

Glossary

Aggregate Ratio: See **Mean** and **Ratio Estimate**.

AMPD: Average miles driven per day. See **Appendix B**, "Estimation Methodologies."

Annual Vehicle Miles Traveled: See **Vehicle Miles Traveled**.

Automobile: Includes standard passenger car, 2-seater car and station wagons; excludes passenger vans, cargo vans, motor homes, pickup trucks, and jeeps or similar vehicles. See **Vehicle**.

Average Household Energy Expenditures: A ratio estimate defined as the total household energy expenditures for all RTECS households divided by the total number of households. See **Ratio Estimate, and Combined Household Energy Expenditures**.

Average Number of Vehicles per Household: The average number of vehicles used by a household for personal transportation during 1991. For this report, the average number of vehicles per household is computed as the ratio of the total number of vehicles to the total number of households within any subgroup or "table cell." The total number of vehicles used by a household is based on the number of days each vehicle is used. For example, a total of one vehicle may represent two vehicles, each used for half of the year. See **Vehicle**.

Average Vehicle Fuel Consumption: A ratio estimate defined as total gallons of fuel consumed by all vehicles, divided by: (1) the total number of vehicles (for average fuel consumption per vehicle) or (2) the total number of households (for average fuel consumption per household). See **Ratio Estimate**.

Average Vehicle Miles Traveled: A ratio estimate defined as total miles traveled by all vehicles, divided by: (1) the total number of vehicles (for average miles traveled per vehicle) or (2) the total number of households (for average miles traveled per household). See **Ratio Estimate** and **Vehicle Miles Traveled**.

BLS: Bureau of Labor Statistics within the U.S. Department of Labor. See **Price**.

British thermal unit (Btu): The amount of energy required to raise the temperature of 1 pound of water 1 degree Fahrenheit (F) at or near 39.1 degrees F and 1 atmosphere of pressure. One Btu is about equal to the heat given off by a blue-tip match. See **Conversion Factor**.

Btu: See British thermal unit.

Btu Conversion Factor: See **Conversion Factor**.

Bureau of Labor Statistics (BLS) Pump Price Series: See **Price**.

Carburetor: A fuel delivery device for producing a proper mixture of gasoline vapor and air, and delivering it to the intake manifold of an internal combustion engine. Gasoline is gravity fed from a reservoir bowl into a throttle bore, where it is allowed to evaporate into the stream of air being inducted by the engine. The fuel efficiency of carburetors is more temperature dependent than fuel injection systems. See **Fuel Injection** and **Diesel Fuel System**.

Census Division: A geographic area consisting of several States defined by the U.S. Department of Commerce, Bureau of the Census. See the map in **Appendix F**, "U.S. Census Regions and Divisions." The States are grouped into nine divisions and four regions:

Region	Division	States
Northeast	New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont
	Middle Atlantic	New Jersey, New York, and Pennsylvania
Midwest	East North Central	Illinois, Indiana, Michigan, Ohio, and Wisconsin
	West North Central	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota
South	South Atlantic	Delaware, the District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia
	East South Central	Alabama, Kentucky, Mississippi, and Tennessee
	West South Central	Arkansas, Louisiana, Oklahoma, and Texas
West	Mountain	Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming
	Pacific	Alaska, California, Hawaii, Oregon, and Washington

Census Region: See **Census Division** and the map in **Appendix F**, "U.S. Census Regions and Divisions."

Central City: Usually one or more legally incorporated cities within the Metropolitan Statistical Area (MSA) that is significantly large by itself or large relative to the largest city in the MSA. Additional criteria for being classified as "Central City" include having at least 75 jobs for each 100 employed residents and having at least 40 percent of the resident workers employed within the city limits. Every MSA has at least one central city, usually the largest city. Central cities are commonly regarded as relatively large communities with a denser population and a higher concentration of economic activities than the outlying or suburban areas of the MSA. "Outside Central City" are those parts of the MSA not designated as central city. See **Metropolitan**.

Certification Files: See **Environmental Protection Agency Certification Files**.

Change in Vehicle Stock: See **Vehicle Acquisition** and **Vehicle Disposition**.

CID: Cubic Inch Displacement. See **Engine Size**.

