

### International Consumption of Propane



**Problems with Propane**  
The flammable gas Propane is more expensive than diesel.  
If the fuel lines get freezing, natural gas/propane can be very dangerous.

### Solutions to these issues

- Since Propane is part of the clean air act, paying a little bit of extra money is worth it because it is better for the environment in the long run
- In addition, a barrier can be made to control the propane if fuel lines were to break

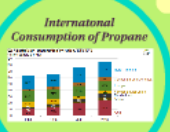
### Effects on the Environment

Propane is one of the cleanest-burning fossil fuels. In the absence of oxygen, it poses an asphyxiation risk.

To a study published by the World LPG Gas Association, about 100 million propane-fueled vehicles in the United States produce 10 times more CO2 than the same number of gasoline-fueled vehicles. However, propane-fueled vehicles produce 10 times less CO2 than gasoline-fueled vehicles.

# Propane Energy

By: Shayna Goldstein,  
Annie Shahverdian,  
and Allison Kirste



**Problems with Propane**

- The National Gas Propane Institute (NGPI) reports that propane is more expensive than diesel.
- If the fuel lines get broken, natural gas (propane) can be very dangerous.

**Solutions to these issues**

- Since Propane is part of the clean air act, paying a little bit of extra money is worth it because it is better for the environment in the long run.
- In addition, a barrier can be made to control the propane if fuel lines were to break.

**Effects on the Environment**

Propane is a hydrocarbon, a member of the class of organic, it poses an asphyxiation risk.

In a study published by the World Oil Gas Association (WOGA) which involved 50 tests over three-and-a-half years, they compared propane vehicles and more reliable testing performed by Natural Resources Canada in a Report. It shows that propane vehicles reported up to 40% less carbon dioxide (CO2) compared to regular vehicles and 20% less nitrogen oxide (NOx).

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# *What is Propane?*

Propane is usually stored as a liquid. It is nontoxic, colorless, and odorless. It is primarily a byproduct of natural gas processing, though some is produced from oil refinement. This is becoming increasingly abundant because of the increased supply of natural gas.



# *History of Propane*

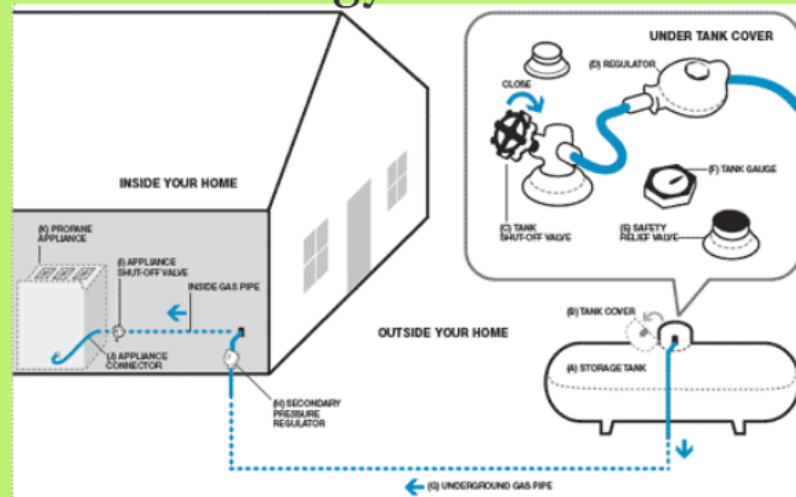
In 1912, Dr. Walter Snelling led a series of experiments to find a way to store gasoline without it evaporating. He found that transforming evaporating gases into liquid would keep them from evaporating. Propane, being the most plentiful, was experimented on and later used to heat many homes in America.



