

# Energy Security in the United States

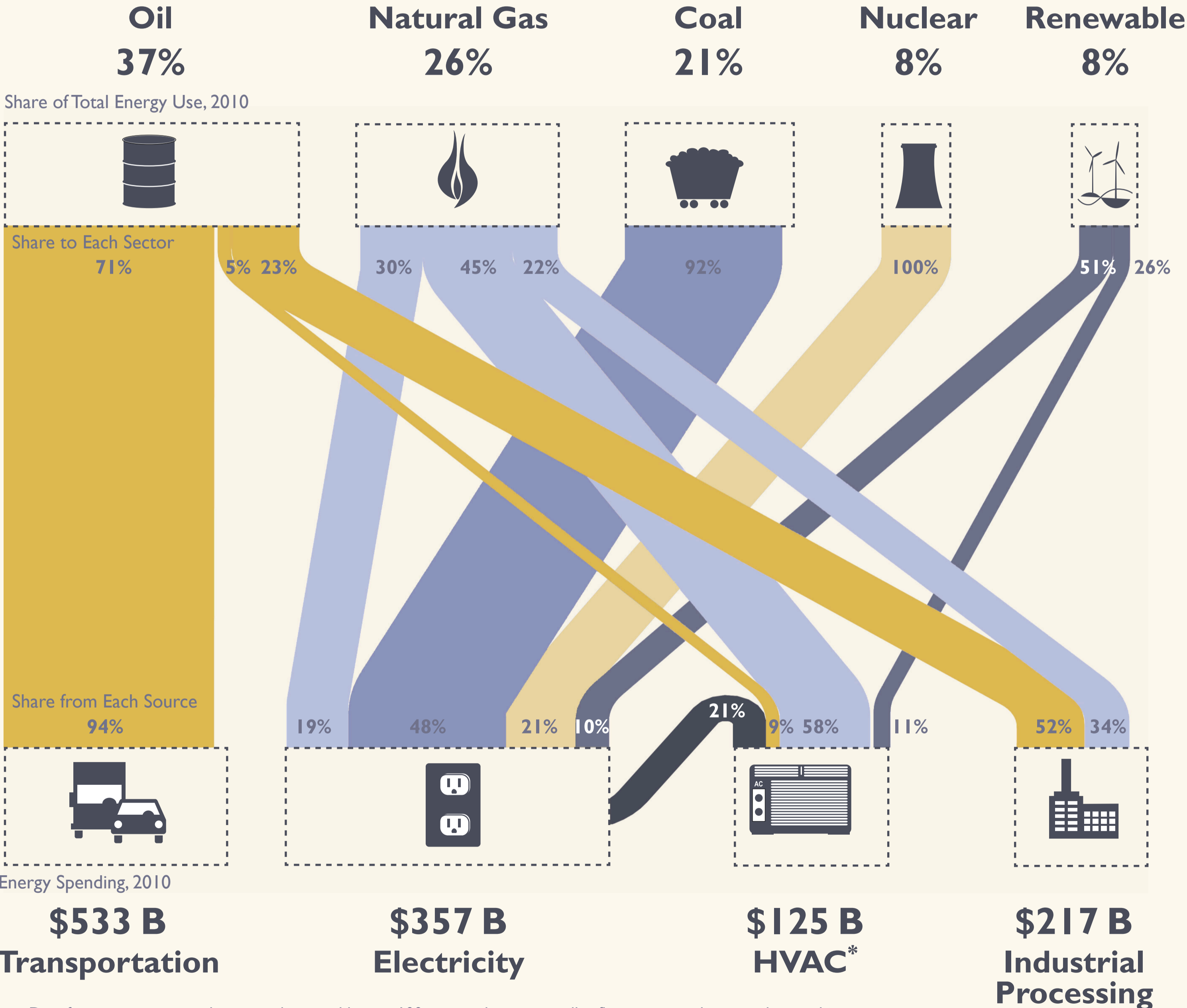
## What Is Energy Security?

By one measure, energy security is the ability of households and businesses to accommodate disruptions of supply in energy markets. The United States is more secure with regard to a particular energy source if a disruption in the supply of that source creates only limited additional costs for consumers.