Cold-Deck Imputation: A statistical procedure that replaces a missing value of an item with a constant value from an external source such as a value from a previous survey. See **Imputation** and **Appendix C**, "Quality of the Data."

Combined Household Energy Expenditures: The total amount of funds spent for energy consumed in, or delivered to, a housing unit during a given period of time; and for fuel used to operate the motor vehicles that are owned or used on a regular basis by the household. For this report, expenditures for energy consumed in the housing unit are presented on an annual basis for calendar year 1990 as collected during the 1990 Residential Energy Consumption Survey. All vehicle expenditure statistics calculated for the RTECS are on an annual basis for calendar year 1991.

The total dollar amount for energy consumed in a housing unit includes State and local taxes but excludes merchandise repairs or special service charges. Electricity, and natural gas expenditures are for the amount of those energy sources consumed. Fuel oil, kerosene and LPG expenditures are for the amount of fuel purchased, which may differ from the amount of fuel consumed.

The total dollar amount of fuel spent for vehicles is the product of fuel consumption and price. In the 1991 RTECS, price data were obtained from the Bureau of Labor Statistics price data and the Lundberg Survey Inc. price series. See **Vehicle Fuel Expenditures**, **Average Household Energy Expenditures** and **Price**.

Conversion Factor: A number that translates units of one system into corresponding values of another system. Conversion factors are used to translate physical units of measures for various fuels into Btu equivalents. Conversion factors used in this report are:

Motor Gasoline125 million Btu per gallon
Diesel Fuel139 million Btu per gallon
Propane091 million Btu per gallon
Gasohol121 million Btu per gallon
Gasohol = 90 percent motor gasoline and 10 percent ethanol	
1 barrel = 42 gallons	

Diesel Fuel: A fuel composed of distillates obtained in petroleum refining operation or blends of such distillates with residual oil used in motor vehicles. The boiling point and specific gravity are higher for diesel fuels than for gasoline. See **Diesel Fuel System**.

Diesel Fuel System: Diesel engines are internal combustion engines that burn diesel oil rather than gasoline. Injectors are used to spray droplets of diesel oil into the combustion chambers, at or near the top of the compression

stroke. Ignition follows due to the very high temperature of the compressed in-take air, or to the use of "glow plugs," which retain heat from previous ignitions (spark plugs are not used). Diesel engines are generally more fuel efficient than gasoline engines, but must be stronger and heavier due to high compression ratios. See **Diesel Fuel**, **Carburetor**, and **Fuel Injection**.

Drivers: Household members who drove a vehicle on a regular basis at the time of the 1990 RECS personal interviews.

Electricity: See **Main Heating Fuel**.

Energy Used in the Home: For electricity or natural gas, the quantity is the amount used by the household during the 365- or 366-day period. For fuel oil, kerosene, and liquefied petroleum gas (LPG), the quantity consists of fuel purchased, not fuel consumed. If the level of fuel in the storage tank was the same at the beginning and end of the annual period, then the quantity consumed would be the same as the quantity purchased. Information on the level of fuel in the storage tank was not included in the data collection. The time period for household consumption for energy used in the home is January 1990 through December 1990 and was collected during the 1990 Residential Energy Consumption Survey.

Engine Size: The total volume within all cylinders of an engine, when pistons are at their lowest positions. The engine is usually measured in "liters" or "cubic inches of displacement (CID)." Generally, larger engines result in greater engine power, but less fuel efficiency. There are 61.024 cubic inches in a liter. See **Number of Cylinders**.

Environmental Protection Agency (EPA) Certification Files: Computer files produced by EPA for analysis purposes. For each vehicle make, model and year, the files contain the EPA test MPG's (city, highway and 55/45 composite). These MPG's are associated with various combinations of engine and drive-train technologies (e.g., number of cylinders, engine size, gasoline or diesel fuel, and automatic or manual transmission). These files also contain information similar to that in the DOE/EPA *Gas Mileage Guide*, although the MPG's in that publication are adjusted for shortfall. See **Miles per Gallon, Shortfall** and **Appendix B**, "Estimation Methodologies."

EPA Certification Files: See **Environmental Protection Agency (EPA) Certification Files**.

