

# Changing Energy Trends

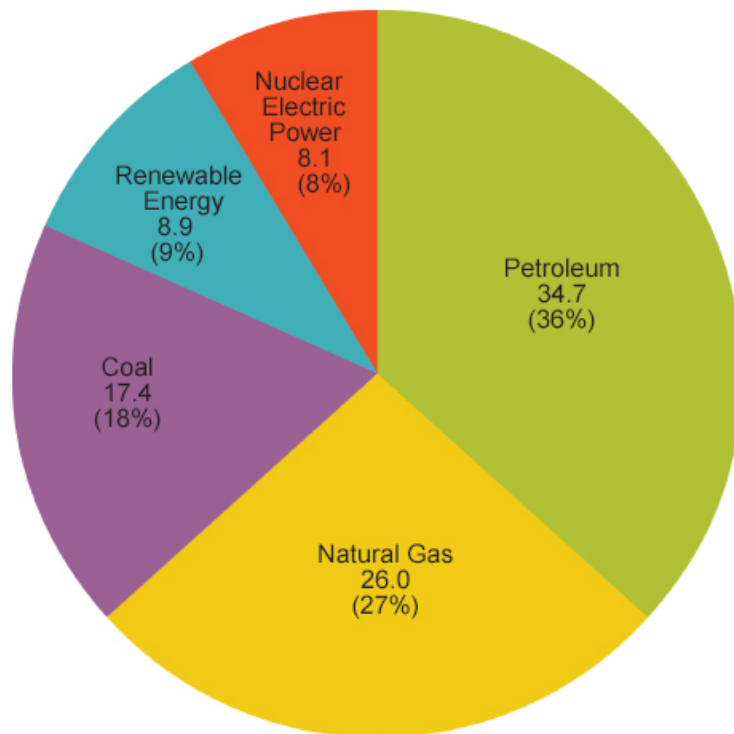
From 1973 to today

## Continued Oil Dependence

**Petroleum is the largest source of primary energy used in the United States.**

Primary energy use by source, 2012  
quadrillion Btu and percent of total<sup>1</sup>

Total U.S. = 95.1 quadrillion Btu



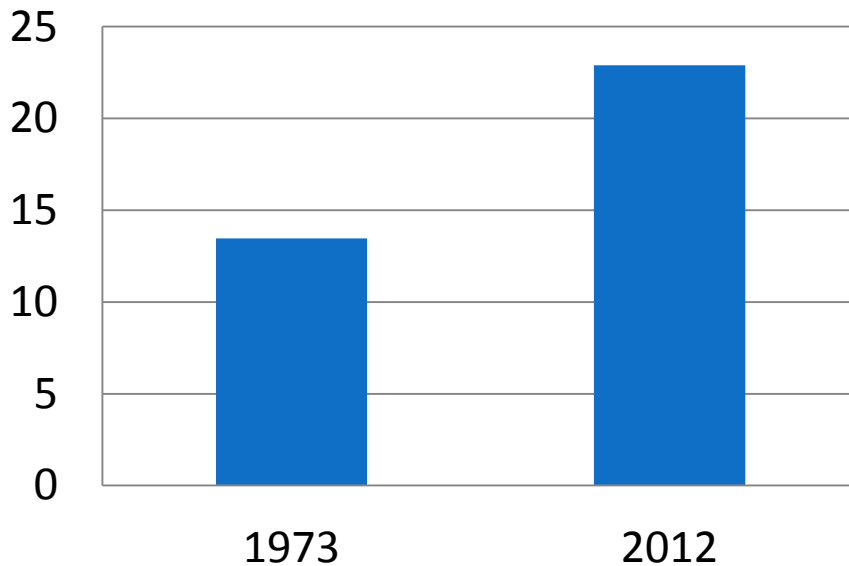
<sup>1</sup>Does not add to 100 due to independent rounding.

Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 1.3 (April 2013), preliminary 2012 data.

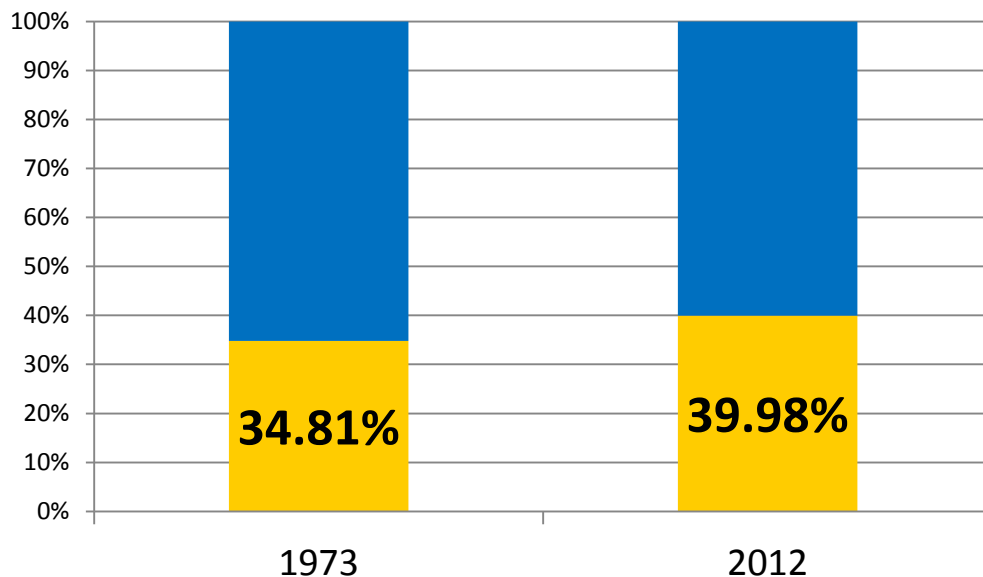
# Continued Oil Dependence

The U.S. imports more oil now than in 1973, both in absolute and relative terms.

