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# **End-Use Taxes: Current EIA Practices**

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# Highlights

## Findings

The major finding of this review is that there are inconsistencies in the Energy Information Administration (EIA) published end-use price data with respect to Federal, State, and local government sales and excise taxes. Some publications include end-use taxes and others do not, thereby causing price data to vary from report to report.

- The coal prices based on information from the Residential and Commercial end-use consumption surveys, include the relevant end-use taxes, because the price information is collected from the respondent's supplier. Coal prices derived from the *Quarterly Coal Consumption Report-Manufacturing Plants* survey probably include end-use taxes, but the respondents are not instructed to include them in the delivered cost of coal purchases.
- Survey respondents are requested to report the delivered cost of coal. For example, the instructions to Forms EIA-3, "Quarterly Coal Consumption Report Manufacturing Plants," and EIA-5, "Coke Plant Report - Quarterly," specify that the delivered cost is to include cost, insurance and freight but do not mention end-use taxes. In a survey conducted in the fall of 1993, seven large manufacturing sector consumers of steam coal responding to Form EIA-3 stated that they included end-use taxes in delivered cost. Of the eight respondents to Form EIA-5 that were contacted, one respondent did not include end-use taxes in reported cost. The results of this survey suggest that end-use taxes are probably included in industrial coal prices.
- The petroleum product price information collected on Forms EIA-782A/B excludes taxes. The motor gasoline, diesel, and Number 2 distillate fuel oil prices of the residential, commercial, and industrial sectors are adjusted in the *State Energy Price and Expenditure Report 1990 (SEPER)* to include taxes. Residual fuel oil prices reported by *SEPER* for the commercial, industrial, and transportation end-use sectors include taxes. *SEPER* does not include taxes in the aviation fuel prices.
- Electricity prices do not include end-use taxes and published data are not adjusted to reflect these taxes.
- Respondents are requested to include taxes on the natural gas forms, but the question raised about the extent to which natural gas prices include taxes remains unanswered. Nineteen respondents to Form EIA-857, who are also respondents to Form EIA-176, noted on their January 1991 filings

that they excluded taxes in reporting gross revenue. The Form EIA-176 prices are used to benchmark the EIA-857 data. How widespread this practice is for natural gas, as well as other surveys, is not known at this time. The current EIA practice of either including or excluding taxes in the published data varies across fuels, economic end-use sectors, and publications.

## Estimates of Bias in *SEPER* Prices

Quantitative estimates of the effect on the prices (bias) reported in *SEPER* resulting from the inconsistent treatment of taxes are preliminary.

- Estimates of the downward bias in the 1990 electricity prices, by not including sales and excise taxes for those States that do not exempt electricity sales, ranged from 0.8 percent in the residential sector, to 4.1 percent in the commercial sector, with an overall bias for the United States of 2.2 percent. The estimate of bias by States ranged from 3 percent to 8 percent.
- Estimates of the upward bias in residential distillate fuel prices, by including sales taxes in the prices of the States that exempt residential fuel use, was 2.9 percent for the United States, with estimates for the 21 States that exempt residential sales ranging from 2.9 to 7.4 percent. The average energy price for the residential sector decreased by 0.2 percent for the country. The New England States show 1.9 percent decrease in the residential sector price.
- Estimates of the downward bias in 1990 jet fuel prices, by not including excise taxes for States that do not exempt jet fuel sales, was 7.0 percent for the average jet fuel price and 0.7 percent for the transportation sector price. States' estimates in the downward bias in jet fuel prices range from 0.17 to 27.4 percent, with transportation sector prices ranging from less than 0.1 percent to 4.1 percent.
- Estimates of the downward bias in 1990 aviation gasoline prices, by not including excise taxes of the States that do not exempt aviation gasoline sales, was 9 percent with less than 1 cent per million Btu impact on the transportation sector price.
- Estimates of motor fuels used on highways are not biased in *SEPER*. However, the Federal taxes on fuels used by water vessels are less than those levied for highway use. The taxes levied by States on vessel bunkering fuels and railroad locomotives vary widely. The effect of these taxes on the overall 1990 prices for motor fuel was not estimated.

## Actions Taken

EIA has undertaken several actions to enhance the reporting of end-use energy prices. Some of the actions will have been done by the time this report is published, but others will take time such as clarifying reporting data elements on the data collections forms. The actions are as follows:

- The explanation of end-use tax adjustments to prices in *SEPER* and their limitations will be amplified.
- All EIA fuel publications will state that the published prices exclude or include Federal, State, and local government sales and excise taxes.
- The revenue, prices, and end-use taxes reporting requirements will be clarified, as needed, in the appropriate data collection forms.





- EIA fuel publications will publish end-use taxes if information on Federal and State sales and excise tax rates and exemptions is easily obtainable and easily summarized.
- EIA is examining the feasibility and calculating the burden on electric utilities of collecting information on end-use taxes on electricity. If it is feasible, this information will be collected and reported in the future.



# Introduction

The Office of Statistical Standards (OSS) initiated this project as a result of one of the findings of its quality assurance review of the State Energy Price and Expenditure Data System (SEPEDS) and the *State Energy Price and Expenditure Report 1988 (SEPER)*.<sup>1</sup>

There are important reasons for addressing the end-use tax issues. One important reason for including Federal, State<sup>2</sup>, and local government sales and excise taxes in end-use energy prices is to provide consistent and accurate information on the total cost of energy purchased by the final consumer. This information forms the backbone for the analysis of the economic and distributional impact of end-use energy taxes on businesses and consumers. The total cost of energy purchased by the final consumer is essential in the analysis of the economic impact of energy prices. If Federal, State, and local sales and excise taxes are partially included, or not included in energy prices, the total cost to the consumer is understated. The amount the consumer spends on energy will be affected by the energy prices relative to non-energy prices, as well as price differences between different fuels. The use of ex-tax price data as a proxy to the final price introduces bias into any analysis of energy use by consumers. However, there are other situations in which the use of ex-tax price data is appropriate, such as in examining the prices due to market forces across States.

*SEPER* price and expenditure data are used by Government, trade association, academic, and business analysts to examine historical trends, develop forecasts, and perform policy analysis. Analysts require that the data used consistently measure energy time series and cross-sectional information. In this case, the data are State energy prices, consumption, and expenditures.<sup>3</sup> *SEPER* displays price and expenditures and is one of two sources; the other source is the *State Energy Data Report: Consumption Estimates (SEDR)* which displays energy consumption estimates in standard physical units and British thermal units (Btu). Both provide data at the State level by major fuels and end-use sector. Both reports are a compilation of disparate EIA and non-EIA quantities and prices.<sup>4</sup> The EIA surveys which feed into SEPEDS and *SEPER* have been developed over a period of time, considering different objectives and purposes. Consequently, the Office of Energy Markets and End Use (EMEU) puts considerable effort into making the data for diverse surveys compatible, and into reducing inconsistencies in data.

<sup>1</sup>Office of Statistical Standards, "Recommendations for Enhancements and Procedural Changes for Secondary System Quality Assessment (*State Energy Price and Expenditure Report, SEPER*)," Attachment 1, and "Summary of Findings for the State Energy Price and Expenditure Data System Secondary Systems Audit," Attachment 3 to Memorandum (June 22, 1991) to Dr. Calvin A. Kent, Administrator, Energy Information Administration.

<sup>2</sup>The term "State" refers to one of the 50 States or the District of Columbia. The term "States" refers to the 50 States and the District of Columbia.

<sup>3</sup>For an interesting discussion of economic data issues, from the viewpoint of Zvi Griliches, an econometrician, see "Economic Data Issues," Ch. 25, *Handbook of Econometrics*, Vol. III, ed. by Zvi Griliches and Michael D. Intriligator (North Holland, New York, 1986), pp. 1465-1514.

<sup>4</sup>The consumption data used in *SEPER* to calculate expenditures are from SEPEDS. The consumption data are reported in *SEDR*.

Our primary concern is that the inconsistency in reporting taxes on EIA surveys may result in biases in *SEPER* price estimates. Biases result because the weighted average State prices for each economic sector are computed as the sum of separate fuel expenditures. Each of these may include (1) Federal, State, and local taxes, (2) Federal and State taxes, but not local taxes, or (3) no taxes. Thus, when comparing the changes in prices for two fuel sources (e.g., electricity and petroleum), it is not clear how much of the movement in the two prices is attributable to changes in taxes, underlying market

forces, or some combination of the two. In comparing aggregate energy prices of each economic sector between years or across States, the resulting differences may partially be attributed to changes in market forces and/or changes in taxes.<sup>5</sup> This argues for consistency in the treatment of taxes.

<sup>5</sup>In this report, the term "sales tax" will stand for any *ad valorem* tax levied on sales, gross receipts, use, etc., by a State or local government. A sales tax levied on the value of a fuel or electricity is equivalent to an *ad valorem* excise tax. The term excise tax will generally denote the specific excise tax where the rate of tax is expressed in dollars or cents per physical unit. For example, the current Federal motor gasoline excise tax rate, effective October 1, 1993, is 24.4 cents per gallon.

# 1. Method

The Energy Information Administration's (EIA) current practices in treating taxes in the calculation of end-use prices in the *State Energy Price and Expenditure Report 1990 (SEPER)*, and other EIA data publications, were evaluated by determining (1) what adjustments, if any, were made to prices, (2) what potential bias and ambiguities may result from the method used to adjust prices for taxes, and (3) what problems may be attributed to the potential ambiguity as to whether the revenue and price data collected on EIA's surveys do, or do not, include taxes. This effort required reviewing the tax practices in *SEPER*, in other EIA publications reporting end-use prices, and the price and revenue data elements in EIA's surveys used to gather end-use prices. The information collected for this study is presented in various tables contained in the appendices to this report.

In the introduction to both the 1989 and 1990 *SEPER*, there is a brief description of how taxes were handled for each of the fuels: coal, natural gas, petroleum products, and electricity. Detailed documentation of sources and procedures is provided in Appendix A.<sup>6</sup> The tables in Appendix A of this report summarize (1) the *SEPER* 1990 methodology, procedures, methods of estimation, and sources, and (2) the instructions and requirements for reporting revenue and price on relevant EIA surveys.

The tables in Appendix B display information on Federal and State sales and excise taxes on specific fuels from several sources, including the tax information used to adjust prices in the 1990 *SEPER*. The sources for the State tax information summarized in Tables B2 and B3 are (1) State Taxation/Revenue Offices, and (2) the *All States Tax Guide (ASTG)* published by the Research Institute of America. The tax rates and exemptions for each economic sector shown are current as of July 1992. The current State tax rate data may be different. The information on exemptions did not change from 1990 to mid-1992. The data show that these exemptions vary widely within, and across, States. Although the *ASTG* summarizes local taxes, there was no attempt to summarize this information in the tables because of the wide variance in coverage and information for each State. The information contained in the tables in Appendix B is used in evaluating the tax data used by EMEU to adjust prices in the *SEPER*. Other energy taxes subsequently levied from the end-use sectors, such as State severance and production taxes, are included in operating costs and are passed along in the price to the buyers.

The delineation of end-use economic sectors is important because (1) the sectoral coverage of end users in the data collection forms and publications may differ from each other and from the definition used by *SEPER*, and (2) sectoral definitions used in State tax exemptions may differ from those used in *SEPER*. These potential mismatches of end-use sectors may lead to further biases and ambiguities of price and tax data. *SEPER*'s classification of the end-use economic sectors is based on the Standard Industrial Classification (SIC). The economic sectors are as follow: Residential (SIC 88); Industrial (SIC 1 through 39); Commercial (SIC 50 through 87, 89, and 91 through 97); Transportation--which includes private and public vehicles that

<sup>6</sup>Energy Information Administration, *State Energy Price and Expenditure Report 1990*, DOE/EIA-0376(90) (Washington, DC, September 1992), pp. 1-3 and 181-243.

move people and commodities--(SIC 40 through 49), and the Electricity Utility Sector (SIC 491 and 493).<sup>7</sup> Coal and the manufacturing energy consumption surveys collect data for the Manufacturing Sector (SIC 20-39). The manufacturing sector is often considered to be synonymous with the industrial sector, but it is actually a sub-sector of the industrial sector. The revenue, output, or prices from EIA's data collection forms used to develop the published prices used in *SEPER* may be based

<sup>7</sup>The Standard Industrial Classification classifies establishments by type of economic activity in which they are engaged. Each establishment is assigned at least a three-digit code representing an "industry." The code used above is the two-digit industry classification system.



on different definitions of the end-use sectors. For instance, the commercial sector definition used by the Petroleum Marketing Division's (PMD) surveys includes apartments. Apartments are included in the residential sector in the residential consumption survey and in *SEPER*.<sup>8</sup> The extent of potential bias because of the mismatch in end-use sector classification by different sources is discussed in Section 3.

Section 2 presents a detailed discussion, by type of fuel, concerning the treatment of end-use taxes in *SEPER* prices relative to the EIA survey forms providing the data. After presenting the findings by fuel type, the EIA publications that report price, tax, and revenue data on the fuels are listed. Section 3 presents estimates of bias in end-use prices due to inconsistent treatment of end-use taxes and conclusions.

<sup>8</sup>See the Energy Information Administration report, *Energy Consumption by End-Use Sector: A Comparison of Measures by Consumption and Supply Surveys*, DOE/EIA-0533, (Washington, DC, April 6, 1990) for the impact on consumption data because of different coverage.

## 2. Findings

This report will focus on evaluating the methods and sources used in *SEPER* in terms of consistency of approach, handling of missing data, applicability and coverage of the tax data used to adjust prices, and relationship to the data collection surveys.<sup>9</sup> Although the tables summarizing *SEPER*'s methodology give the price data sources from 1970 forward, this report will review only the current coverage and practices. Most *SEPER* prices have been the same since 1983. Earlier price estimates are instructive, but are not germane to the issues at hand.

### Coal

#### Industrial Sector

In *SEPER* the reported industrial sector coking and steam coal prices ". . . probably include sales and excise taxes" (Table A1 in Appendix A). However, instructions on data collection Forms EIA-3 ("Quarterly Coal Consumption Report--Manufacturing Plants") and EIA-5 ("Coke Plant Report--Quarterly") for delivered costs do not mention taxes. The instructions tell the respondent to report the total delivered cost and state that this is the cost, insurance, and freight (c.i.f.) price (Table A2 in Appendix A). According to the survey manager of both forms, the Office of Coal, Nuclear, Electric, and Alternative Fuels (CNEAF) had not specifically asked the respondents to include Federal, State, and local governments' end-use taxes. Thus, CNEAF was uncertain whether the coal prices in 1990 included end-use taxes. In late fall of 1993, CNEAF asked seven Form EIA-3 and eight Form EIA-5 respondents if they include end-use taxes in delivered costs. The respondents selected had one or more coal-consuming plants located in States, which according to Table B2, have end-use taxes on coal.

The seven Form EIA-3 respondents stated that they do include taxes in the coal prices they report on the survey. These plants represented 4 percent of the total coal receipts at manufacturing plants located in the States contacted. Seven of the eight Form EIA-5 respondents reported that their price data included taxes. The other respondent stated that taxes were not included. The coke plants contacted account for approximately 45 percent of total coal receipts at coke plants in 1992.

CNEAF states that it appears from this limited verification that most coal-consuming industrial companies are including State taxes in the prices they report on Form EIA-3 and EIA-5 surveys. Based on this effort, CNEAF intends to modify these forms by adding instructions to explicitly request the inclusion of State sales and excise taxes, as well as all Federal taxes, in their reported value of coal receipts figures.<sup>10</sup>

<sup>9</sup>Prices in *SEPER* are reported in dollars per million Btu and quantities in million Btu. Prices reported in the primary publications are reported in physical units; e.g., dollars per barrel. In this report, except when the distinction between Btu quantities and physical units is required, the price/unit of measure will be dollars per million Btu.

<sup>10</sup>Energy Information Administration, *State Energy Price and Expenditure Report 1990*, Tables A1 and A4, pp. 181 and 186.

From 1981 forward, the coking and other industrial coal prices reported in *SEPER* are those displayed in the *Quarterly Coal Report (QCR)*. To prevent disclosure of individual firms, some States' coal prices and consumption are not displayed in the *QCR*. The missing State data in *SEPER* are estimated using simple averages from adjacent States. From 1981 forward, the States for which coking coal price data have not been reported have varied from year to year; the adjacent States used in

estimating prices have also varied from year to year.<sup>11</sup> For instance, in the fourth quarter of 1990, coking coal prices of 11 of the 15 States with active coke plants were not reported in the *QCR*. Also, the "other industrial steam coal prices" for 19 States were not reported.<sup>12</sup>

The sales tax levied on coal use in the industrial sector varies across States. From 1990 through 1991, coking coal prices were not shown in the publications for 11 States. Of these, five States exempted coal from sales and excise taxes, or did not levy a tax on coal sales or use (Table B2 in Appendix B). Coal is exempt, or not taxed, in five of the six States that were used to estimate missing prices. An adjacent State coking coal price, such as that used in Indiana, could be assigned to more than one State without a coking coal price. In matching each State with a missing price to its assigned adjacent State(s), we find that the States of five of the matched pairs did not levy sales taxes on coking coal sales; two pairs of the matched States levied sales taxes. Even in the case where both States levy a sales tax, the estimated price can be over- or underestimated depending on the difference in the tax rate. For instance, Indiana's coking coal price was assigned to Utah for the years 1988 through 1990. Utah's sales tax on coking coal was 1 percent lower than Indiana's sales tax, resulting in an upward bias in the estimated Utah coke price. Two States with missing prices levied sales taxes and the States that were used to estimate their prices did not. For these two States, the estimated price would be understated by an amount equal to the tax rate.

In 1990, 10 of the 18 States in which the industrial steam coal prices were withheld did not have end-use coal taxes. Of these, there were three cases in which the estimated price was from one adjacent State. In this case, there was only one mismatch, giving an upward bias to the estimated price. Where two or more adjacent States were used to estimate the price, there was only one case in which there was no mismatch; otherwise there were mismatches because of the mix of taxing and non-taxing States. The bias in these cases could have gone in either direction. For the missing States that levy a sales tax on coal, there was only one case in which no mismatch occurred.

Thus, for estimated industrial coal prices (coke plus other industrial steam coal prices) for 18 States out of the 24 States lacking industrial coal prices, there are mismatches of coal prices with and without taxes. This leads to an inherent ambiguity in the estimated industrial coal prices for these States, the regions in which they are included, and for the national average.

## Transportation Sector

Since 1978, the transportation sector coal consumption has been included in other industrial consumption and not reported in *SEDR*. Consequently, *SEPER* does not report steam coal prices for transportation. Because of the small amount of steam coal consumed in transportation, as well as the lack of information on State taxes on coal used in transportation, the impact of transportation energy cost is a small order of magnitude.

<sup>11</sup>Energy Information Administration, *Quarterly Coal Report: October-December, 1990*, DOE/EIA-0121(90/4Q)(Washington, DC, May 1991), Table 19, p. 39.

<sup>12</sup>Form EIA-6, "Coal Distribution Report."

## Commercial Sector

EIA collects data on residential and commercial coal consumption, but not on prices.<sup>13</sup> For the commercial sector, the *SEPER* industrial steam coal prices of a State are assigned as estimates of that State's commercial steam coal prices. This assignment of prices carries over the industrial tax mismatch biases described above. Additionally, in some States the commercial sector may not be exempt, while the manufacturing sector is, thus, resulting in further potential bias in the estimated prices.

## Residential Sector

As noted above, EIA does not collect residential steam coal prices. The most recent source of such prices is the American Gas Association's annual *Gas Househeating Survey (GHS)* of 1971 through 1978, which reported "the average delivered price as of December 31."<sup>14</sup> It is noted in *SEPER* that the prices include taxes (Table A1 in Appendix A). From 1979 forward, these old prices have been updated in the following way. First, a regression equation was developed by regressing the residential steam coal prices for 1974 through 1978 from *GHS* on the average spot coal prices delivered to the electric utilities for the same period, as reported in *Cost and Quality of Fuels for Electric Utility Plants (C&Q)*. The electric utility prices are derived from Federal Energy Regulatory Commission (FERC) Form 423. Second, the current spot coal prices of the electric utilities are used as the independent variable in the regression equation to calculate updated residential coal prices. The coefficients of the regression equation have not been updated.<sup>15</sup> *SEPER* states that the residential steam coal prices are comprised of the average delivered price for coal purchased by residential customers including taxes.

The number of States not reporting electric utility spot coal prices ranged from 7 to 14 because there are no coal generation plants or purchases of spot coal for the years used in the regression analysis. In updating the residential coal prices from 1979 forward, the number of States ranged from 7 to 11. The States reporting no spot utility coal prices either used no coal in producing electricity or did not purchase coal on the spot market. For these missing data, *C&Q* "prices are assigned from other States for use in the regression."<sup>16</sup> Also, for the period 1971 to 1978, the *GHS* did not report "average delivered" residential coal prices for several States; e.g., in 1974, six States did not have prices. States with no consumption were assigned a zero price and were not used in the regression. To calculate the prices from 1979 forward, the regression equations of neighboring States were used.<sup>17</sup> To estimate spot coal prices for use in the regression for those States with missing price data, Battelle Northwest Laboratory used average prices of adjacent States as estimates of the prices, except in New England where the average for the region was assigned to each State.<sup>18</sup> The States with missing price data vary over time.

Some States have sales taxes on coal and others do not. This unevenness raises the possibility that an assigned coal price from a neighboring State may include sales or excise taxes, while the State to which it is assigned may not have a sales tax on coal, or vice versa. Consequently, there is an unknown bias in the estimated coefficients. In 1991, 10 States had no sales

<sup>13</sup>Form EIA-6, "Coal Distribution Report."

<sup>14</sup>American Gas Association, *Gas Househeating Survey*, Appendix 2, Competitive Fuel Prices, 1971-1978.

<sup>15</sup>A pooled cross-section, time-series regression was performed by Battelle Northwest Laboratory (BNL).

<sup>16</sup>For the States missing spot prices and the State prices that were assigned by the BNL and EMEU staff, see Table A2, "Residential Sector Coal Spot Price Assignments," *State Energy Price and Expenditure Report 1990*, DOE/EIA-0376(90), p. 183.

<sup>17</sup>Energy Information Administration, *SEPER 1990*, p. 183.

<sup>18</sup>See Table A3, "Residential Sector Spot Coal Price Assignments, 1971-1978," *SEPER 1990*, p. 184.

tax on coal (Table B2 in Appendix B). Of those States that levied a sales or use tax, 13 States exempted the residential sector and 6 States exempted electric utilities.

## **Publications**

The *Quarterly Coal Report (QCR)* provides coking plant, other industrial and electric utilities coal prices. Coal prices are also reported in the *Cost and Quality of Fuels for Electric Utility Plants (C&Q)* and the *Electric Power Monthly (EPM)*. These prices are delivered prices and are presumed to include State and local sales and excise taxes. The *Monthly Energy Review (MER)* and the *Annual Energy Review (AER)* report cost of coal for electric utilities. The presumption is that the displayed prices include State and local sales and excise taxes.

# Natural Gas

The source of the natural gas prices reported in *SEPER* is the *Natural Gas Annual (NGA)*. EIA collects the gross revenue and volumes data on Form EIA-176. These data are required to calculate the annual natural gas prices. The instructions for completing Form EIA-176 tell the respondents to include State and local sales and excise taxes in the reported gross revenue. Table A4 in Appendix A provides a summary of prices, calculation method used, tax data requested, and the definition of economic sectors of Form EIA-176. The basic concern, however, is whether or not the respondents follow the instructions and include State and local sales and excise taxes in the reported gross revenues. The position taken in *SEPER* regarding the tax-price issue is explained as follows:

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 are not included in the revenues reported in the *Natural Gas Annual* or *Natural Gas Production and Consumption* and are not included in the prices. Taxes paid by the utility (rather than end user) are considered operating costs and are passed on to the 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 are not.**<sup>19</sup> (Emphasis added.)

The premise for this statement is that since the respondents are most likely to follow the standard public utility accounting practice of excluding sales and excise taxes from their revenue accounts, they will most likely follow the path of least resistance and report the revenue shown on their books, no matter what the survey instructions state.<sup>20</sup> This will be especially true of the respondents that also report on FERC Forms No. 1 and No. 2, which require using the *Uniform System of Accounts* as the accounting standard for reporting purposes.<sup>21</sup>

Information is available on which respondents report on Form EIA-176 and/or FERC Forms No. 1 and No. 2. Of the 1991 natural gas sales to consumers, FERC Form No. 2 respondents comprised 3.5 percent of the total natural gas sales.<sup>22</sup> Thirteen of the 50 largest gas distributors are a combination of gas and electric utilities and report information on the FERC Form No. 1. These firms delivered 15.9 percent of the total natural gas to consumers in 1990.<sup>23</sup> If it is true that companies reporting on FERC Forms No. 1 and No. 2 provide the same revenue information on Form EIA-176, then around 19 percent of the natural gas revenues reported to EIA would not include end-use taxes.

Two findings from the *Audit/Preclearance Report on Natural Gas Data Collection Forms* provide further information on the question of whether respondents include sales taxes in reported gross revenue. The first finding is that one of the three distributors visited by the audit team was not reporting taxes on Form EIA-176.<sup>24</sup> The second finding shows that out of 391 firms responding on Forms EIA-857 and EIA-176, ". . . 12 respondents specifically noted that sales taxes were not included, 2 noted that sales and municipal taxes were not included, and 5 noted that sales taxes, municipal taxes, and franchise fees were not included. Other respondents may exclude these taxes but failed to footnote the fact."<sup>25</sup> It is to be noted that in

<sup>19</sup>Table A3 in Appendix A and *State Energy Price and Expenditure Report 1990*, pp. 2 and 189.

<sup>20</sup>Summary of discussions with staff of the Integrated Statistics Branch.

<sup>21</sup>The use of the Uniform Systems of Accounts is prescribed for natural gas companies subject to the provisions of the Natural Gas Act (18 CFR 201). The utilities reporting on FERC Form No. 1 use provisions of 18 CFR 101. The details of accounts 480, 481, and 482 are reported in Table 2, pp. 14-15.

<sup>22</sup>Energy Information Administration, *Natural Gas Monthly*, DOE/EIA-0130(91/1) (Washington, DC, September 1991), Tables 3 and 13.

<sup>23</sup>Energy Information Administration, *Natural Gas Annual 1990*, DOE/EIA-0131(91)/1 (Washington, DC, September 1991), Table 25.

<sup>24</sup>Office of Statistical Standards, draft, *Audit/Preclearance Report on Natural Gas Data Collection Forms*, June 4, 1992, p. 54.