EPA Composite MPG: The harmonic mean of the EPA city and highway MPG, weighted under the assumption of 55 percent city driving and 45 percent highway driving. See **Appendix B**, "Estimation Methodologies."

Family Income: The total combined annual income in 1990 of all members of the family from all sources before taxes and deductions as collected in the 1990 RECS. It includes wages, salaries, tips, commissions, income from Social Security, pensions, interest, dividends, rent, public assistance, and unemployment insurance. This includes the total income for all family members who lived in the household in 1990. Income of nonfamily members of the household is not included. "Family" includes the following types of relationships: mother, father, sister, brother, son, daughter, father-in-law, uncle, aunt, niece, grandchild, foster child, and similar relationships.

Four-Wheel Drive: See **Type of Drive**.

Front-Wheel Drive: See **Type of Drive**.

Fuel Consumption: See **Vehicle Fuel Consumption**.

Fuel Efficiency: See **Miles per Gallon**.

Fuel Expenditures: See **Vehicle Fuel Expenditures**.

Fuel Injection: A fuel delivery system whereby gasoline is pumped to one or more fuel injectors under high pressure. The fuel injectors are valves that, at the appropriate times, open to allow fuel to be sprayed or atomized into a throttle bore or into the intake manifold ports. The fuel injectors are usually solenoid operated valves under the control of the vehicle's on-board computer (thus the term "electronic fuel injection"). The fuel efficiency of fuel injection systems is less temperature dependent than carburetor systems. Diesel engines always use injectors. See **Carburetor**, and **Diesel Fuel Systems**.

Fuel Oil: See **Main Heating Fuel**.

Fuel Type: See **Type of Vehicle Fuel Purchased**.

Full Service: See **Type of Primary Service**.

GPMP (Gallons per Mile Ratio): See **MPG Shortfall** and **Appendix B**, "Estimation Methodologies."

Gasohol: A fuel used in motor vehicles that is a blend of finished motor gasoline (leaded or unleaded) and alcohol (generally ethanol, but sometimes methanol), limited to 10 percent alcohol by volume. See **Gasoline**.

Gasoline: A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, obtained by blending appropriate refinery streams to form a fuel suitable for use in spark ignition engines. Motor gasoline includes both leaded or unleaded grades of finished motor gasoline, blending components, and gasohol.

High-Mileage Households: Households with estimated aggregate annual vehicle mileage that exceeds 12,500 miles, as obtained in the 1990 RECS.

Hispanic Descent: This, as the question on origin, was self-determined by the respondent and is collected in the 1990 RECS. The respondent was asked, "Is the householder of Spanish or Hispanic descent?" and the respondent's answer was recorded. See **Origin**.

Hot-Deck Imputation: A statistical procedure for deriving a probable response to a questionnaire item concerning a household or vehicle, where no response was given during the survey. To perform the procedure, the households or vehicles are sorted by variables related to the missing item. Thus, a series of "sort categories" are formed, which are internally homogeneous with respect to the sort variables. Within each category, households or vehicles for which the questionnaire item is not missing are randomly selected to serve as "donors" to supply values for the missing item of "recipient" households or vehicles. See **Imputation** and **Appendix C**, "Quality of the Data."

Household: A family, an individual, or a group of up to nine unrelated persons occupying the same housing unit at the time of the 1990 RECS interview. "Occupy" means the housing unit was the person's usual or permanent place of residence at the time of the first field contact. The household includes babies, lodgers, boarders, employed persons who live in the housing unit, and persons who usually live in the household but are away traveling or in a hospital. The household does not include persons who are normally members of the household but who were away from home as college students or members of the armed forces at the time of the contact. The household does not include persons temporarily visiting with the household if they have a place of residence elsewhere, persons who take their meals with the household but usually lodge or sleep elsewhere, domestic employees or other persons employed by the household who do not sleep in the same housing unit, or persons who are former members of the household, but have since become inmates of correction or penal institutions, mental institutions, homes for the aged or needy, homes or hospitals for the chronically ill or handicapped, nursing homes, convents or monasteries, or other places in which residents may remain for long periods of time. By definition, the number of households is the same as the number of occupied housing units. The number of households for a subgroup or table cell is estimated by summing the survey weights over all sample households in that subgroup.