**Petroleum Imports (quadrillion Btu)**



**Net Imports of Petroleum as a Share of Total U.S. Demand for Petroleum**



Source: U.S. Energy Information Administration

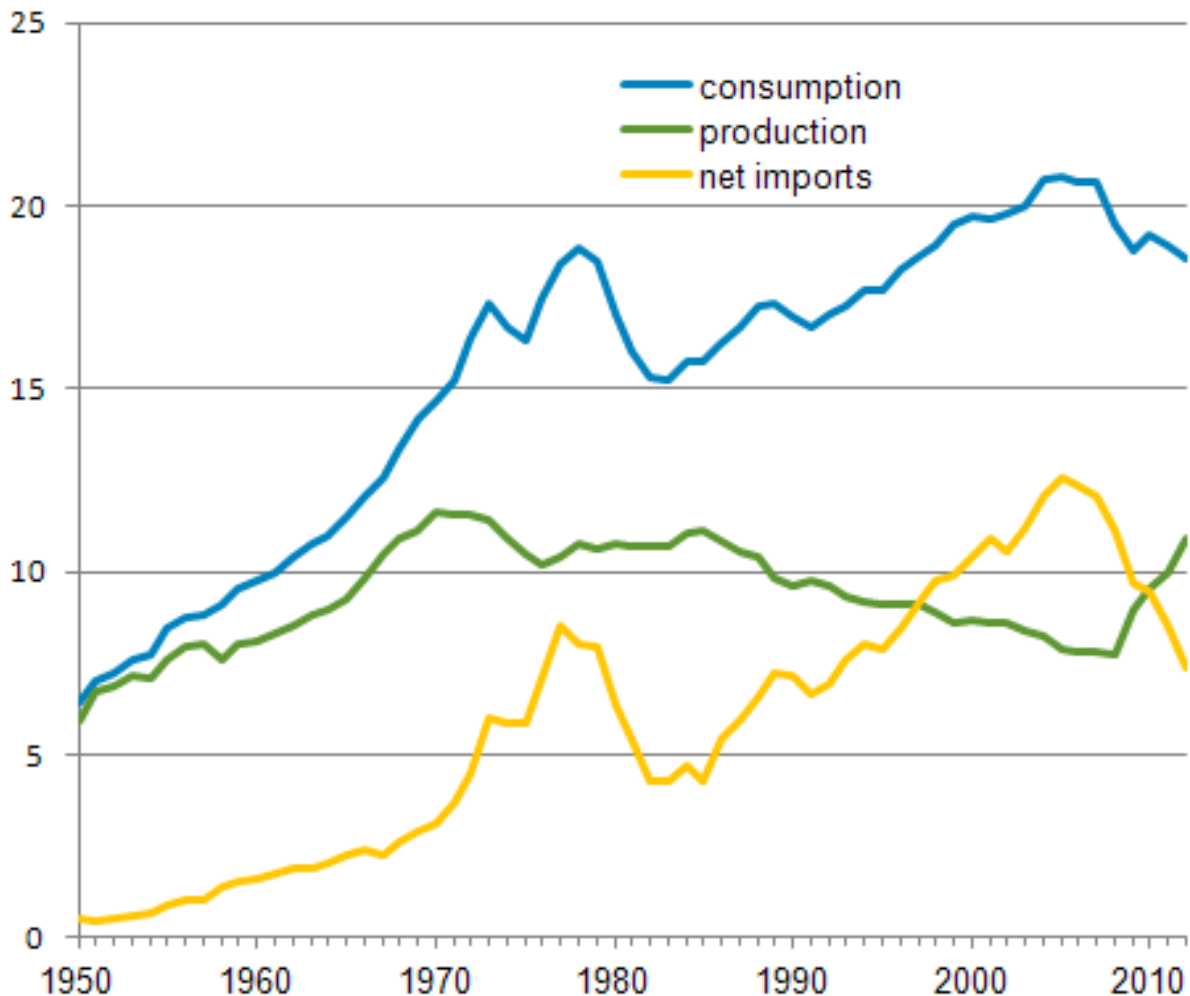
# Continued Oil Dependence

**Net oil imports (imports minus exports)  
hit a high of over 60% in 2005.**

**Oil consumption also peaked in 2005.**

**Domestic oil production has increased since 2008.**

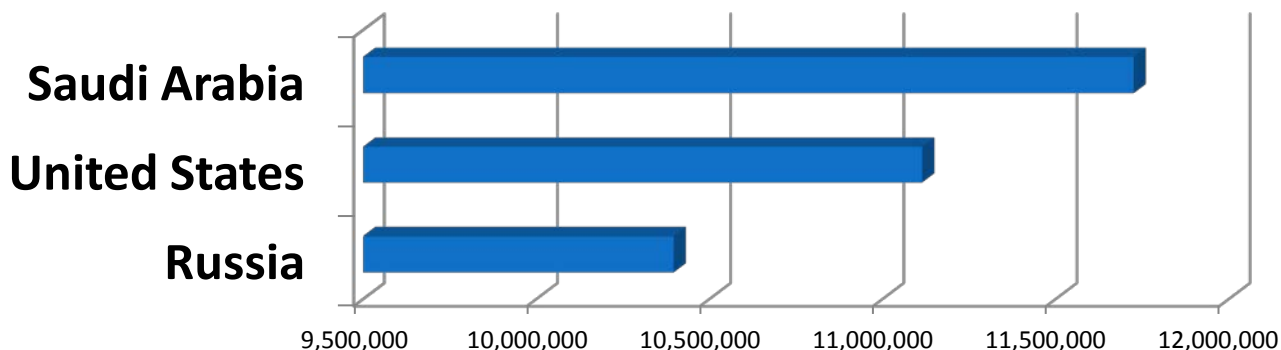
U.S. petroleum and other liquids consumption,  
production, and net imports (1950-2012)  
million barrels per day



Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 3.1 (April 2013), preliminary 2012 data, and *Annual Energy Review*, Table 5.1b (August 2012).