That definition differs from others that are sometimes used—for example, the extent to which the United States can produce the energy it needs from domestic sources or from commodities obtained from friendly countries.

# Energy Sources and Uses

Energy primarily comes from five sources and is used throughout the U.S. economy in four sectors.



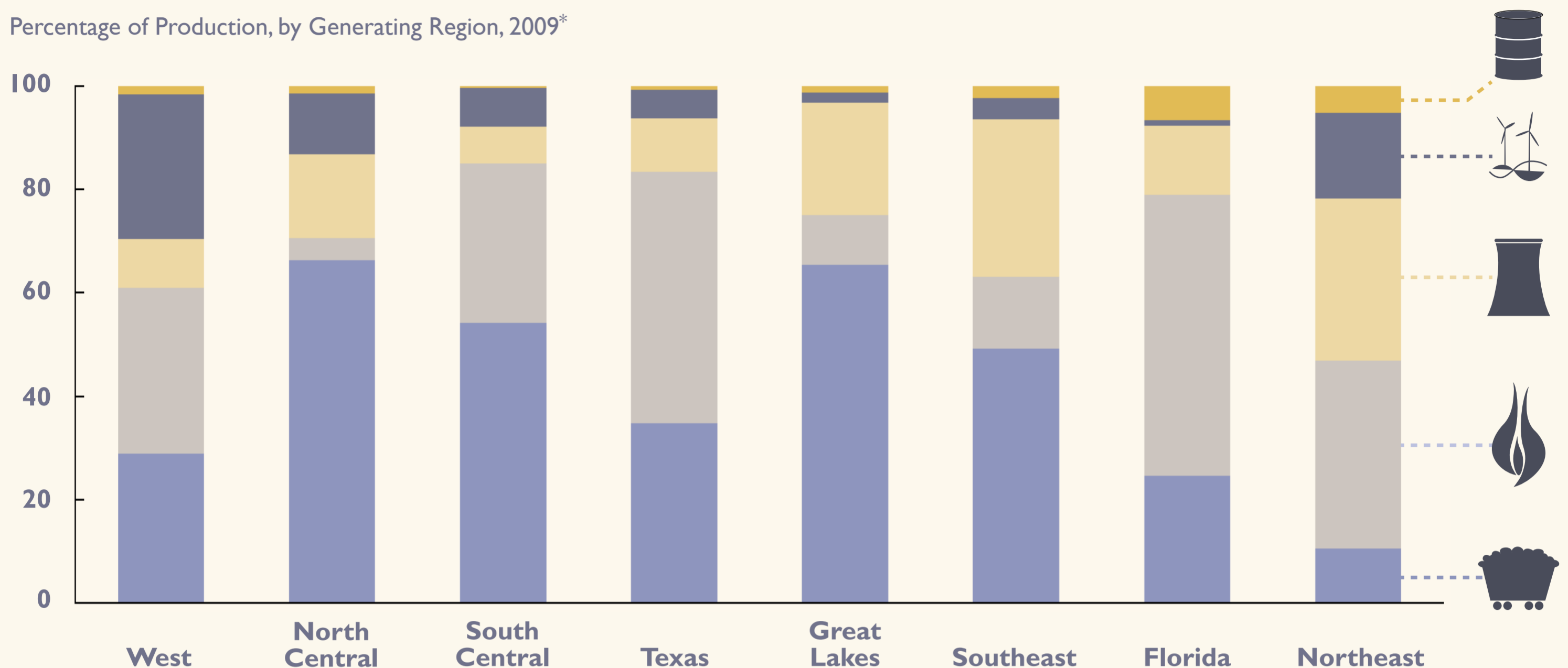
Note: Data for some sectors and sources do not add up to 100 percent because smaller flows are not shown in this graphic. To see the full graphic with all flows shown, see Figure I in the related report at <http://go.usa.gov/Vmg>.

\* To avoid double counting, energy expenditures for heating, ventilation, and air conditioning (HVAC) do not include electricity.

# Diversification in Energy Sources

Electricity production relies on several fuels, making the sector more secure because it can adjust to a disruption in the supply of any one energy source.