Householder: The person (or one of the people) in whose name the home is owned or rented. If there is no lease or similar agreement, or if the person who owns the home or pays the rent does not live in the housing unit, the householder is the person responsible for paying the household bills, or whoever is generally in charge.

Household Composition: The configuration of the household members including number of children, number of household members, and age of household members. For this report, households were divided into households with children and households without children. Within the households with children, a further division was made

depending on the age of the oldest child. Within households without children, a further division was made depending on the number of adults and then within that category, the age of the households. See **Household, Householder,** and **Housing Unit.**

Household Energy Expenditures: The total amount of funds spent for energy consumed in, or delivered to, a housing unit during a given period of time. See **Combined Household Energy Expenditures.**

Household Size: Number of individuals occupying a housing unit. See **Household, and Housing Unit.**

Housing Unit: A structure or part of a structure where a household lives. It has direct access from the outside of the building, either directly or through a common hall. Housing units do not include group quarters such as prisons or nursing homes where 10 or more unrelated persons live. Hotel and motel rooms are considered housing units if occupied as the usual or permanent place of residence.

Imputation: A group of statistical techniques for estimating probable responses to questionnaire items concerning households or vehicles, where no responses or poor quality responses were given during the survey. The three most common techniques employed in this survey were "hot-deck," "regression," and "predictive mean matching." See **Hot-Deck Imputation, Cold-Deck Imputation, Predictive Mean Matching, Regression Imputation, and Appendix C, "Quality of the Data."**

Intermediate Grade Gasoline: An increasingly common grade of unleaded gasoline with an octane rating intermediate between "regular" and "premium." Octane boosters are added to gasolines to control engine pre-ignition or "knocking" by slowing combustion rates. See **Regular Grade Gasoline** and **Premium Grade Gasoline**.

In-Use MPG: An MPG that was adjusted for seasonality and annual miles traveled. See **Appendix B, "Estimation Methodologies."**

Jeep-like Vehicle: These vehicles are now referred to as sport-utility. See **Sport-Utility Vehicle**.

Kerosene: See **Main Heating Fuel**.

Large Van: See **Van**.

Leaded Gasoline: A fuel that contains more than 0.05 gram of lead per gallon or more than 0.005 gram of phosphorus per gallon. See **Gasoline** and **Unleaded Gasoline**.

Liquefied Petroleum Gas (LPG): See **Main Heating Fuel**.

Liters: See **Engine Size**.

Lundberg Survey Inc. Price Series: See **Price**.

Main Heating Fuel: The primary fuel delivered to a residential site. It may be converted to some other form of energy at the site. The following are defined as primary fuels for this report:

Electricity: Metered electric power supplied by a central utility company to a residence via underground or above-ground power lines. It does not refer to electricity generated onsite for the exclusive use of a residence. When a residence has its own generating capability, the fuel used for the generator will be specified. The Btu equivalent for electricity is the energy value of electricity as received by the household (3,412 Btu per kilowatthour). For this report, energy losses that occur in generating and transmitting electricity are not included in the conversion of electricity into a Btu equivalent. If these losses were to be included, the conversion rate would generally be about 10,353 Btu per kilowatthour.

Fuel Oil: No. 1, No. 2, or No. 4 grade fuel oil or residual oil that is burned for space- or water-heating purposes. No. 1 distillate fuel oil is a form of heating oil used mostly as a blending stock to insure that heavier grades of fuel flow under severe cold weather conditions. No. 2 distillate refers to both No. 2 heating oil and No. 2 diesel fuel. Although these products are not identical, they are essentially interchangeable for most applications. No. 2 fuel oil is the most common form of heating oil. No. 4

distillate is a blend of No. 2 and No. 5 or No. 6 residual fuel oil, used in large stationary diesel engines and boilers equipped with fuel preheating equipment. Residual fuel oil refers to the heavier oils that remain after the distillate fuel oils and lighter hydrocarbons are boiled off in refinery operations.

Kerosene: The generic name for a distilled product of oil or coal, having properties similar to those of No. 1 fuel oil. Kerosene is used for cooking stoves, for space heating or water heating, or for lighting equipment that uses wicks. It is sometimes sold under the names "range oil," "stove oil," or "coal oil."