<sup>25</sup>Office of Statistical Standards, draft, *Audit/Preclearance Report on Natural Gas Data Collection Forms*, June 4, 1992, p. 30.

contrast to the instructions on Form EIA-176, the instructions to Form EIA-857 explicitly state that "In the event your regularly maintained records do not include all charges for which customers are billed, for example local sales tax, footnote the type of charges excluded on your initial submittal." (Table A4 in Appendix A.)

Until further information is obtained from the respondents on their reporting practices with respect to sales and/or excise taxes, the question as to whether or not taxes have been included in the natural gas prices remains unresolved.

## Publications

The end-use natural gas prices derived from Forms EIA-176 and EIA-857 are published in the *Natural Gas Monthly (NGM)*, *NGA*, *AER*, *MER*, and *SEPER* without adjustment.

## Petroleum Products

The petroleum product prices collected by EIA on Forms EIA-782A/B and published in the *Petroleum Marketing Monthly (PMM)* do not include Federal, State, and local sales and excise taxes. In *SEPER*, selected petroleum product prices have been adjusted to include Federal and State taxes, but not local taxes. For the petroleum prices reported in *SEPER* that include taxes, EIA has estimated Federal and State taxes and added those taxes to the prices. The source of tax information and the method for estimating the taxes will be discussed in the individual product sections.

## Motor Gasoline

Since 1988, *SEPER* has added the Federal and State motor gasoline excise taxes to the *Petroleum Marketing Annual's (PMA)* motor gasoline prices for the transportation sector. Table A5 in Appendix A summarizes *SEPER's* methodology and sources. State and local sales taxes are not added because they differ widely from State to State. According to the *PMM* of July 1992, eight States had a sales tax on motor fuels.<sup>26</sup> With such a small number of States involved, it is not clear why States' sales taxes are not added to price. It would be difficult to add local taxes to the motor gasoline prices in several States because the local gasoline taxes vary widely. In Alabama, for example, there is a widespread levy of motor gasoline taxes by counties and towns, ranging from 1 to 3 cents per gallon.

The Department of Transportation's Federal Highway Administration's annual report, *Highway Statistics*, is the source of the State motor gasoline, diesel, liquefied petroleum gas, and gasohol taxes (Table B4 in Appendix B).

The transportation sector's motor gasoline prices are used as estimates for motor gasoline prices in the commercial and industrial sectors. Because there is a wide variation in State taxes on off-highway use of motor gasoline in the commercial and industrial sectors, the motor gasoline prices reported may not be close to the actual motor gasoline prices paid by the consumers in the two sectors. Table B2 in Appendix B, under the column heading "Petroleum Products" shows the variation from State to State in the treatment of motor gasoline taxes for off-highway use.

<sup>26</sup>Energy Information Administration, *Petroleum Marketing Monthly*, DOE/EIA-0380(92) (Washington, DC, November 1992), Table EN1.



## Distillate Fuel

Distillate fuel prices for the transportation sector reported in *SEPER* include the Federal highway and State excise taxes. Since the *Highway Statistics* report does not include the excise tax on diesel and other liquid fuels used by cargo vessels, it is not clear what rate was used to adjust the price for vessel bunkering. Table A7 in Appendix A summarizes *SEPER*'s methodology. The prices for distillate fuel used for heating and other uses in the residential, commercial, and industrial sectors were adjusted by using sales tax numbers from the Bureau of Census report *State Government Tax Collections (SGTC)* (Table B5 in Appendix B). The food and prescription drug purchases are the only exemptions from the sales taxes shown by this publication. It does not show which end-use sectors may be exempt from the sales tax, but Table B2 in Appendix B provides information which was obtained from State Taxation/Revenue offices on the end-use sectors that may be exempt by States. The State taxes reported in Table B2 do not cover all excise taxes levied in the States. For instance, between April 15th and October 15th, Texas levies a 20 cents per million Btu tax on fuel oil used in boilers that have the capability of using natural gas in metropolitan areas with populations greater than 350,000 people, located in ozone non-attainment areas.<sup>27</sup>

As in past years, the residential, commercial, and industrial distillate fuel prices for 24 States are from the *PMA*. In 1990, price estimates for 24 of the missing 27 States were derived from the fuel oil prices reported in *Gas Househeating Survey (GHS)*.<sup>28</sup> The *GHS* prices are not the delivered cost to the consumer. They do not include transportation, State and local sales and excise taxes.<sup>29</sup> For the other three States--Hawaii, New Mexico, and Oklahoma--Petroleum Administration for Defense (PAD) district prices are used. Since 1983, the number of States that did not have *GHS* prices has varied. The detailed procedure used in estimating the price using *GHS* data is discussed in *SEPER*.<sup>30</sup>

## Residual Fuel

Residual fuel oil prices for the commercial, industrial, and transportation sectors include taxes (Table A8 in Appendix A). The industrial sector prices in *SEPER*, from 1984 forward, are from the *PMA*, Table A4.<sup>31</sup> The Bureau of Census sales tax table was used to adjust the numbers in *SEPER*. The commercial sector prices are the same as the industrial sector prices. Those States whose residual prices are withheld because of disclosure are assigned PAD district or subdistrict prices. Transportation prices are a weighted average of vessel bunkering, military, and railroad prices. From 1982 forward, the vessel bunkering price is the end-use sales price of residual fuel oil greater than 1 percent sulfur content.<sup>32</sup> Taxes are calculated as described for the commercial sector. The procedure calculates the volume-weighted average State prices for the vessel bunkering, railroad use, and military use. There is no adjustment for the Inland Waterway Trust Fund tax on diesel and liquid fuels used by cargo vessels (Table B1 in Appendix B). The vessel bunkering tax-adjusted price is understated by 11 cents per gallon. However, because some States exempt fuels sold to commercial vessels from their sales taxes, there is an upward bias to the prices. State taxes are included in the price of residual fuel oil sold to the electric utility industry. Military and railroad use are assigned the estimated electric utility industry prices. Since the military does not pay State taxes, the taxes have been deleted from the estimated military price by using the Bureau of Census tax data.

<sup>27</sup>Telephone conversation, July 2, 1993, with Richard Sitton of Groppe, Long, and Littell, an energy consulting firm in Houston, Texas.

<sup>28</sup>American Gas Association, *Gas Househeating Survey*, Appendix 2, from table titled "Competitive Fuel," column labeled "Fuel Oil," various editions.

<sup>29</sup>Telephone conversation, September 26, 1993, with Ellen Hahn, American Gas Association.

<sup>30</sup>Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pp. 194-200.

<sup>31</sup>Table A4 in *PMA* 1991 is now Table A3. Table A1 in previous *PMA*s has been deleted.

<sup>32</sup>Energy Information Administration, *Annual Energy Review 1990*, DOE/EIA-0383(90) (Washington, DC, June 1990), Table 17.

## Aviation Fuel

Jet fuel and aviation gasoline prices in *SEPER* are national averages and do not include taxes (Table A9 in Appendix A). However, many States levy taxes on aviation fuel, as shown in Table B3 in Appendix B, based on information obtained from State Taxation/Revenue Offices. The use of the national average is understandable because withholding data on the State level in order to prevent disclosure is widespread. If there were a requirement that prices must include State taxes, it could only be implemented by applying the taxes to unpublished State data to derive a publishable national price.

## Kerosene

Kerosene prices for the residential sector are derived by applying the rates of change of the residential distillate fuel prices to the last reported prices from the Bureau of Labor Statistics (BLS) report, *Producer Prices and Price Indexes Supplement*. (See Table A10 in Appendix A for details on methodology and sources.) In July 1985, BLS ceased publishing the prices used to estimate this series. The industrial prices are estimated using the same method that is used to derive the residential kerosene prices. Since the series is based on the distillate fuel prices which include the imputed sales taxes, the kerosene prices reflect these imputed taxes. Again, some sectors in some States may be partially or fully exempt from paying the sales tax with the result that the kerosene price may be overstated.<sup>33</sup>

## Liquefied Petroleum Gas

The liquefied petroleum gas prices for the residential sector are those reported by the American Gas Association's *Gas Househeating Survey*. They purportedly include taxes. (See Table A11 in Appendix A for details on methodology and sources.) The industrial prices are propane prices from various issues of the *PMA*, which exclude taxes.

## Other Petroleum Products

The remaining petroleum products reported in *SEPER* are not collected directly by EIA (Table A12 in Appendix A). Outside information with respect to both quantity and price is used. Taxes are included in the asphalt and road oil price, but not in the lubricant oils.

## Publications

The *PMM* and the *PMA* display ex-tax prices for petroleum products reported on Forms EIA-782A/B. The prices exclude Federal, State, and local excise and sales taxes. These prices are also published in the *AER* and *MER*. The motor gasoline prices are not broken down into specific end-use sectors. However, EIA uses and publishes the BLS city average retail price of motor gasoline prices in the *MER* (Table 9.4) and the *Weekly Petroleum Status Report* (Table A11, *Household Vehicles Energy Consumption*<sup>34</sup>). BLS retail prices include all taxes.

Number 2 distillate fuel prices are reported by residential, commercial/institutional, industrial and other sectors for 27 States. The commercial/institutional sector includes apartment buildings/complexes and other multifamily dwellings that are in the residential sector in *SEPER*.

## Electricity

Table A13 in Appendix A summarizes the treatment of electricity prices in *SEPER*. The average revenue per kilowatthour is calculated by dividing revenues by electricity sales. The monthly numbers are collected on Form EIA-826 utilizing a sample

<sup>33</sup>Kerosene that is blended with diesel oil is taxed at the same rate as diesel oil (Table B3, Appendix B).

<sup>34</sup>U.S. Department of Commerce, Bureau of Labor Statistics (BLS), *Consumer Prices: Energy*, monthly issues.

of 248 utilities from the Form EIA-861 frame. The annual numbers are collected on Form EIA-861, which is a mandatory census. The revenues reported by the utilities do not include end-use taxes. The 128 utilities that are required to submit FERC Form No. 1 and Forms EIA-826 and EIA-861, report the same revenue. These utilities account for 76 percent of the electricity sales to ultimate customers, and are required to keep their books in conformity with the *Uniform System of Accounts* (U.S. of A.) (18 CFR 101).<sup>35</sup> Consequently, they report "net billings" as operating revenues that do not include State and local sales and excise taxes (Tables A14 and A16 in Appendix A). The remaining utilities are required to follow the same definition in reporting their revenues. The definition of revenue given on Form EIA-861 is from that given on Form EIA-826. Since the guidelines given at the beginning of Forms EIA-861 and EIA-826 instruct the respondent to follow the U.S. of A. requirements for reporting revenues, the problem that has occurred in reporting natural gas revenue does not occur.

## End-Use Consumption Surveys

The four end-use consumption surveys collect information directly from the final consumer in the residential, commercial, manufacturing, and residential transportation sectors. The residential, commercial, and manufacturing surveys collect end-use prices that are taken directly from consumers' energy purchases. Purchases exclude (1) quantities delivered from another establishment in the "same" company even if these quantities are repurchased, (2) quantities purchased and paid for by a central purchasing entity separate from the establishment, and (3) quantities for which payment was in-kind. The surveys discussed above depend upon the respondent reporting all sales to end-use sectors in accordance with the definitions of end-use sectors. The coal surveys should be classified as end-use consumption surveys because the manufacturing sector is an end-use sector. The data obtained from these surveys provide further information on end-use prices and taxes at the Census Regions, but not at the State level.

### Residential Sector

The residential energy prices are calculated from the data collected in the Residential Energy Consumption Survey, Forms EIA-457A/C. The respondent is not asked questions on costs and quantity purchased. Instead the respondent is asked to authorize the utility and/or fuel company to give the survey contractor his bill. The utility bill shows the total cost to the consumer, and includes State and local taxes, base cost, system cost, and fuel adjustment cost. The fuel company is asked for the total cost of delivering the fuel including State and local taxes. Thus, the energy prices given in the *Household Energy Consumption and Expenditures 1987 (HECE)* report include end-use taxes (Table A15 in Appendix A).

<sup>35</sup>Energy Information Administration, *Electric Power Annual Report*, DOE/EIA-0348(90) (Washington, DC) and *Financial Statistics of Selected Investor-Owned Electric Utilities 1990*, DOE/EIA-0437(90)/1 (Washington, DC).

## Commercial Sector

The Commercial Buildings Energy Consumption Survey (Forms EIA-871C/F) collects information on natural gas, district heating, electric, and fuel consumption. Coal data are not collected. The respondents do not report costs, but provide estimates of consumption. Billing information from the utilities and fuel suppliers is used to obtain the cost of the fuels and to verify actual consumption. The instructions indicate that the total dollar amount should include State and local taxes that are paid by the consumer. The reported prices are calculated by dividing total cost by quantity or volume. Thus, the energy expenditures per square foot and per Btu shown in the *Commercial Buildings Energy Consumption and Expenditures 1989 (CBECE)* report include the relevant State and local taxes (Table A15 in Appendix A).

## Manufacturing Sector

Respondents report the "total expenditures, including charges" for energy quantities on Forms EIA-846A/C, Manufacturing Energy Consumption Survey (Table A15 in Appendix A). According to the survey manager, establishments report the figures shown in their books. Most likely, the reported numbers include State and local taxes. The average costs calculated from the survey data appear in the *Manufacturing Energy Consumption 1988 (MEC)* report.

## Residential Transportation Sector

The respondents to the Residential Transportation Energy Consumption Survey (Forms EIA-876A/E) are asked the pump price of their last purchase of motor fuel. However, in developing the data, the BLS motor gasoline prices and Lundberg's diesel prices are used to estimate fuel expenditures (Table A15 in Appendix A). These latter two prices include Federal, State and local taxes. The data appear in the *Household Vehicles Energy Consumption 1988 (HVEC)*.



### 3. Estimated Bias in the *State Energy Price and Expenditure Report 1990 (SEPER)* Prices

This review has examined the practices and adjustments that are used to develop end-use prices that are published in *SEPER*. In performing the review, treatment of end-use taxes in other EIA publications and surveys was considered because the prices used in *SEPER* are derived from information reported on various EIA surveys, with the exception of a few petroleum products. The major finding of this review is that there is inconsistency in EIA's published price data with respect to taxes. The coal prices for electric utility sectors and the prices based on information from the end-use consumption surveys include the relevant end-use taxes. Industrial coal prices most likely include end-use taxes. The petroleum product price information collected on Forms EIA-782A/B exclude these taxes. The motor gasoline, diesel, and Number 2 distillate fuel oil prices of the residential, commercial, and industrial sectors are adjusted in *SEPER* to include taxes. Residual fuel prices reported by *SEPER* for the commercial, industrial, and transportation end-use sectors include taxes. *SEPER* does not include taxes in the aviation fuel prices. Electricity prices do not include taxes, and published data are not adjusted to reflect taxes.

Respondents are requested to include taxes on the natural gas forms, but the question raised about the extent to which their reports include taxes is not known. Nineteen respondents to Form EIA-857, who are also respondents to Form EIA-176, noted on their January 1991 filings that they excluded taxes in reporting gross revenue. One respondent who was visited during the audit of the natural gas surveys was not including taxes.<sup>36</sup> How widespread this practice is for natural gas, as well as other surveys, is not known at this time. EIA publications include, or exclude, taxes depending upon the fuel and end-use sector.

This section presents estimates of the potential effect that State sales and excise taxes may have on selected end-use prices. Figures 1 and 2 show State sales and motor gasoline tax rates in effect for 1990 and 1992.<sup>37</sup> If energy end-use purchases by the consumer are taxed, the tax rates give an upper bound of the potential magnitude of the bias. The potential upper bound in end-use energy prices for 39 States in 1990 and 41 States in 1992 was between the 4- and 6-percent interval with a number of States increasing in the 6-percent interval in 1992. The number of States in the 3-percent range decreased by one from 1990 to 1992. Connecticut decreased its sales tax from 8 to 6 percent (Figure 1). For the five States with no sale taxes, there is obviously no bias.

One determinant of the potential impact on the average energy price of end-use taxes is the share of each energy source in total U.S. States energy expenditures. Electricity, motor gasoline, natural gas, and distillate fuel account for 86 percent of the total energy expenditures in 1990, with electricity expenditures accounting for 37 percent of the total expenditures (Figure 3). Motor gasoline alone accounted for 27 percent of the total expenditures. Jet fuel and liquefied petroleum gas together accounted for an additional 6 percent of the total expenditures.

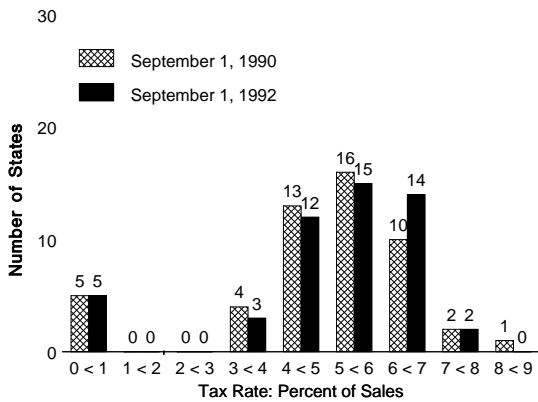
<sup>36</sup>Office of Statistical Standards, draft *Audit/Preclearance Report on Natural Gas Data Collection Forms*, June 4, 1992, p. 30 and p. 54.

<sup>37</sup> Table B2 in Appendix B shows the effective date of the State sales taxes by State. The motor gasoline tax rates shown were in effect on July 1, 1991.



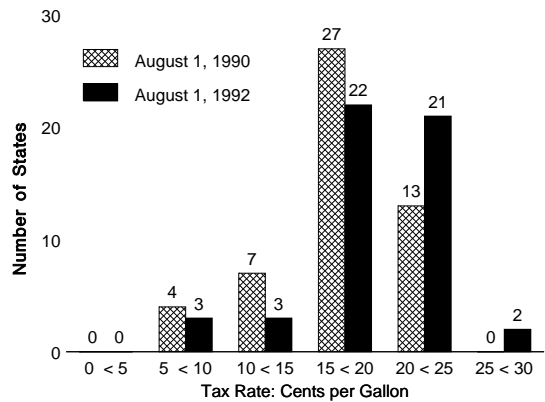


**Figure 1. State Sales Tax Rates (September 1, 1990 and 1992)**



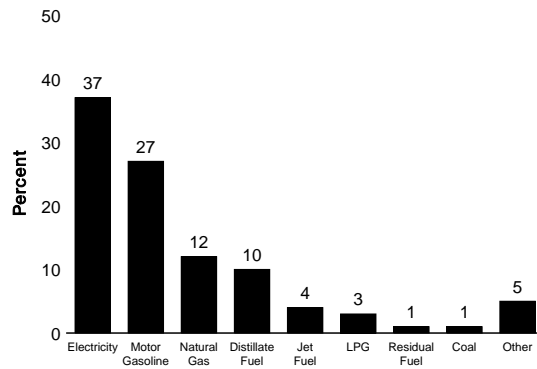
Source: Table B2 and B3.

**Figure 2. State Motor Gasoline Tax (August 1, 1990 and 1992)**



Source: Energy Information Administration, *Petroleum Marketing Annual 1990*, DOE/EIA-0487(90), and *Petroleum Marketing Monthly*, November 1992, DOE/EIA-0383(92/11), Table EN1.

**Figure 3. Share of Total End-Use Expenditures by Selected Fuels, 1990**



<sup>a</sup> Other includes asphalt and road oil, aviation gasoline, lubricants, and petroleum coke used by electric utilities.

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, DOE/EIA-0376(90), p. 21.

A determinant of the potential impact on a sector's average energy price is the share of each energy source in the sector's total energy expenditures. In 1990, electricity was the major net energy purchase in the residential sector, 66.2 percent, and commercial sector, 76.6 percent (Figures 4 and 5). Figure 6 shows that electricity was also the largest net energy expenditure by the industrial sector, accounting for 42.4 percent of the total. Natural gas has the second largest share of total expenditures in the three sectors. Motor gasoline accounts for a 68.2 percent expenditure share of the total transportation expenditures (Figure 7). One implication of these expenditure patterns is that if taxes are properly accounted for in electricity, motor gasoline, natural gas, and distillate fuel prices, the potential sources of bias in sectorial prices would be substantially reduced.

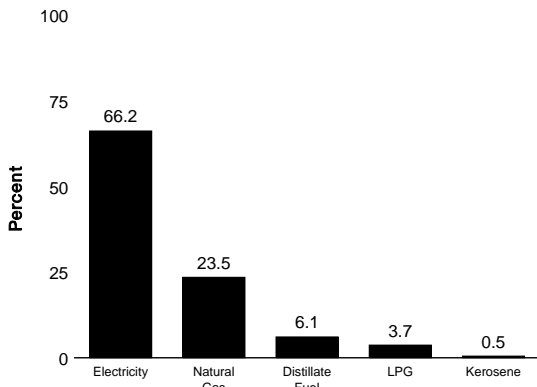
## Adjusting Prices for Taxes

Adding statutory taxes to pre-tax prices is a tedious, error-prone process. One possible source of error is misinterpreting the tax code of the State and Federal Governments in locating information to answer the following questions: (1) What fuels are taxed? (2) What jurisdiction levies the tax? (3) What type of tax is it and what is its rate? Table B1 in Appendix B shows the motor fuels that are taxed by the Federal Government. The States levy both sales and excise taxes. Table B2 in Appendix B summarizes the information on sales and use taxes. Table B3 in Appendix B summarizes the motor fuel taxes levied by the States. Because of the wide variety of taxes imposed by local governments, the tax adjustment is only practicable at the State level. If many local governments levy a specific tax on motor gasoline, as is done in Alabama, or if a large city such as New York City, or a county, such as Cook County, Illinois, levies sales taxes which include electric and natural gas utility sales, then the end-use price plus tax for the State will be understated. Table B2 does not report all end-use energy taxes. As stated previously, between April 15th and October 15th, Texas levies a 20 cents per million Btu tax on fuel oils used in boilers capable of using natural gas in metropolitan areas with populations greater than 350,000 people, located in ozone non-attainment areas.

Another source of error in estimating sector prices and quantities (volumes) is that EIA, the States, and the SIC do not define sectors in the same way. The industrial sector price and consumption figures available to EIA, for example, may not correspond to those appropriate to the industrial sector as defined by the Ohio State tax code. To reduce the potential for error requires determining which specific end-use energy sales are exempt from State end-use taxes, and the EIA sector to which the exempt sale should be assigned. For instance, do electricity sales for residential use, which are exempt in Oklahoma, include sales to apartments? Figures 8-11 show the exemptions, partial exemptions and reduced sales taxes for electricity, natural gas, fuel oil, and coal. Although an attempt was made to verify status and type of tax relief in each sector, resource constraints prevented an in-depth review. Consequently, these are preliminary estimates that could be substantially revised. Considerably more research needs to be done to develop a correspondence between the establishments in each of the EIA sectors and the State tax code classification, especially in the industrial and commercial sectors.

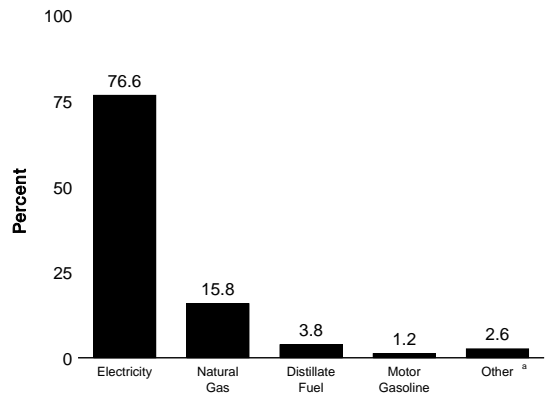
States not only exempt some activities, they also charge different sales tax rates for a particular activity or sector. For instance, residents of Utah who use heating oil to heat their houses pay a 2 percent sales tax instead of the 5 percent sales tax. Manufacturers, some agricultural activities, and railroads pay a 1.5 percent sales tax in Mississippi instead of the State's 6 percent sales tax on fuels and electricity. This practice is not widespread, but for Utah and Mississippi, the adjusted end-use prices are likely to be higher than the actual prices if exemptions are not taken into account. Alaska, Delaware, Montana, New Hampshire, and Oregon have no sales tax.

**Figure 4. Share of Residential Energy End-Use Expenditures by Fuel, 1990**



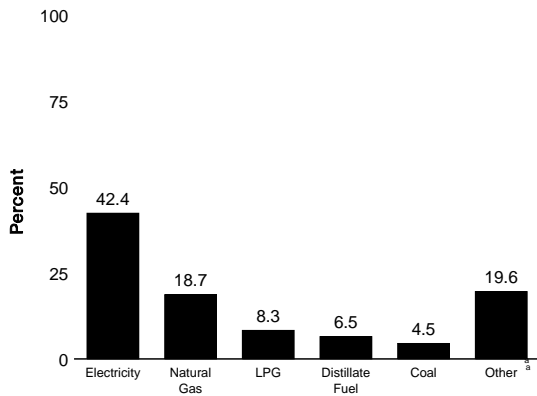
Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, DOE/EIA-0376(90), p.21.

**Figure 5. Share of Commercial Energy End-Use Expenditures by Fuel, 1990**



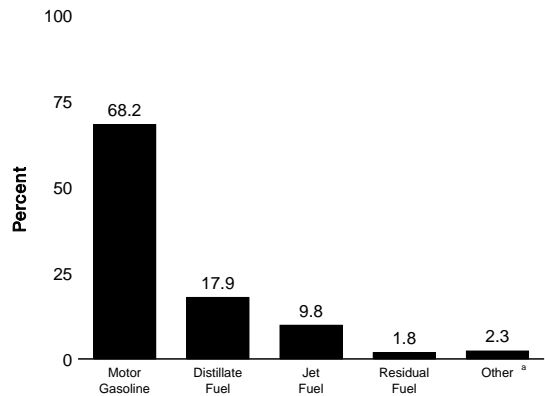
<sup>a</sup> Other includes kerosene, LPG, and residual fuel.  
Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, DOE/EIA-0376(90), p.21.

**Figure 6. Share of Industrial Energy End-Use Expenditures by Fuel, 1990**



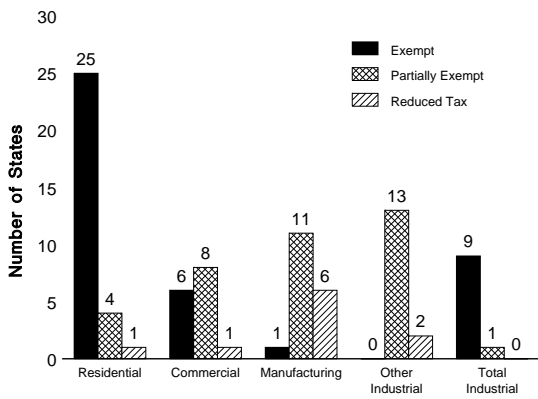
<sup>a</sup> Other includes asphalt and road oil, kerosene, lubricants, motor gasoline, and residual fuel oil.  
Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, DOE/EIA-0376(90), p. 21.