# Continued Oil Dependence

**Because of fracking, the U.S. is now the second largest producer of oil in the world.**

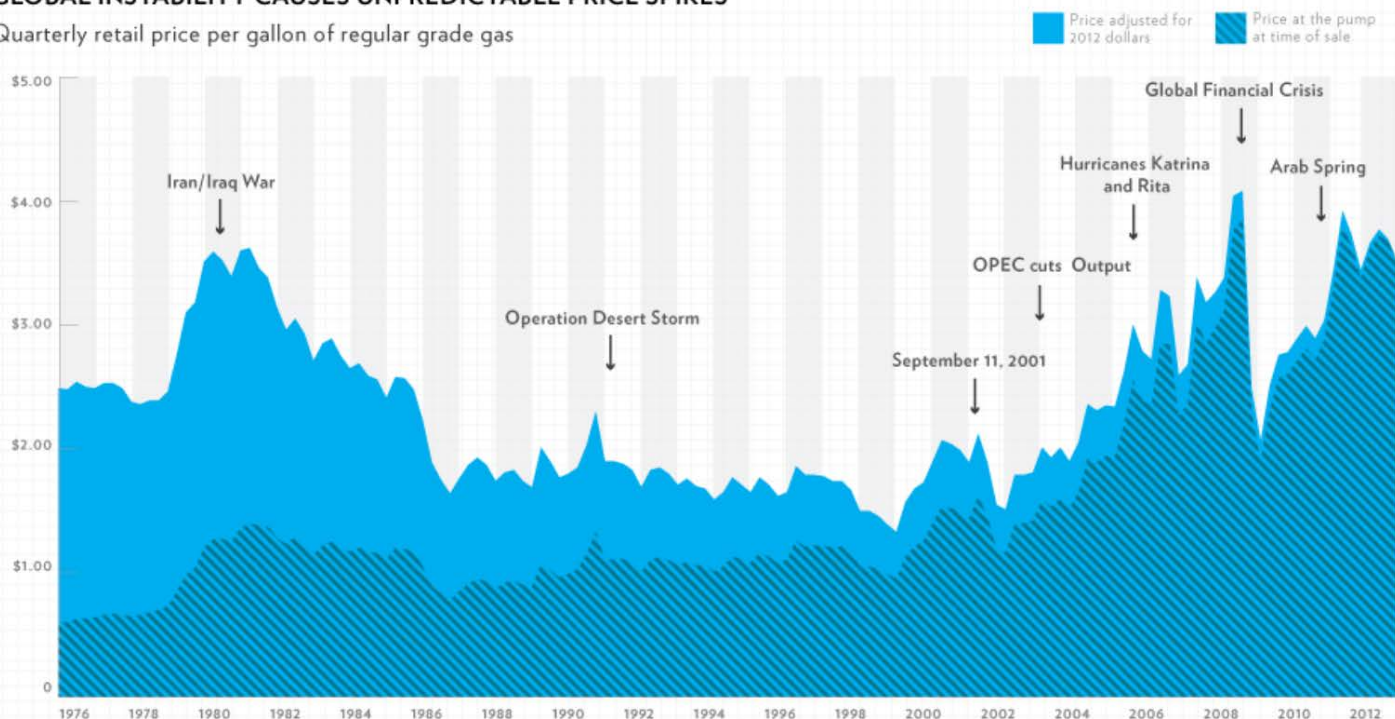


Source: U.S. Energy Information Administration

**Nevertheless, the U.S. remains subject to world oil prices, which are extremely volatile and sensitive to geopolitical events we have no control over.**