LPG or Liquefied Petroleum Gas: Any fuel gas supplied to a residence in liquid form, such as propane or butane. It is usually delivered by tank truck and stored near the residence in a tank or cylinder until used. Propane was the most common liquefied petroleum gas supplied to RECS households. Household use of LPG solely for outdoor gas grills is not considered sufficient use to mark the household as a user of LPG.

Natural Gas: Utility gas supplied by underground pipeline to individual housing units by a central utility company. It does not refer to privately owned gas wells operated by the household, nor to LPG.

Mean: The simple arithmetic average for a population; that is, the sum of all the values in a population divided by the size of the population. For this report, population means are estimated by computing the weighted sum of the sample values, then dividing by the sum of the sample weights. The mean is, thus, an aggregate ratio whose denominator is the total number of households or vehicles. See **Ratio Estimate**.

Measured Heated Area of Residence: The floor area of the housing unit that is enclosed from the weather and heated as collected in the 1990 RECS. Basements are included whether or not they contain finished space. Garages are included if they have a wall in common with the house. Attics that have finished space and attics that have some heated space are included. Crawl spaces are not included even if they are enclosed from the weather. Sheds and other buildings that are not attached to the house are not included. "Measured" area means that the measurement of the dimensions of the home did not rely on the respondent's reports but was an actual measurement by the interviewer using a metallic, retractable, 50-foot tape measure. "Heated area" is that portion of the measured area that is heated during most of the season. Rooms that are shut off during the heating season to save on fuel are not counted. Attached garages that are unheated and unheated areas in the attics and basements are also not counted.

Metropolitan: A group of households located within Metropolitan Statistical Areas (MSA's) as defined by the U.S. Office of Management and Budget. Except in New England, an MSA is (1) a county or group of contiguous counties that contain at least one city of 50,000 inhabitants or more, or (2) an urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (75,000 in New England). The contiguous counties are included in an MSA if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city. In New England, MSA's consist of towns and cities, rather than counties. See **Nonmetropolitan** and **Central City**.

Metropolitan Status: Refers to the geographic location of the households in relationship to MSA's. See **Metropolitan**, **Nonmetropolitan**, and **Central City**.

Miles per Gallon (MPG): A measure of vehicle fuel efficiency. Miles per gallon or MPG as presented in this report represents "Fleet Miles per Gallon." For each subgroup or "table cell," MPG is computed as the ratio of the total number of miles traveled by all vehicles in the subgroup to the total number of gallons consumed. For the 1991 RTECS, MPG's were assigned to each vehicle using the EPA certification files and adjusted for on-road driving. See **Appendix B**, "Estimation Methodologies," for a discussion of how MPG's were assigned to each vehicle.

Mini-Service Pumps: See **Type of Primary Service**.

Minivan: New type of small van that first appeared with that designation in 1984. Any of the smaller vans built on an automobile-type frame. Earlier models such as the Volkswagen van are now included in this category.

Model Year: The year in which the particular style or design of vehicle was introduced or manufactured.

Motor Fuel Consumption: See **Vehicle Fuel Consumption**.

Motor Fuel Expenditures: See **Vehicle Fuel Expenditures**.

MPG: See **Miles per Gallon**.

MPG Shortfall: The difference between actual on-road MPG and EPA laboratory test MPG. MPG shortfall is expressed as gallons per mile ratio (GPMR). See **Appendix B**, "Estimation Methodology."

MSA: See **Metropolitan**.

Multistage Area Probability Sample: A sample design executed in stages with geographic "clusters" of sampling units selected at each stage. This procedure reduces survey expense while maintaining national coverage. See **Appendix A**, "How the Survey Was Conducted."

Natural Gas: See **Main Heating Fuel**.

Nonmetropolitan: Households not located within MSA's as defined by the U.S. Office of Management and Budget. See **Metropolitan**.

Number of Cylinders: In a reciprocating engine, a cylinder is the chamber in which combustion of fuel occurs and the piston moves, ultimately delivering power to the wheels. Common engine configurations include 4, 6, and 8 cylinders. Generally, the more cylinders a vehicle has, the greater the amount of engine power it has. However, more cylinders often result in less fuel efficiency. See **Engine Size**.