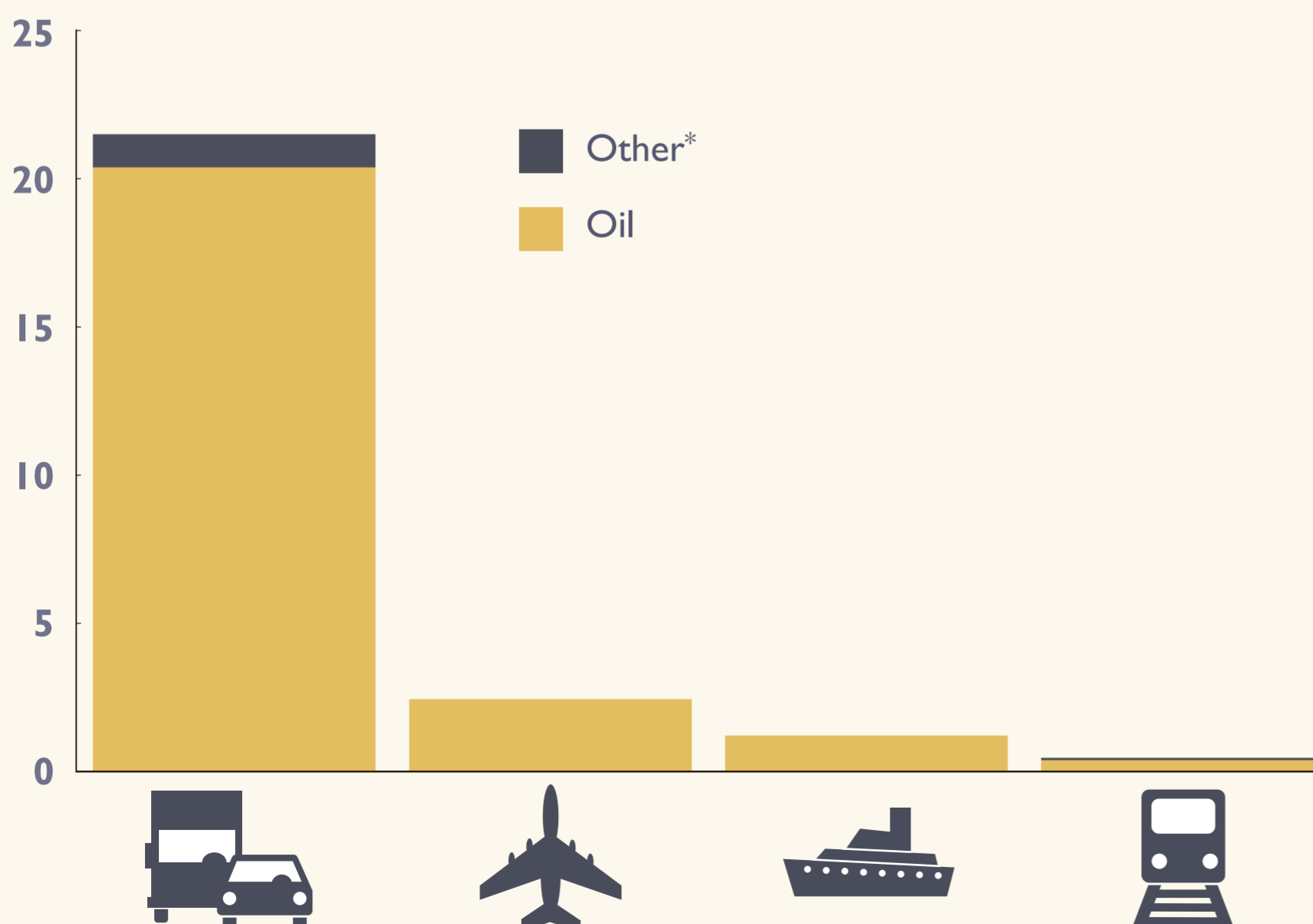
Percentage of Production, by Generating Region, 2009\*



\* Generating regions are the eight regions regulated by the North American Electric Reliability Corporation. To see the full graphic showing a regional map, see Figure 7 in the related report at <http://go.usa.gov/Vmg>.