## GLOBAL INSTABILITY CAUSES UNPREDICTABLE PRICE SPIKES

Quarterly retail price per gallon of regular grade gas



Source: White House <http://www.whitehouse.gov/energy/gasprices>

# Continued Oil Dependence

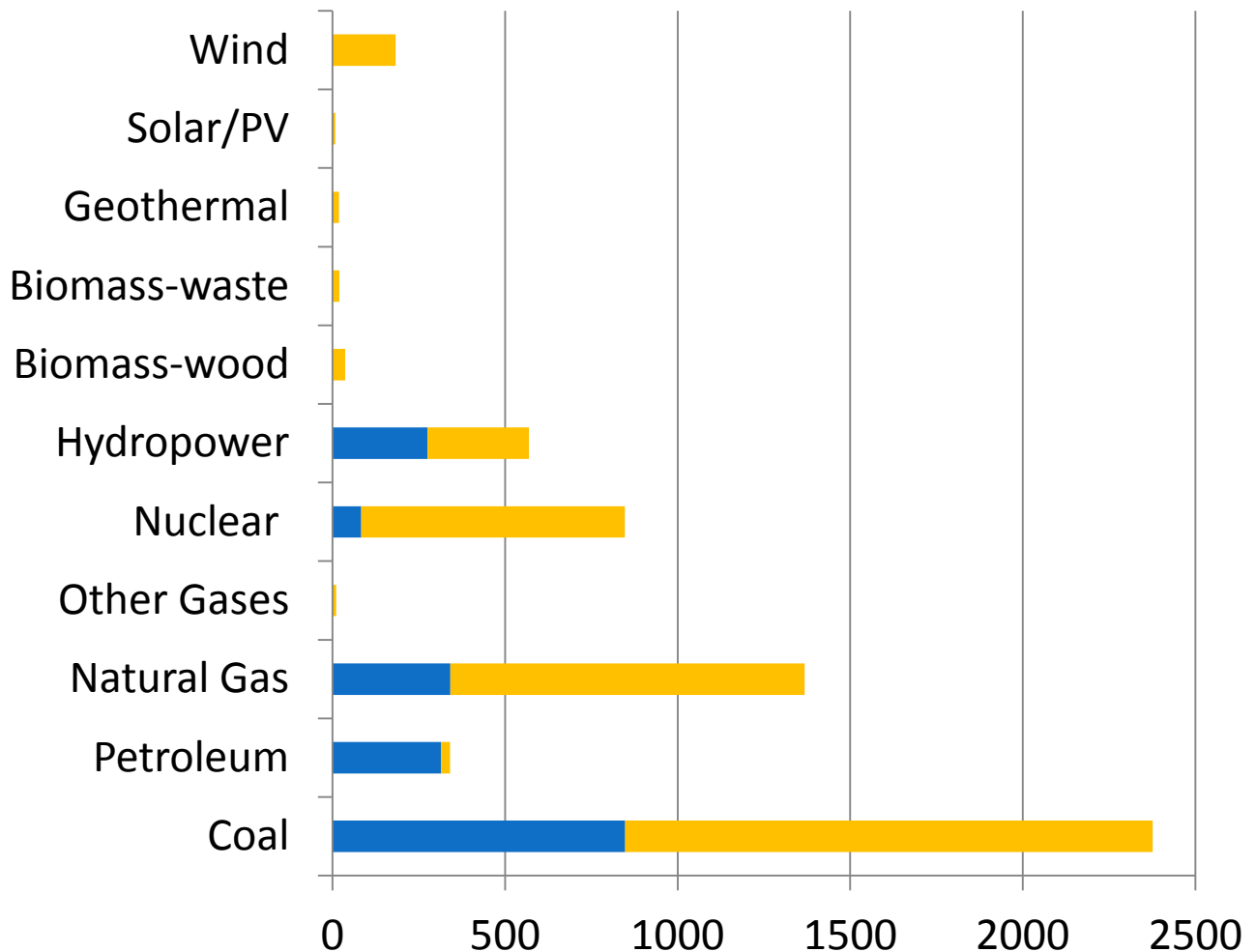
**Petroleum represents a much smaller share of electricity generation**

## Electricity Net Generation, 1973 & 2013

(in billion kilowatt hours)

■ 1973

■ 2013

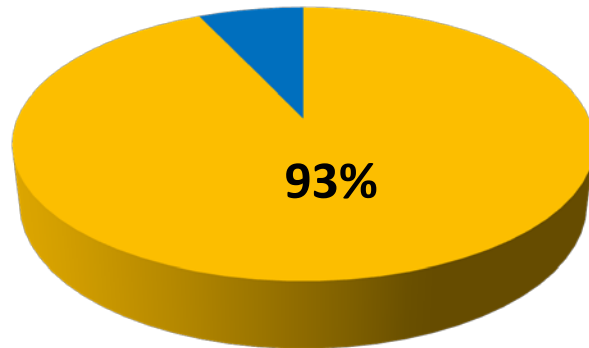


Source: U.S. Energy Information Administration

# Continued Oil Dependence

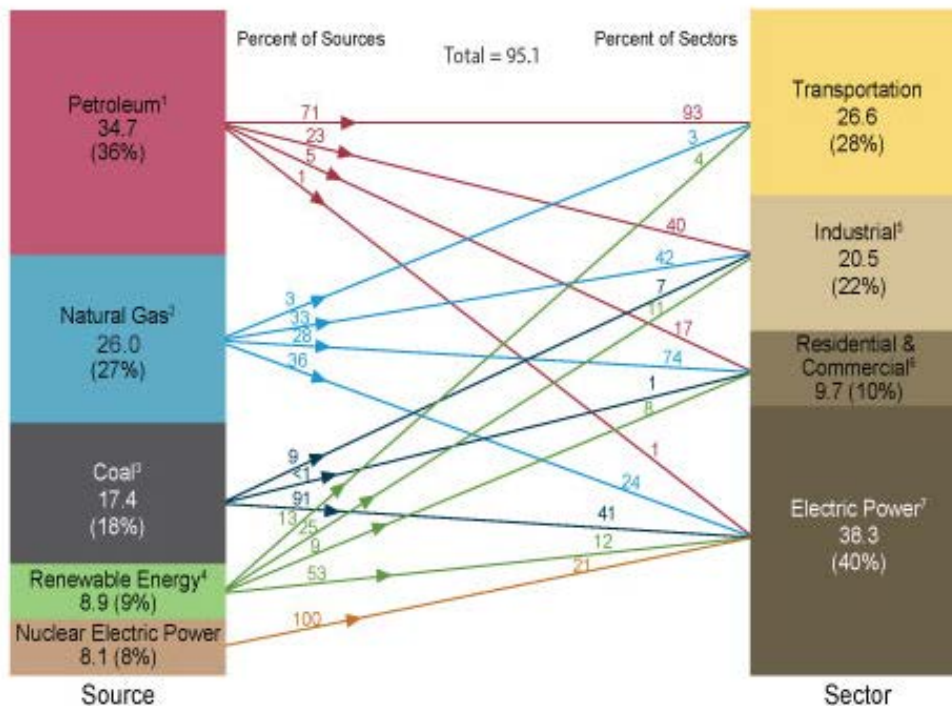
**But the U.S. transportation sector is still very dependent on petroleum.**