Number of Households: The total number of households in the United States that are represented by the sample households. In this report, most statistics are shown for the number of households with vehicles, which is a subset of the total number of households.

Number of Vehicles: See **Vehicle** and **Vehicle Stock**.

Occupied Housing Unit: A unit someone was living in as his or her usual or permanent place of residence when the first field contact was made. See **Housing Unit**.

On-road MPG: A composite MPG that was adjusted to account for the difference between the test value and the fuel efficiency actually obtained on the road. See **Appendix B**, "Estimation Methodology."

Origin: The primary ethnic background of the person considered to be the householder as self-determined by the respondent. Origin of householder was collected in the 1990 RECS. Each respondent was asked, "Which of the groups on this exhibit best describes the householder?" The groups included: white, black or Negro, American Indian, Alaskan native, Asian, and Pacific Islander. The word "race" was not used in either the questionnaire or the instructions. See **Hispanic Descent**.

Outside Central City: See **Central City**.

Passenger Car: See **Vehicle** and **Automobile**.

Pickup Truck: Includes compact and full-size pickup trucks. See **Vehicle**.

Poverty: Low-income classifications to which certain households are assigned based on the household's annual income reported in the 1990 RECS. "Below 100 percent of poverty" encompasses a group of households with incomes below the poverty level as defined by the Bureau of the Census. "Below 125 percent of poverty" includes a group of households with incomes below 125 percent of the poverty level. These groups of the poor and near-poor represent alternative levels for defining poverty. The definitions of "poor" are based on the number of family members in the household and the income of the entire family.

Premium Grade Gasoline: A grade of unleaded gasoline with a high octane rating, (approximately 92) designed to minimize preignition or engine "knocking" by slowing combustion rates. See **Regular Grade Gasoline** and **Intermediate Grade Gasoline**.

Predictive Mean Matching: A model-based procedure used to impute for item nonresponse. This method uses logistic models to compute predicted means that are used to statistically match each nonrespondent to a respondent with the closest predicted mean. The respondent's value is directly imputed to the nonrespondent. See **Imputation** and **Appendix C**, "Quality of the Data."

Price: The dollar amount per gallon of fuel purchased. For the 1991 RTECS, fuel prices were not collected directly from the respondent. Instead fuel prices were estimated from the Bureau of Labor Statistics Retail Pump Price Survey and from the Lundberg Survey Inc. Prices. See **Appendix B**, "Estimation Methodologies" and **Appendix C**, "Quality of the Data."

Primary Sampling Unit (PSU): A sampling unit selected at the first stage in multistage area probability sampling. A PSU typically consists of one to several contiguous counties--for example, a metropolitan area with surrounding suburban counties. The approximately 3,100 counties and independent cities of the contiguous United States were grouped into about 1,800 PSU's by a procedure similar to the one used by the Census Bureau for its Current Population Survey. PSU's can be composed of one or more MSA's or can be composed of rural counties. See **Metropolitan** and **Appendix A**, "How the Survey Was Conducted."

PSU: See **Primary Sampling Unit**.

Quadrillion: The number 1,000,000,000,000,000 or 10^{15} .

Ratio Estimate: The ratio of two population aggregates (totals). For example, "average miles traveled per vehicle is the ratio of total miles driven by all vehicles, over the total number of vehicles, within any subgroup or "table cell." In this report, there are two types of ratio estimates: those computed using aggregates for vehicles and those computed using aggregates for households. See **Mean**.

Rear-Wheel Drive: See **Type of Drive**.

RECS: See **Residential Energy Consumption Survey (RECS)**.

Regression Imputation: A statistical technique for predicting the value of a numerical variable that is missing. The technique involves developing a regression equation that predicts the value of the missing variable based upon variables that are not missing or have already been imputed. See **Imputation** and **Appendix C**, "Quality of the Data."

Regular Grade Gasoline: A grade of unleaded gasoline with a lower octane rating (approximately 87) than other

grades. Octane boosters are added to gasoline to control engine preignition or "knocking" by slowing combustion rates. See **Intermediate Grade Gasoline** and **Premium Grade Gasoline**.

Relative Standard Error: See **RSE (Relative Standard Error)**.