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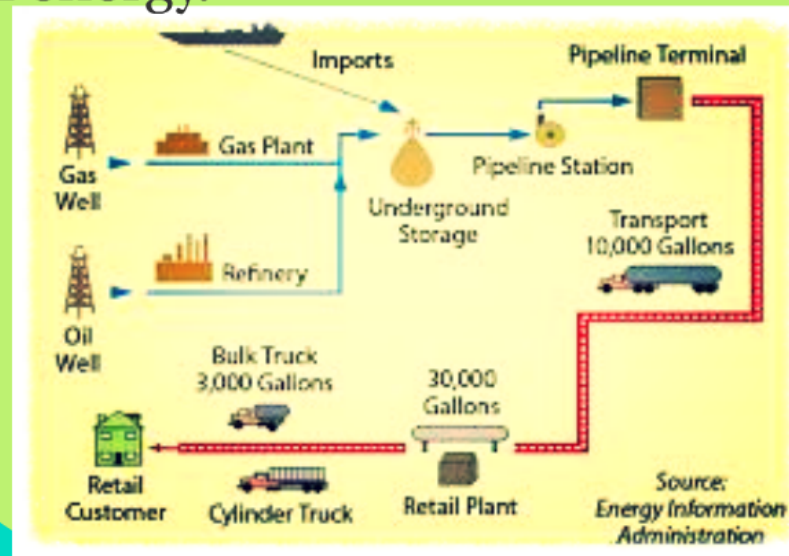
# *How Propane is Converted into Energy*

Propane is a type of liquid petroleum gas. It is put in a pressurized container and stored at low temperatures so that it liquifies. Propane tanks are then attached to different heating sources and is used as a source of energy