**Figure 7. Share of Transportation Energy End-Use Expenditures by Fuel, 1990**



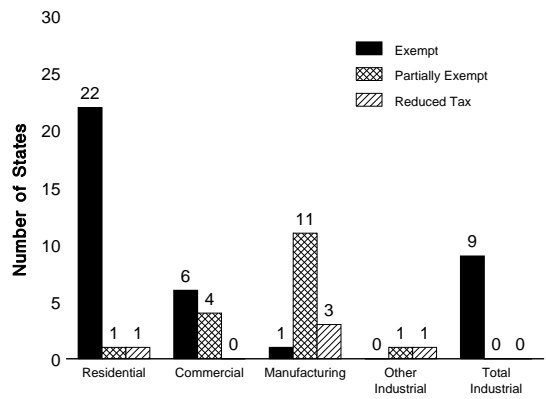
<sup>a</sup> Other includes aviation gasoline, coal, LPG, lubricants and electricity.  
Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, DOE/EIA-0376(90), p. 21.

**Figure 8. Electricity Sales Tax Status by Economic Sector, 1990-1992**



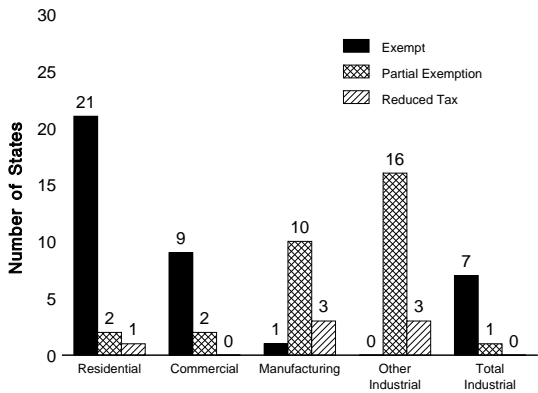
Source: Table B2.

**Figure 9. Natural Gas Sales Tax Status by Economic Sector, 1990-1992**



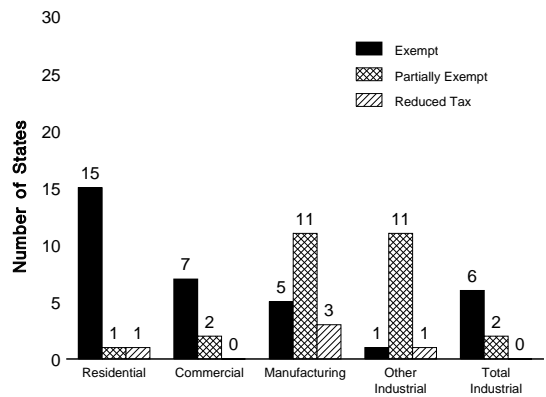
Source: Table B2.

**Figure 10. Natural Gas Sales Tax Status by Sector, 1990-1992**



Source: Table B2.

**Figure 11. Coal Fuel Sales Tax Status by Economic Sector, 1990-1992**



Source: Table B2.

## Magnitude of Bias

At the spring meeting of the American Statistical Association Energy Committee, questions were raised about the magnitude of bias resulting from current practices of handling taxes in *SEPER*. The results presented below are EIA's first assessment of the magnitude of bias in *SEPER*.

### Motor and Aviation Fuels

The source of the information used to adjust the motor gasoline and diesel fuel prices for taxes in *SEPER* is the Department of Transportation's Federal Highway Administration's *Highway Statistics* report (Table B4 in Appendix B). We compared this information to the information on State motor fuel taxes reported in the *PMA*, *PMM*, and the *ASTG*, and State tax codes whenever feasible. We found that the motor fuel tax data contained in *Highway Statistics* are carefully done. This report represents the best published single source for motor fuel taxes, but does not cover all motor fuel taxes such as aviation fuels. Table B3 summarizes the 1992 rates, including the other motor fuels and kerosene.

Since the Federal and State taxes on motor fuel are specific excise taxes (except for Kentucky, Massachusetts, and Rhode Island),<sup>38</sup> adjusting the motor fuel prices in the transportation sector is a straight-forward procedure compared with adjusting prices for sales taxes. The three States that levy *ad valorem* taxes have a minimum tax and set the tax quarterly. The expenditure on motor gasoline by the commercial and industrial sectors in 1990 was 2.7 percent of total motor gasoline expenditures. Since the pattern of taxing off-highway use varies across States, this is one area that needs to be examined to see if there is some bias in the energy expenditures of these two sectors (Table B2 in Appendix B). The *SEPER* tax-adjusted motor gasoline and diesel fuel prices are not biased when applied to highway vehicles. However, the tax rates vary across States for water vessel and railroad use. There is a potential bias in the vessel bunkering and railroad prices; however, we did not estimate the magnitude of bias because of lack of information.

Aviation fuel prices are not adjusted for tax. Jet fuel accounts for 9.8 percent of the transportation energy expenditures, and aviation gasoline accounts for 0.1 percent--a negligible amount. Thirty-eight States levy taxes on aviation gasoline and jet fuel. The aviation gasoline and jet fuel taxes were added to the *SEPER* prices to obtain preliminary estimates of magnitude of bias. Figures 12 and 13 show the effect of adding the taxes to the fuel prices. The taxes on aviation gas do not change the observed sector price, but do increase the average price by 9 percent. There is considerable variation in the increase across States, ranging from 0.8 to 14.48 percent of the national average price (Table C6 in Appendix C). This 9-percent downward bias in aviation gasoline prices could affect quantitative analysis of this market.

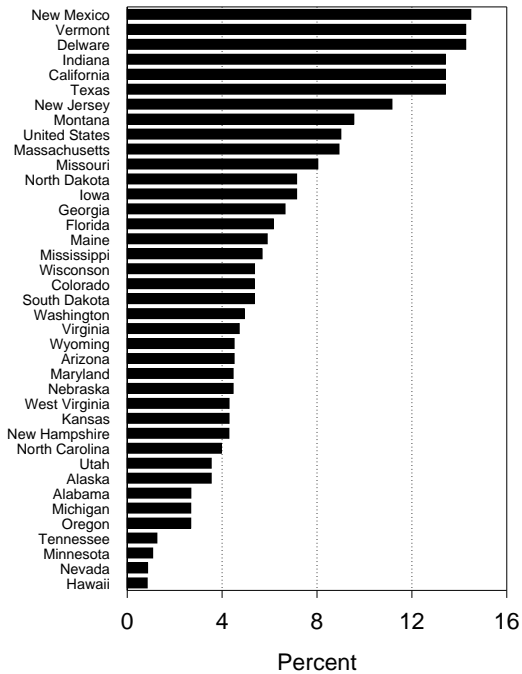
The State taxes on jet fuel increased the 1990 price by 7.0 percent and the transportation sector average price by 0.7 percent (Figure 13). There was considerable variation in the increase across States, ranging from Oklahoma's 0.2 percent, to Maine's 27.4 percent (Table C7 in Appendix C). Importance of jet fuel consumption, also varied across States, ranging from Wyoming's 1.0 percent of transportation sector's consumption, to Alaska's 56.8 percent (Table C7 in Appendix C). Jet fuel prices affect air travel demand through increase in ticket prices. For instance, in the *Assumptions for the Annual Energy Outlook 1993*, it is assumed that "a 10-percent increase in the ticket price results in approximately a 4-percent decline in forecast travel demand."<sup>39</sup> Thus, a 7-percent increase in jet fuel, if passed through dollar-for-dollar, could result in a 2.8-percent decline in forecasted air travel.

<sup>38</sup>Kentucky, Massachusetts, and Rhode Island motor fuel taxes are *ad valorem* excise taxes. Additional State taxes are levied. For these States, additional taxes would need to be added if they are not local taxes (Table B3 in Appendix B).

<sup>39</sup>Energy Information Administration, *Assumptions for the Annual Energy Outlook 1993*, DOE/EIA-0554(93) (Washington, DC), p. 27.

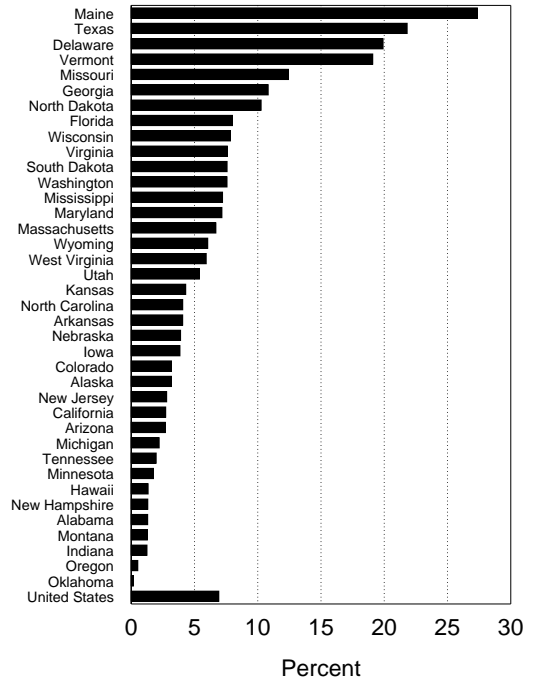


**Figure 12. Percent Increase in Aviation Gasoline Prices by the Addition of State Excise Taxes, 1990<sup>a</sup>**



<sup>a</sup> Because the scales differ, the graphs should not be compared.  
 Note: The average prices for the transportation sector are not shown as they are less than 0.1 percent.  
 Source: Table C6.

**Figure 13. Percent Increase in Jet Fuel Prices by the Addition of State Excise Taxes, 1990<sup>a</sup>**



<sup>a</sup> Because the scales differ, the graphs should not be compared.  
 Note: The average prices for the transportation sector are not shown as they are less than 0.1 percent except for five States  
 Source: Table C7.

## Distillate Fuel

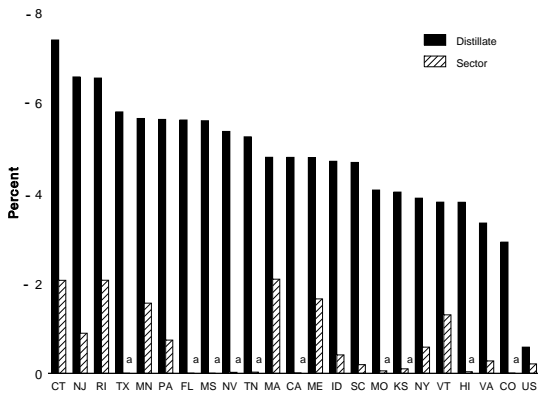
The *SEPER* adds State sales taxes to the distillate and residual fuel prices of the residential, commercial, and industrial sectors. As noted above, the sales taxes are from the Bureau of Census' *State Government Tax Collections* (Table B5 in Appendix B). The only exemptions shown are for food and medicine. However, as shown in Figure 10, there is a wide dispersion of exemptions from the sales tax on fuel oils. Twenty-one States exempt heating oil fuels used in the residential sector. The exemption from the sales tax for fuel oil used in the commercial and industrial sectors varies widely, from fuels used to heat structures used for raising poultry in Georgia, to all manufacturing activity. Since the residential sector has the largest number of full exemptions, we used this sector to provide preliminary estimates of the magnitude of bias. Figure 14 shows the result of this analysis. The procedure was to compare the *SEPER* tax fuel price with the reported price for each State

that exempted the residential sector. The results give an estimated distillate fuel price upward bias, ranging from 3.0 to 8.0 percent. To assess the importance of these changes on the residential sector price,<sup>40</sup> the decrease in distillate fuel

<sup>40</sup>Sector prices are determined by adding the energy sources' expenditures (\$) to obtain the sector's energy expenditure and dividing it by sector's net energy consumption (million Btu), which gives the average cost per million Btu.



**Figure 14. Percent Decrease in Residential Distillate Fuel and Sector Prices for States Exempting Sales Tax, 1990**

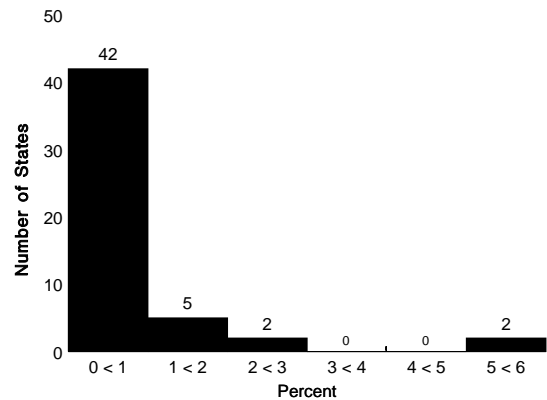


<sup>a</sup> Less than 0.1 percent change in the average price of the sectors.

Note: The residential sector price is the weighted average of the cost of energy.

Source: Table C1.

**Figure 15. Coal Consumption as Share of Total Residential Energy Consumption, 1990**



Note: Because scales differ, the graphs should not be compared.

Source: Energy Information Administration, *State Energy Data Report 1990*, DOE/EIA-0214(91), Table 7.

expenditures was subtracted from the residential sector expenditures and divided by the residential net energy consumption<sup>41</sup> to obtain an estimated new residential sector price. As shown in Figure 14, there is a wide dispersion of price changes. Ten States had changes less than 0.1 percent in their prices. The States with the largest decrease in total energy prices, such as Maine and Massachusetts, were relatively large consumers of fuel oil--33.3 percent and 25 percent of total residential energy expenditures, respectively. Distillate fuels comprised 6.1 percent share of the nationwide residential total expenditures. Overall, U.S. residential fuel oil prices decreased by 2.8 percent and energy end-use prices decreased by 0.2 percent. This is a rough approximation of the magnitude of the potential bias because the information included by the States in the residential sector may differ from what is included in this sector in *SEPER*. Since some States fully or partially exempt fuel oil purchases in the commercial and industrial sectors, the reported prices in *SEPER* could be overstated. The extent they are overstated depends on the relative importance of fuel oil consumption to total energy consumption. This requires further analysis.

## Coal

Coal prices for the residential and commercial sector also pose problems. EIA does not collect revenue or price information in these sectors. As discussed above, *SEPER* estimates residential coal prices using electric utility spot coal prices via a regression function. We have discussed the possible bias in the residential coal prices from using this method. The

<sup>41</sup>Energy Information Administration, *State Energy Data Report 1991*, DOE/EIA-0214(91)(Washington, DC, May 1993), pp. 32-34.

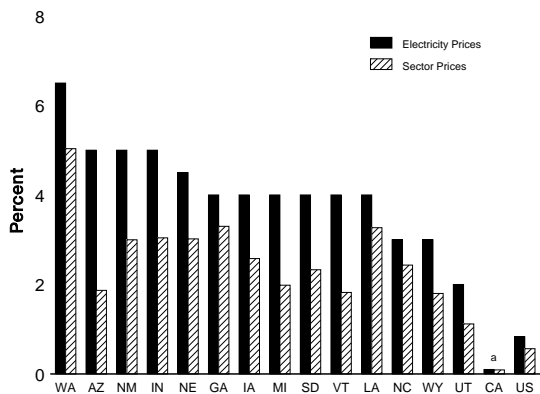
commercial sector coal prices are assigned from the industrial sector. There is the same possibility of errors occurring in the assigned price because coal use may be tax exempt in the industrial sector, but not in the commercial sector.

The biases from inaccurate estimates are small. Total coal expenditures are 1 percent of the total U.S. energy end-use expenditures (Figure 3). For the residential sector, coal expenditures were 0.2 percent of the sector's expenditures. Figure 15 shows coal expenditures as a percentage of total States' residential energy expenditures. As indicated, residential coal expenditures in 42 States were less than 1 percent of total energy expenditures. The two States in the 5-percent interval--Alaska and Pennsylvania--exempt coal purchases from the sales tax. Since the industrial sector spends more on coal than the residential sector, the effect of eliminating the potential bias in residential coal prices could be within the round-off error.

## Electricity

Electricity prices are not adjusted for sales tax in *SEPER*. If there were reliable and useful State tax data, the electricity prices could be adjusted for State sales tax following the procedure used in *SEPER* to adjust heating oil prices. To estimate the magnitude of the possible effect of including State sales tax in the electricity prices, the same method for adjusting distillate fuel prices was used. In this case, the electricity prices of the non-exempt States were inflated by multiplying the tax price by  $(1+t)$ , where  $t$  is the Bureau of Census sales tax data, except for Utah and California residential sectors (Tables B2 and B4 in Appendix B). Figures 16 through 18 show the States which would have increases in electricity and sector energy prices if sales taxes were included in the price of electricity. Since electricity accounts for 76.6 percent of the commercial sector's energy expenditures, and few States give partial or full exemptions, this sector has the largest estimated increase in electricity prices (4.2 percent), and sector energy prices (3.2 percent) of the three sectors. Industrial electricity and sector energy prices increase by 2.1 and 0.9 percent respectively, as shown in Figure 17, primarily because the 13 States depicted account for 36.2 percent of the electricity expenditures and 40.0 percent of total industrial energy expenditures.

**Figure 16. Percent Increase in Residential Electricity and Sector Prices by the Addition of State Sales Taxes, 1990**

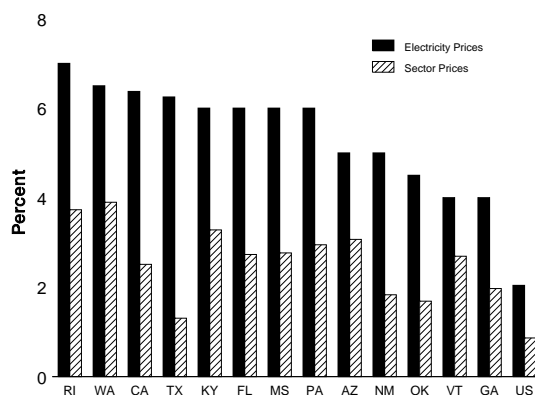


<sup>a</sup> California levies an environmental tax of 0.1 mill per kilowatthour.

Note: The residential sector price is the weighted average of the cost of energy.

Source: Table C2.

**Figure 17. Percent Increase in Industrial Electricity and Sector Prices by the Addition of Sales Taxes, 1990**

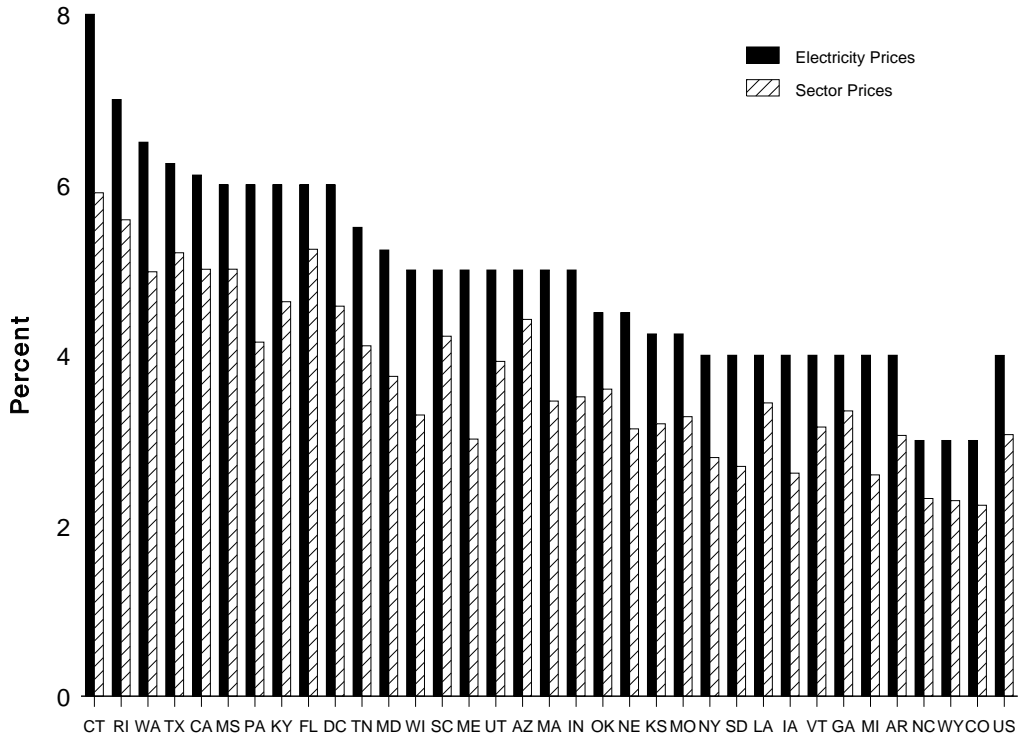


Note: The Industrial sector price is the weighted average of the cost of energy.

Source: Table C4.

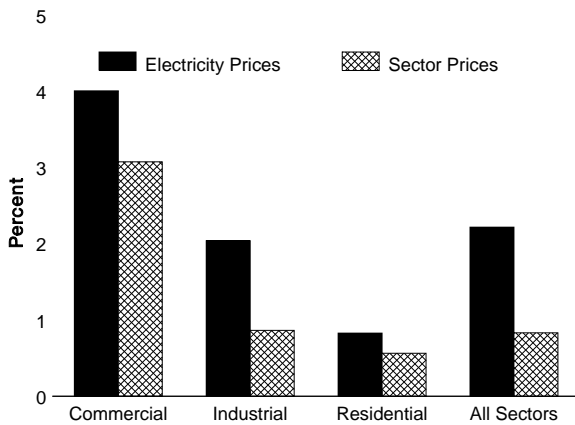
The impact on the residential sector is least, with electricity prices rising by 0.9 percent and total energy prices by 0.6 percent. Figure 19 shows the impact of the increase in electricity and average energy prices of the commercial, industrial, and residential sectors by the addition of States' sales taxes. Total U.S. energy expenditures include the transportation sector's electric and total expenditures, which accounted for 0.2 percent of the electricity expenditures, and 38.5 percent of total energy expenditures.

**Figure 18. Increase in Commercial Electricity and Sector Prices by the Addition of State Excise Taxes to Prices, 1990**



Note: The commercial sector price is the weighted average of the cost of energy.  
Source: Table C3.

**Figure 19. Increase in Electricity and Sector Prices of End-Use Sectors by the Addition of State Sales Taxes, 1990**



Note: Price effects on the transportation sector were not estimated.  
Source: Table C5

## Summary

Based on these estimates of bias, it is clear that the total electricity and jet fuel expenditures by the consumer are under-reported, and the expenditures on distillate fuel costs of the residential consumers are over-reported by the individual States affected by State sales tax. Users of EIA's electricity, distillate and jet fuel price data will eventually have to decide if the magnitude of bias is significant. Again, it needs to be emphasized that these estimates are preliminary. They depend on the individual tax codes in each State, and how the State's taxation/revenue offices interpret them.<sup>42 43</sup>

Preliminary estimates of the magnitude of bias in the reported 1990 electricity prices ranged from 0.8 percent in the residential sector to 4.1 percent in the commercial sector, with total U. S. bias of 2.2 percent (Figures 14 through 18). The estimate of bias by States ranged from 3 percent to 8 percent (Table 1). Moreover, Figures 3 through 7 show the percentage of energy expenditures on electricity. These results suggest that if end-use taxes on electricity could be collected from the respondents, the under-reporting of electricity price bias in total U.S. energy prices could be reduced.

**Table 1. Impact on Electricity and Sector Prices by Including Sales Taxes in Prices, 1990  
(Dollars per Million Btu)**

Sector	Electricity Prices		Sector Prices	
	Excluding Sales Tax	Including Sales Tax	Excluding Sales Tax	Including Sales Tax
Residential	22.96	23.15	12.14	12.21
Commercial	21.20	22.06	11.95	12.32
Industrial	13.92	14.20	5.49	5.54
United States	19.33	19.76	8.43	8.50

Source: Tables C1 through C4 in Appendix C.

## Classification of Sectors

Differences in how *SEPER*, EIA, Census, and the States define economic sectors limit how accurately reported values can be adjusted to reflect the taxes that are paid. The electricity sector is a good example of a potential problem in estimating the prices of each of the economic sectors. Table A-16 in Appendix A shows the instructions of what is to be included in the sectors for Forms EIA-826 and -861 and Federal Energy Regulatory Commission (FERC) Forms No. 1 and No. 2. For the commercial and industrial sectors, the respondent has several options in reporting revenue. For instance, the following is the industrial sector's instructions for completing Forms EIA-826 and EIA-861:

<sup>42</sup>For instance, if a kitchen in a restaurant is considered a manufacturing process, is the firm exempt from the sales tax on the energy used?

<sup>43</sup>A forthcoming report by the American Alliance to Save Energy on State and local energy taxes will provide further information on the complexity of the energy tax codes of the States.

The industrial sector includes electricity supplied to manufacturing, construction, mining, agriculture, fishing, and forestry establishments, Standard Industrial Classification (SIC) codes 01-39. The utility may classify industrial service using the SIC codes, or based on demand or annual usage exceeding some specified limit. The limit may be set by the utility based on the rate schedule of the utility. Sales to consumers (i.e., farms and irrigation) that the utility has no system for separating into residential, commercial and industrial classifications, should be classified based on the classification of consumer that their rate schedule most closely resembles. If there is no rate schedule distinction, report industrial consumers as those having a demand equal to or greater than 1000 kilowatts.

If a respondent elects not to use the SIC codes or the rate schedule, a large commercial establishment sale could be reported as an industrial sector sale if the sale was greater than 1000 kilowatts. There is also the possibility that electricity sales to farms could be reported in the residential sector. If the electricity price data were to be published ex-taxes, the only ambiguity left to be addressed is one that results from mismatched sectors. If the prices include taxes, there is the additional difficulty of determining what sectors may be exempt from taxes as well as the potential mismatch between EIA's sectors and those defined by the State tax code. For instance, if electricity sales to each farm were sufficiently small to fail to be classified as residential sector sales, the tax-adjusted price would not accurately reflect the price of the industrial and residential sectors. The same problem would hold true for those surveys whose end-use sectors differ from the *SEPER*.

## Conclusion

We have presented estimates of the approximate order of magnitude of bias that results from the inconsistent treatment of taxes for aviation gasoline, jet fuel, the distillate fuel residential sector, and for the electricity residential, commercial, and industrial sectors. We have also discussed why these are preliminary estimates. To sharpen these estimates would require more information about the pattern and importance of the exemptions from sales and excise taxes in the States. The type of questions that would need to be answered would include:

- If residents are exempt from sales tax on purchases of electricity and fuels, is coverage of this category the same as the residential coverage of *SEPER*?
- When a State exempts fuels used in the manufacturing process, how is the manufacturing process defined? Can the amount of energy consumed in these processes be determined?
- What other energy taxes are *de facto* end-use taxes?

# Appendix A

## *SEPER* and Surveys Documentation Tables

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Each of the *SEPER* documentation tables gives a source where detailed information can be found. Quotations in the tables are from the cited source.