Residential: Occupied housing units, including mobile homes, single-family housing units (attached and detached), and apartments. The definition of "occupied housing units" is the same as that used by the U.S. Bureau of the Census. See **Household** and **Housing Unit**.

Residential Energy Consumption Survey (RECS): A national multistage probability sample survey conducted by the Energy End Use Division of the Energy Information Administration. The RECS provides baseline information on how households in the United States use energy. The RTECS sample is a subset of the RECS. Household demographic characteristics reported in the RTECS publication are collected during the RECS personal interview. See **Appendix A**, "How the Survey Was Conducted."

RSE (Relative Standard Error): A measure of the reliability or precision of a survey statistic. Variability occurs in survey statistics because the different samples that could be drawn would each produce different values for the survey statistics. The RSE is a measure of precision on a percentage scale. The RSE is defined as the standard error of a survey estimate, divided by the survey estimate and multiplied by 100. (Standard error is the square root of the variance.) For example, an RSE of 50 percent means that the standard error is half as large as the survey estimate. See **Appendix C**, "Quality of the Data," for a discussion of sampling errors.

RSE Column Factor: An adjustment factor that appears above each column of the tables and is used to compute RSE's. For a survey estimate in a particular row and column of a table (that is, a particular "cell"), the approximate RSE is obtained by multiplying the RSE row factor by the RSE column factor for that cell. See **RSE**, **RSE Row Factor**, and **Appendix C**, "Quality of the Data."

RSE Row Factor: A factor that appears to the right of each row of the tables, and is used to compute RSE's. For a survey estimate in a particular row and column of a table (that is, a particular "cell"), the approximate RSE is obtained by multiplying the RSE row factor by the RSE column factor for that particular cell. The row factor is equal to the geometric mean of the RSE's in a particular row of the tables. See **RSE**, **RSE Column Factor** and **Appendix C**, "Quality of the Data."

Sampling: The procedure used to select housing units for interview from the population of residential housing units in the United States. See **Multistage Area Probability Sample** and **Appendix A**, "How the Survey Was Conducted."

Self-Service or Mini-Service: See **Type of Primary Service**.

Shortfall: See **MPG Shortfall** and **Appendix B**, "Estimation Methodologies."

Sport-Utility Vehicle: Includes light trucks that are similar to jeeps. Other common terms for these vehicles are sport-utility, special purpose, utility or off-the-road vehicles. They may have a four- or two-wheel drive. See **Vehicle**.

Transmission Type: The householder was asked if each vehicle had an automatic or manual shift transmission. The transmission is the part of a vehicle that transmits motive force from the engine to the wheels, usually by means of gears for different speeds using either a hydraulic "torque-converter" (automatic) or clutch assembly (manual). On front wheel drive cars, the transmission is often called a "transaxle." Fuel efficiency is usually higher with

manual, rather than automatic transmissions, although modern, computer-controlled automatic transmissions can be efficient.

Transportation Energy Expenditures: See **Vehicle Fuel Expenditures** and **Combined Household Energy Expenditures**.

Type of Drive: Refers to which wheels the engine power is delivered to, the so-called "drive wheels." Rear-wheel drive, has drive wheels on the rear of the vehicle. Front-wheel drive, a newer technology, has drive wheels on the front of the vehicle. Four-wheel drive uses all four wheels as drive wheels, and is found mostly on Jeep-like vehicles and trucks, though it is becoming increasingly more common on station wagons and vans.

Type of Fuel System: See **Carburetor, Fuel Injection** and **Diesel Fuel Systems**.

Type of Vehicle Fuel Purchased: The predominant type of fuel purchased during 1991. Data categories are leaded and unleaded gasoline, diesel motor fuel and "other" which includes propane and gasohol. See **Gasoline, Gasohol, Unleaded Gasoline, Leaded Gasoline, Regular Grade Gasoline, Intermediate Grade Gasoline, and Premium Grade Gasoline**.

Type of Primary Service: The dominant type of service the respondent uses at the service station. Response categories include Full-Service Pumps, "Self- or Mini-Service Pumps," or "Both Equally." Mini Service is provided when attendants pump the vehicle fuel but do not provide any other service, such as checking the tire pressure or washing windshields.