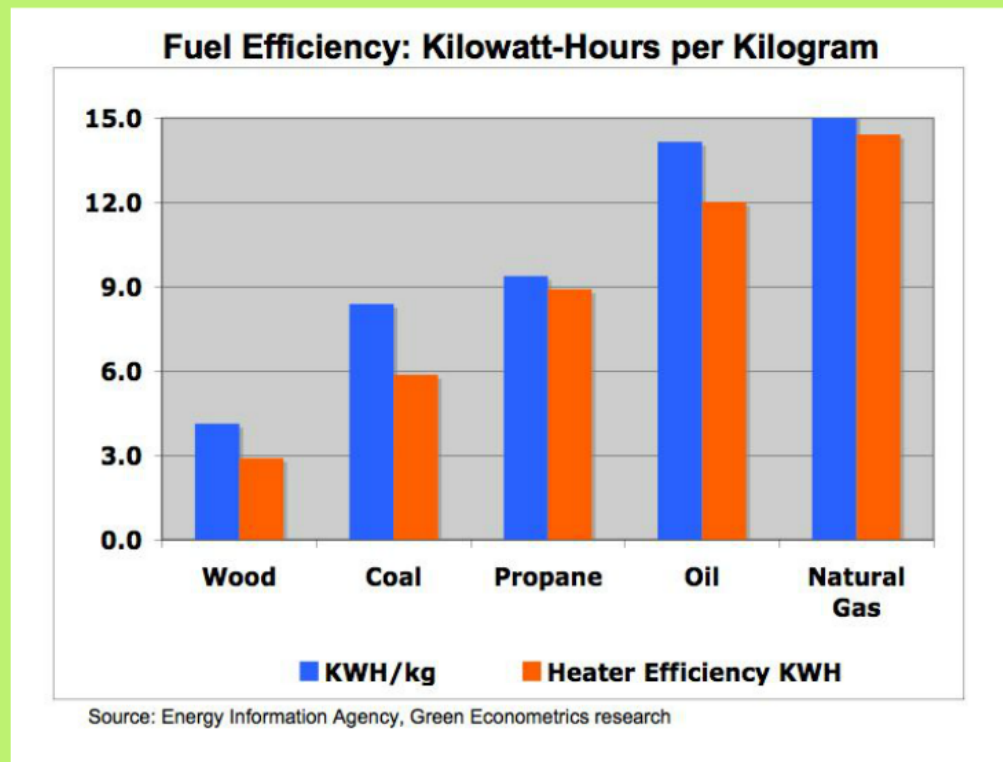


# *Why is Propane an effective fuel?*

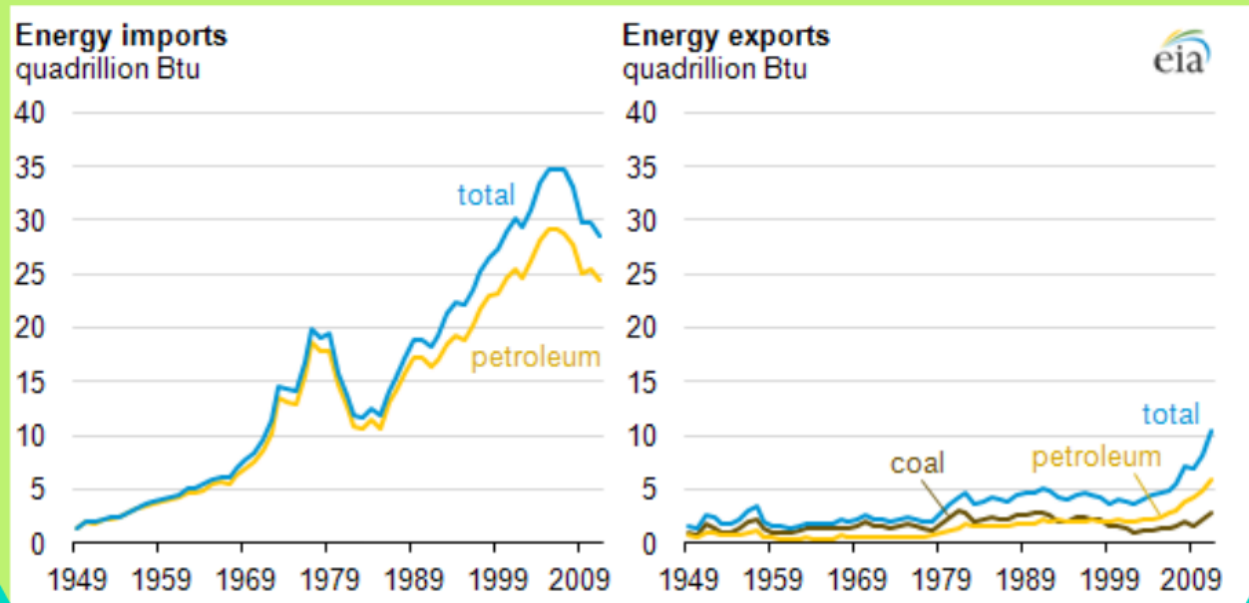
Propane is an effective fuel because it is abundant as well as a clean source of energy. Propane is non-toxic and does not harm the soil or water in its surroundings. Additionally, because it was part of the 1990 Clean Air Act, propane is a relatively environmentally safe source of energy.



