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Household Vehicles Energy Consumption 1991

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As part of EIA's mission to provide meaningful data, the consumption surveys have ongoing user needs efforts to ascertain the requirements of its users. If you have any suggestions to make the data in this report more useful to your needs, please contact F. Ronald Lambrecht, RTECS Manager, at 202-586-4962 or at the address below.

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Executive Summary

This report, *Household Vehicles Energy Consumption 1991,* is based on data from the 1991 Residential Transportation Energy Consumption Survey (RTECS). Focusing on vehicle miles traveled (VMT) and energy end-use consumption and expenditures by households for personal transportation, the 1991 RTECS is the fifth in a series conducted since 1978 by the Energy Information Administration (EIA). Over 3,000 households with more than 6,000 vehicles were surveyed, providing information on their vehicle stock and annual miles traveled per vehicle. The information provided represents the characteristics and energy consumption of the 84.6 million households with vehicles nationwide. An additional 10 million households did not own or have access to a vehicle during the survey year.

Use of residential vehicles and fuels in 1991 showed little change from 1988 and was indicative of the current state of personal transportation in America. Two noticeable changes for 1991 were a small increase in the average number of miles traveled both per household[1] and per vehicle, and a slight decrease in the average consumption of motor vehicle fuel per household. An increase in the average fuel efficiency (miles per gallon-MPG), was the reason for the decreased consumption. However, vehicle fuel expenditures per household rose by 16 percent between 1988 and 1991, primarily due to a 21 percent rise in the price of vehicle fuel.

Results from the 1991 RTECS indicate that:

- Annual vehicle miles traveled per household and per vehicle were 18.9 and 10.6 thousands respectively.
- The average number of vehicles per household did not change between the 1988 and 1991 RTECS: Both surveys reported approximately 1.8 vehicles per household.
- The total number of vehicles in the U.S. stock by vehicle type remained approximately the same for 1991 and 1988. The exception has been minivans and sport-utility vehicles (listed as jeep-like vehicles in previous publications), which have almost doubled from 7 million to 12.4 million and are classified as trucks for fuel efficiency standards.
- Approximately 9 percent of the vehicle stock consisted of pre-1975 models.
- Average fuel consumption was 979 gallons per household and 548 gallons per vehicle, both down slightly from 1988, though not statistically significant.
- In 1991, the average on-road vehicle MPG was 19.3, up 5 percent from 18.3[2] in 1988. This change resulted from retiring old vehicles and purchasing newer models which are more fuel efficient. The size of the increase was limited by the increased sales of vehicles classified as trucks (i.e., minivans and sport-utility), which have lower fuel efficiency standards[3].

[1]Per household numbers are only for households with vehicles unless otherwise stated.

[2]The methodologies for calculating fuel efficiency, fuel consumption, and fuel expenditures were the same as in the 1988 RTECS. See Appendix B, "Estimation Methodologies" and Appendix C, "Quality of the Data."

[3]According to Department of Transportation statistics, there has been essentially no improvement in the overall efficiency of the new car fleet for the last 10 years. In actuality, efficiency has been declining since 1988. The availability of inexpensive fuels, desire for larger and faster vehicles, and flashy advertising are probably the main factors contributing to this phenomena.

- In 1991, households spent an average of $1,161 for vehicle fuel compared to $998 per household in 1988.

- Lower-income households appear to be paying a larger percentage of their income on vehicle fuel.

- Household vehicles consumed 10.3 quadrillion Btu of vehicle fuel, the same as in 1988. This represents approximately 31 percent of the 32.8 quadrillion Btu of all petroleum consumption in the United States and 13 percent of the total U.S. energy consumption of 81.1 quadrillion Btu.

- In 1991, combined household energy expenditures were $2,333 for both their housing unit and vehicles, with vehicle fuel purchases accounting for 50 percent. In 1988 only 47 percent of household energy expenditures were for vehicle fuel.

The 1991 RTECS provides baseline information on motor vehicle use in the residential sector. To be included in this survey one of two criteria must be met. Vehicles must be (1) owned or used by household members on a regular basis for personal transportation or (2) company vehicles, not owned by the household, but kept at home and regularly available to household members. Data from the RTECS and a companion household survey, the Residential Energy Consumption Survey, are available to the public in published reports and on public-use personal computer diskettes for the 1988 and 1991 surveys and on 9-track tapes for all years.[4]

Table ES1 summarizes selected vehicle energy-related items from the 1991 RTECS. This table allows the reader to easily discern energy information related to vehicle characteristics. The household averages in this table are based on households with vehicles.

Table ES1. Summary of Vehicle Characteristics by Census Region, 1991

Vehicle Characteristics	U.S. Total	Northeast	Midwest	South	West
Number of Households (millions)	94.6	19.3	23.4	32.3	19.6
Number of Households with Vehicles (millions)	84.6	16.0	21.1	29.5	18.0
Number of Vehicles (millions)	151.2	27.0	38.4	52.7	33.2
Vehicle Miles Traveled (billions)	1,602	295	403	571	333
Vehicle Fuel Consumption (billion gallons)	82.8	14.1	21.3	29.8	17.6
Number of Vehicles per Household	1.8	1.7	1.8	1.8	1.8
Vehicle Miles Traveled per Household (thousands)	18.9	18.5	19.1	19.3	18.5
Vehicle Miles Traveled per Vehicle (thousands)	10.6	10.9	10.5	10.8	10.0
Vehicle Fuel Efficiency (miles per gallon)	19.3	20.9	19.0	19.2	18.9

Note: Because of rounding, data may not sum to totals.

[4]See Appendix F, "Related EIA Publications on Energy Consumption," for a list of EIA publications available concerning the consumption of energy.

Source: Energy Information Administration, Office of Energy Markets and End Use, 1991 Residential Transportation Energy Consumption Survey.