In contrast, transportation relies almost exclusively on oil—converted by refineries to gasoline, diesel, and jet fuel—making it vulnerable to disruptions in the oil supply.

Energy Use, in Quadrillions of British Thermal Units (BTUs), 2010

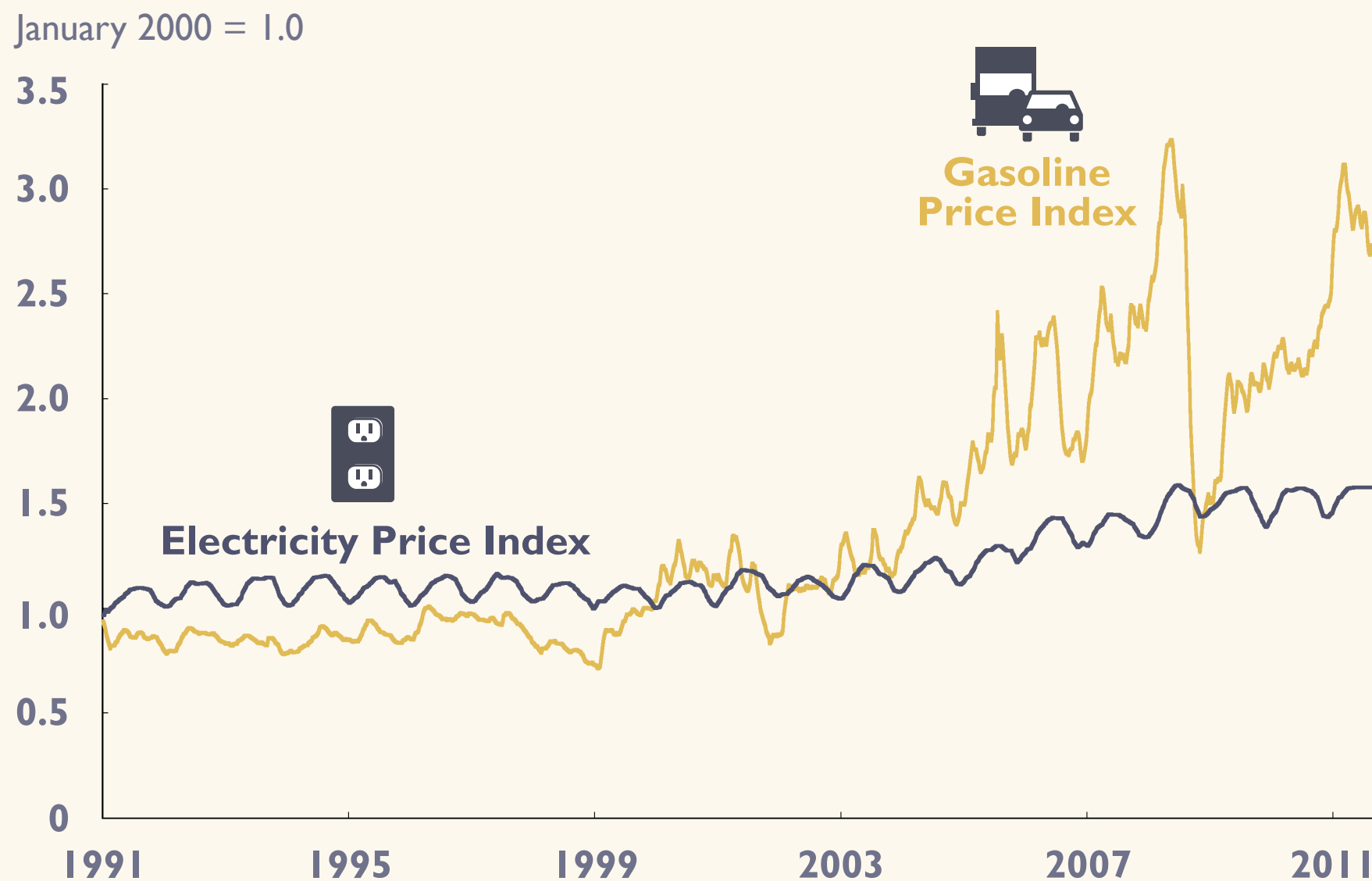


Recent discoveries of natural gas or increased coal production do not currently reduce U.S. vulnerability to oil price increases because oil represents 94 percent of the energy used for transportation.