**Petroleum's share of all transportation fuels (U.S.) (2012)**



Source: U.S. Energy Information Administration

**Primary energy consumption by source and sector, 2012**  
quadrillion BTU



Endnotes:

<sup>1</sup> Does not include biofuels that have been blended with petroleum—biofuels are included in "Renewable Energy."

<sup>4</sup> Conventional hydroelectric power, geothermal, solar/PV, wind, and biomass.

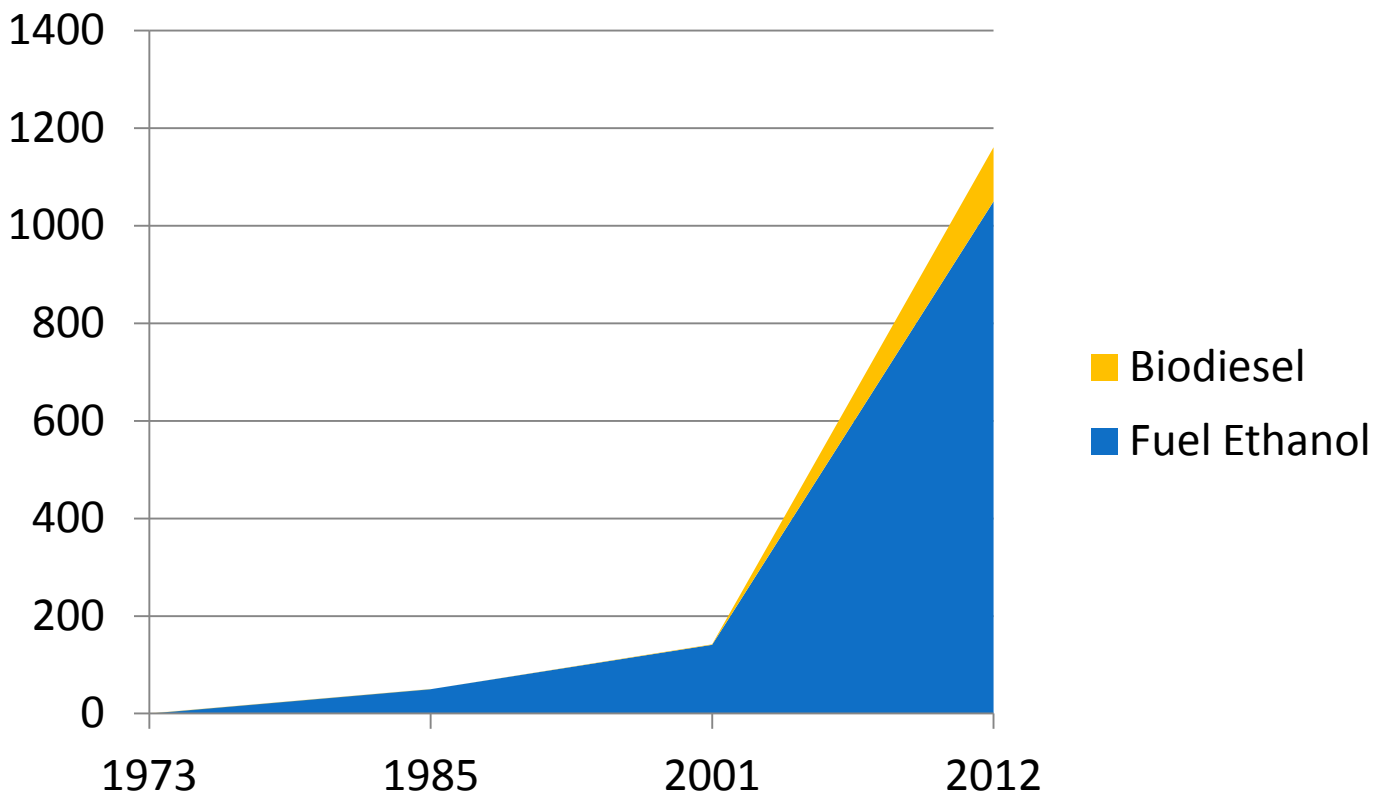
\* Sum of components may not equal total due to independent rounding.

Source: U.S. Energy Information Administration, *Monthly Energy Review* (April 2013), Tables 1.3, 2.1-2.5, preliminary 2012 data.