Unleaded Gasoline: Contains not more than 0.05 gram of lead per gallon and not more than 0.005 gram of phosphorus per gallon. Premium, regular and intermediate grades are included, depending on the octane rating. See **Gasoline, Leaded Gasoline, Regular Grade Gasoline, Intermediate Grade Gasoline, and Premium Grade Gasoline**.

Van: Includes large vans. Generally, the distinction between large vans and minivans is made by the respondents' answers to "Type of Vehicle" question. Exceptions were: (1) Volkswagen vans were categorized as minivans, and (2) all other pre-1983 vans were categorized as vans.

Vehicle: For the RTECS, vehicles were any motorized vehicles used by U.S. households for personal transportation. Excluded were: motorcycles, mopeds, large trucks, and buses. Included were: automobiles, station wagons, passenger vans, cargo vans, motor homes, pickup trucks, and jeeps or similar vehicles. In order to be included, vehicles must be: (1) owned by members of the household; (2) company cars not owned by household members but regularly available to household members for their personal use and are ordinarily kept at home; or (3) rented or leased for 1 month or more. See **Vehicle Stock, Vehicles Used on the Job, Automobile, Mini-vans, Vans, Pickup Trucks, and Sport-Utility Vehicles**.

Vehicle Acquisition: The number of vehicles a household acquires or obtains during the RTECS survey year. The average number of vehicles in the stock is computed using these data. See **Vehicle Disposition**.

Vehicle Disposition: The number of vehicles a household disposes of during the RTECS survey year. Disposed vehicles include those sold, traded, or the owner moved out of the household. The average number of vehicles in the stock is computed using these data. See **Vehicle Acquisition**.

Vehicle Fuel Consumption: Vehicle fuel consumption is computed as the vehicle miles traveled divided by the fuel efficiency reported in MPG's. For the 1991 RTECS, vehicle fuel consumption was derived from the actual

vehicle mileage collected in the RTECS and the assigned MPG's obtained from the EPA certification files and adjusted for on-road driving. See **Appendix B**, "Estimation Methodologies," for an explanation of procedures used to estimate annual vehicle fuel consumption.

Vehicle Fuel Efficiencies: See **Miles per Gallon (MPG)** and **Appendix B**, "Estimation Methodologies."

Vehicle Fuel Expenditures: The cost, including taxes, of the gasoline, gasohol or diesel fuel added to the vehicle's tank. Expenditures do not include the cost of oil or other items that may have been purchased at the same time as the vehicle fuel. See **Appendix B**, "Estimation Methodologies," for an explanation of procedures used to estimate annual vehicle fuel expenditures.

Vehicle Identification Number (VIN): A set of codes, usually alpha-numeric characters, assigned to a vehicle at the factory and inscribed on the vehicle. When decoded, the VIN provides vehicle characteristics. The VIN was used in the 1991 RTECS to help match vehicles to the EPA certification file for calculating MPG's. See **Environmental Protection Agency Certification Files** and **Appendix A**, "How the Survey Was Conducted."

Vehicle Miles Traveled (VMT): The number of miles traveled nationally by the RTECS vehicles for a period of 1 year. In the RTECS, VMT were either calculated using two odometer readings or, for vehicles with less than two odometer readings, imputed using a regression estimate. See **Average Vehicle Miles Traveled**, **Appendix A**, "How the Survey Was Conducted," and **Appendix C**, "Quality of the Data."

Vehicle Stock: The number of vehicles owned or used by a household for personal transportation. In the RTECS, with the exception of the statistics reported as of July 1991, a vehicle was defined in terms of a "Vehicle Year." If a vehicle was present in a household for the entire year, it was counted as one vehicle. If a vehicle was present in a household for one-half of the year, it was counted as only one-half of a vehicle. Therefore, the number of vehicles a sample household was considered as having during the survey year was computed as the days of possession summed over all vehicles in the household, divided by 366 days (1991 was a leap year). See **Average Number of Vehicles** and **Vehicles**.

Vehicle Used on the Job: A vehicle used by anyone in the household for job-related activities, excluding commuting to and from work. These vehicles are included in the RTECS. See **Vehicle**.

VIN: See **Vehicle Identification Number**.

VMT: See **Vehicle Miles Traveled**.