\* Fuels other than oil, which are used in cars/trucks and rail/transit, include natural gas, biofuels, and electricity.

# Volatility of Energy Prices

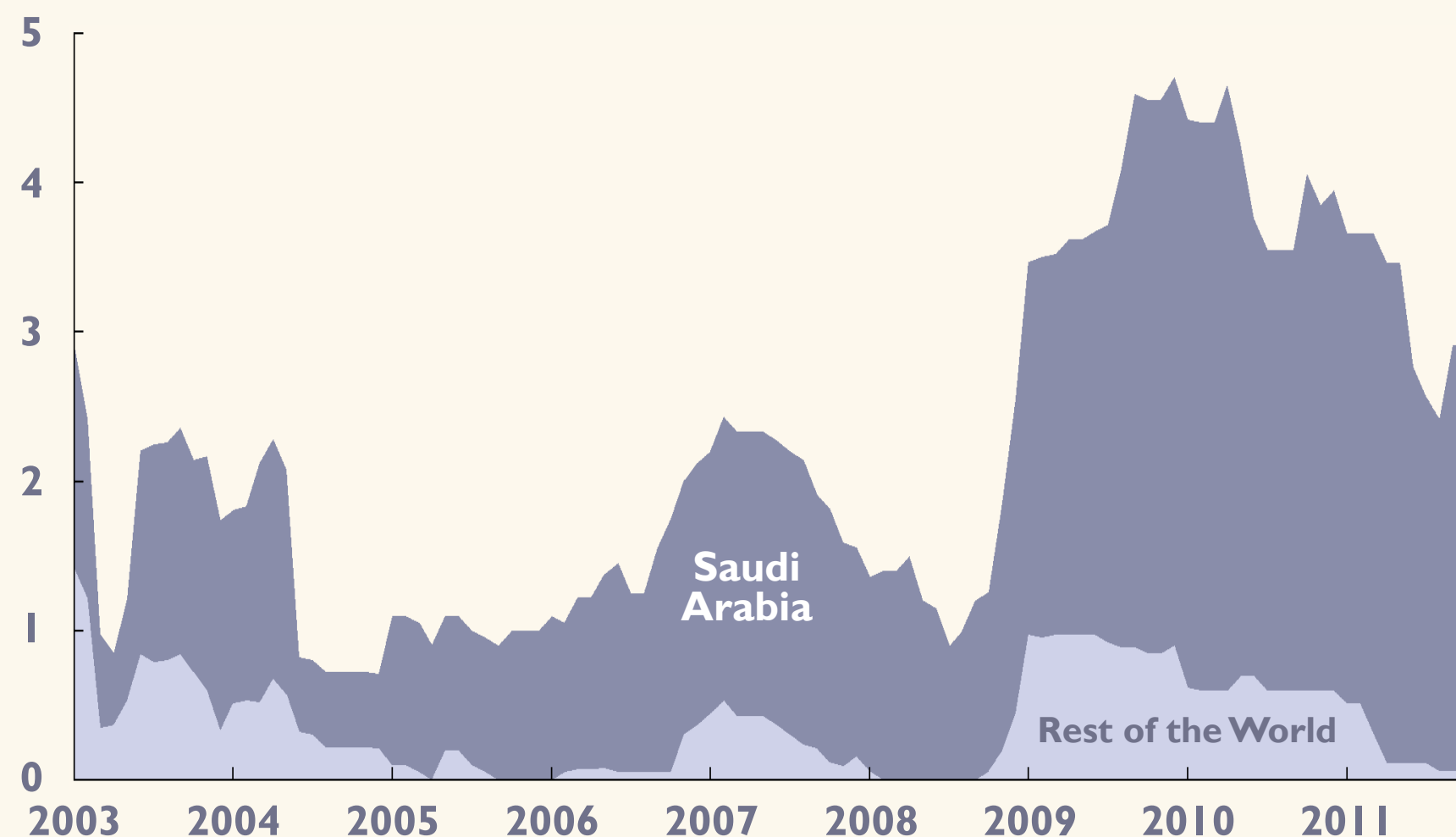
Having less flexibility in the choice of fuels contributes to the volatility of prices for transportation fuels.