The left-hand column of the EIA survey tables gives the form number and title. All quotations are from the cited forms.

Table A-16 shows the instructions for what is to be included in the sectors for the forms used in the survey.

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## Appendix A

# SEPER and Survey Documentation Tables

**Table A1. SEPER Documentation of Coal Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
Coking Coal  Industrial	"Coking coal prices are those paid at coke plants, and probably include taxes, but it is not that clear from sources' data collection forms."	For 1981 forward: EIA, <i>Quarterly Coal Report</i> , (QCR), Oct.- Dec. issue, Table A3. (EIA-5)  1977-80: EIA, <i>Coke and Chemicals</i> , Table 19 (1977), Table 15 (1978), and Table 7 (1979-80).  1970-76: Bureau of Mines, <i>Minerals Yearbook</i> , "Coke and Coal Chemicals" chapter, Table 12.
Steam Coal  Residential	"Residential sector steam coal Btu prices are the average delivered prices for coal purchased by residential customers and include taxes." From 1979 forward the prices are estimated "using an equation estimated by regressing the residential steam coal prices generated for 1974-1978 from <i>Gas Househeating Survey (GHS)</i> on average spot coal Btu prices from <i>C&amp;Q</i> ." For details on how the missing data problem was handled see the <i>SEPER's</i> documentation.	For 1974 forward: EIA, <i>Cost and Quality of Fuels for Electric Utility Plants (C&amp;Q)</i> , average spot coal prices, Table 2 (1974-79), Table 44 (1980-82), Table 49 (1983-84), and Table 39 (1985 forward). (FERC Form 423)  1971-78: American Gas Association, <i>Gas Househeating Survey (GHS)</i> , table titled, "Competitive Fuel Prices."
Steam Coal  Industrial	For 1984 forward, annual industrial prices are weighted average of quarterly prices. "Although it is not clear from the data sources, the prices probably include taxes." (See <i>QCR</i> )  Other years from <i>ASM</i> or <i>CM</i> . "It is not clear from data sources whether the prices include taxes."  See documentation for further details on the estimation procedures, especially for the few States that did not report prices in the <i>QCR</i> .	For 1984 forward: EIA, <i>QCR</i> , Tables 16 and 17 (1984:1 through 1985:2 and 1986:1, 1987:1, 1988:1); Tables 18 and 19 (1985:3 and 1985:4, 1986:2, 1987:2, and 1988:2nd through 4th Qtrs; 1989 forward, 1st-4th Qtrs. (EIA-5)  1980-83: EIA, "Quarterly Coal Consumption Report: Manufacturing Plants, " (EIA-3). Only published data are used from Table 25 (1980), Table 11 (1981-82), and Table 2 (1983).  1971, 1974-79: Bureau of Census, United States, Dept. of Commerce, <i>Annual Survey of Manufacturers (ASM)</i> and <i>Census of Manufacturers (CM)</i> , Table 4 (1971) and Table 3 (1974-79).  1970, 1972-73: Steam coal electric utility.
Commercial	Commercial sector prices are assigned from industrial steam coal prices.	See Industrial sector sources.

**Table A1. SEPER Documentation of Coal Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
Steam Coal Transportation	Since 1978, the <i>SEPER</i> has reported zero consumption of coal in the transportation sector. Thus, this sector will not be discussed in this report. Prior to 1978, the industrial steam coal prices were assigned as estimates in the transportation prices.	See Industrial sector sources.

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pages 181-188.

**Table A2. EIA Surveys: Coal End-Use Price and Tax Data**

Form	Prices and Method of Calculating	Price, Revenue and/or Tax Data Requested	Sector
<p>EIA-3 Coal</p> <p><i>Quarterly Coal Consumption Report-- Manufacturing Plants</i></p>	<p>The respondent does not report the unit price. Total cost and quantity numbers are used to calculate unit prices that are published.</p>	<p>"Total Cost of Coal Received on a C.I.F. Basis." (C.I.F. means cost including insurance and freight; i.e., the delivered cost at the plant.) General Instructions - G.4.</p>	<p>Manufacturing (SIC 20-39)</p>
<p>EIA-5 Coal</p> <p><i>Coke Plant Report--Quarterly</i></p>	<p>The respondent does not report the unit price. Total cost and quantity numbers are used to calculate unit prices that are published.</p>	<p>"Total Cost of Coal Received on a C.I.F. Basis; i.e., the delivered cost at the plant." General Instructions.</p>	<p>Manufacturing Coke Plants</p>
<p>EIA-5 Coal</p> <p><i>Coal Distribution Report</i></p>	<p>NA</p>	<p>Collects no information on prices. Collects information on the coal sold to the Residential and Commercial Sectors as well as other information. This information is used in developing the consumption estimates in <i>SEDR</i>. Residential coal consumption estimates multiplied by the price estimates give the expenditure estimate in <i>SEPER</i>.</p>	<p>Residential Commercial</p>
<p>FERC Form-423 Coal</p> <p><i>Monthly Report of Costs and Quality of Fuels for Electric Plants</i></p>	<p>The respondent enters spot prices in cents per million Btu for coal from each mine.</p>	<p>"Enter cost in cents per million Btu Free on Board (f.o.b.) plant. The purchase price should include all costs incurred by the utility in the purchase and delivery of the fuel to the plant."</p>	<p>Residential</p> <p>Utilities spot coal prices are used in the derivation of residential coal price.</p>

Source: Forms EIA-3, EIA-5, EIA-6 and FERC Form-423.

**Table A3. SEPER Documentation of Natural Gas Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Natural Gas</p> <p>Residential, Commercial, and Industrial</p>	<p>"In general, taxes are included in the prices. <b>However, taxes collected by a utility from an end user and turned over to a government authority are not included in the revenues reported in the <i>Natural Gas Annual</i> or <i>Natural Gas Production and Consumption</i> and are not included in the prices.</b> Taxes paid by the utility (rather than end user) are considered operating costs and are passed on to the user as part of the rate. <b>Therefore, Federal, State, business, and property taxes are typically included in the prices, while sales and other point-of-purchase taxes are not.</b>" p. 189.</p>	<p>For 1980 forward: EIA, <i>Natural Gas Annual Volume 1</i>, Table 11 (1980), Table 14 (1981-85), Table 15 (1986), Table 19 (1987), and Table 22 (1988-90). (EIA-176 and EIA-857)</p> <p>1970-79: Bureau of Mines, United States, Department of Interior, <i>Natural Gas Production and Consumption</i>, Table 6 (1970 and 1979), and Table 7 (1971-78).</p>

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pp. 189-191.

**Table A4. EIA Surveys: Natural Gas End-Use Price and Tax Data**

Form	Prices and Method of Calculating	Price, Revenue and/or Tax Data Requested	Sector
<p>EIA-176 Natural Gas</p> <p><i>Annual Report of Natural and Supplemental Gas Supply and Disposition</i></p>	<p>The respondent does not report the unit price. Total cost and quantity numbers are used to calculate the published unit prices.</p>	<p>"Revenue reported for sales are to be gross revenues, including all local and State taxes, surcharges, and/or adjustments billed to consumers whether or not billing and/or payment occurred during the report year." (Page 6 of Instructions defines gross revenue.)</p>	<p>Residential includes apartments.</p> <p>Commercial (includes agriculture, forestry, fisheries, State and Federal Govts., and non-manufacturing activities). SIC: 01-09 and 40-99, except for electric utilities and apartments.</p> <p>Industrial SIC: 10-39.</p> <p>(See page 5 Instructions and Appendix A for details.)</p>
<p>EIA-857 Natural Gas</p> <p><i>Monthly Report of Natural Gas Purchases and Deliveries to Consumers</i></p>	<p>The respondent does not report the unit price. The expenditures and quantity numbers are used to calculate the published unit prices.</p>	<p>"...gross revenues, including any and all system charges or minimum bill amounts, commodity charges, <b>taxes</b>, surcharges, adjustments or other charges billed for gas delivered. In the event your regularly maintained records do not include all charges for which customers are billed, for example local sales tax, footnote the type of charges excluded on your initial submittal." (See page 4 of Instructions.)</p>	<p>Residential</p> <p>Commercial (includes agriculture, forestry and fisheries, and local, State, and Federal agencies engaged in non-manufacturing activities.)</p> <p>Industrial</p>
<p>FERC Form No. 2 Natural Gas</p> <p><i>Annual Report for Major Natural Gas Companies</i></p>	<p>The respondent does not report the unit price. The revenue and quantity numbers are used to calculate the published unit prices.</p>	<p>Accounts 480, 481, 482 specify what is to be reported in operating revenue.</p> <p>The statement at the end of the table specifies the details.</p> <p>See note on net billing in the above FERC Form No 1.</p>	<p>Residential, Commercial, Industrial, and Public authorities.</p> <p>(See classifications of sector at the end of the tables.)</p>

Source: Forms EIA-176 and EIA-857 and FERC Form No. 2.

**Table A5. SEPER Documentation of Motor Gasoline Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Motor Gasoline</p> <p>Transportation Commercial Industrial</p>	<p>Motor gasoline is developed for the transportation sector, and the transportation sector prices are assigned to the industrial and commercial sector. <b>Prices in this series are retail prices (usually service station prices) including taxes.</b></p> <p>For 1983 forward: From <i>PMA</i> and from the <i>Consumer Prices: Energy (CPI)</i>. <b>State and Federal motor gasoline taxes are added to the prices from the <i>PMA</i>; all taxes are included in the <i>CPI</i> data. In cases where the tax rate is not constant throughout the year, average monthly rates are used. Due to the lack of uniformity in application, State and local Sales taxes are not included. Monthly State tax information and Federal tax information are from <i>Highway Statistics</i>. The monthly State taxes are averaged to create an average annual tax for each State which is combined with the Federal tax to adjust the <i>PMA</i> price.</b></p>	<p>For 1986 forward: EIA, <i>PMA</i>, Table 29 (1986-88) and Table 30 (1989 forward), column titled "All Refiners, Sales to End Users, Through Company Outlets." (EIA-782A/B)</p> <p>1983-85: EIA, <i>PMA 1985, Volume 1</i>, Table 16, column titled "All Refiners and Gas Plant Operators, Sales to End Users, Through Company Outlets."</p> <p>For 1974 forward: BLS, DOL, <i>Consumer Prices: Energy</i>, computer printouts of monthly gasoline prices.</p> <p>1970-82: McGraw-Hill, Inc. <i>Platt's Oil Price Handbook and Oilmanac</i>, table titled "AAA 'Fuel Gauge' Report" (1982); table titled "Platt's/Lundberg Summary,"(1979-81); and table titled "Service Station Prices: Gasoline (Including Taxes)," (1970-78).</p>
	<p>1982: <i>Platt's</i> and <i>CPI</i> data are used. <b>The continuity of these prices with prices published by <i>Platt's</i> in previous years suggests that taxes are included, but this is not explicitly indicated. The <i>CPI Detailed Report</i> of April 1986 explicitly states that Federal, State, and local taxes are included.</b> The <i>Platt's</i> survey in the <i>Oil and Gas Journal</i> database includes a series with taxes and a series without taxes.</p> <p>1979-81: <b>Although it is not clear whether taxes are included in the prices (<i>Platt's</i>), the continuity of the series with 1978 prices suggests that taxes are included. The <i>CPI</i> data includes all taxes.</b></p> <p>1970-78: <b>Both the <i>CPI</i> and the <i>Platt's</i> prices include taxes.</b> Methods of estimation vary for the years.</p>	<p>1974-82: BLS, <i>CPI Detailed Report</i>, April 1986, Technical Notes, page 110.</p> <p>1982: EIA, Form EIA-25 "Prime Supplier Report" computer tape, unpublished data.</p> <p>1976-84: EIA, <i>Monthly Energy Review</i>, January 1985, table titled "Petroleum: Finished Motor Gasoline Supply and Disposition."</p> <p>Taxes: 1970 forward: DOT, Federal Highway Administration, <i>Highway Statistics</i>, Tables MF-26 (1973 forward); MF-121T for State taxes (1983 forward); FE-101 for Federal taxes (1983 forward); and MF-23 and MF-25 (1970-72).</p>

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pp. 218-225.

**Table A6. EIA Surveys: Petroleum Products End-Use Price and Tax Data**

Form	Prices and Method of Calculating	Price, Revenue and/or Tax Data Requested	Sector
EIA-782A Petroleum Products  <i>Refiners'/Gas Plant Operators' Monthly Petroleum Product Sales Report</i>	"Unit prices are to be determined by dividing the total revenues derived from the sales of products during the reference period by the total number of gallons." (See page 2, Instruction iv.)	"The reported unit price should <b>exclude all taxes on the sale of petroleum products such as Federal, State, and local excise or sales taxes.</b> " (See page 2, Instruction iv.)	Residential, Commercial, Industrial, and Transportation
EIA-782B  <i>Resellers'/Retailers Monthly Petroleum Product Sales Report</i>	Same as above.	Same as on Form EIA-782A.	Residential, Commercial, Industrial, and Transportation
<p><b>The product information collected on Forms 782-A/B is (1) motor gasoline, distillate fuels, residual fuels, aviation fuels, and liquefied petroleum gas for Tables A5, A6-9, and A11.</b></p>			

Source: Forms EIA-782A and EIA-782B.



**Table A7. SEPER Documentation of Distillate Fuel Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Distillate Fuel</p> <p>Residential</p>	<p><b>"Beginning with 1983, taxes are added to the prices. It is not clear from the data sources whether taxes are included in the prices for the previous years." States' general sales taxes from the Bureau of Census report, <i>State Government Tax Collections (SGTC)</i>, are added to the reported or estimated prices.</b></p> <p>The diesel fuel prices are reported in the <i>PMA</i> for the following 24 States: AK, CT, DC, DE, ID, IL, IN, MA, MD, ME, MI, MN, NH, NJ, NY, OH, OR, PA, RI, VA, VT, WA, WI, and WV.</p> <p>For the remaining 27 States that do not have prices in the <i>PMA</i>, prices are estimated using <i>GHS</i> fuel oil prices, <i>SEDR</i> consumption data, and <i>PMA</i> PAD district prices for Districts II, III, IV, and V.</p> <p>Explicitly, of the States with estimated prices for periods 1978-82, the 24 States reporting prices exclude taxes. There is no mention in this period, as well as in the periods 1975-77 and 1970-74, where sources were changing and only regional data are available indicating what they did with respect to taxes.</p>	<p>For 1986 forward: EIA, <i>Petroleum Marketing Annual (PMA)</i>, Table 37 (1986-88) and Table 39 (1989 forward), column titled, "To Residential Consumers." (EIA-782A/B)</p> <p>For 1983 forward: American Gas Association, <i>Gas Househeating Survey (GHS)</i>, Appendix 2, "Competitive Fuel Prices," column titled, "Fuel Oil." Used in estimating non-reporting State prices.</p> <p>For 1983 forward: Bureau of Census, United States, Department of Commerce, <i>State Government Tax Collections (SGTC)</i>, table titled, "State Government Excises on General Sales, Motor Fuel, and Cigarettes, Beginning and End of Fiscal Year."</p> <p>1983-85: EIA, <i>PMA 1985, Volume 1</i>, Table 26. 1970-85: McGraw-Hill, Inc., <i>Platt's Oil Price Handbook and Oilmanac</i>, refinery and terminal prices for No.2 fuel oil, average of highs and lows.</p> <p>1975-82: EIA, <i>MER</i>, table titled "Residential Heating Oil Prices by Region," Feb. 1978, p. 67 (1975 and 1976); Apr. 1980, p. 83 (1977 and 1978); July 1982, p. 87 (1979-82). Data collected on EIA Form 9A (formerly EIA-9A and FEA-P112-M-1).</p> <p>1970-82: EIA, <i>AER 1988</i>, Table 67, "Motor Gasoline and Residential Heating Oil Prices, 1949-1988."</p>

See note at end of table.

**Table A7. SEPER Documentation of Distillate Fuel Price Estimates (Continued)**

Product Sector	Price/Tax information	Source of Price Data
Commercial	<p>"Commercial sector distillate prices are estimated by two methods; one for prices 1983 forward, and the other for prices 1970-1982. For 1983 forward, retail prices paid by commercial/institutional establishments (excluding taxes) are from <i>PMA</i>. <b>State general sales taxes from the Bureau of Census are added.</b></p>	<p>For 1970-1982, commercial distillate prices are based on markups calculated from <i>Energy Prices: 1960-1973</i>, and refinery and terminal (wholesale) prices are from <i>Platt's</i>. <b>It is not clear from the data whether these prices include taxes.</b> For 1986 forward: EIA, <i>PMA</i>, Table 37 (1986-88) and Table 39 (1989 forward), column titled "To Commercial/Institutional Consumers." (EIA-782A/B)</p> <p>For 1983 forward: American Gas Association, <i>GAS</i>, Appendix 2, "Competitive Fuel Prices," column titled "Fuel Oil."</p> <p>For 1983 forward: Bureau of Census, <i>SGTC</i>, table titled "State Government Excises on General Sales, Motor Fuel, and Cigarettes: Beginning and End of Fiscal Year."</p> <p>1983-85: EIA, <i>PMA 1985, Volume 1</i>, Table 26.</p> <p>1970-82: McGraw-Hill, Inc., <i>Platt's Oil Price Handbook and Oilmanac</i>, refinery and terminal prices for No. 2 fuel oil, average of highs and lows.</p> <p>1970-82: Foster Associates, Inc., 1974, <i>Energy Prices 1960-73</i>, Tables 4-c and 5-b.</p>

See note at end of table

**Table A7. SEPER Documentation of Distillate Fuel Price Estimates (Continued)**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Distillate Fuel</p> <p>Industrial</p>	<p>For 1983 forward, sales prices of No. 2 fuel oil to industrial consumers are from <i>PMA</i>. <b>State general sales taxes from the Bureau of Census are added.</b></p> <p>For 1970-1982, prices are the average cost of distillate to manufacturing firms; <b>it is not clear from the data sources whether these prices include taxes.</b></p>	<p>For 1986 forward: EIA, <i>PMA</i>, Table 37 (1986-88) and Table 39 (1989 forward), column titled "To Industrial Consumers." (EIA-782A/B)</p> <p>For 1983 forward: <i>American Gas Association, GAS</i>, Appendix 2, "Competitive Fuel Prices," column titled "Fuel Oil."</p> <p>For 1983 forward: Bureau of Census, <i>SGTC</i>, table titled "State Government Excises on General Sales, Motor Fuel, and Cigarettes: Beginning and End of Fiscal Year."</p> <p>1983-85: EIA, <i>PMA 1985, Vol. 1</i>, Table 26.</p> <p>1971, 77, and 81: Bureau of Census, <i>CM</i>, Table 4 (1971) and Table 3 (1977, 81).</p> <p>1970-82: McGraw-Hill, Inc., <i>Platt's Oil Price Handbook and Oilmanac</i>, refinery and terminal prices for No. 2 fuel oil, average of highs and lows.</p> <p>1974-76 and 1978-80: Bureau of Census, <i>ASM</i>, Table 3.</p>

See note at end of table.

**Table A7. SEPER Documentation of Distillate Fuel Price Estimates (Continued)**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Distillate Fuel</p> <p>Transportation</p>	<p>Consumption: vessel bunkering plus military and railroad and on-highway fuel use.</p> <p>For 1986 forward: <b>State and Federal fuel taxes are added to PMA prices. State and local sales and other general taxes were not included.</b></p> <p>For 1983-85: State and Federal tax rate information is taken from <i>Highway Statistics</i> for 24 States. Other information was calculated using <i>Agricultural Prices</i>. <b>A simple average of monthly State and Federal taxes is calculated as a combined average tax and added to the PMA prices for a final physical unit price. State and local sales and other general taxes are not included.</b></p> <p>For 1977-83: <b>Prices include State and local per gallon taxes. Federal taxes and State and local sales and other general taxes are not included.</b></p> <p>For 1970-76: <b>Prices include State and local per gallon taxes. Federal taxes and State and local sales taxes, and other general taxes, are not included.</b></p>	<p>For 1986 forward: EIA, <i>PMA</i>, Table 36 (1986-88) and Table 38 (1989) column titled "Sales to End Users, Sales Through Company-Operated Retail Outlets," for diesel fuel prices, and Table 29 (1986-88) and Table 30 (1989 forward), column titled "All Refiners, Sales to End Users, Through Company Outlets," for motor gasoline prices. (EIA-782A/B)</p> <p>1983-85: EIA, <i>PMA 1985 Volume 1</i>, Table 25 titled "Sales to End Users, Sales Through Company-Operated Outlets."</p> <p>1970-85: Crop Reporting Board, United States, Department of Agriculture, <i>Agricultural Prices</i>, tables generally titled "Motor Supplies: Average Price Paid by Farmers for Motor Fuel" for 1970-79, and "Diesel Fuel: Average Price Paid by States" for 1980-85.</p> <p>For 1970 forward: DOT, Federal Highway Administration, <i>Highway Statistics</i>, Table FE-101 for Federal tax rates, and Table MF-25 for special fuels consumption data. Table MF-25 is not included in the 1976 volume but is publicly available directly from FHA.</p>

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pp. 194-207.

**Table A8. SEPER Documentation of Residual Fuel Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Residual Fuel Oil</p> <p>Commercial</p>	<p><b>Prices for all years include taxes.</b></p> <p>For 1984 forward: Data from <i>PMA</i>. Tax data from Bureau of Census publications are added to final sector prices.</p>	<p>For 1984 forward: EIA, <i>PMA 1990</i>, Table A4. (EIA-782A/B)</p> <p>1978-83: EIA, <i>MER, December 1988</i>, table titled "Refiner Sales Prices of Residual Fuel Oil, column titled "Average Sales to End Users."</p> <p>1976-77 EIA, <i>MER, December 1983</i>, table titled "Average No. 6 Residual Fuel Oil Prices," column titled "Average Retail."</p> <p>Taxes:</p> <p>1987 forward: Bureau of Census, <i>State Government Tax Collections</i>, Table 8.</p>
<p>Residual Fuel Oil</p> <p>Transportation</p>	<p><b>Prices include taxes for all years with an adjustment for military use.</b></p> <p>The prices are a weighted average of vessel bunkering, military use, and railroads.</p>	<p>For 1982 forward: EIA, <i>AER 1990</i>, Table 71, row titled "Sales Prices to End Users, Residual Fuel Oil, Greater Than 1 Percent Sulfur Content." (EIA-782A/B)</p> <p>1976-81: EIA, <i>Monthly Petroleum Product Price Report</i>, Table 3.</p> <p>1975: FEA, <i>Monthly Petroleum Product Price Report</i>, Table 3.</p> <p>1970-86: Electric utility sector residual fuel price estimates (in physical units) from SEPEDS.</p> <p>Taxes:</p> <p>For 1987 forward: Bureau of Census, <i>State Government Tax Collections</i>, Table 8.</p>

See note at end table.

**Table A8. SEPER Documentation of Residual Fuel Price Estimates (Continued)**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Residual Fuel Oil</p> <p>Industrial</p>	<p><b>Prices for all years include taxes.</b></p> <p>For 1984 forward: Data from <i>PMA</i>. Tax data from Bureau of Census publications are added to the final sector prices.</p> <p>1982-83: Used <i>ASM/CM</i> earlier data along with <i>Platt's</i> data (No. 6 fuel oil price) to estimate prices. <b>No statement made about taxes.</b></p> <p>1971, and 1974-81. Used <i>ASM/CM</i> data. <b>Taxes are included in all published data.</b></p> <p>1970, 72, 73: Mixed estimation procedure using both <i>ASM/CM</i> and <i>Platt's</i> data. <b>No statement on taxes. Must assume it is in the data.</b> For 1984 forward: EIA, <i>PMA 1990</i>, Table A4. (EIA-782A/B)</p>	<p>For 1984 forward: EIA, <i>PMA 1990</i>, Table A4. (EIA-782A/B)</p> <p>For 1984 forward: Industrial sector distillate price estimates from the <i>SEPER</i> data system for AK and WA only.</p> <p>For 1970-83: McGraw-Hill, Inc., <i>Platt's Oil Price Handbook and Oilmanac</i>, refinery and terminal prices for No. 6 fuel, average of highs and lows.</p> <p>1971, 77, and 81: Bureau of Census, DOC, <i>Census of Manufacturers, Fuels and Electric Energy Consumed</i>, Part 2, Table 3. (Dates shown on the report covers are 1972, 1977, and 1982.)</p> <p>1974-76 and 1978-80: Bureau of Census, <i>Annual Survey of Manufacturers, Fuels and Electric Energy Consumed, States by Industry Group</i>, Table 3.</p> <p>Taxes:</p> <p>For 1987 forward: Bureau of Census, DOC, <i>State Government Tax Collections</i>, Table 8, column titled "Percentage Rate, September 1."</p> <p>1984-86: Bureau of Census, DOC, <i>Statistical Abstract of the United States</i>, table titled "State Government Tax Collections and Excise Taxes," column titled "Excise Taxes, General Sales and Gross Receipts."</p>

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pp. 227-233.

**Table A9. SEPER Documentation of Aviation Fuel Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Aviation Gasoline</p> <p>Transportation</p>	<p>Aviation gasoline prices are national averages, <b>excluding taxes</b>, developed from several sources.</p>	<p>For 1978 forward: EIA, <i>Annual Energy Review 1990 (AER)</i>, Table 71, row titled "Sales Prices to End Users: Aviation Gasoline." (EIA-782A)</p> <p>1976-77: EIA, <i>Monthly Energy Review 1989 (MER)</i>, April 1984, page 106, column titled "Aviation Gasoline, Retail."</p> <p>1970-75: EIA, <i>AER 1989</i>, Table 70, column titled " Motor Gasoline, Leaded Regular, Nominal."</p>
<p>Jet Fuel</p> <p>Transportation</p>	<p>Prices are developed for kerosene-type jet fuel and are used as the price for both types of jet fuel. Taxes are not included in the prices for 1983 forward. <b>It is not clear from the data sources whether taxes are included in the 1970-1982 prices.</b></p>	<p>For 1985 forward: EIA, <i>PMA</i>, Table 21, column titled "Kerosene-Type Jet Fuel" (85) and Table 33 (86-88) and Table 35 (89 forward) column titled "Kerosene-Type Jet Fuel, Sales to End Users." (EIA-782A)</p> <p>1983-84: EIA, <i>Petroleum Marketing Monthly</i>, Table 14 (Jan. 1984), Table 19 (Feb.- Sept. 1984), and Table 25 (Oct.- Jan. 1985).</p> <p>1973-82: Bureau of Labor Statistics, United States, Department of Labor, <i>Producer Prices and Price Indexes, Supplement</i>, table titled "Producer Price Indexes for Refined Petroleum Products by Region."</p> <p>1970-75: McGraw-Hill, Inc., <i>Platt's Oil Price Handbook and Oilmanac</i>, 57th Edition, page 480.</p>

Source: Energy Information Administration: *State Energy Price and Expenditure Report 1990*, Aviation Gasoline, p. 194, Jet Fuel, pp. 207-209.