# *Fuel Mass to Energy Output of Propane*

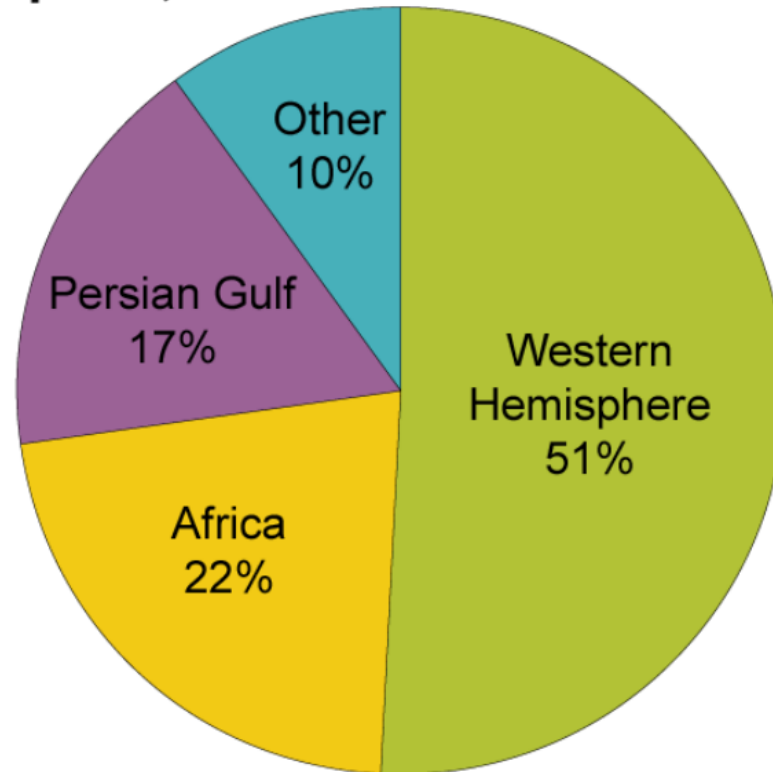


# *Imports and Exports of Propane*



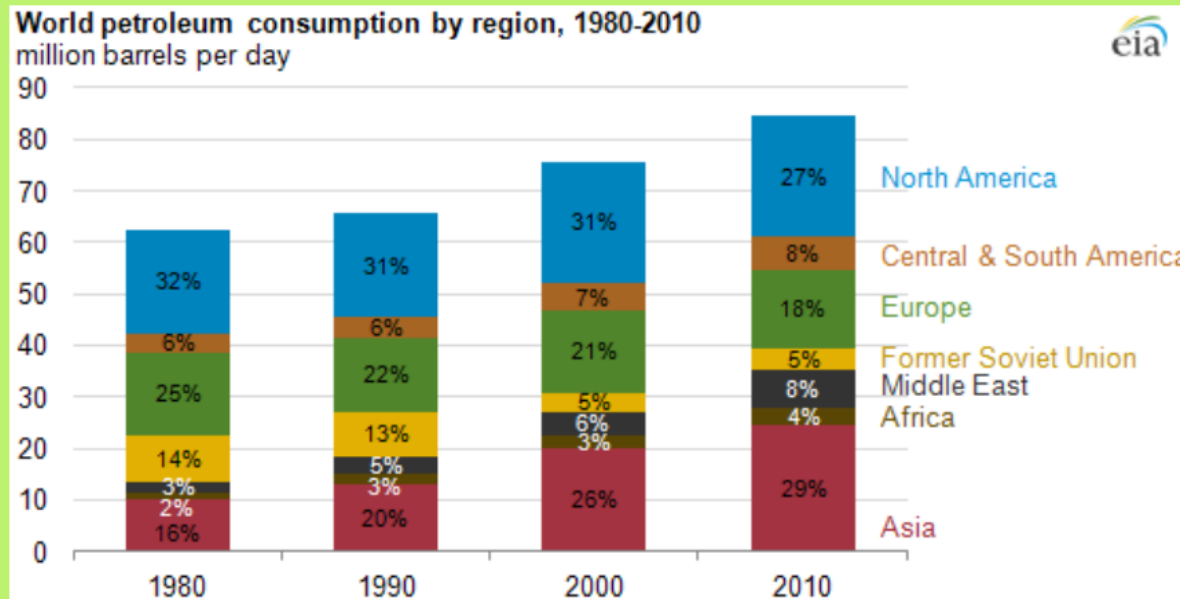


## Sources of U.S. Net Petroleum Imports, 2009



Source: U.S. Energy Information Administration, *Petroleum Supply Annual 2009*.

# *International Consumption of Propane*



## Problems with Propane

- The Natural gas/Propane is more expensive than Diesel.
- If the fuel lines get broken, natural gas/propane can be very dangerous.

## Solutions to these issues

- Since Propane is part of the clean air act, paying a little bit of extra money is worth it because it is better for the environment in the long run
- In addition, a barrier can be made to control the propane if fuel lines were to break

## Effects on the Environment

Propane is non-toxic when inhaled – however, in the absence of oxygen, it poses an asphyxiation risk.

In a study published by the World LP Gas Association, diesel vehicles produced 30 times more Particulate Matter than propane powered vehicles and recent vehicle testing performed by Natural Resources Canada on a Roush CleanTech propane vehicle reported up to 60% less Carbon Monoxide (CO) compared to a gasoline vehicles and 20% less nitrogen oxide (NOx).