On average, electricity producers in the United States maintain about 20 percent unused capacity (relative to peak summer usage), offering them more flexibility if a disruption occurs.

Volatility is also greater for transportation fuels because very few oil-producing countries have spare production capacity they can use when supply disruptions occur.

Spare Capacity, Millions of Barrels per Day\*



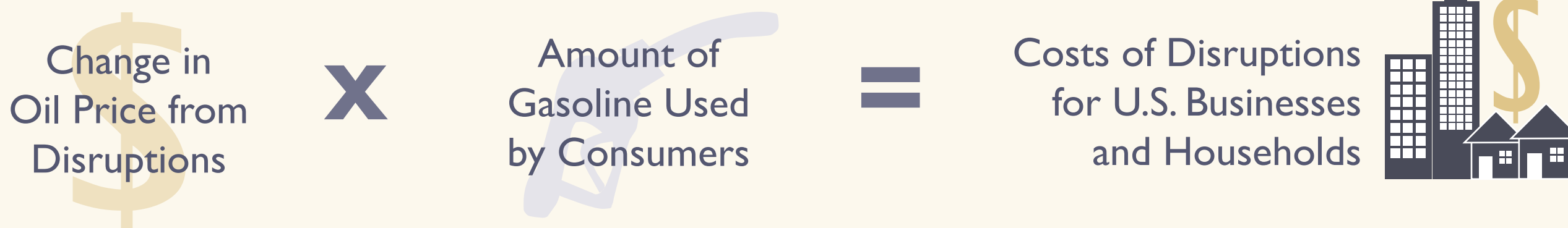
Saudi Arabia has almost all of the world's spare production capacity.

The United States has none, because of the geologic characteristics of U.S. oil reserves and the private ownership of development and production rights.

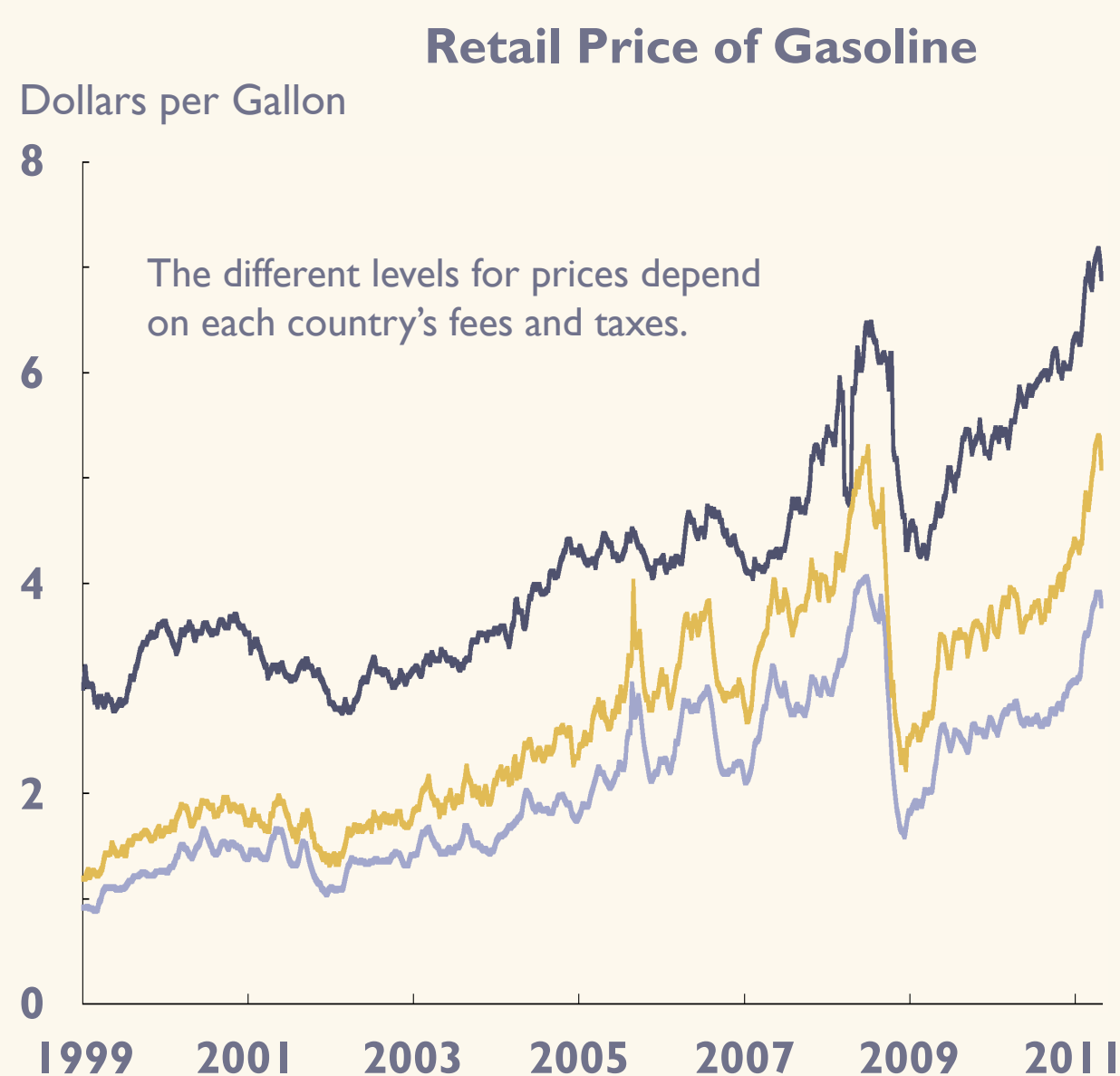
\*The U.S. Energy Information Administration defines spare capacity as the volume of oil production that can be brought online within 30 days and maintained for at least 90 days.