**Table A10. SEPER Documentation of Kerosene Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Kerosene Residential</p>	<p>For 1985 forward: In July 1985, BLS ceased publication of the <i>Producer Prices and Price Indexes (PPI)</i> data series used to estimate SEPER's residential kerosene prices. Another approach is used to estimate prices which essentially applies the rate of change of the residential distillate price to kerosene prices. <b>Taxes are included in the prices.</b></p> <p>1977-84: It is not clear from the data sources whether these prices include taxes. The <i>PPI</i> are used to estimate the kerosene price, adjusted to correlate with the <i>Agricultural Prices</i>. <b>It is not clear from the data sources whether these prices include taxes.</b></p> <p>1970-75: Price data in <i>Agricultural Prices</i> are used. <b>It is not clear from the data sources whether the price include taxes.</b></p>	<p>For 1984 forward: Residential distillate fuel price estimates (in physical units) from the SEPER data system.</p> <p>1975-84: BLS, <i>Producer Prices and Price Indexes Supplement</i>, table titled "Producer Price Indexes for Refined Petroleum Products by Region."</p> <p>1970-76: Crop Reporting Board, USDA, <i>Agricultural Prices</i>, table titled "Household Supplies: Average Price Paid by Farmers for Lawn Mowers and Petroleum Products."</p>
<p>Kerosene Commercial</p>	<p>State prices from the industrial sector are assigned to the commercial sector.</p>	<p>See Industrial Sector</p>
<p>Kerosene Industrial</p>	<p>The industrial sector kerosene prices are based on wholesale price, price index data and on industrial sector distillate prices. See the documentation for period-by-period calculation.</p> <p>For 1985 forward: <b>Taxes are included in the price.</b></p> <p>1970-84: <b>It is not clear from the data sources whether taxes are included in these prices.</b></p>	<p>For 1970 forward: Industrial sector distillate price estimates (in physical units) from the SEPER Data System.</p> <p>1975-85: BLS, <i>Producer Prices and Price Indexes Supplement</i>, table titled "Producer Price Indexes for Refined Petroleum Products by Region."</p>

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pp. 209-211.



**Table A11. SEPER Documentation of Liquefied Petroleum Gas Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
<p>Liquefied Petroleum Gas</p> <p>Industrial</p>	<p>The industrial sector liquefied petroleum gas (LPG) prices are estimated from average LPG prices to manufacturing firms, average LPG prices to farmers, and refiner and gas plant operator sales to end users. <b>Taxes are included in the 1970-1984 estimates but are not included in the prices for 1985 forward.</b></p> <p>See Documentation for estimation procedures.</p>	<p>For 1985 forward: EIA, <i>PMA</i>, Table 21 (1985), Table 33 (1986-88), and Table 35 (1989). (EIA-782A)</p> <p>1970-84: Crop Reporting Board, USDA, <i>Agricultural Prices</i>, table titled "Household Supplies: Average Price Paid by Farmers for Lawn Mowers and Petroleum Products," column titled "L.P. Gas" (1970-76); "Household Supplies: Average Price Paid by Farmers" (1977-79); column titled "L.P. Gas: Average Price Paid by States" (1980); and column titled "L.P. Gas: Average Price Paid by Months by States" (1981-84).</p> <p>1981: Bureau of Census, Department of Commerce, <i>1982 Census of Manufacturers, Fuels and Electric Energy Consumed, Part 2, States and Standard Metropolitan Statistical Areas by Major Industry Groups</i>, Table 3, "State-level Quantity and Cost of Liquefied Petroleum Gases."</p> <p>1978-80: Bureau of Census, DOC, <i>Annual Survey of Manufacturers, Fuels and Electric Energy Consumed, States by Industry Group and Standard Metropolitan Statistical Areas by Major Industry Groups</i>, Table 3, "State-level Quantity and Cost of Liquefied Petroleum Gases."</p>
<p>Liquefied Petroleum Gas</p> <p>Residential</p>	<p>Residential sector prices are the average delivered prices of LPG to residential consumers in areas where natural gas is available as a competing fuel. <b>Taxes are included in the prices.</b></p>	<p>For 1971 forward: American Gas Association, <i>Gas Househeating Survey (GHS)</i>, Appendix 2, "Competitive Fuel Prices."</p> <p>1970-72: Crop Reporting Board, USDA, <i>Agricultural Prices</i>, table titled "Household Supplies: Average Price Paid by Farmers for Lawn Mowers and Petroleum Products, in column titled "L.P. Gas."</p>
<p>Liquefied Petroleum Gas</p> <p>Commercial</p>	<p>State prices from the industrial sector are assigned to the commercial sector.</p>	<p>See Industrial sources</p>

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pp. 212-217.



**Table A12. SEPER Documentation of Other Petroleum Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
Asphalt and Road Oil  Industrial	"The asphalt and road oil prices reflect construction use of asphalt and road oil, defined as part of the industrial sector. <b>Taxes are not included.</b> "	For 1970 forward: McGraw-Hill Inc., <i>Engineering News Record</i> .
Lubricants  Industrial and Transportation	Lubricant prices are developed for the industrial sector and assigned to the transportation sector. State-level prices are not available for either sector; national-level prices are developed and assigned to all States. <b>Taxes are not included in the prices.</b>	1970-71, 1973-76, 1978-81, and 1983 forward: Bureau of Census, DOC, <i>Annual Survey of Manufacturers; Lubricating Oils and Greases (Industries 29117 and 29920)</i> .  1972, 1977, and 1982: Bureau of Census, DOC, <i>Census of Manufacturers, Petroleum Refining; Lubricating Oils and Greases (Industries 29117 and 29920)</i> .
Other Petroleum  Industrial	Seven other petroleum prices are assigned to the industrial sector. Only national prices are developed because State-level price information is not available, and <b>taxes are not included in any of the estimates.</b>	See Documentation Appendix in <i>SEPER</i>

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, Asphalt and Road Oil, pp. 193-194, Lubricants, pp. 217-218, and Other Petroleum, pp. 234-238.

**Table A13. SEPER Documentation of Electricity Price Estimates**

Product/Sector	Price/Tax Information	Source of Price Data
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<p>Electricity End-Use Sectors</p>	<p>Electricity prices are retail prices for sales to ultimate users. Prices are developed for the residential, commercial, industrial, and transport sectors. <b>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 are not included in the revenues reported in the <i>Electric Power Annual</i> or the <i>Statistical Yearbook</i>, and are not included in the prices.</b> Taxes paid by the utility (rather than end user) are considered operating costs and are passed on to the end user as part of the rate. <b>Therefore, Federal, State, business and property taxes are typically included in the prices, while sales and other point-of-purchase taxes are not.</b></p>	<p>For 1987 forward: EIA, <i>Electric Power Annual 1988</i>, Tables 19 and 21 (1987 data); <i>Electric Power Annual 1990</i>, Tables 27 and 29 (1988-90). (EIA-861)</p> <p>1970-86: Edison Electric Institute, <i>Statistical Yearbook of the Electric Utility Industry</i>, tables titled "Revenues: Total Electric Industry" and "Energy Sales: Total Electric Utility Industry."</p> <p>1970-86: EIA, <i>Annual Energy Review 1989</i>, Table 95, "Retail Prices of Electricity Sold by Electric Utilities, 1960-1989."</p>
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Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, pp. 239-243.

**Table A14. EIA Survey: Electricity End-Use Price and Tax Data**

<b>Form</b>	<b>Prices and Method of Calculating</b>	<b>Price, Revenue and/or Tax Data Requested</b>	<b>Sector</b>
<p>EIA-861 Electricity  <i>Annual Electric Utility Report</i></p>	<p>The respondent does not report the unit price. The expenditures and quantity numbers are used to calculate the published unit prices.</p>	<p>"...revenue from sales of electricity to those customers purchasing electricity for their own use and not for resale." This entry is a gross revenue and includes the revenue from State and local income taxes, energy or demand charges, consumer service charges, environmental surcharges, franchise fees, fuel adjustments and other miscellaneous charges applied to retail consumers during normal billing operations.(See page vii, Instructions for Schedule III.) However, this definition is subject to the guidelines stated for publicly- and privately-owned electric utilities. For the public utilities, they report the revenue items from Form EIA-412. For the private utilities, they report under "revenue and sales to ultimate consumers," items from pages 300-301 of the FERC Form 1. The revenue accounts of the U.S. of A. are those listed in FERC Form 1.</p>	<p>Commercial, Industrial, Residential. See definitions in Form EIA-816 for coverage.</p>

**Table A14. EIA Survey: Electricity End-Use Price and Tax Data**

<b>Form</b>	<b>Prices and Method of Calculating</b>	<b>Price, Revenue and/or Tax Data Requested</b>	<b>Sector</b>
<p>FERC Form No. 1 Electricity</p> <p><i>Annual Report of Major Electric Utilities, Licensees and Others</i></p>	<p>The respondent does not report the unit price. The revenue and quantity numbers are used to calculate the published unit prices.</p>	<p>Conformity with <i>Uniform System of Accounts</i> (18 CFR 101) (U.S. of A.). Conformity to Accounts 440, 441, 442,443 (U.S. of A.) specifies what is to be reported in operating revenue. The statement at the end of tables specifies the details.</p> <p>Note: FERC advises EIA that "net billing" excludes sales, franchise taxes, certain surcharges, and environmental taxes.</p>	<p>Residential, Commercial, Industrial, Public Authorities (Major), and Railroads and Railways (Major). See classification statement at the end of the tables.</p>

See note at end of table.

**Table A14. EIA Survey: Electricity End-Use Price and Tax Data (Continued)**

<b>Form</b>	<b>Prices and Method of Calculating</b>	<b>Price, Revenue and/or Tax Data Requested</b>	<b>Sector</b>
<p>EIA-412 <i>Annual Report of Public Electric Utilities</i></p>	<p>The respondent does not report the unit price. The revenue and sales numbers are used to calculate the published unit prices.</p>	<p>The respondents follow the U.S. of A. in reporting data and use the same accounts as shown for FERC Form 1.</p>	<p>Residential, Commercial, and Industrial.</p>
<p>EIA-826 Electricity <i>Monthly Electric Utility Sales and Revenue Report with State Distributions</i></p>	<p>The respondent does not report the unit price. The revenue and sales numbers are used to calculate the published unit prices.</p>	<p>The electricity sales and revenue data by State and consumer class that are filed on Form EIA-861, "...should equal the sum of the 12 monthly submissions of this report. If you also file Form EIA-412...or the (FERC)Form 1...the electricity sales and revenue reported on these forms should equal the sum of the 12 monthly submissions of Form EIA-826." (Page ii, General Instructions.)</p> <p>"Revenue. The amount of money resulting from the sales related to services. Also included are gains from the sale or exchange of assets, interest and dividends earned on investments, and other increases in the owner's equity except those arising from capital." (Page iv, Definitions.)</p>	<p>Commercial, Industrial, and Residential. See form for definitions.</p>

Source: Forms EIA-861 and EIA -826 and FERC Form No. 1.

**Table A15. EIA Surveys: Energy End-Use Consumption Price and Tax Data**

<b>Form</b>	<b>Prices and Method of Calculating</b>	<b>Price, Revenue and/or Tax Data Requested</b>	<b>Sector</b>
<p>EIA-457A/C Energy Conservation</p> <p><i>Residential Energy Consumption Survey</i></p>	<p>The respondent does not report the unit prices.</p> <p>The unit prices are calculated using the information provided on the respondents bill.</p>	<p>Questions are not asked about costs. Instead, the respondent is asked to authorize the utility and/or fuel company to give the survey contractor its bill. The utility bills show the total cost to the consumer, which includes state and local taxes, base cost, systems cost, and fuel adjustment. The fuel company is asked for the total cost of delivery of the fuel including State and local taxes. The EIA survey contractor sees the actual bill.</p>	<p>Residential</p>
<p>EIA-871C/F Energy Conservation 871C: Natural Gas 871D: District Heating 871E: Electric 871F: Fuel</p> <p><i>Commercial Buildings Energy Consumption Survey</i></p>	<p>Quantity or volume data are collected as well as the total costs. Therefore, unit values can be calculated.</p>	<p>"Total Dollar Amount should include...State and Local Taxes." Statements of this kind are made across the forms. Billing information is used to get actual consumption and total cost to the consumer.</p>	<p>Commercial</p>
<p>EIA-846A/C Energy Conservation</p> <p><i>Manufacturing Energy Consumption Survey</i></p>	<p>The respondent does not report the unit price. The expenditures and quantity numbers are used to calculate the published unit prices.</p>	<p>The instructions are not specific on the forms (i.e., "Total Expenditures, Including Charges of the Quantity Items...").</p>	<p>Manufacturing</p>
<p>EIA-876A/E Energy Conservation</p> <p><i>Residential Transportation Energy Consumption Survey</i></p>	<p>The respondent does not report the unit price.</p> <p>The reported prices.</p>	<p>Ask the respondents the pump price of their last purchases. In developing the data, EPA factors are used to estimate consumption and BLS gasoline prices, and Lundberg's diesel prices. These are the pump prices to the final purchaser. Include Federal, State and local sales taxes.</p>	<p>Residential Transportation Sector.</p>



Source: Forms EIA-457A/C, EIA-871C/F, and EIA-846 A/C.

**Table A16. Classifications of Economic Sectors by Form**

<b>EIA-826 &amp; EIA-861</b>
<p><b>Commercial</b></p> <p>The commercial sector includes electricity supplied to non-manufacturing business establishments, including hotels, motels, restaurants, wholesale businesses, retail stores, and health, social, and educational institutions. The utility may classify commercial service as all consumers whose demand or annual use exceeds some specified limit. The limit may be set by the utility based on the rate schedule of the utility. Sales to consumers (i.e., farms and irrigation) that the utility has no system for separating into residential, commercial and industrial classifications, should be classified based on the classification of consumer that their rate schedule most closely resembles. If there is no rate schedule distinction, report commercial consumers as those having a demand less than 1000 kilowatts.</p>
<p><b>Industrial</b></p> <p>The industrial sector includes electricity supplied to manufacturing, construction, mining, agriculture, fishing, and forestry establishments, Standard Industrial Classification (SIC) codes 01-39. The utility may classify industrial service using the SIC codes, or based on demand or annual usage exceeding some specified limit. The limit may be set by the utility based on the rate schedule of the utility. Sales to consumers (i.e., farms and irrigation) that the utility has no system for separating into residential, commercial and industrial classifications, should be classified based on the classification of consumer that their rate schedule most closely resembles. If there is no rate schedule distinction, report industrial consumers as those having a demand equal to or greater than 1000 kilowatts.</p>
<p><b>Residential</b></p> <p>The residential sector includes electricity supplied to private household establishments which consume energy primarily for space heating, water heating, air conditioning, lighting, refrigeration, cooking, and clothes drying. The classification of an individual consumer's account, where the use is both residential and commercial, is based on principal use. Apartment houses are also included.</p>
<b>FERC Form No. 1</b>
<p><b>Electric Utilities</b></p> <p>Conformity with <i>Uniform System of Accounts</i> (18 CFR 101) (U.S. of A). Conformity to Account 400 of the U.S. of A. guides the reporting of operating revenue. Accounts 440, 442, 444, 445, and 446 provide instructions on classifying end-users.</p>
<p><b>440 Residential Sales</b></p> <p>A. This account shall include the net billing for electricity supplied for residential or domestic purposes.</p> <p>B. (Record-keeping requirement)</p> <p>Note: When electricity supplied through a single meter is used for both residential and commercial purposes, the total revenue shall be included in this account, or account 442, Commercial and Industrial Sales, according to the rate schedule which is applied. If the same rate schedules apply to residential as to commercial and industrial service, classification shall be made according to principal use.</p>

See note at end of table.

**Table A16. Classifications of Economic Sectors by Form (Continued)**

<b>FERC Form No. 1</b>
<p><b>442 Commercial and Industrial Sales</b></p> <p>A. This account shall include the net billing for electricity supplied to customers for commercial and industrial purposes.</p> <p>B. [1st sentence: Record keeping requirement] Records shall be maintained to show separately the revenues from commercial and industrial customers (1) which have demands generally of 1000 kW or more, and (2) those which have demands generally less than 1000 kW. Reasonable deviations above or below the 1000 kW demand are permissible in order that transfers of customers between the two classes during the year may be minimized.</p> <p>Note A: If the utility classifies large commercial and industrial customers and related revenues on a less than 1000 kilowatts of demand basis, or segregates industrial customers and related revenues according to a recognized definition of an industrial customer, such classifications are acceptable in lieu of those otherwise required by the text of this account on the basis of 1000 kilowatts of demand.</p> <p>Note B. When electricity supplied through a single meter is used for both residential and commercial purposes, the total revenue shall be included in this account, or account 442, Commercial and Industrial Sales, according to the rate schedule which is applied. If the same rate schedules apply to residential as to commercial and industrial service, classification shall be made according to principal use.</p>
<p><b>444 Public Street and Highway Lighting</b></p> <p>A. This account shall include the net billing for electricity supplied and services rendered for the purposes of lighting streets, highways, parks and other public places, or for traffic or other signal system service, for municipalities or other divisions or agencies of State or Federal government.</p> <p>B. [1st sentence: Record keeping requirement] In addition, the records shall be maintained to show the revenue from (1) contracts which include both electricity and services, and (2) contracts which include sales of electricity only.</p>
<p><b>445 Other Sales to Public Authorities (Major Only)</b></p> <p>A. This account shall include the net billing for electricity supplied to municipalities or divisions or agencies of federal or State Governments, under special contracts or agreements or service classifications applicable only to public authorities, except for such revenue as are included in accounts 444 and 447.</p> <p>B. (Record-keeping Requirement)</p>

**446 Sales to Railroads and Railways**

A. This account shall include the net billing for electricity supplied to railroads and interurban and street railways, for general railroad use, including the propulsion of cars or locomotives, where such electricity is supplied under separate and distinct rate schedules.

Note: Revenues from incidental use of electricity furnished under a contract for propulsion of cars or locomotives shall be included herein.

B. (Record-keeping Requirement)

See note at end of table.

**Table A16. Classifications of Economic Sectors by Form (Continued)**

FERC Form No. 2
<p><b>Major Natural Gas Companies</b></p> <p>Conformity with <i>Uniform System of Accounts</i> (18 CFR 201) (U.S. of A). Conformity to Accounts 480,481, and 482 of the U.S. of A. guides the reporting of operating revenue and provides instructions on classifying end-users.</p>
<p><b>480 Residential Sales</b></p> <p>A. This account shall include the net billing for gas supplied for residential or domestic purposes.</p> <p>B. (Record-keeping requirement)</p> <p>Note: When gas supplied through a single meter is used for both residential and commercial purposes, the total revenue shall be included in this account or account 481, Commercial and Industrial Sales, according to the rate schedule which is applied. If the same rate schedules are applicable to both residential and commercial service, classification shall be according to principal use.</p>
<p><b>481 Commercial and Industrial Sales</b></p> <p>A. This account shall include the net billing for gas supplied to commercial and industrial customers.</p> <p>B. (Record-keeping requirement)</p> <p>C. (Major Companies) Records shall be maintained so as to show separately the revenues from commercial and industrial customers, as follows:</p> <div style="margin-left: 40px;"> <p>Large commercial and industrial sales (wherein shall be included the revenues from customers which use large volumes of gas, generally in excess of 200,000 Mcf per year or approximately 800 Mcf per day of normal requirements. Reasonable deviations are permissible in order that transfers of customers between the large and small classifications may be minimized).</p> <p>Small commercial and industrial sales (wherein shall be included the revenues from customers which use volumes of gas generally less than 200,000 Mcf per year or less than approximately 800 Mcf per day of normal requirements).</p> </div> <p>Note: When gas supplied through a single meter is used for both commercial and residential purposes, the total revenue shall be included in this account or in account 480, Residential Sales, according to the rate schedule which is applied. If the same rate schedules are applicable to both residential and commercial service, classification shall be according to principal use.</p>

**482 Other Sales to Public Authority (Major Only)**

A. This account shall include the net billing for gas supplied to municipalities or divisions or agencies of Federal or State Governments, under special contracts or agreements or service classifications, applicable only to public authorities, for general governmental institutional purposes, except any revenues under rate schedules which are included in accounts 481 or 483, and except any revenues from gas used for purposes such as powerplant fuel for publicly-owned electric systems, manufacturing processes of arsenals, etc., and other major uses of gas which appropriately may be classified in account 481, Commercial and Industrial Sales.

B. (Record-keeping Requirement)

See note at end of table.

**Table A16. Classifications of Economic Sectors by Form (Continued)**

<b>EIA-3</b>
<p><b>Manufacturing Plant</b></p> <p>A plant engaged in the mechanical or chemical transformation of materials or substances into finished or semifinished material products (SIC 20-39)</p>
<b>EIA-5</b>
<p><b>Manufacturing</b></p> <p>Companies operating coke plants. Commercial sales are reported, but not by class of industry. (SIC- 3312)</p>
<b>EIA-6</b>
<p><b>Residential/ Commercial</b></p> <p>Housing Units; wholesale or retail business (except coal wholesalers); health institutions (hospitals); social and educational institutions (schools and universities); and Federal, State, and local governments (military installations, prisons, office buildings, etc.). Exclude shipments to Federal power projects, such as TVA; and rural electrification cooperatives, power districts, and State power receipts.</p>
<b>EIA-857</b>
<p><b>Residential</b></p> <p>Residential consumers are consumers using gas for heating, air conditioning, cooking, water heating, and other residential uses in single and multi-family dwelling and apartments.</p>
<p><b>Commercial</b></p> <p>Commercial consumers are nonmanufacturing establishments or agencies primarily engaged in the sales of good or services. Included hotels, restaurants, wholesale and retail stores and other service enterprises; establishments engaged in agriculture, forestry, and fishery, and local, State, and Federal agencies engaged in nonmanufacturing activities.</p>
<p><b>Industrial</b></p> <p>Industrial consumers are establishments engaged in a process which creates or changes raw or unfinished materials into another form or product.</p>

See note at end of table.

**Table A16. Classifications of Economic Sectors by Form (Continued)**

<b>EIA-176</b>
<p><b>Residential</b></p> <p>Residential consumers are consumers using gas for heating, air conditioning, cooking, water heating, and other residential uses in single and multi-family dwellings, apartments, and mobile homes.</p>
<p><b>Commercial</b></p> <p>Commercial consumers are nonmanufacturing establishments or agencies primarily engaged in the sale of goods or services. Included are establishments such as hotels, restaurants, wholesale and retail stores, and other service enterprises; establishments engaged in agriculture, forestry, and fisheries; and local, State, and Federal agencies engaged in nonmanufacturing activities. (Note: Local, State, and Federal agencies were formerly classified as "Other Consumers." The "Other Consumers" classification has been discontinued.) In general, commercial establishments are those in Standard Industrial Classification (SIC) major groups 01 through 09 and 40 through 99 with the exceptions of electric utilities (reported separately on this report) and apartments (included in residential on this report).</p>
<p><b>Industrial</b></p> <p>Industrial Consumers are establishments engaged in a process which creates or changes raw or unfinished materials into another form or product. In general, industrial establishments would be those in Standard Industrial Classification major group codes 10 through 39.</p>
<b>EIA-782A/B</b>
<p><b>Residential</b></p> <p>In cases of sales of No. 2 Fuel Oil, includes individual customers or households (as opposed to businesses or institutions) who ostensibly use the fuel in a residence. Sales to apartment buildings/complexes or to other multi-family dwellings are excluded from the "Residential Sales" category and are included in the "Commercial/ Institutional Sales" category.</p>
<p><b>Commercial/ Institutional</b></p> <p>Firms engaged in transportation, wholesale or retail trade, finance, insurance, and real estate. Also included are apartment buildings/ complexes and other multi-family dwellings, hotels, and office buildings or complexes, local, State or Federal facilities or organizations including the military, schools, hospitals, religious institutions, universities and all other government-supported organizations.</p>
<p><b>Industrial</b></p> <p>Firms engaged in mining, construction, or manufacturing.</p>

See note at end of table.



**Table A16. Classifications of Economic Sectors by Form (Continued)**

<b>EIA-457 A/D</b>
<p><b>Housing Units</b></p> <p>The Residential Energy Consumption Survey (RECS) is a sample of all housing units in the United States. For RECS, a housing unit is a house, an apartment, a mobile home, a group of rooms or a single room, occupied as separate living quarters by a family, an individual, or a group of one to nine unrelated persons. The housing unit must be the primary residence that is occupied for most of the year, seasonal units are not included. Group quarters for ten or more persons, such as a prison, or a nursing home, are not included in the RECS. Hotel and motel rooms are considered housing units if occupied as the usual or permanent place of residence.</p>
<p><b>Survey Coverage and Data Comparisons</b></p> <p>The RECS is designed to sample all year-round, occupied, residential housing units that are primary residences. Included are multifamily units, mobile homes, farm homes, and single-family homes on and off military bases. The RECS definition specifically excludes seasonal units, vacant units, and second homes which numbered 12 million seasonal and vacant housing units in 1989. If these units were a part of the covered households in the RECS, they would represent about 11 percent of residential housing units in 1990; they may represent proportionately less of the total energy consumption. The exclusion of these units from RECS should lower RECS estimates of the consumption of energy sources relative to estimates from supply surveys, which do cover these types of units.</p>
<p><b>Housing Unit</b></p> <p>A house, an apartment, a group of rooms, or a single room if it is either occupied, or intended for occupancy, as separate living quarters by a family, an individual, or a group of nine unrelated persons. Separate living quarters means the occupants (1) live and eat separately from other persons in the house or apartment and (2) have direct access from the outside of the building or through a common hall-that is they can get to it without going through someone else's living quarters. Housing units do not include group quarters such as prisons or nursing homes where ten or more unrelated persons live. Hotel and motel rooms are considered housing units if occupied as the usual or permanent place of residence.</p>
<p><b>Seasonal Units</b></p> <p>Housing units intended for occupancy at only certain seasons of the year. Seasonal units include units intended only for recreational use, such as beach cottages and hunting cabins. Seasonal units are not usually included in the RECS count of occupied housing units unless they are occupied for more than half of the year. (See Primary Residence.)</p>
<p><b>Year-Round Units</b></p> <p>Housing units occupied or intended for occupancy at any time during the year.</p>
<b>EIA-871A/F</b>
<p><b>Commercial Building</b></p> <p>A building with more than 50 percent of its floorspace used for commercial activities. Commercial buildings include, but are not limited to, stores, offices, schools, churches, gymnasiums, libraries, museums, hospitals, clinics, warehouses, and jails. Government buildings were included except for buildings on site with restricted access, such as some military bases or reservations. Farms and buildings located on farms (such as silos, grain elevators, and barns) were excluded from the survey.</p>

See note at end of table.

