases causing the resulting expenditure to remain virtually unchanged. The same compensating revisions occur when the conversion factor increases, the price decreases, and expenditure remains changed only by rounding differences caused by the recalculation. In 2001, the factors are revised for 32 States, causing small price increases, the largest being an increase of \$0.12 per million Btu (1 percent) in the residential natural gas price in Kansas. In 2003 the factors are revised for three States, New Mexico, New York, and Texas, causing price decreases by \$0.01 per million Btu or less. In 2004, the conversion factors are revised for 21 States contributing to price revisions as large as the decrease by \$0.64 per million Btu (4 percent) in the residential natural gas price in Florida. The residential natural gas expenditure estimate for Florida in 2004 remains unchanged (except for rounding differences that occur in the

recalculation) because the revised conversion factor causes the consumption estimate, expressed in Btu, to increase proportionally.

In addition, the prices for natural gas delivered to residential, commercial, and industrial sectors in 2004 were revised by the data source, the EIA Natural Gas Navigator. The impact of the revised conversion factors, described above, and the revised prices causes almost all residential, commercial, and industrial natural gas prices for all States to be revised for 2004. Expenditures for natural gas are affected by all these price revisions and revisions to the cubic feet of consumption of natural gas described in the SEDS Consumption Technical Notes (http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf). More than half of the revisions can be seen in the PDF and HTML tables and all can be seen in the greater-precision CSV data files. These revisions to State prices and consumption estimates in 2004 cause U.S. average prices and total expenditures for natural gas in the residential, commercial, and industrial sectors to be revised by less than one-half of a percent and most of these changes cannot be seen in the PDF and HTML tables.

Transportation Sector, 2000 through 2004. The prices for natural gas consumed by the transportation sector are revised for 2000 through 2004 by the data source, the EIA Natural Gas Navigator. Prices previously available for Alabama (2000 and 2001), Georgia (2000 through 2002), Michigan (2000 and 2001), West Virginia (2000 and 2001), and Iowa (2004) are no longer available in the Natural Gas Navigator. Therefore, these States are assigned estimated prices calculated as the averages of the prices of surrounding States. This causes large increases in the estimated prices for Georgia, Michigan, and West Virginia and decreases in the estimated prices for Alabama and Iowa. There is a change in which neighboring States' prices are used to calculate average prices that are assigned to Iowa in 2001 through 2003 and to Nebraska in 2002 and 2004. This change causes Iowa and Nebraska transportation natural gas prices to be revised by less than 10 percent. In addition, the price of natural gas used for transportation in Oregon for 2004 was revised in the data source, a decrease of 38 percent. This causes the Idaho price for 2004, which is estimated using Oregon price, to be decreased by 7 percent. The price of transportation natural gas for Maine was corrected to be zero for 2003 and 2004, since no consumption is reported for these years. Most of these revisions are large enough to be seen in the PDF and HTML tables and proportional revisions occur in the associated expenditure estimates. The State-level revisions cause a 2-percent increase

in the U.S. average price and total expenditures for natural gas used in the transportation sector for 2000 and 2001 and smaller decreases in the U.S. values for 2002 through 2004.

In addition to the price and resulting expenditure revisions described in the previous paragraph, revisions to the factors used for converting prices from dollars per cubic foot to dollars per British thermal units, cause small revisions to prices in the transportation sector of 31 States in 2001, 3 States in 2003, and 21 States in 2004. These revisions to natural gas prices in the transportation sector are by 1 percent or less with the exception of the 4-percent increase for Florida in 2004. Although prices are revised, estimated expenditures remain virtually unchanged because the same revised factors were used to convert consumption from cubic feet to Btu and the revisions to consumption offset the price revisions when calculating expenditures.

Electric Power Sector, 2001. Revisions to natural gas consumption estimates for the electric power sector in 2001 described in the SEDS Consumption Technical Notes (http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf) cause expenditure estimates to be revised as well. Most of the expenditure revisions were small increases and most can be seen in the PDF and HTML tables. The largest increase in electric power sector expenditures for natural gas was in California, an increase of \$18 million representing less than one-half a percent change. The \$12-million increase in Kansas and the \$10-million in Utah (both representing 16-percent increases in expenditures) were the only other revisions over \$10 million. The sum of State-level revisions caused the U.S. total expenditures for natural gas in the electric power sector to increase by \$89 million, a change of less than 1 percent. The U.S. average price is revised slightly by the recalculation, a change that can only be seen in the greater precision of the CSV data files.