# Improving Energy Security

Improving U.S. energy security is principally about reducing costs to U.S. consumers from disruptions in the oil supply.

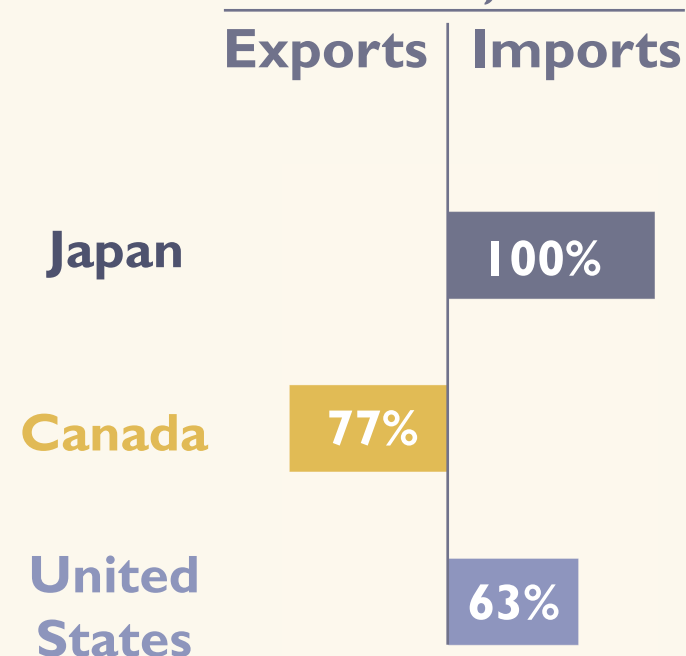


Because the world market dictates the price of oil, increased domestic production would probably not dampen price changes resulting from disruptions.



\* Based on estimates from the U.S. Energy Information Administration.

**Net Oil, 2010\***



**No country is independent of the world oil market.**

**Canada, a net exporter of oil, experiences the same types of price changes as Japan, which imports all of its oil.**

Reducing the amount of oil used could reduce the cost of disruptions to U.S. consumers.

Government policies to reduce the use of oil and its products could include an increase in fuel-efficiency requirements for cars and trucks, higher taxes on gasoline and diesel fuel, or subsidies for fuels and vehicles that are not dependent on oil.