# The Rise of Biofuels

**Renewable biofuels are beginning to replace petroleum. Renewable ethanol displaces about 9.7% of U.S. gasoline (by volume in 2012).**

**Biofuel Use in Transportation (trillion Btu)**

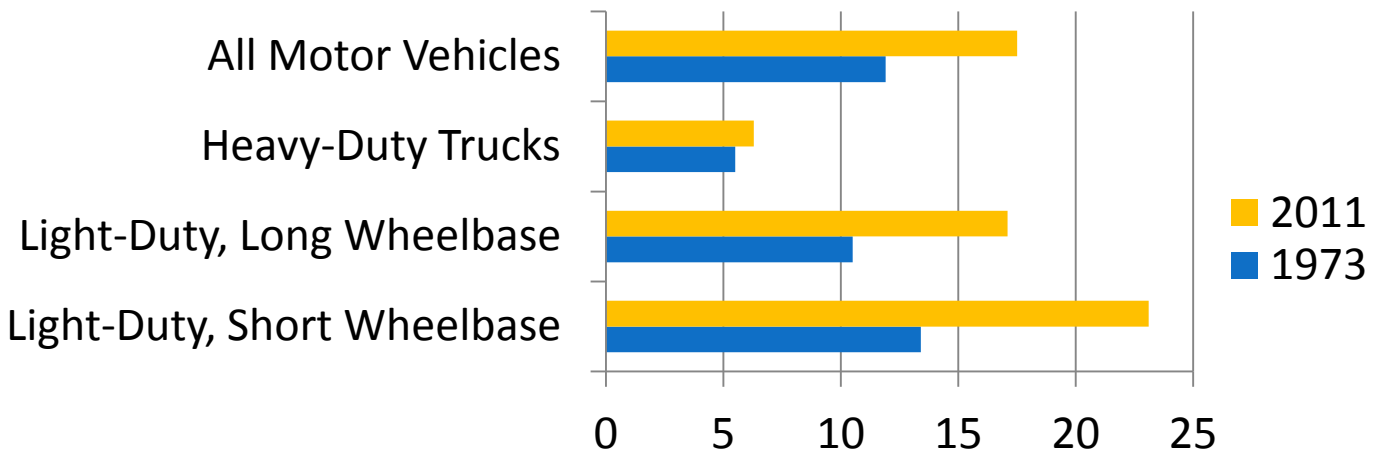


Source: U.S. Energy Information Administration

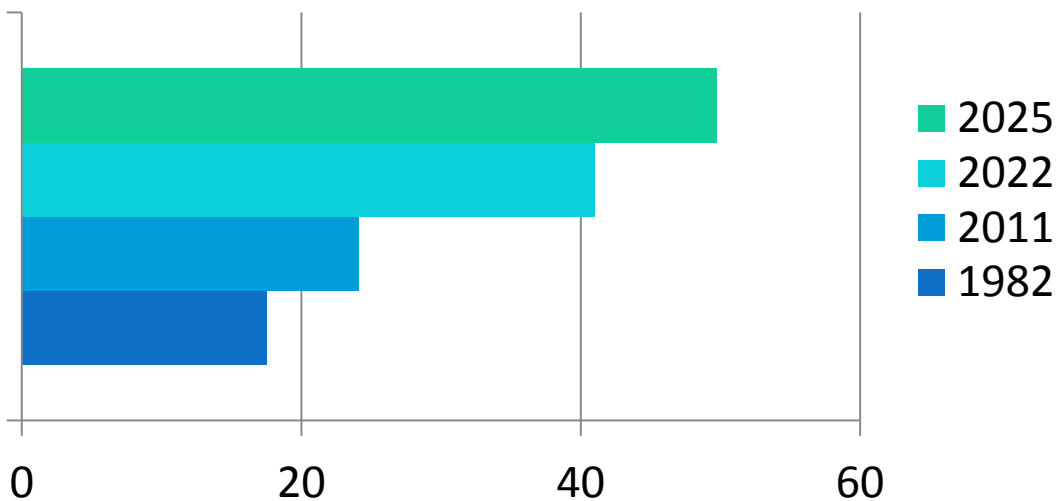
# Increasing Energy Efficiency

More importantly, vehicles have become much more energy efficient, thanks to federal standards

## Motor Vehicle Fuel Economy (mpg)



## CAFE Fuel Standards Miles Per Gallon (MPG) Requirements



Sources:

U.S. Energy Information Administration

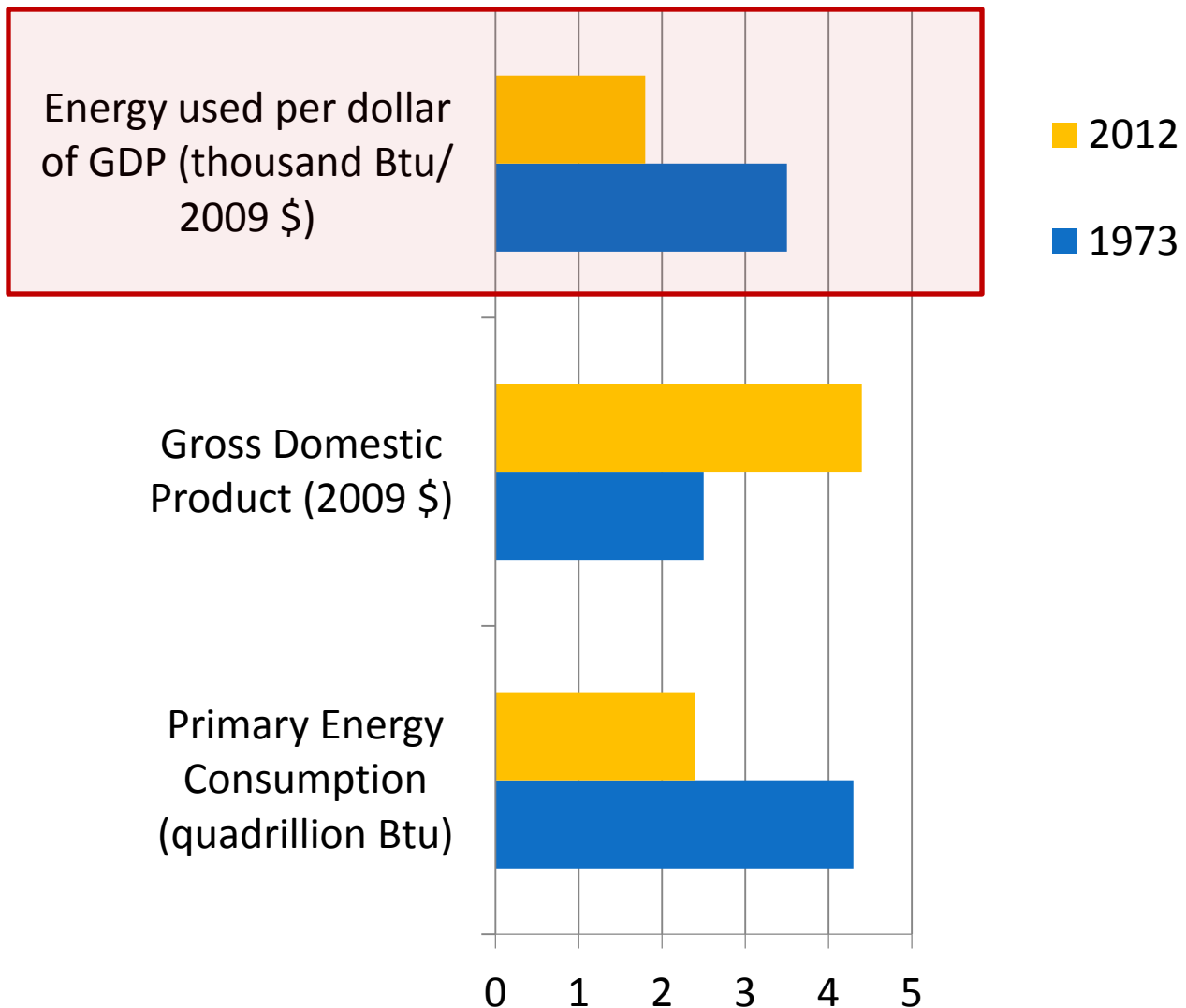
National Highway Traffic Safety Administration



# Increasing Energy Efficiency

**In fact, the entire economy has become more energy efficient.**

## GDP Rises While Energy Consumption Falls



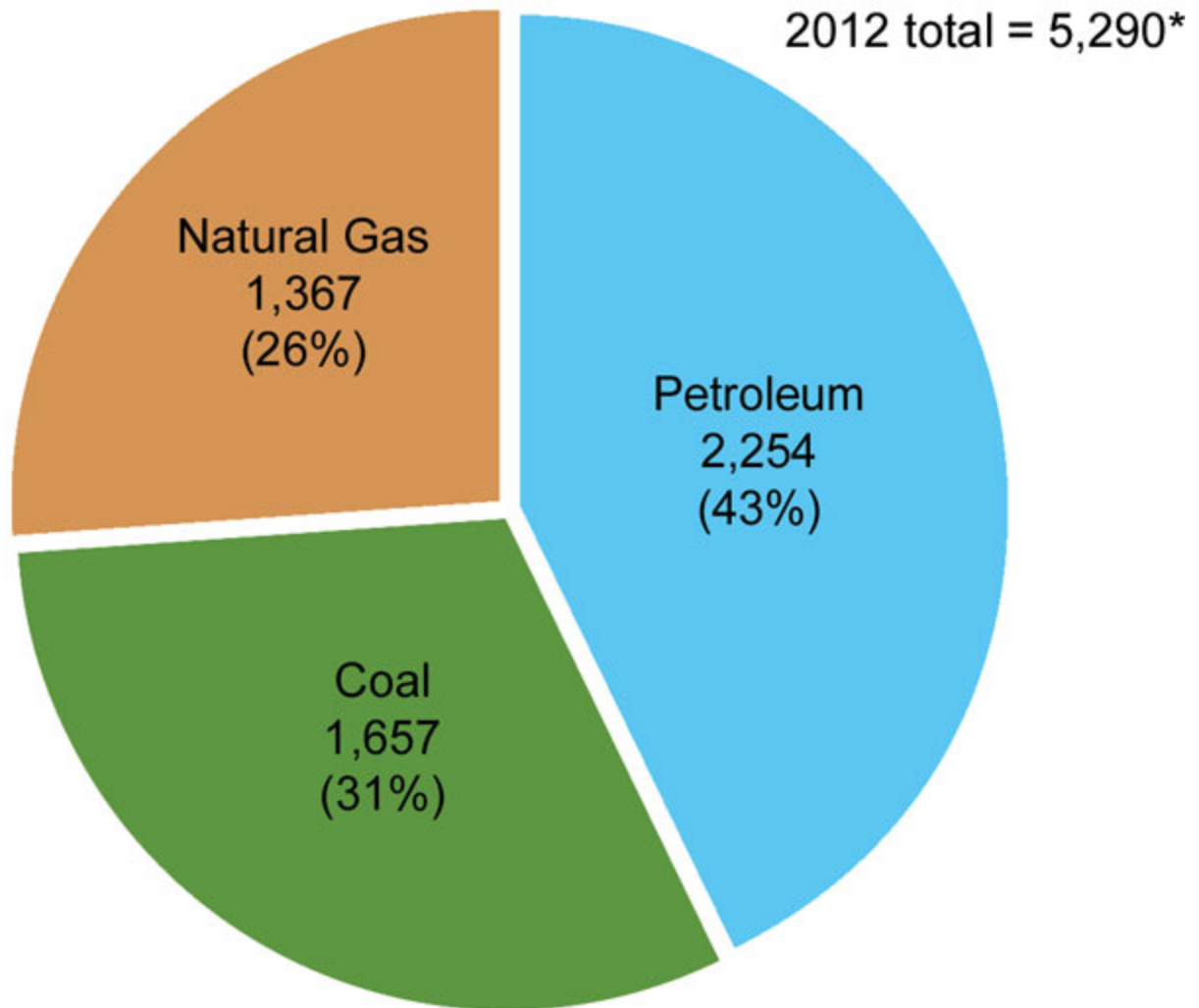
Source: U.S. Energy Information Administration