Electric Power Sector, 2002 and 2003. Prices for natural gas delivered to the electric power sector in 2002 and 2003 are revised by the data source, the EIA Natural Gas Navigator. These revisions also affect the prices of some States for which there are no prices in the source because those States are assigned prices calculated as the average of surrounding States' prices. Prices are revised for 10 States in 2002 and 36 States in 2003. The largest revisions are the \$1.05-per-million-Btu decrease in South Carolina in 2002 and in Maryland in 2003, representing a 30-percent decrease and a 16-percent decrease, respectively. Most of the revisions are decreases in 2002 and increases in 2003 resulting a

decrease in the average U.S. price for natural gas consumed in the electric power sector of less than one-quarter of a percent in 2002 and an even smaller increase in 2003. Electric power sector expenditures for natural gas in 2002 and 2003, calculated with these revised prices, change in proportion to the price revisions.

Electric Power Sector, 2004. Although there are no revisions to prices for natural gas purchased by the electric power sector in 2004 in data the source, revisions to the factor used for converting prices from dollars per cubic foot to dollars per British thermal units, described in the SEDS Consumption Technical Notes (http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf), cause revisions to the prices expressed in dollars per Btu for 17 States in 2004. All of the revisions are increases, and all except 3 are large enough to be seen in the PDF and HTML files. Because the same revised conversion factors are used to convert consumption from cubic feet to Btu and prices from dollars per cubic feet to dollars per million Btu, the conversions compensate for each other and the resulting calculated expenditures remain unchanged except for small rounding differences. Of the 9 States with revisions to the physical quantities of electric power natural gas consumption, described in the Consumption Technical Notes, only Texas and Arizona have small expenditure increases that are visible in the PDF and HTML tables. The State-level revisions cause the U.S. average price and U.S. total expenditures for natural gas consumed in the electric power sector to increase slightly in 2004.

Petroleum

Asphalt and Road Oil

Industrial Sector, 1999 through 2004. The SEDS asphalt consumption data source, the Asphalt Institute, *Asphalt Usage Survey for the United States and Canada*, which is used to calculate consumption-weighted average State prices, began publishing data on modified asphalt cement from 1999 forward. In this edition of SEDS, that additional data series has been incorporated into the calculations of average prices of asphalt by State for 1999 forward. This causes the prices for most States to be reduced slightly. In addition, the consumption values published for Delaware, New Hampshire, Rhode Island, and Vermont in 1999 seem out of range and the 1998 data for those States are repeated for 1999. The

largest price revision caused by these changes in the estimation methodology is a decrease by \$0.63 per million Btu or by 15 percent for New Hampshire in 1999. The next largest revisions are decreases of \$0.08 per million Btu (2 percent) for Montana in 2001 and \$0.07 per million Btu (2 percent) in Wyoming for 2002. Proportional revisions occur in all the expenditure estimates calculated using these prices. Although many of the revisions to prices and expenditures are quite small, some can be seen in the PDF and HTML tables and all can be found in the greater-precision CSV data files.

In addition, revisions to asphalt consumption data, as described in the SEDS Consumption Technical Notes at http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf, cause prices and expenditures to be revised for Alaska, Arkansas, and Arizona in 2001. The revisions to the prices and expenditures for Alaska and the expenditures for Arkansas are large enough to be seen in the PDF and HTML tables, but the others can only be seen in the greater-precision CSV files.

Aviation Gasoline

Transportation Sector, 2004. Although there have been no revisions to prices for aviation gasoline in the data source, the revisions to consumption estimates in the transportation sector for all States (described in the SEDS Consumption Technical Notes at http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf) cause revisions to expenditures for aviation gasoline for all States in 2004. Expenditures are revised by as much as 11 percent in California, while most States' aviation gasoline expenditures are decreased by 1 percent.

Distillate Fuel

All Sectors, 2004. Although there have been no revisions to prices for distillate fuel in the data source, the revision to consumption data for all States and all end-use sectors (described in the SEDS Consumption Technical Notes at http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf) cause small revisions to expenditures for distillate fuel in 2004. The recalculation of consumption-weighted U.S. average prices and the State average prices paid by all sectors causes those prices to be affected slightly by the expenditure revisions. The only revisions that are large enough to be seen in the SEDS PDF and

HTML tables are the electric power sector 2004 expenditures for distillate fuel in Arizona and the U.S. total. All other revisions can only be seen in the fuller-precision CSV data files.

Jet Fuel

Transportation Sector, 2000. A data entry error for the price of kerosene-type jet fuel in Hawaii in 2000 has been corrected in this edition of SEDS. The price is revised from \$4.34 per million Btu to \$6.98 per million Btu and causes the U.S. average price to be revised from \$6.60 per million Btu to \$6.64 per million Btu. The jet fuel expenditures for Hawaii and the U.S. total in 2000 are increased in proportion to the price increases.