**Table A16. Classifications of Economic Sectors by Form (Continued)**

<b>EIA-846A/E</b>
<p><b>Manufacturing</b></p> <p>Manufacturing (SIC: 20-39) excluding the manufacturers listed in EIA Forms 847 B/C.</p>
<p><b>Residential Transportation</b></p> <p>Survey of final purchaser at the gasoline/ diesel fuel pumps.</p>
<b>EIA Form 876 A/E</b>
<p><b>Residential Transportation</b></p> <p>Survey of final purchaser at the gasoline/diesel fuel pumps.</p>

Note: The information contained in this table was taken directly from the data collections forms.

# **Appendix B**

## Federal and State Tax Tables



## Appendix B Federal and State Tax Tables

**Table B1. Federal Energy Excise Taxes**

Tax (and Code Section) <sup>1</sup>	Tax Rates
<b>A. Highway and Rail Excise Taxes (§ 9503)<sup>2</sup></b>	
Motor Fuels (Highway and Rail)	
Gasoline (§4081).....	14 cents/gallon
Diesel Fuel (§s 4041(a)(1), 4091).....	20 cents/gallon generally <sup>3</sup>
Special Motor Fuels (incl. alcohol fuels from petroleum (§ 4041(b)(2)).....	14 cents/gallon
Methanol and Ethanol Fuels: <sup>4</sup>	
Methanol Fuels From Petroleum or Natural Gas (§ (4041(b)92)).....	8 cents/gallon (i.e., a 6 cents/gallon exemption)
Ethanol Fuels From Other Than Petroleum or Natural Gas (§ 4041(b)(2)).....	8.6 cents/gallon (i.e., a 5.4 cents/gallon exemption)
Fuels From Natural Gas (§ 4041(m)).....	7 cents/gallon (i.e., a 7 cents/gallon exemption)
Gasohol (§ 4081(c)):	
From Ethanol.....	9.56 cents/gallon (i.e., a 5.11 cents/gallon exemption for 10 percent or more alcohol gasoline blend)
From Other Than Ethanol.....	8.89 cents/gallon (i.e., a 5.11 cents/gallon for 10 percent or more alcohol-diesel blend)
Diesohol (§s 404(k)1), 4091(c)).....	14.6 cents/gallon (i.e., a 5.4 cents/gallon exemption for 10 percent or more alcohol-diesel blend)

Rail Fuels (§s 4091, 4093(c)).....	2.5 cents/gallon
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See notes at the end of this table.

**Table B1. Federal Energy Excise Taxes (Continued)**

**B. Airport and Airway Excise Taxes (§ 9502)**

Fuels Taxes for Noncommercial Aviation:	
Gasoline (§s 4081 and 4041(c)).....	15 cents per gallon
Nongasoline (jet) (§s 4041(c) and 4091).....	17.5 cents per gallon
Nongasoline in Alcohol Mixture Made From Ethanol (§ 4091(d)).....	4.56 cents per gallon
Nongasoline in Alcohol Mixture Made From Ethanol (§ 4091(e)).....	3.89 cent per gallon

**C. Environmental Excise Taxes**

Taxes for Leaking Underground Storage Tank Trust Fund (§ 9508):<sup>5</sup>

Gasoline (§ 4081(a)(2)(B)(ii)).....	0.1 cent per gallon (including aviation use.)
Other Motor Fuels (§s 4041(d) and 4091).....	0.1 cent per gallon (including fuels used in motor vehicles, motorboats, trains, or aviation, but excluding liquid petroleum gas)
Methanol and Ethanol Fuels (§ 4041(b)(3)).....	0.05 cent per gallon
Fuels Used Inland Waterways (§ 4042).....	0.1 cent per gallon

**D. Inland Waterways Trust Fund Excise (§ 9506)**

Tax on Diesel and Other Liquid Fuels Used by Commercial Cargo Vessels on Specified Inland or Intracoastal Waterways (§ 4042).

1990.....	11 cents per gallon
1991.....	13 cents per gallon
1992.....	15 cents per gallon
1993.....	17 cents per gallon
1994.....	19 cents per gallon
1995 and thereafter.....	20 cents per gallon

Notes:

<sup>1</sup> U.S. Congress, Joint Committee on Taxation, *Schedule of Present Federal Excise Taxes (as of January 1, 1991) (JCS-3-91)* March 4, 1991.

<sup>2</sup> The highway and rail excise taxes and exemptions are scheduled to expire after September 30, 1995. § 9503 refers to the Highway Trust Fund portion of the highway excise taxes.

<sup>3</sup> A net Highway Trust Fund tax of 3 cents per gallon (17 cents/gal. refund or credit) applies to certain privately-operated, scheduled intercity buses (§6427(b)).

<sup>4</sup> Alcohol fuels with a content of at least 85 percent methanol, ethanol, and other alcohol.

<sup>5</sup> These taxes are scheduled to expire after December 31, 1995.



**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

**Table B2. Sales and Use Taxes on End-Use Energy Consumption**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
AL	<p>Tax Rate Schedule:                      0-40 kWh - 4 Percent                      &gt;40-60kWh - 3 Percent                      &gt;60 kWh - 2 Percent</p> <p>(7/1/63)<sup>3</sup></p>	<p>Tax Rate: 4 Percent                      (7/1/63)</p>	<p>Tax Rate: 4 Percent                      (7/1/63)</p> <p>Exemption(s):                      Fuel oil for kiln use in manufacturing plants, diesel fuel for off-highway farming, fuel for ships, towing vessels, barges, drilling rigs, and other watercraft in foreign international-interstate commerce, gasoline and other fuels that are taxed.</p>	<p>Tax Rate: 4 Percent                      (7/1/63)</p> <p>Exemption(s):                      Coal and coke used by manufacturers.</p>
AK	No Sales Tax.	No Sales Tax	A non-highway use tax of 2 ¢/gallon is levied (after paying 8 ¢/gallon and getting 6 ¢/gallon refund).	No Sales Tax
AZ	<p>Tax Rate: 5 Percent                      (6/1/83)<sup>3</sup></p>	<p>Tax Rate: 5 Percent                      (6/1/83)</p>	<p>Tax Rate: 5 Percent                      (6/1/83) Sales tax on non-highway use.</p>	<p>Tax Rate: 5 Percent                      (6/1/83)</p>
AR	<p>Tax Rate: 4.5 Percent                      (5/7/91)<sup>3</sup></p> <p>Exemption(s):                      Residents with income less than \$12,000 on first 500 kWh per month, manufacturing aluminum by electrolytic reduction, and qualified steel manufacturers.</p>	<p>Tax Rate: 4.5 Percent                      (5/7/91)</p> <p>Exemption(s):                      Qualified steel manufacturers.</p>	<p>Tax Rate: 4.5 Percent                      (5/7/91)</p> <p>Exemption(s):                      Barges, railroads, commercial water vessels, and motor fuels otherwise taxed.</p>	<p>Tax Rate: 4.5 Percent                      (5/7/91)</p>

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
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See notes at end of table.

CA	<p>Tax Rate: 6 Percent (7/15/91)<sup>3</sup></p> <p>Exemption(s): Residential Energy Surcharge--excise tax (0.1 mill per kWh).</p>	<p>Tax Rate: 6 Percent (7/15/91)</p> <p>Exemption(s): Residential, commercial, and industrial.</p>	<p>Tax Rate: 6 Percent (7/15/91)</p> <p>Sales tax on motor fuels is in addition to the taxes reported in Table B3.</p> <p>Exemption(s): Sales to water, air or rail common carriers.</p>	<p>Tax Rate: 6 Percent (7/15/91)</p> <p>Exemption(s): Sales to water, air, or rail common carriers.</p>
CO	<p>Tax Rate: 3 Percent (8/1/84)<sup>3</sup></p> <p>Exemption(s): Residential and industrial.</p>	<p>Tax Rate: 3 Percent (8/1/84)</p> <p>Exemption(s): Residential heating, manufacturing processing, mining, irrigation, communications, and transportation.</p>	<p>Tax Rate: 3 Percent (8/1/84)</p> <p>Exemption(s): Residential heating, manufacturing processing, mining, irrigation, communications, transportation, and motor fuels otherwise taxed.</p>	<p>Tax Rate: 3 Percent (8/1/84)</p> <p>Exemption(s): Residential heating, manufacturing processing, mining, irrigation, communications, and transportation.</p>

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
CT	<p>Tax Rate: 6 Percent (10/1/91)<sup>3</sup></p> <p>Exemption(s): Residential - first \$150/month; 75% for powering industrial manufacturing plant or directly used in farming, fabrication or manufacturing.</p>	<p>Tax Rate: 6 Percent (10/1/91)</p> <p>Exemption(s): Residential - 75% for powering industrial manufacturing plant or directly used in farming, fabrication or manufacturing. Includes bottled propane.</p>	<p>Tax Rate: 6 Percent (10/1/91)</p> <p>2.5 % Gross receipt tax on aviation fuels. (10/8/91)</p> <p>Gross Earning Tax on Refiners and Distributors for in-state sales.</p> <p>Exemption(s): Residential, aviation fuel is used or sold and stored for experimental testing of any product, and at least 75% for powering industrial manufacturing plant or directly used in farming, fabrication or manufacturing. Transportation fuels subject to excise tax.</p>	<p>Tax Rate: 6 Percent (10/1/91)</p> <p>Exemption(s): Residential and at least 75% for powering industrial manufacturing plant or directly used in farming, fabrication or manufacturing.</p>
DE	No Sales Tax	No Sales Tax	No Sales Tax	No Sales Tax

See notes at end of table.

DC	<p>Tax Rate: 6 Percent (6/1/80)<sup>3</sup></p> <p>Exemption(s): Residential and used in manufacturing.</p>	<p>Tax Rate: 6 Percent (6/1/80)</p> <p>Exemption(s): Residential and used in manufacturing.</p>	<p>Tax Rate: 6 Percent (6/1/80)</p> <p>Exemption(s): Residential, fuel used for manufacturing, and motor fuels otherwise taxed.</p>	<p>Tax Rate: 6 Percent (6/1/80)</p> <p>Exemption(s): Fuels used in manufacturing.</p>
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**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
FL	<p>Tax Rate: 6 Percent (2/1/88)<sup>3</sup></p> <p>Exemption(s): Residential and by qualified businesses in enterprise zones.</p>	<p>Tax Rate: 6 Percent (2/1/88)</p> <p>Exemption(s): Residential, used in manufacturing at a fixed location in the State, boiler fuel, and space flights.</p>	<p>Tax Rate: 6 Percent (2/1/88)</p> <p>Exemption(s): Residential, industrial boiler fuels, space flights, farming and commercial fishing (off-highway driving), fuels taxed per Chapter 207.</p>	<p>Tax Rate: 6 Percent (2/1/88)</p> <p>Exemption(s): Residential, industrial boilers, and wood used for manufacturer's processing.</p>
GA	<p>Tax Rate: 4 Percent (4/1/89)<sup>3</sup></p>	<p>Tax Rate: 4 Percent (4/1/89)</p> <p>Exemption(s): Heating structures for poultry raising.</p>	<p>Tax Rate: 4 Percent (4/1/89)</p> <p>One percent sales tax and other motor fuel for highway use. See Table B3 for details.</p> <p>Exemption(s): Heating structures for poultry raising.</p>	<p>Tax Rate: 4 Percent (4/1/89)</p> <p>Exemption(s): Heating structures for poultry raising.</p>
HI	<p>Tax Rate: 4 Percent (7/1/91)<sup>3</sup></p> <p>Exemption(s): Utility services and fuels.</p>	<p>Tax Rate: 4 Percent (7/1/91)</p> <p>Exemption(s): Utilities services and fuels.</p>	<p>Tax Rate: 4 Percent (7/1/91)</p>	<p>Tax Rate: 4 Percent (7/1/91)</p> <p>Exemption(s): Fuels.</p>
ID	<p>Tax Rate: 4 Percent (4/1/86)<sup>3</sup></p> <p>Exemption(s): Residential, commercial and industrial.</p>	<p>Tax Rate: 4 Percent (4/1/86)</p> <p>Exemption(s): Residential, commercial, and industrial fuels.</p>	<p>Tax Rate: 4 Percent (4/1/86)</p> <p>Exemption(s): Residential, commercial, industrial fuels, and motor fuels otherwise taxed.</p>	<p>Tax Rate: 4 Percent (4/1/86)</p> <p>Exemption(s): Residential, commercial, and industrial fuels.</p>

See notes at end of table.

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
IL	<p>Subject to utility tax:</p> <p>Rate: 32 one-hundredth ¢/kWh, or 5 percent of gross receipts, whichever is less.</p>	<p>Subject to Gas Tax under Gas Tax Revenue Act.</p> <p>Rate: 2.4 ¢/therm. or 5 percent of gross receipts, whichever is less.</p>	<p>Tax Rate: 6.25 Percent (1/1/90)<sup>3</sup></p> <p>Gasohol: 30 percent of sales exempt through 6/30/96.</p> <p>Exemption(s): Fuel for air carrier flights outside the United States, coal exploration, mining, processing, and motor fuels otherwise taxed.</p>	<p>6.25% Sales Tax (1/1/90)</p> <p>Exemption(s): River vessels for hire.</p>
IN	<p>Tax Rate: 5 Percent (1/1/83)<sup>3</sup></p> <p>Exemption(s): Manufacturing for production, farmers, and restaurants.</p> <p>Public Utilities: gross revenue tax of 0.15 percent.</p>	<p>Tax Rate: 5 Percent (1/1/83)</p> <p>Exemption(s): Manufacturing for production, farmers, and restaurants.</p> <p>Public Utilities: gross revenue tax of 0.15 percent.</p>	<p>Tax Rate: 5 Percent (1/1/83)</p> <p>Exemption(s): Gasoline for farm use.</p>	<p>Tax Rate: 5 Percent (1/1/83)</p>
IA	<p>Tax Rate: 5 Percent (7/1/92)<sup>3</sup></p> <p>Exemption(s): Manufacturing processing.</p>	<p>Tax Rate: 5 Percent (7/1/92)</p> <p>Exemption(s): Manufacturing processing, fuels for agriculture, creameries, dairies and ice cream factories.</p>	<p>Tax Rate: 5 Percent (7/1/92)</p> <p>Exemption(s): Fuel for ships, barges, agriculture, creameries, dairies and ice cream factories, and motor and special fuels for highway, aircraft, or watercraft otherwise taxed.</p>	<p>Tax Rate: 5 Percent (7/1/92)</p> <p>Exemption(s): Agriculture, creameries, dairies, and ice cream factories.</p>

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
KS	Tax Rate: 4.25 Percent (7/1/89) <sup>3</sup>  Exemption(s): Residential, farm use (no irrigation), manufacturing, and mining.	Tax Rate: 4.25 Percent (7/1/89)  Exemption(s): Residential, farm use, manufacturing, and mining.	Tax Rate: 4.25 Percent (7/1/89)  Exemption(s): Residential, farm use, manufacturing, mining, and motor fuels otherwise taxed.	Tax Rate: 4.25 Percent (7/1/89)  Exemption(s): Residential, farm use, manufacturing, and mining. Also, wood for heat and light.
See notes at end of table.				
KY	Tax Rate: 6 Percent (7/1/90) <sup>3</sup>  Exemption(s): Residential sector.	Tax Rate: 6 Percent (4/9/90)  Exemption(s): Residential sector.	Tax Rate: 6 Percent (4/9/90)  Exemption(s): Residential, manufacturing and processing, and gasoline and other special fuels otherwise taxed.	Tax Rate: 6 Percent (4/9/90)  Exemption(s): Residential, manufacturing and processing.
LA	Tax Rate: 4 Percent (7/1/84) <sup>3</sup>  Exemption(s): Chloralkali Manufacturers.	Tax Rate: 4 Percent (7/1/84)  Exemption(s): Agriculture, and fuel for boilers.	Tax Rate: 4 Percent (7/1/84)  Exemption(s): All Petroleum products.	Tax Rate: 4 Percent (7/1/84)  Exemption(s): Boiler fuel, and wood waste.
ME	Tax Rate: 6 Percent (8/1/91) <sup>3</sup>  Rate is 1 percent on 95 percent of electricity used in manufacturing facility.  Exemption(s): 0-750 kWh in residential sector.	Tax Rate: 6 Percent (8/1/91)  Rate is 1 percent on 95 percent of gas used in manufacturing facility.  Exemption(s): Residential.	Tax Rate: 6 Percent (8/1/91)  Rate is 1 percent on 95 percent of fuel used in manufacturing facility.  Exemption(s): Residential, burning blueberry lands, fuel oil byproducts, and motor fuels otherwise taxed.	Tax Rate: 6 Percent (8/1/91)  Rate is 1 percent on 95 percent of Coal used in manufacturing facilities.  Exemption(s): Residential and burning blueberry lands.

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
MD	Tax Rate: 5 Percent (6/1/77) <sup>3</sup>  Exemption(s): Residential, four units or fewer.	Tax Rate: 5 Percent (6/1/77)  Exemption(s): Residential, four units or fewer, and manufacturing.	Tax Rate: 5 Percent (6/1/77)  Exemption(s): Residential, four units or fewer, diesel fuel to reclaim land mined for coal by strip mine or open pit mining, and for use in farm tractors or equipment, and motor fuels otherwise taxed.	Tax Rate: 5 Percent (6/1/77)  Exemption(s): Residential, four units or fewer, manufacturing, and wood for heating fuel.
See note at end of table.				
MA	Tax Rate: 5 Percent (11/12/75) <sup>3</sup>  Exemption(s): Residential and manufacturing when used for production and/or the company has fewer than six employees.	Tax Rate: 5 Percent (11/12/75)  Exemption(s): Residential and Industrial.	Tax Rate: 5 Percent (11/12/75)  Exempt from sales tax when used as a fuel or power, and motor fuels otherwise taxed.	Tax Rate: 5 Percent (11/12/75)  Exemption(s): Residential, railroads, and manufacturers.
MI	Tax Rate: 4 Percent (1/1/61) <sup>3</sup>  Exemption(s): Agriculture	Tax Rate: 4 Percent (1/1/61)  Exemption(s): Agriculture.	Tax Rate: 4 Percent (1/1/61)  Exemption(s): Agriculture, and certified businesses, Diesel PCS buses (10 seats or more).	4 Percent Sales tax (1/1/61)  Exemption(s): Agriculture.
MN	Tax Rate: 6 Percent (6/18/91) <sup>3</sup>  Exempt from sales tax.	Tax Rate: 6 Percent (6/18/91)  Exempt from sales tax.	Tax Rate: 6 Percent (6/18/91)  Exempt from sales tax.	Tax Rate: 6 Percent (6/18/91)  Exempt from sales tax.

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
MS	<p>Tax Rate: 6 Percent (12/1/83)<sup>3</sup></p> <p>Manufacturers and some agricultural activities pay at 1.5 percent.</p> <p>Exemption(s): Residential.</p>	<p>Tax Rate: 6 Percent (12/1/83)</p> <p>Manufacturers and some agricultural activities pay at 1.5%.</p> <p>Exemption(s): Residential.</p>	<p>Tax Rate: 6 Percent (12/1/83)</p> <p>Manufacturers, and some agricultural activities and railroad locomotives pay at 1.5 percent.</p> <p>Exemption(s): Residential, petroleum products sold to vessels or barges for international commerce, and motor fuels otherwise taxed.</p>	<p>Tax Rate: 6 Percent (12/1/83)</p> <p>Manufacturers, some agriculture, and railroad locomotives pay at 1.5 percent.</p>
MO	<p>5.725 Percent Sales Tax (7/1/92)<sup>3</sup></p> <p>Exemption(s): Residential, drying farm crops. Manufacturers are exempt from paying the tax for the amount that exceeds 10 percent of the cost of production.</p>	<p>5.725 Percent Sales Tax (7/1/92)</p> <p>Exemption(s): Residential and drying farm crops.</p>	<p>5.725 Percent Sales Tax (7/1/92)</p> <p>Exemption(s): Residential, drying farm crops, and diesel fuel for farm equipment (50 percent exempt), and motor fuels otherwise taxed.</p>	<p>5.725 Percent Sales Tax (7/1/92)</p> <p>Exemption(s): Wood for residential use.</p>

See notes at end of table.

MT	No Taxes	No Taxes	No Taxes	No Taxes
NE	<p>Tax Rate: 5 Percent (7/10/90)<sup>3</sup></p> <p>Exempt if &gt;50 percent is used for processing, manufacturing, refining, farming and irrigation, or for hospital use.</p>	<p>Tax Rate: 5 Percent (7/10/90)</p> <p>Exempt if &gt;50 percent is used for processing, manufacturing, refining, farming and irrigation, or for hospital use.</p>	<p>Tax Rate: 5 Percent (7/10/90)</p> <p>Exempt if &gt;50 percent is used for processing, manufacturing, refining, irrigation, farming, generation of electricity, or for hospital use, and motor fuels otherwise taxed.</p>	<p>Tax Rate: 5 Percent (7/10/90)</p> <p>Exempt if &gt;50 percent used for processing, manufacturing, refining, irrigation, farming, generation of electricity, or for hospital use.</p>



**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
NV	Tax Rate: 6.5 Percent (10/1/91) <sup>3</sup>  Exempt if delivered through lines.	Tax Rate: 6.5 Percent (10/1/91)  Exempt if delivered to customers through, mains, lines, or pipes and residential heating.	Tax Rate: 6.5 Percent (10/1/91)  Exemption(s): Residential, and motor fuels for highway use.	Tax Rate: 6.5 Percent (10/1/91)  Exemption(s): Residential and wood for residential use.
NH	No Sales Tax	No Sales Tax	Apparently no off-highway exemption from motor fuel and environmental taxes.	No Sales Tax
NJ	Tax Rate: 7 Percent (7/1/90) <sup>3</sup>  Electric utility sales are exempt.	Tax Rate: 7 Percent (7/1/90)  Natural gas utilities sales are exempt.	Tax Rate: 7 Percent (7/1/90)  Fuels are exempt from sales taxes.	Tax Rate: 7 Percent (7/1/90)  Exempt from Sales Tax.
NM	Tax Rate: 5 Percent (7/9/91) <sup>3</sup>  Exemption(s): Warehouse and offices.	Tax Rate: 5 Percent (7/9/91)	Tax Rate: 5 Percent (7/9/91)  Exemption(s): Oil use by production units and gasoline.	Tax Rate: 5 Percent (7/9/91)  Exemption(s): Coal.

See notes at end of table.

NY	Tax Rate: 4 Percent (7/1/71) <sup>3</sup>  Exemption(s): Residential, agricultural use, and manufacturing assembling, mining, and research (direct-predominant use).	Tax Rate: 4 Percent (7/1/71)  Exemption(s): Residential, agricultural use, and fuel for manufacturing assembling, mining, and research (direct and predominant use).	Tax Rate: 4 Percent (7/1/71)  Exemption(s): Residential, agricultural use (non-highway diesel fuel), and non-highway diesel fuel used in manufacturing, mining, assembling and research, and diesel fuel for non-highway use.	Tax Rate: 4 Percent (7/1/71)  Exemption(s): Residential, assembling, mining, and research (direct-predominant use).  Exemption(s): Wood for home heating.
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**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
NC	Tax Rate: 4 Percent (7/16/91) <sup>3</sup>  Manufacturers pay 1% for use in production.	Tax Rate: 4 Percent (7/16/91)  Farmers, manufacturers, and commercial laundries and dry cleaners pay 1%.	Tax Rate: 4 Percent (7/16/91)  Aviation fuel (noncommercial); fuel for interstate and foreign commerce, farmers, manufacturers, and commercial laundries and dry cleaners pay a lower tax.  Exemption(s): Motor fuels otherwise taxed.	Tax Rate: 4 Percent (7/16/91)  Farmers, manufacturers, and commercial laundries and dry cleaners pay a lower tax.
ND	Tax Rate: 5 Percent (12/6/89) <sup>3</sup>  Electricity is exempt.	Tax Rate: 5 Percent (12/6/89)	Tax Rate 5 Percent (12/6/89)  Use in non-licensed vehicles. Railroads, and agricultural use are taxed at 2%.  Exemption(s): Gasoline	Tax Rate: 5 Percent (12/6/89)  Exemption(s): Agriculture processing or sugar beet refining plants.
OH	Tax Rate: 5 Percent (1/24/81) <sup>3</sup>  Electricity and utility services are exempt.	Tax Rate: 5 Percent (1/24/81)  Natural gas is exempt from sales tax.	Tax Rate: 5 Percent (1/24/81)  Motor vehicle fuels are exempt.	No Taxes
See notes at end of table.				
OK	Tax Rate: 4.5 Percent (5/1/90) <sup>3</sup>  Exemption(s): Residential and manufacturing.	4.5 % Sales Tax (5/1/90)  Exemption(s): Residential and manufacturing.	4.5 % Sales Tax (5/1/90)  Exemption(s): Gasoline, gasohol, and other motor fuel if excise taxed.	4.5 % Sales Tax (5/1/90)
OR	No Sales Tax.	No Sales Tax.	No Sales Tax.	No Sales Tax.

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
PA	Tax Rate: 6 Percent (11/1/68) <sup>3</sup>  Exemption(s): Residential.	Tax Rate: 6 Percent (11/5/68)  Exemption(s): Residential.	Tax Rate: 6 Percent on Fuels (11/1/68)  Exemption(s): Residential, and motor fuels otherwise taxed.	Coal is exempt from Sales Tax.
RI	Tax Rate: 7 Percent (7/1/90) <sup>3</sup>  Exemption(s): Residential.	Tax Rate: 7 Percent (7/1/90)  Exemption(s): Residential, and fuel for plants and flowers.	Tax Rate: 7 Percent on Fuels (7/1/90)  Exemption(s): Residential, fuel for plants and flowers, and excise taxed gasoline and diesel.	Tax Rate: 7 Percent (7/1/90)  Exemption(s): Residential and fuels for plants and flowers.
SC	Tax Rate: 5 Percent (7/1/84) <sup>3</sup>  Exemption(s): Residential, crop irrigation, and radio broadcasting.	Tax Rate: 5 Percent (7/1/84)  Exemption(s): Residential, manufacturing, agricultural curing, poultry production, and motor fuel, except aviation fuels.	Tax Rate: 5 Percent (1/7/92)  Exemption(s): Residential, manufacturers, transportation, agricultural curing, farm machinery, and fishing boats.	Tax Rate: 5 Percent (1/7/92)  Exemption(s): Residential, manufacturers, transportation, agricultural curing, farm machinery, and fishing boats.
SD	Tax Rate: 4 Percent (3/1/88) <sup>3</sup>  Exemption(s): Farm use.	Tax Rate: 4 Percent (3/1/88)  Exemption(s): Farm use.	Tax Rate: 4 Percent (3/1/88)  Exemption(s): Agricultural use, rail roads, gasoline, gasohol, special fuel, other motor fuels otherwise taxed, and manufacturing.	Tax Rate: 4 Percent (3/1/88)  Exemption(s): Farm use, railroads, and wood used for power in manufacturing or industry.