# Oil: Principal Source of CO<sub>2</sub> Emissions

**Petroleum is a leading source of CO<sub>2</sub> emissions.**

U.S. energy-related carbon dioxide emissions by major fuel, 2012

million metric tons carbon dioxide



\*Includes small amounts of CO<sub>2</sub> from non-biogenic municipal solid waste and geothermal energy (0.2% of total).

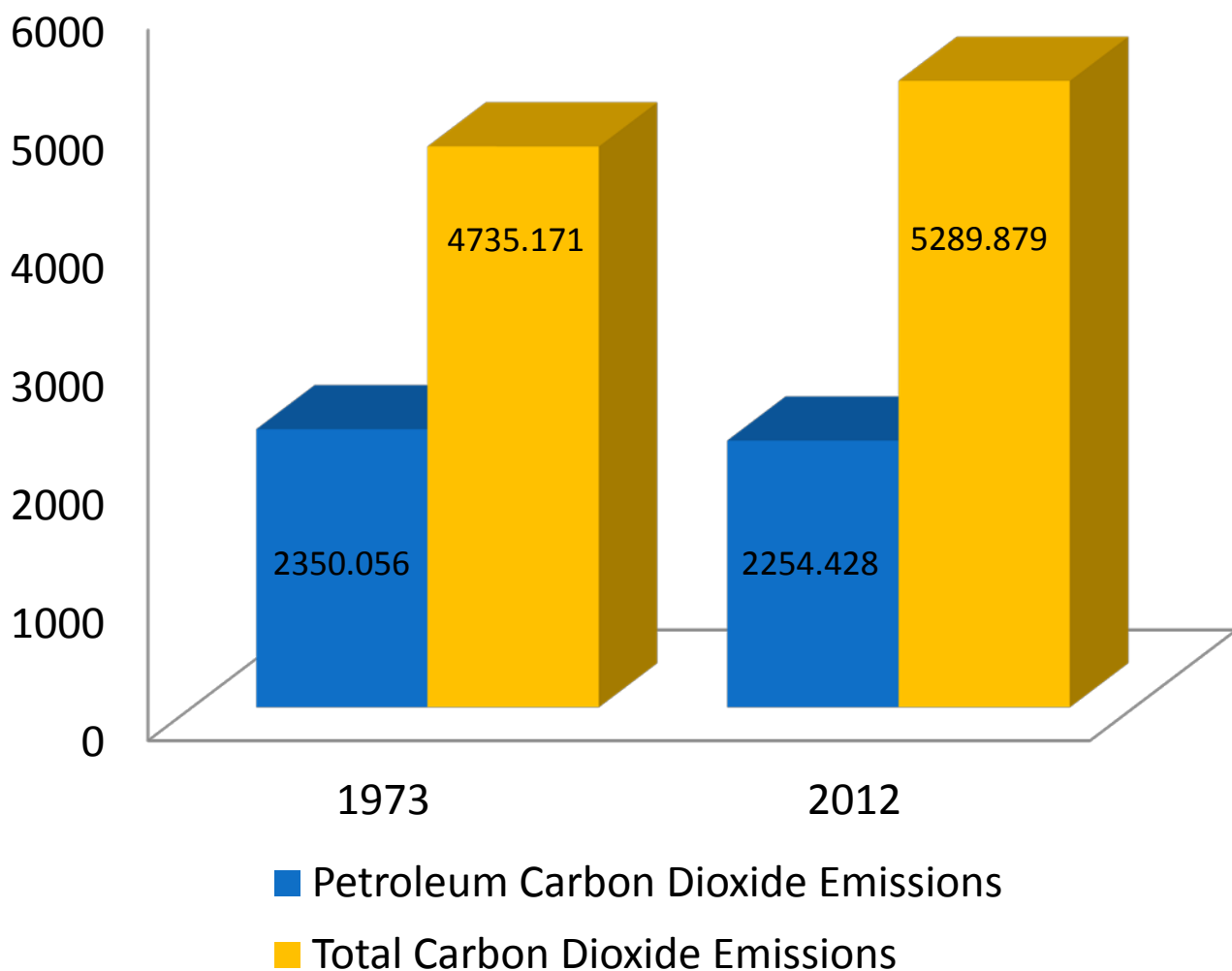
Note: Totals may not equal sum of components due to independent rounding.

Source: U.S. Energy Information Administration, *Monthly Energy Review*, Table 12.1 (May 2013), preliminary 2012 data.

# Oil: Principal Source of CO2 Emissions

**Petroleum's share of CO2 emissions hasn't changed much since 1973.**

**U.S. Carbon dioxide emissions from energy consumption (Million Metric Tons of Carbon Dioxide)**



Source: U.S. Energy Information Administration



Produced by  
the Environmental and Energy Study Institute,  
for the 40<sup>th</sup> Anniversary of the OPEC Oil Embargo.