Liquefied Petroleum Gases

Residential, Commercial and Industrial Sectors, 2004. Revisions to liquefied petroleum gases (LPG) consumption in Hawaii, as described in the SEDS Consumption Technical Notes at (http://www.eia.doe.gov/emeu/states/sep_use/notes/use_changes.pdf), lead to the inclusion of residential and commercial prices for Hawaii when previously there were none in SEDS. For calculating expenditures, industrial sector consumption estimates are adjusted to remove LPG consumed by petroleum refineries to avoid double-counting of the cost of those fuels. The method of estimating State refinery fuel use involves calculations done at the aggregate Petroleum Administration for Defense District (PADD) levels. Since Hawaii is in PADD 5, the revision to Hawaii's industrial sector consumption in 2004 affects the estimates of the adjusted industrial sector consumption of LPG in the other PADD 5 States (Alaska, California, Nevada, and Washington). Although industrial sector prices of LPG in the PADD 5 States have not changed, estimates of expenditures are decreased by 86 percent for Hawaii and by 2 percent for the other four States. All of these revisions cause the U.S. total residential, commercial, and industrial sectors' expenditures to be revised slightly and the U.S. average prices of LPG for the three sectors to also be revised slightly. Most of these revisions are large enough to be seen in the PDF and HTML tables as well as in the greater-precision CSV files.

Transportation Sector, 2002 through 2004. A review of State taxes on LPG used as a vehicle fuel in SEDS and further research resulted in a 4 or 5-percent increase in the estimated prices of LPG used in the transportation sector of New Mexico for 2002 through 2004 and proportional increases in the associated expenditures. These increases for New Mexico cause small increases in the U.S. total transportation expenditures for LPG and the U.S. average price in all 3 years. Most of these revisions can be seen in the PDF and HTML tables as well as in the greater-precision CSV files.

Lubricants

All Sectors, 2002 through 2004. Value of shipments data used to derive prices for lubricants used in the industrial and transportation sectors are revised for the U.S. for 2002 through 2004 in the data source, the Bureau of Census, *Annual Survey of Manufactures*. All the revisions are large enough to be seen in the HTML and PDF tables. Prices are decreased by \$1.56 per million Btu in 2002 and \$2.04 per million Btu in 2003, and are increased by \$1.04 per million Btu in 2004. These changes in prices cause corresponding revisions in expenditures.

Motor Gasoline

Commercial, Industrial, and Transportation Sectors, 2003 and 2004. A correction in the average motor gasoline tax rate for Ohio in 2003 and 2004 causes a 1-cent per million Btu price increase for motor gasoline, which in turn causes small increases in expenditures for motor gasoline in the commercial, industrial, and transportation sectors of Ohio. The revisions also cause very small increases in the U.S. average price of motor gasoline that cannot be seen in the PDF and HTML tables, only in the greater-precision CSV data files. The expenditure estimates are revised accordingly.

In addition, the revisions to motor gasoline consumption data for all States in 2004 (described in the SEDS Consumption Technical Notes at http://www.eia.doe.gov/emeu/states/sep_fuel/notes/use_changes.pdf) cause small revisions to motor gasoline expenditures for all States and sectors in 2004. Most revisions are by less than 1 million nominal dollars with the exception of expenditures for motor gasoline in the transportation sectors of Illinois, Montana, and Ohio and in the

commercial sectors of Connecticut, Indiana, Ohio, Oklahoma, and Pennsylvania. The State revisions cause total U.S. expenditures for motor gasoline to increase by less than 1 percent in the transportation sector and decrease by 8 percent in the commercial sector.

Other Petroleum Products

Miscellaneous Petroleum Products

Industrial Sector, 2001. A correction was made to the 2001 nominal composite price of crude oil, which is used to estimate the price of miscellaneous petroleum products. The same U.S. average price is assigned to every State with miscellaneous petroleum products consumption,

therefore all the States' prices decreased from \$7.73 per million Btu to \$7.36 per million Btu. Proportional decreases (by 5 percent) occur in the expenditures for each State.

Petroleum Coke

Industrial Sector, 2004. Although there have been no revisions to prices for petroleum coke in SEDS, the revisions to consumption data in the industrial sector (described in the SEDS Consumption Technical Notes at http://www.eia.doe.gov/emeu/states/sep_fuel/notes/use_changes.pdf) cause small revisions to expenditures for petroleum coke in 2004 for 4 States: Ohio, South Carolina, Texas, and Washington. The revisions can be seen in the CSV data files.