See notes at end of table.

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
TN	<p>Tax Rate: 6 Percent (4/1/92)<sup>3</sup></p> <p>Rate is 1.5 percent for manufacturers, and for farmers for use in food production, and for nurserymen for use in growing horticultural products.</p> <p>Exemption(s): Residential</p>	<p>Tax Rate: 6 Percent (4/1/92)</p> <p>Rate is 1.5 percent for manufacturers, and for farmers for use in food production, and for nurserymen for use in growing horticultural products.</p> <p>Exemption(s): Residential</p>	<p>Tax Rate: 6 Percent (4/1/92)</p> <p>Rate is 1.5 percent for manufacturers, farmers for use in food production, and for nurserymen for use in growing horticultural products.</p> <p>Exemption(s): Residential, gasoline subject to tax or for farm use.</p>	<p>Tax Rate: 6 Percent (4/1/92)</p> <p>Rate is 1.5 percent for manufacturers, and for use in production of greenhouse crops, or nursery.</p> <p>Exemption(s): Residential</p>
TX	<p>6.25 Percent Sales Tax (7/1/90)<sup>3</sup></p> <p>Exemption(s): Non-commercial or non-business use.</p>	<p>6.25 Percent Sales Tax (7/1/90)</p> <p>Exemption(s): Non-commercial or non-business use.</p>	<p>6.25 Percent Sales Tax (7/1/90)</p> <p>No sales tax levied on petroleum products.</p>	<p>Contacted sales tax office: No evidence of tax on coal in state tax code.</p>
UT	<p>Tax Rate: 5 Percent (1/1/90)<sup>3</sup></p> <p>Rate is 2 percent for Residential.</p> <p>Exemption(s): All other businesses are exempt from sales tax except commercial business.</p>	<p>Tax Rate: 5 Percent (1/1/90)</p> <p>Rate is 2 percent for Residential.</p> <p>Exemption(s): Greenhouses (wholesale), irrigation, and orchards.</p>	<p>Tax Rate: 5 Percent</p> <p>Environmental surcharge (0.5¢/gal)</p> <p>Rate is 2 percent for Residential fuel.</p> <p>Exemption(s): Greenhouses (wholesale), irrigation, orchards, use in off-highway farm, machinery, fuels subject to excise tax.</p>	<p>Tax Rate: 5 Percent (5/14/91)</p> <p>Rate is 2 percent for Residential.</p> <p>Exemption(s): Greenhouses (wholesale), irrigation and orchards.</p>

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
VT	<p>Tax Rate: 5 Percent (6/1/91)<sup>3</sup></p> <p>Exemption(s): Taxpayer-generated and 60 percent used in own business.</p>	<p>Tax Rate: 5 Percent (6/1/91)</p> <p>Exemption(s): Residential and for agricultural use. Motor fuels otherwise taxed except jet fuel.</p>	<p>Tax Rate: 5 Percent (6/1/91)</p> <p>Exemption(s): Residential, and for agricultural use; motor fuels otherwise taxed except jet fuel.</p>	<p>Tax Rate: 5 Percent (1/1/91)</p> <p>Exemption(s): Residential and for agricultural use.</p>

See notes at end of table.

VA	<p>Tax Rate: 3.5 Percent (1/1/87)<sup>3</sup></p> <p>Exemption(s): Electricity through lines for manufacturing for direct processing, making feed for sale or resale, commercial leasing or renting of laundered textile products sold to watermen for extracting fish, bivalves, or crustaceans from water.</p>	<p>Tax Rate: 3.5 Percent (1/1/87)</p> <p>Exemption(s): Residential and manufacturing for direct processing, making feed for sale or resale, commercial leasing or renting of laundered textile products sold to watermen for extracting fish, bivalves, or crustaceans from water and for drying or curing crops.</p>	<p>Tax Rate: 3.5 Percent (1/1/87)</p> <p>Exemption(s): Residential. Manufacturing for direct processing, making feed for sale or resale, commercial leasing or renting of laundered textile products sold to watermen for extracting fish, bivalves or crustaceans from water, and for drying or curing crops, and motor fuel otherwise taxed. Refund for off-highway use.</p>	<p>Tax Rate: 3.5 Percent (1/1/87)</p> <p>Exemption(s): Residential and manufacturing for direct processing, making feed for sale or resale, commercial leasing or renting of laundered textile products sold to waterman for extracting fish, bivalves, or crustaceans from water, and drying or curing crops.</p>
WA	<p>Tax Rate: 6.5 Percent (1/1/87)<sup>3</sup></p>	<p>Tax Rate: 6.5 Percent (1/1/87)</p>	<p>Tax Rate: 6.5 Percent (1/1/87)</p> <p>Exemption(s): Aircraft research and public transportation, and diesel fuel for boats used in commercial, deep sea or passenger fishing.</p>	<p>Tax Rate: 6.5 Percent (1/1/87)</p>

**Table B2. Sales and Use Taxes on End-Use Energy Consumption (Continued)**

State	Electric	Natural Gas	Petroleum Products <sup>1</sup>	Coal <sup>2</sup>
WV	Tax Rate: 6 Percent (6/1/88) <sup>3</sup>  Electricity sales are exempt.	Tax Rate 6 Percent (6/1/88)  Natural gas sales are exempt.	Sales and use tax \$.0485/gal on motor gasoline and special fuels (including home heating oil) delivered or used in State, based on minimum average wholesale price (\$ 0.97 per gallon) times 5 percent. (6/25/91)	Tax Rate: 6.5 Percent (6/1/88)  Exemption (s): Coal processing facilities for making coke in steel production.

See notes at end of table.

WI	Tax Rate: 5 Percent (5/1/88) <sup>3</sup>  Exemption(s): Residential and farming: November through April.	Tax Rate: 5 Percent (5/1/88)  Exemption(s): Residential and farming: November through April; commercial fishing, interstate and foreign commerce, and railroads.	Tax Rate: 5 Percent (5/1/88)  Exemption(s): Residential and farming: November through April; commercial fishing, interstate and foreign commerce, railroads, aviation fuel, and motor fuel otherwise taxed.	Tax Rate: 5 Percent (5/1/88)  Exemption(s): Residential and farming: November through April; commercial fishing, interstate, foreign commerce, and railroads; wood residue for fuel in business activity.
WY	Tax Rate: 3 Percent (7/1/67) <sup>3</sup>  Exemption(s): Manufacturing process, and agricultural use.	Tax Rate: 3 Percent (7/1/67)  Exemption(s): Manufacturing process, and agricultural use.	Tax Rate: 3 Percent (7/1/67)  Exemption(s): Manufacturing process and agricultural use--carrier and farm fuel, gasoline, gasohol.	Tax Rate: 3 Percent (4/30/91)  Exemption(s): Manufacturing process, and agricultural use.

Notes:

<sup>1</sup> See Table B3 for the States motor fuel specific excise taxes.

<sup>2</sup> Includes wood, biomass, and other energy products.

<sup>3</sup> Date of last effective change.

Source: State Taxation/Revenue Offices and Research Institute of America, *All States Tax Guide*, March 29, 1993.

**Table B3. Motor Fuels Excise Taxes**  
**(Cents per Gallon, unless otherwise stated)**

<b>State</b>	<b>Gasoline</b>	<b>Diesel</b>	<b>Gasohol</b>	<b>Liquefied Petroleum Gas</b>	<b>Aviation Gasoline Jet Fuel</b>
AL	18 Refund 11 for farm use	19	18	No Tax	3 for reciprocating engines 1 for jet engines
AK	8 Fuel for boats and watercraft (including commercial fishing craft). 5	8	No Tax	No Tax	Aviation Gasoline: 4 Aviation other than gasoline: 2.5
AZ	19	19	19	19 Compressed Natural Gas: 1	Aviation, not jet or turbine powered, 5 Jet Fuel is 10 million gallons purchased, 3.05; on balance, 2.05
AR	18.7	18.7	18.7	16.5	Aviation Gasoline exempt Jet Fuel 7 percent Sales Tax
CA	16.6	16.6	16.6 (15 percent ethanol or methanol)	6	Aviation Gasoline 16.6 Jet Fuel 2
CO	22.31	20.81	22.31	20.5	Jet Fuel 4 Aviation Gasoline 6
CT	26	18	25	26	No Tax
DE	19	19	19	19	19
DC	18	18	18	18	No Consumption

**Table B3. Motor Fuels Excise Taxes (Continued)**  
**(Cents per Gallon, unless otherwise stated)**

State	Gasoline	Diesel	Gasohol	Liquefied Petroleum Gas	Aviation Gasoline Jet Fuel
See notes at end of table.					
FL	11.6	11.6	11.6	11.6	Aviation 6.9. Carriers electing to use mileage apportionment for FL sales tax purposes can elect to pay at a rate of 8 percent of retail sales price with 4.4 minimum.
GA	7.6 A second tax on gasoline and motor fuels at rate of 4 percent (consisting of 1 percent sales tax and 3 percent motor fuel) of retail sales price less 7.5.	7.6	7.6	No Tax	Aviation Fuels 7.5
HI	16	16	11	17	Aviation Fuels 1
ID	22	22	18	No Tax	Aviation Gasoline 5.5  Jet Fuel 4.5
IL	19.3	21.8	19.3 Use in commercial highway vehicles 27.8	19.3	No Tax
IN	15.08	16.8	15.08	16.08	Aviation Gasoline 15 Jet Fuel 0.08



**Table B3. Motor Fuels Excise Taxes (Continued)**  
**(Cents per Gallon, unless otherwise stated)**

State	Gasoline	Diesel	Gasohol	Liquefied Petroleum Gas	Aviation Gasoline Jet Fuel
IA	20	20 Special Diesel Engine: 2.25	19	Compressed Natural Gas 16 ¢/ cubic feet	Aviation Gasoline: 8  Special Aircraft Fuel: 3
See notes at end of table.					
KS	18.02	19.02	18.02	18.02	Aviation Fuels: 4.25 percent Sales Tax
KY	15.4 Tax has two parts: variable and supplemental highway use tax; both set quarterly. The variable rate is 9 percent of the average wholesale price with a minimum 10 (wholesale price of 1.10 ). The supplemental is 5 for gasoline and 2 for special fuels. There is an environmental tax of 0.4.	12.4	15.4	15	Aviation Gasoline is refundable. Jet Fuel is exempt.
LA	20.03	20.03	20.03	\$187/M annual for LAG and Natural Gas	20.03
ME	20	20	18	No Tax	Aviation Gasoline 15 minus 7.5 percent sales tax  Jet Fuel 15 plus 7.5 percent Sales tax.

**Table B3. Motor Fuels Excise Taxes (Continued)**  
**(Cents per Gallon, unless otherwise stated)**

State	Gasoline	Diesel	Gasohol	Liquefied Petroleum Gas	Aviation Gasoline Jet Fuel
MD	23.5	19.2	23.5	19.2	Aviation and Turbine Fuel 5

See notes at end of table.

MA	21 Motor fuel, including special fuel, and motor carrier fuels, is taxed at 19.1 percent (21 ) of average price from distributor to retailer. Tax is set quarterly by Revenue Department.	21 See gasoline	21 See gasoline	15.5 Propane gas rate is 15.5 percent (no minimum) of average price from distributor to retailer; set quarterly.	Aircraft Fuel (except jet fuel) rate is 7.5 percent (10 minimum).  Cities and towns can impose a tax on jet fuel at the rate of 5 percent (5 minimum) of average price.
MI	15.88	15.88	15.88	15.88	3 (1.5 refundable to airlines showing scheduled operations interstate.)
MN	21.88	21.88	19.08	20	Aviation Fuels 1-50,000 gals.- 5 50,001- 100,000 gals.- 2 100,001- 200,000 gals.- 1 200,001 gals.- and above 0.5

**Table B3. Motor Fuels Excise Taxes (Continued)**  
**(Cents per Gallon, unless otherwise stated)**

State	Gasoline	Diesel	Gasohol	Liquefied Petroleum Gas	Aviation Gasoline Jet Fuel
MS	18.20	18.20	18.20	LAG used in motor vehicles-18; otherwise 17. Liquefied natural gas is 18¢/MCF	Aviation Gasoline 6.4  Jet Fuel 5.65
MO	13.1	13.10	13.10	11	Aviation Fuels 9.32
MT	21.4	21.4	21.4	Users pay an annual license fee ranging from \$108 for passenger car to \$1,806 for 48,000 lbs., plus trucks.	Aviation gasoline 1.07

See notes at end of table.

NE	23.9	23.9	21.9	23.9	Aviation Gas 5  Jet Fuel 3
NV	21.1	25.1	21.1	16.25	Aviation Gasoline 21.1  Counties Jet Fuel  1
NH	18.7	18.7	18.7	18	Aviation Gasoline  4.8 on aviation jet fuel for FAA Part 121-certified craft. 2 on other aviation jet fuel 0.5

**Table B3. Motor Fuels Excise Taxes (Continued)**  
**(Cents per Gallon, unless otherwise stated)**

State	Gasoline	Diesel	Gasohol	Liquefied Petroleum Gas	Aviation Gasoline Jet Fuel
NJ	14.5	17.5	14.5	5.25	Aviation Fuel 12.5  Turbine Fuel 2
NM	17	17	17	16 Instead elect to pay \$75 annual fee for LAG or natural gas-propelled motor vehicles up to 8,000 gwt; \$150, 8,001 - 16,000 lbs; \$375, 16,0001 lbs.	Aviation Gasoline 17  Counties levy jet fuel taxes.
NY	22.89	24.89	22.89	22.89	Aviation fuels are taxed but refundable if used in aircraft.

See notes at end of table.

NC	22.15	22.15	22.15	22.15	Aviation Fuels - 6 percent sales tax: 4 percent state 2 percent county, collected by State.
ND	17.25	17.25	17.25	17	Aviation gasoline and motor fuel, and jet fuel 8
OH	21	21	21	21	No Tax
OK	17	14	17	17 Passenger autos, vans and pickups pay \$100 annual fee in lieu of tax	Jet Fuel 0.008
OR	22	22	17	18	Aviation Gasoline 17  Jet Fuel 0.5

**Table B3. Motor Fuels Excise Taxes (Continued)**  
**(Cents per Gallon, unless otherwise stated)**

State	Gasoline	Diesel	Gasohol	Liquefied Petroleum Gas	Aviation Gasoline Jet Fuel
PA	22.35	22.35	22.35	0.12	3.6 for propeller-driven aircraft; 1.8 for jet-driven craft.
RI	26  For all motor fuels, total adjusted quarterly by tax administrator. Consists of 2 parts: 11 percent (min 23¢) of average wholesale selling price per gallon excluding federal, state, and excise taxes; plus 2 percent (min 3¢) of wholesale price.	26	26	26	No Tax
SC	16.75	16.75	16.75	16.75	No Tax
SD	19	19	17	16	6

See notes at end of table

TN	21.4	18.4	21	14	Aviation Fuels 1.4
TX	20	20	20	20	20
UT	19.5	19.5	19.5	19	4
VT	16	17	16	16	16
VA	17.70  Synthetic Motor Fuels: Rate is based on years in production ranging from 0.03 for first 3 years to 0.175 for 10th year and following years.	16.20	17.7	17.5	5
WA	23.12	23.12	19.442	23 , or per 100 cf of compressed natural gas	23

**Table B3. Motor Fuels Excise Taxes (Continued)**  
**(Cents per Gallon, unless otherwise stated)**

WV	20.35	20.35	20.35	20.35	Aviation Fuels 4.85
WI	24.2	24.2	24.2	24.2	6
WY	9	9	5	9	5

Notes:

<sup>1</sup> The table lists rates of general application (including, but not limited to excise taxes, environmental taxes, special taxes, and inspection fees), exclusive of county and local taxes. Rates are also exclusive of any tax based on gross or net receipts. The State rates are effective as of July 1, 1992.

<sup>2</sup> Additional State taxes were levied as follows: California: 6 percent sales tax; Connecticut: 3 percent gross earnings tax; Georgia: 3 percent second motor fuel tax plus 1 percent sales tax; Hawaii: 4 percent sales tax; New York: 4 percent sales tax.

Source: Energy Information Administration, *Petroleum Marketing Monthly*, November 1992; Research Institute, *All States Tax Guide*; and State Taxation/Revenue Offices.

**Table B4. Federal Statistics, State Excise Tax Rate on Motor Fuel - 1990  
(Cents per Gallon)**

State <sup>1</sup>	Gasoline		Diesel		Liquefied Petroleum Gas		Gasohol		
	Rate	Date of Change	Rate	Date of Change	Rate	Date of Change	Rate	Date of Change	Exemptions
Alabama	13 <sup>2</sup>		14 <sup>2</sup>		12		13 <sup>2</sup>		0
Alaska	8		8		0		0		8
Arizona	17		17		17		17		0
	18	10-1	18	10-1	18	10-1			
Arkansas	13.7 <sup>3</sup>		13.7 <sup>3</sup>		11.5		13.7 <sup>3</sup>		0
California	9		9		6 <sup>4</sup>		9		0
Colorado	20		18	1-1	18 <sup>5</sup>	1-1	20		0
Connecticut	20		20		20		20		1
	22	7-1	22	7-1	21	7-1	21	7-1	1
Delaware	16		16		16		16		0
District of Columbia	18		18		18		18		0
Florida <sup>6</sup>	9.7 <sup>7</sup>		9.7 <sup>7</sup>		4 <sup>8</sup>		9.7 <sup>7</sup>		0
	10.9	7-1	10.9	7-1	4 <sup>8</sup>			7-1	0
Georgia	7.5		7.5		7.5		7.5		0
Hawaii	11		11		8		11		0
Idaho	18		18		18		14		0
Illinois	19		21.5 <sup>9</sup>		19		19		0
Indiana	15		16		0 <sup>10</sup>		15		0
Iowa	20		22.5		20		19		1
Kansas	15		17		14 <sup>4</sup>		15		0
	16	7-1	18	7-1	15 <sup>4</sup>	7-1	16	7-1	0
Kentucky <sup>6,11</sup>	15		15		15		0		
	15.4 <sup>12</sup>	7-1	15	7-1	15.4 <sup>12</sup>	7-1	0		
Louisiana	20	1-1	20 <sup>13</sup>	1-1	20 <sup>14</sup>	1-1	0		
Maine	17		20		16		17	1-1	0
Maryland	18.5		18.5		18.5		18.5		0
Massachusetts <sup>6</sup>	11		11		4.2	1-1	11		0
	11		11		4.3	4-1	11		0
	11		11		4.6	7-1	11		0
	17	7-28	17	7-26	4.6		17	7-26	0
	17		17		7.1	10-1	17		0
Michigan	15		15 <sup>15</sup>		15		15		0
Minnesota	20		20		20		18		0

See notes at the end of this table.

**Table B4. Federal Statistics, State Excise Tax Rate on Motor Fuel - 1990 (Continued)  
(Cents per Gallon)**

State	Gasoline		Diesel		Liquefied Petroleum Gas		Gasohol		
	Rate	Date of Change	Rate	Date of Change	Rate	Date of Change	Rate	Date of Change	Exemptions
Mississippi	18 18.2 <sup>16</sup>	7-1	18 18.2 <sup>16</sup>		17 17		18 18.2 <sup>16</sup>		0 0
Missouri	11.03 <sup>17</sup>		11		11		11.03 <sup>17</sup>		0
Montana	20		20		0 <sup>19</sup>		20 <sup>14</sup>		0
Nebraska <sup>6</sup>	22.3 <sup>20</sup> 23.1 <sup>20</sup> 22.2 <sup>20</sup> 21.7 <sup>20</sup>	1-1 4-1 7-1 10-1	22.3 <sup>20</sup> 23.1 <sup>20</sup> 22.2 <sup>20</sup> 21.7 <sup>20</sup>	1-1 4-1 7-1 10-1	22 22.8 21.9 21.4	1-1 4-1 7-1 10-1	19.3 <sup>14,20</sup> 20.1 <sup>14,20</sup> 20.2 <sup>14,20</sup> 19.7 <sup>14,20</sup>	1-1 4-1 7-1 10-1	0 0 0 0
Nevada	18		22		22		18		0
New Hampshire	14.6 <sup>21</sup> 16.6 <sup>21</sup>	4-1	14.6 <sup>21</sup> 16.6 <sup>21</sup>	4-1	14 16.6	4-1	14 <sup>21</sup> 16.6 <sup>21</sup>	4-1	0 4
New Jersey <sup>22</sup>	10.5		13.5		5.25		6.5	1-1	3
New Mexico	16.2 17.3 <sup>23</sup>	7-1	16.2 17.3 <sup>23</sup>	7-1	16.2 16 <sup>24</sup>	7-1	13.2 15 <sup>23,25</sup>	7-1	3 2
New York <sup>9,26</sup>	8.05 14.375	10-1	10.05 16.375	10-1	8.05 8.05		8.05 14.375		0 0
North Carolina	21.7 21.5	1-1 7-1	21.7 21.5	1-1 7-1	21.7 21.5		21.7 21.5	1-1 7-1	0 0
North Dakota	17		17 <sup>27</sup>		17 <sup>14</sup>		17 <sup>17</sup>		0
Ohio <sup>6</sup>	18 20	7-1	18 20	7-1	18 20	7-1	18 <sup>18</sup> 20		0
Oklahoma <sup>26</sup>	17 <sup>29</sup>		14		17 <sup>4,29</sup>		17 <sup>29</sup>		0
Oregon	18	1-1	18 <sup>30</sup>	1-1	18 <sup>30</sup>	1-1	18	1-1	0
Pennsylvania <sup>6,9,31</sup>	17.8		17.8		17.8		17.8		0
Rhode Island	20		20		20		20		1
South Carolina	16		16		16		10		6
South Dakota	18		18		18		16 <sup>14</sup>		2
Tennessee	20		17		14		20		0
Texas	15		15		15		15		0
Utah	19		19		19 <sup>32</sup>		19		0
Vermont	16		17 <sup>33</sup>		0		16		0
Virginia <sup>34</sup>	17.7		16.2		16.2		17.7		0
Washington	18 22		18 22		0 <sup>10</sup> 0 <sup>10</sup>		15.12 <sup>14</sup> 18.48 <sup>14</sup>		2.96 3.52

See notes at the end of this table.



**Table B4. Federal Statistics, State Excise Tax Rate on Motor Fuel - 1990 (Continued)**  
(Cents per Gallon)

State	Gasoline		Diesel		Liquefied Petroleum Gas		Gasohol		
	Rate	Date of Change	Rate	Date of Change	Rate	Date of Change	Rate	Date of Change	Exemptions
West Virginia	20.35		20.35		20.35		20.35		0
Wisconsin	20.8 21.5	4-1	20.8 21.5	4-1	20.8 21.5	4-7 <sup>7</sup>	20.8 21.5	4-1	0 0
Wyoming	9		9		0 <sup>35</sup>		5		4
Weighted Average Tax Rate	15.50		16.05		14.48		16.61		

Notes:

- <sup>1</sup> This table shows motor fuel tax rates in effect as of January 1, and any subsequent changes that have occurred throughout the year. Only taxes that are levied as a dollar amount per volume of motor fuel are included on sheet 1. Taxes that apply to all petroleum products without distinguishing motor fuel are also omitted.
- <sup>2</sup> Includes 2 cents per gallon inspection fee.
- <sup>3</sup> Rate shown includes 0.2 cent per gallon environmental assurance fee.
- <sup>4</sup> LPG user may pay an annual fee in lieu of the gallonage tax.
- <sup>5</sup> Owners of LPG vehicles registered in State must pay an annual flat fee in lieu of the gallonage tax.
- <sup>6</sup> "Variable tax" the rate or a component of the rate is determined periodically by a procedure prescribed by law.
- <sup>7</sup> Rate consists of a fixed rate of 4 cents per gallon plus a 5 percent (6 percent beginning July 1) sales tax applied to the legislated retail price established annually. The sales tax component may go below 5.7 cents per gallon (6.9 cents effective July 1.)
- <sup>8</sup> Florida - registered vehicles powered by LPG pay an annual decal fee in lieu of the 4 cents tax on alternative fuels.
- <sup>9</sup> Additional gallonage tax is required for motor carriers 4.1 cents (4.5 cents effective July 1) in Illinois; 11 cents in Indiana; and 6 cents in Pennsylvania. The rates for the additional tax in New York are adjusted quarterly. The rates for gasoline are 6.9, 7, 6.9, and 6.3 cents. The diesel rates are 7.5, 8.1, 7.7, and 10.6 cents per gallon.
- <sup>10</sup> Owner of LPG-Powered vehicles pay an annual fee.
- <sup>11</sup> In Kentucky, a 2 percent surtax is imposed on gasoline and 4.7 percent on special fuels for any vehicle with 3 or more axles. An additional 2 cents per gallon surtax on vehicles with a combined licensed weight in excess of 50,000 pounds is imposed.
- <sup>12</sup> Rate shown includes 0.4 cent per gallon petroleum environmental assurance fee.
- <sup>13</sup> Owners of LPG-powered vehicles of 10,000 pounds or less gross vehicle weight pay an annual flat fee of \$150 in lieu of the gallonage tax.
- <sup>14</sup> Louisiana has a producer's incentive credit of \$1.40 per gallon of ethanol in Ohio. The dealer is refunded 15 cents per gallon of each qualified fuel (ethanol or methanol) that is blended with unleaded gasoline. Nebraska has a producer's incentive of 20 cents per gallon of ethanol produced at qualified facilities in State. Washington pays a tax credit of 80 percent of the tax rate for every gallon of alcohol used in gasohol; the rate shown reflects this credit. Montana pays alcohol distillers a credit of 30 cents per gallon of alcohol produced in State with State agricultural products that was blended with gasoline to make gasohol. North Dakota credits producers 40 cents per gallon of agriculturally derived alcohol produced in the State and used to make gasohol. South Dakota grants a credit at the rate of the gasoline tax to distributors blending gasoline with ethanol to produce gasohol. A production incentive payment of 20 cents per gallon is allowed for distillers producing ethanol to make gasohol.
- <sup>15</sup> There is a 6 cents per gallon discount if diesel fuel is delivered into the fuel supply tank of a commercial vehicle which is licensed (decal) at the rate of \$92 for a resident vehicle and \$26 for a nonresident vehicle.
- <sup>16</sup> Rate shown includes 0.2 cent per gallon tax dedicated to the groundwater protection trust fund.
- <sup>17</sup> Rate shown includes inspection fee of 0.03 cents per gallon.
- <sup>18</sup> Missouri-registered vehicles may pay an annual decal fee in lieu of gallonage tax.
- <sup>19</sup> Montana-registered vehicles are subject to an annual license fee based on gross weight. Nonresidents may purchase 72-hour trip permits.
- <sup>20</sup> Rate shown includes 0.3 cent per gallon petroleum release remedial action fee.
- <sup>21</sup> Rate shown includes 0.6 cent per gallon oil discharge and disposal cleanup fee.
- <sup>22</sup> Effective 7/1/90, in addition to rates shown, New Jersey imposes a petroleum products gross receipts tax of 2.75 percent.
- <sup>23</sup> Rate shown includes petroleum products loading fee of \$80 per 8,000 gallons (1 cent per gallon).
- <sup>24</sup> Owners of LPG-powered vehicles up to 26,000 pounds gross vehicle weight may pay an annual fee in lieu of gallonage tax.
- <sup>25</sup> In New Mexico, rate is for gasohol with at least 50 percent of ethanol produced in State derived from agricultural feedstocks from the State.
- <sup>26</sup> Rates shown include petroleum testing fee of 0.5 mill (0.05 cent) per gallon. Effective October 1, also included is the petroleum business tax of 5.5 cents per gallon of gasoline, gasohol, or diesel plus a 15 percent surcharge.
- <sup>27</sup> A special excise tax of 2 percent is imposed on all sales of special fuel that are exempted from the gallonage tax if the fuel is sold for use in North Dakota.
- <sup>28</sup> Rate shown includes 1 cent per gallon tax dedicated to the petroleum underground tank release environmental cleanup indemnity fund. When the fund reaches specified balance, future tax revenues will be deposited in a highway fund.
- <sup>29</sup> Rate shown includes 0.08 cent per gallon inspection fee.
- <sup>30</sup> Tax is paid by users for vehicles not under the jurisdiction of Public Utility Commissioner. Vehicles under jurisdiction of Public Utility Commissioner and paying motor-carrier fees are exempt from payment of the motor-fuel tax.
- <sup>31</sup> Rates shown include the oil franchise tax for highway maintenance and construction. Franchise tax rate is variable.
- <sup>32</sup> LPG is tax exempt if user purchases exemption certificate annually.

