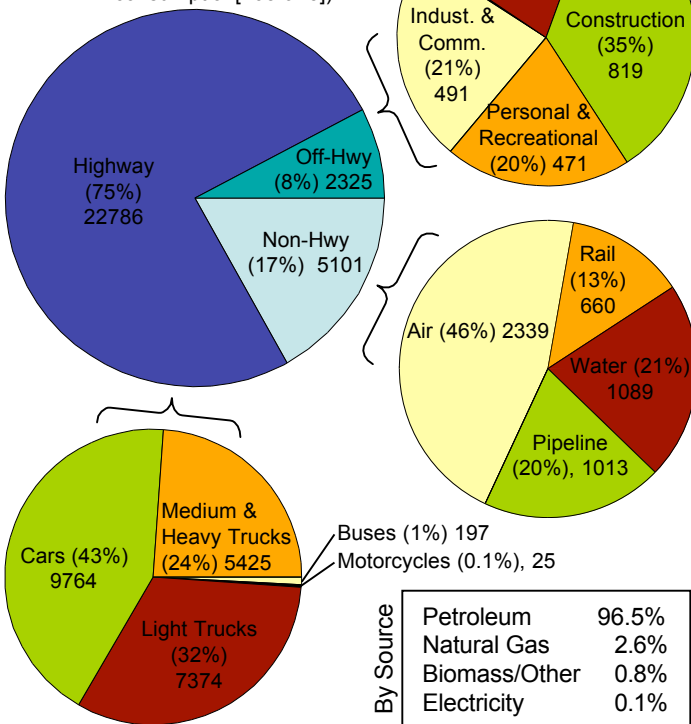


## 2003 Consumption of Transportation Energy by Type (PJ)

(28% of total U.S. energy consumption [103.6EJ])



## Misc. On-Highway Patterns and Statistics

Fuel Type	Stations	Fuel Type	Vehicles
Gasoline	126,889	Gasoline	~226,100,000
Diesel	32,509	Flex-fuel	~6,000,000
E85	945	Hybrid	~510,000
CNG	744	Diesel	~5,667,000
B2-B100	518	LPG	194,389
Electric	458	CNG	143,742
Hydrogen	48	E85 only	146,195
		Electric	55,852

• In 2004 there were 226.1 million light cars & trucks registered in the U.S. The Ford F-Series (891,482) and Toyota Camry (426,990) were the best selling models in their categories.

## Travel Type and Distances

Road Type	Miles	%	Arterial and Interstate (11.1% of road mileage) carry 72.1% of total miles travel.
Local	2,719,288	68.8%	
Collectors	795,208	20.1%	
Arterial	389,925	9.9%	
Interstate	46,677	1.2%	

- Travel to work in 2000: 76% of people drove alone, 11% carpooled, 3% worked at home, 3% bike/walk, 3% bus, 2% subway, 0.5% railroad, and 1% other.
- Passenger vehicles average 30 miles/day.
- CAFE standards: 27.5/21 mpg for cars/trucks. '02 sales: 29/21/6 mpg for cars/light trucks/heavy heavy-duty trucks.
- From 1979-2000, annual motor-vehicle fatalities declined 17% from 51,093 to 42,387.

## Emissions and Material Use

2002 GHG & Criteria Emissions	10 <sup>9</sup> kg		10 <sup>9</sup> kg	
	CO <sub>2</sub>	%	PM <sub>10</sub>	%
	1865	32%	0.47	2%
	78.5	77%	0.39	7%
	10.4	54%	0.19	5%
	6.5	44%		

### Material (per auto)

Material	kg	%
Steel	836	54%
Iron	140	9%
Aluminum	95	9%
Plastics/composites	117	8%
Fluids/lubricants	90	6%
Rubber	69	5%
Other metals	51	3%
Glass	45	3%
Other	60	4%

### 2004 auto indus. share of total US materials use

Lead	73%
Alum.	31%
Iron	24%
Zinc	23%
Steel	12%
Copper	11%
Plastic	5%

(Typical Light-Duty Vehicle: 1,538 kg)

## Key Issues and Future Prospects

**Light-Duty:** Due to the slow rates of change in fleet characteristics, it will likely be decades before advanced powertrains (e.g. hybrids and clean diesels) have a significant impact on transportation energy use. Using technological advances to improve the overall efficiency of conventional vehicles rather than to increase power & weight and moderating growth in miles traveled are the most promising short-term options for reducing energy consumption.

**Heavy-Duty:** Strict emissions legislation and high fuel prices are driving research in efficiency (advanced combustion [e.g. HCCI], and new exhaust catalysts [e.g. SCR], thermoelectric heat recovery sys.).

**Non-Highway:** Total, as well as sector energy use has declined in the last 30 years, with air the only sector experiencing growth. Yet, average miles per shipment has continued to increase annually, lead by shallow draft boats (20.5%).

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Note: Cars and light trucks constitute the so-called "light-duty" category and are generally defined as passenger vehicles weighing less than 8,500 lbs. (3856 kg) gross vehicle weight rating (GVWR), which includes the weight of the vehicle itself plus fuel, passengers and cargo. Medium and heavy-duty trucks include passenger vehicles weighing between 8,500 lbs. and 10,000 lbs. (4536 kg), but consist primarily of commercial trucks.

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*(These statements are the editorial opinion of the fact sheet authors and are based largely on the following references).*

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