Table B4. Notes (Continued)

<sup>33</sup> Diesel vehicles 10,000 pounds and over pay 26 cents per gallon.

<sup>34</sup> Motor carrier road tractors, tractor trucks and straight trucks with more than two axles pay an additional 3.5 cents per gallon rates shown include 0.2 cent per gallon for the Virginia Underground Petroleum Storage Tank fund.

<sup>35</sup> LPG is subject to sales tax.

<sup>36</sup> This is the tax rate as of December 31 weighted on the net gallons taxed. The combined rate for gasoline and gasohol is 15.47 cents per gallon. The combined rate for special fuels (diesel and liquefied petroleum gases) is 16.00 cents per gallon.

Source: United States, Department of Transportation, Federal Highway Administration, *Highway Statistics, 1990*, Table MF-121T.

**Table B5. Federal Statistics, State Sales Tax Rate on Motor Fuel - 1990  
(Cents per Gallon)**

State	Percent	Remarks
Alabama .....	4	Applies to fuel not taxable under gallonage tax laws.
California.....	4.75	Applies to sales price including Federal and State motor fuel taxes.
Georgia.....	3	A second motor fuel tax applies to sales price including Federal motor fuel tax.
Hawaii.....	6.25	Applies to sales price excluding Federal and State motor fuel taxes. Alcohol fuels are exempt.
Illinois.....	6.25	Applies to sales price excluding Federal and State motor fuel taxes. For gasohol, only 70 percent of the price is subject to sales tax.
Indiana.....	5	Applies to sales price excluding Federal and State motor fuel taxes.
Kansas.....	4.25	Applies to fuels not taxable under gallonage tax laws.
Kentucky.....	6	Applies to fuels not taxable under gallonage tax laws.
Maine.....	5	Applies to motor fuel not taxed at the maximum rate for highway use under the gallonage laws.
Massachusetts.....	5	Applies to fuels not taxable under gallonage tax laws.
Michigan.....	4	Applies to sales price of diesel fuel including Federal motor fuel tax except when used in a passenger vehicle with capacity of 10 or more tax hire over regularly scheduled routes in Michigan.
Minnesota.....	6	Applies to fuels not taxable under the gallonage laws.
New Mexico.....	5	Applies to fuels not taxable under gallonage laws. Ethanol blends deductible under gasoline tax law are exempt.
New York.....	4	Applies to sales price including Federal motor fuel tax.
Ohio.....	5	Applies to fuels not taxable under the gallonage tax laws.
Oklahoma.....	4.5	Applies to fuels not taxable under gallonage tax laws.
Rhode Island.....	7	Applies to sales price. Gasoline is exempt.
South Carolina.....	5	Applies to sales price of aviation gas only.
South Dakota.....	4	Applies to fuels not taxable under the gallonage tax laws.
Tennessee.....	4.5	Applies to sales price of aviation fuel only.
Texas.....	6.25	Applies to fuels not taxed or exempted under other laws.
Utah.....	5	Applies to fuels not taxable under the gallonage tax laws.
Vermont.....	4	Applies to sales price.
Virginia.....	2	Applies to retail sales within a county or city which is a member of any transportation district in which a heavy rail commuter mass transportation or a bus commuter mass transportation system is owned and operated by a transportation agency.
Washington.....	6.5	Applies to sales price. The following are exempt. Certain providers of public transportation and transportation of handicapped persons, alcohol for use as motor vehicle fuel, and diesel fuel for certain commercial fishing vessels.
Wisconsin.....	5	Applies to fuels not taxable under the gallonage law.
Wyoming.....	3	Applies to sales price of liquefied petroleum gases.

Source: United States, Department of Transportation, Federal Highway Administration, *Highway Statistics, 1990*, Table MF-121T.

**Table B6. State Government Excises on General Sales: Beginning and End of Fiscal Year 1990 and September 1, 1990**

STATE	State General Sales and Gross Receipts Taxes <sup>1</sup>			
	Percentage Rate			Last Effective Date of Change
	Beginning of Fiscal Year	End of Fiscal Year	Sept. 1, 1990	
ALABAMA	4	4	4	7-1-63
ALASKA	(X)	(X)	(X)	(X)
ARIZONA	5	5	5	6-1-83
ARKANSAS <sup>2</sup>	4	4	4	11-7-83
CALIFORNIA <sup>2</sup>	4.75	5	5	12-1-89
COLORADO <sup>2</sup>	3	3	3	8-1-84
CONNECTICUT	8	8	8	7-1-89
DELAWARE	(X)	(X)	(X)	(X)
FLORIDA <sup>2</sup>	6	6	6	2-1-88
GEORGIA <sup>2</sup>	4	4	4	4-1-89
HAWAII	4	4	4	7-1-65
IDAHO	5	5	5	4-1-86
ILLINOIS <sup>2</sup>	5	6.25	6.25	1-1-90
INDIANA	5	5	5	1-1-83
IOWA	4	4	4	3-1-83
KANSAS <sup>2</sup>	4.25	4.25	4.25	7-1-89
KENTUCKY <sup>2</sup>	5	5	6	7-1-90
LOUISIANA	4	4	4	7-1-84
MAINE	5	5	5	6-1-69
MARYLAND	5	5	5	6-1-77
MASSACHUSETTS	5	5	5	11-12-75
MICHIGAN	4	4	4	1-1-61
MINNESOTA <sup>2</sup>	6	6	6	1-1-83
MISSISSIPPI	6	6	6	12-1-83
MISSOURI <sup>2</sup>	4.225	4.425	4.225	7-1-90
MONTANA	(X)	(X)	(X)	(X)
NEBRASKA	4	4	5	7-10-90
NEVADA	5.75	5.75	5.75	5-1-81
NEW HAMPSHIRE	(X)	(X)	(X)	(X)
NEW JERSEY	6	6	7	7-1-90
NEW MEXICO <sup>2</sup>	4.75	4.75	5	7-1-90
NEW YORK <sup>2</sup>	4	4	4	6-1-71
NORTH CAROLINA <sup>2</sup>	3	3	3	7-1-83
NORTH DAKOTA	6	5	5	12-6-89
OHIO <sup>2</sup>	5	5	5	11-24-81
OKLAHOMA <sup>2</sup>	4	4.5	4.5	5-1-90
OREGON	(X)	(X)	(X)	(X)
PENNSYLVANIA	6	6	6	1-1-68
RHODE ISLAND	6	6	7	7-1-90
SOUTH CAROLINA	5	5	5	7-1-84
SOUTH DAKOTA <sup>2</sup>	4	4	4	3-1-88
TENNESSEE <sup>2</sup>	5.5	5.5	5.5	4-1-84
TEXAS <sup>2</sup>	6	6	6.25	7-1-90
UTAH <sup>2</sup>	5.094	5	5	1-1-90
VERMONT	4	4	4	7-1-84
VIRGINIA <sup>2</sup>	3.5	3.5	3.5	1-1-87
WASHINGTON	6.5	6.5	6.5	1-1-87
WEST VIRGINIA	6	6	6	6-1-88
WISCONSIN <sup>2</sup>	5	5	5	5-1-82
WYOMING <sup>2</sup>	3	3	3	7-1-67
EXHIBIT: District of Columbia	6	6	6	6-1-80

Notes:

<sup>1</sup> Exemption of excise tax on food products and prescription drugs are not reflected in this table.

<sup>2</sup> State authorizes State collections of combined State and local sales taxes in those jurisdictions which approve supplemental local sales taxes under State enabling legislation.



# **Appendix C**

Tables Supporting  
Selected Figures



## Appendix C

# Tables Supporting Selected Figures

**Table C1. Impact on Residential Distillate Fuel and Sector Prices by Excluding Sales Tax from States that Exempt Residential Sales, 1990**  
(Dollars per Million Btu)

State	Tax Rate	Distillate Fuel Prices		Sector Prices	
	Percent	Including Sales Tax	Excluding Sales Tax	Including Sales Tax	Excluding Sales Tax
California.....	5	5.70	5.43	12.67	12.67
Colorado.....	3	6.19	6.01	8.69	8.69
Connecticut.....	8	8.55	7.92	13.66	13.38
Florida.....	6	9.59	9.05	21.25	21.25
Hawaii.....	4	7.69	7.40	28.41	28.40
Idaho.....	5	7.37	7.02	10.83	10.79
Kansas.....	4.25	6.22	5.97	10.16	10.15
Maine.....	5	7.49	7.13	13.27	13.05
Massachusetts.....	5	8.21	7.82	11.97	11.72
Minnesota.....	6	7.75	7.31	9.35	9.20
Mississippi.....	6	4.59	4.33	13.93	13.93
Missouri.....	4.25	7.27	6.76	11.22	11.21
Nevada.....	5.75	6.76	6.40	11.26	11.26
New Jersey.....	7	8.39	7.84	12.20	12.09
Pennsylvania.....	6	7.84	7.40	11.94	11.85
Rhode Island.....	7	8.38	7.83	11.89	11.64
South Carolina.....	5	7.57	7.22	16.33	16.30
Tennessee.....	5.5	6.59	6.24	12.53	12.53
Texas.....	6.25	4.32	4.07	14.10	14.10
Vermont.....	4	8.02	7.72	13.58	13.40
Virginia.....	3.5	8.25	7.97	14.29	14.25
United States.....	--	8.01	7.78	12.14	12.11

-- "Not Applicable."

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, State Tables and Table B2



**Table C2. Impact on Residential Sector's Electricity and Sector Prices by Including Sales Taxes for Selected States, 1990**  
(Dollars per Million Btu, except where noted)

State	Tax Rate	Electricity Prices		Sector Prices	
	Percent	Excluding Sales Tax	Including Sales Tax	Excluding Sales Tax	Including Sales Tax
Arizona	5	26.49	27.81	19.19	19.55
California <sup>a</sup>	0.03	29.26	29.29	12.67	12.68
Georgia	4	21.86	22.73	14.28	14.75
Indiana	5	20.13	21.14	10.13	10.44
Iowa	4	22.89	23.81	10.29	10.56
Louisiana	4	21.70	22.57	14.77	15.25
Michigan	4	22.94	23.86	8.53	8.70
Nebraska	4	18.23	19.05	9.45	9.74
New Mexico	5	26.22	27.53	11.13	11.46
North Carolina	3	20.95	21.58	16.56	16.96
South Dakota	4	20.35	21.16	10.36	10.60
Utah	2	20.91	21.33	8.43	8.52
Vermont	4	27.22	28.31	13.58	13.83
Washington	6.5	12.28	13.08	10.22	10.73
Wyoming	3	17.55	18.08	8.43	8.58
United States	--	22.96	23.15	12.14	12.21

<sup>a</sup> California does not levy a sales tax on residents, but it does levy an environmental tax of 0.1 mills/kWh.

-- "Not Applicable."

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, State Tables and Table B2.

**Table C3. Impact on Commercial Sector's Electricity and Sector Prices by Including Sales Taxes in Prices for Selected States, 1990**  
(Dollars Per Million Btu, except where noted)

State	Tax Rate	Electricity Prices		Sector Prices	
	Percent	Excluding Sales Tax	Including Sales Tax	Excluding Sales Tax	Including Sales Tax
Arizona	5	23.09	24.24	16.20	16.92
Arkansas	4	20.40	21.22	11.64	12.00
California	5	26.31	27.92	15.08	15.84
Colorado	8	16.89	18.24	9.27	9.82
Connecticut	8	27.09	29.26	14.40	15.25
District of Columbia	6	18.56	19.67	11.78	12.32
Florida	6	19.57	20.74	15.26	16.06
Georgia	4	21.58	22.44	14.58	15.07
Indiana	5	17.97	18.87	9.57	10.16
Iowa	4	18.33	19.06	8.58	8.80
Kansas	4.25	19.65	20.49	9.20	9.49
Kentucky	6	15.33	16.25	9.73	10.18
Louisiana	4	20.57	21.39	14.77	15.28
Maine	5	23.99	25.19	9.84	10.14
Maryland	5	19.94	20.98	12.22	12.68
Massachusetts	5	25.44	26.71	12.63	13.07
Michigan	4	24.21	25.18	9.36	9.60
Mississippi	6	21.23	22.50	13.17	13.83
Missouri	4.25	18.98	19.78	11.38	11.75
Nebraska	4.5	17.72	18.52	8.87	9.15
New York	4	29.44	30.62	13.11	13.48
North Carolina	3	18.94	19.51	13.69	14.01
Oklahoma	4.5	16.65	17.40	10.57	10.94
Pennsylvania	6	24.00	25.44	12.06	12.56
Rhode Island	7	26.28	28.12	14.64	15.46
South Carolina	5	17.92	18.82	13.93	14.52
South Dakota	4	18.13	18.86	9.42	10.00
Tennessee	5.5	18.02	19.01	10.62	11.06

See notes at end of table.

**Table C3. Impact on Commercial Sector's Electricity and Sector Prices by Including Sales Taxes in Prices for Selected States, 1990 (Continued)**  
(Dollars Per Million Btu, except where noted)

State	Tax Rate	Electricity Prices		Sector Prices	
	Percent	Excluding Sales Tax	Including Sales Tax	Excluding Sales Tax	Including Sales Tax
<b>Texas</b>	<b>6.125</b>	<b>18.12</b>	<b>19.23</b>	<b>11.58</b>	<b>12.17</b>
Utah	5	17.35	18.22	9.53	9.90
Vermont	4	25.16	26.17	14.41	14.87
Washington	6.5	11.63	12.39	8.63	9.06
Wisconsin	5	17.03	17.88	9.29	9.60
Wyoming	3	15.24	15.70	8.37	8.56
United States	--	21.20	22.06	11.95	12.32

-- "Not Applicable"

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, States Tables and Table B2

**Table C4. Impact on Industrial Sector's Electricity and Sector Prices by Including Sales Taxes in Prices for Selected States, 1990**  
(Dollars per Million Btu)

State	Tax Rate	Electricity Prices		Sector Prices	
	Percent	Excluding Taxes	Including Taxes	Excluding Taxes	Including Taxes
Arizona	5	16.36	17.18	8.42	8.68
California	5	21.35	22.71	7.18	7.36
Florida	6	14.90	15.79	6.23	6.40
Georgia	4	14.16	14.73	6.11	6.23
Kentucky	5	10.49	11.01	5.75	5.91
Mississippi	6	13.63	14.45	5.35	5.50
New Mexico	5	14.61	15.34	7.37	7.50
Oklahoma	4.5	10.64	11.12	3.69	3.75
Pennsylvania	6	17.51	18.56	5.69	5.86
Rhode Island	7	24.46	26.17	8.25	8.56
Texas	6.125	11.82	12.54	4.09	4.14
Vermont	4	19.31	20.08	11.66	11.97
Washington	6.5	7.00	7.46	5.04	5.24
United States	--	13.92	14.20	5.49	5.54

-- "Not Applicable."

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, State Tables and Table B2.

**Table C5. Impact on Electricity and Sector Prices by Including Sales Taxes in Prices, 1990  
(Dollars per Million Btu)**

Sector	Electricity Prices		Sector Prices		Electricity Prices	Sector Energy Prices
	Excluding Sales Tax	Including Sales Tax	Excluding Sales Tax	Including Sales Tax	Percent Change	Percent Change
Residential	22.96	23.15	12.14	12.21	0.83	0.56
Commercial	21.20	22.05	11.95	12.32	4.05	3.11
Industrial	13.92	14.20	5.49	5.54	2.00	0.85
United States	19.33	19.76	8.43	8.50	2.22	0.83

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990*, State Tables and Table B2.

**Table C6. Impact on Aviation Gasoline and Transportation Sector Prices by Including Excise Taxes, 1990**  
(Dollars per Million Btu)

State	Aviation Gasoline Prices			Sector Prices	
	Excluding Excise Tax	Tax	Including Excise Tax	Excluding Excise Tax	Excluding Excise Tax
Alabama	9.32	0.25	9.57	8.43	8.43
Alaska	9.32	0.33	9.65	7.50	7.54
Arizona	9.32	0.42	9.74	8.74	8.74
California	9.32	1.25	10.57	7.48	7.48
Colorado	9.32	0.50	9.82	8.84	8.84
Delaware	9.32	1.33	10.65	8.97	8.98
Florida	9.32	0.57	9.89	7.97	7.97
Georgia	9.32	0.62	9.94	7.71	7.71
Hawaii	9.32	0.08	9.40	7.95	7.95
Indiana	9.32	1.25	10.57	8.09	8.09
Iowa	9.32	0.67	9.99	9.33	9.33
Kansas	9.32	0.40	9.72	8.63	8.63
Maine	9.32	0.55	9.87	9.16	9.16
Maryland	9.32	0.42	9.74	9.30	9.30
Massachusetts	9.32	0.83	10.15	8.97	8.97
Michigan	9.32	0.25	9.57	8.63	8.63
Minnesota	9.32	0.10	9.42	9.35	9.35
Mississippi	9.32	0.53	9.85	8.20	8.20
Missouri	9.32	0.75	10.07	8.39	8.39
Montana	9.32	0.89	10.21	9.47	9.48
Nebraska	9.32	0.42	9.74	9.23	9.23
Nevada	9.32	0.08	9.40	8.40	8.40
New Hampshire	9.32	0.40	9.72	9.46	9.46
New Jersey	9.32	1.04	10.36	7.60	7.60
New Mexico	9.32	1.35	10.67	8.76	8.76
North Carolina	9.32	0.37	9.69	9.15	9.15

See note at end of table.

**Table C6. Impact on Aviation Gasoline and Transportation Sector Prices by Including Excise Taxes, 1990 (Continued)**  
(Dollars per Million Btu)

State	Aviation Gasoline Prices			Sector Prices	
	Excluding Excise Tax	Tax	Including Excise Tax	Excluding Excise Tax	Excluding Excise Tax
North Dakota	9.32	0.67	9.99	9.41	9.41
Oregon	9.32	0.25	9.57	8.64	8.64
South Dakota	9.32	0.50	9.82	9.12	9.13
Tennessee	9.32	0.12	9.44	9.04	9.04
Texas	9.32	1.25	10.57	7.61	7.61
Utah	9.32	0.33	9.65	8.45	8.45
Vermont	9.32	1.33	10.65	9.68	9.68
Virginia	9.32	0.44	9.76	8.51	8.51
Washington	9.32	0.46	9.78	7.56	7.57
West Virginia	9.32	0.40	9.72	9.81	9.81
Wisconsin	9.32	0.50	9.82	9.29	9.29
Wyoming	9.32	0.42	9.74	8.65	8.65
United States	9.32	0.84	10.16	8.33	8.33 <sup>a</sup>

<sup>a</sup> Less than 0.5 cent per gallon.

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990* and *State Energy Data Report 1991*, State Tables and Table B3.

**Table C7. Impact on Jet Fuel and Transportation Sector Prices by Including Excise Taxes, 1990**  
(Dollars per Million Btu)

State	Jet Fuel Prices			Sector Prices	
	Excluding Excise Tax	Tax	Including Excise Tax	Excluding Excise Tax	Including Excise Tax
Alabama	5.99	0.08	6.07	8.43	8.43
Alaska	6.17	0.20	6.37	7.50	7.61
Arizona	6.04	0.16	6.20	8.74	8.76
Arkansas	5.90	0.24	6.14	8.63	8.64
California	5.76	0.16	5.92	7.48	7.51
Colorado	5.59	0.18	5.77	8.84	8.87
Delaware	6.33	1.26	7.59	8.97	9.11
Florida	5.64	0.45	6.09	7.97	8.04
Georgia	5.45	0.59	6.04	7.71	7.80
Hawaii	5.99	0.08	6.07	7.95	7.99
Indiana	5.62	0.07	5.69	8.09	8.10
Iowa	6.11	0.24	6.35	9.33	9.33
Kansas	5.57	0.24	5.81	8.63	8.65
Maine	5.92	1.62	7.54	9.16	9.36
Maryland	5.47	0.39	5.86	9.30	9.32
Massachusetts	5.83	0.39	6.22	8.97	9.02
Michigan	5.65	0.12	5.77	8.63	8.64
Minnesota	5.68	0.10	5.78	9.35	9.36
Mississippi	5.68	0.41	6.09	8.20	8.34
Missouri	5.68	0.71	6.39	8.39	8.45
Montana	6.26	0.08	6.34	9.47	9.48
Nebraska	6.03	0.24	6.27	9.23	9.24
New Hampshire	6.40	0.08	6.48	9.46	9.47
New Jersey	5.60	0.16	5.76	7.60	7.65
North Carolina	5.65	0.23	5.88	9.15	9.16
North Dakota	6.11	0.63	6.74	9.41	9.47
Oklahoma	5.93	0.01	5.94	8.56	8.56

See note at end of table.



**Table C7. Impact on Jet Fuel and Transportation Sector Prices by Including Excise Taxes, 1990  
(Continued)  
(Dollars per Million Btu)**

State	Jet Fuel Prices			Sector Prices	
	Excluding Excise Tax	Tax	Including Excise Tax	Excluding Excise Tax	Including Excise Tax
Oregon	5.93	0.03	5.96	8.64	8.64
South Dakota	6.21	0.47	6.68	9.12	9.16
Tennessee	5.58	0.11	5.69	9.04	9.05
Texas	5.41	1.18	6.59	7.61	7.92
Utah	5.75	0.31	6.06	8.45	8.51
Vermont	6.60	1.26	7.86	9.68	9.71
Virginia	5.53	0.42	5.95	8.51	8.57
Washington	5.68	0.43	6.11	7.56	7.65
West Virginia	6.41	0.38	6.79	9.81	9.81
Wisconsin	5.99	0.47	6.46	9.29	9.30
Wyoming	6.45	0.39	6.84	8.65	8.65
United States	5.68	0.39	6.07	8.33	8.39

Source: Energy Information Administration, *State Energy Price and Expenditure Report 1990* and *State Energy Data Report 1991*, State Tables and Table B3.

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# **List of Acronyms and Postal State Abbreviations**



## List of Acronyms

AER	Annual Energy Review	kWh	Kilowatthour
ASM	Annual Survey of Manufacturers	LPG	Liquefied Petroleum Gas
ASTG	All States Tax Guide	Mcf	Thousand Cubic Feet
BLS	Bureau of Labor Statistics	MEC	Manufacturing Energy Consumption 1988
BNL	Battelle Northwest Laboratory	MER	Monthly Energy Review
Btu	British Thermal Unit	NGA	Natural Gas Annual
C&Q	Cost and Quality of Fuels for Electric Utility Plants	NGM	Natural Gas Monthly
CBECE	Commercial Buildings Energy Consumption and Expenditures 1989	OSS	Office of Statistical Standards
CIF	Cost Including Insurance and Freight	PAD	Petroleum Administration for Defense
CNEAF	Office of Coal, Nuclear, Electric and Alternative Fuels	PMA	Petroleum Marketing Annual
CM	Census of Manufacturers	PMD	Petroleum Marketing Division
CPI	Consumer Price Index	PMM	Petroleum Marketing Monthly
DOC	Department of Commerce	PPI	Producer Prices and Price Indexes
EIA	Energy Information Administration	RECS	Residential Energy Consumption Survey
EMEU	The Office of Energy Markets and End Use	QCR	Quarterly Coal Report
EPM	Electric Power Monthly	SEDR	State Energy Data Report
FERC	Federal Energy Regulatory Commission	SEPEDS	State Energy Price and Expenditure Data System
f.o.b.	Free on Board	SEPER	State Energy Price and Expenditure Report
GHS	Gas Househeating Survey	SGTC	State Government Tax Collections
HECE	Household Energy Consumption and Expenditures 1987	SIC	Standard Industrial Code
HVEC	Household Vehicles Energy Consumption 1988		

## List of Postal State Abbreviations

AL	Alabama	MO	Missouri
AK	Alaska	MT	Montana
AZ	Arizona	NE	Nebraska
AR	Arkansas	NV	Nevada
CA	California	NH	New Hampshire
CO	Colorado	NJ	New Jersey
CT	Connecticut	NM	New Mexico
DE	Delaware	NY	New York
DC	District of Columbia	NC	North Carolina
FL	Florida	ND	North Dakota
GA	Georgia	OH	Ohio
HI	Hawaii	OK	Oklahoma
ID	Idaho	OR	Oregon
IL	Illinois	PA	Pennsylvania
IN	Indiana	RI	Rhode Island
IA	Iowa	SC	South Carolina
KS	Kansas	SD	South Dakota
KY	Kentucky	TN	Tennessee
LA	Louisiana	TX	Texas
ME	Maine	UT	Utah
MD	Maryland	VT	Vermont
MA	Massachusetts	VA	Virginia
MI	Michigan	WA	Washington
MN	Minnesota	WV	West Virginia
MS	Mississippi	WI	Wisconsin
		WY	Wyoming