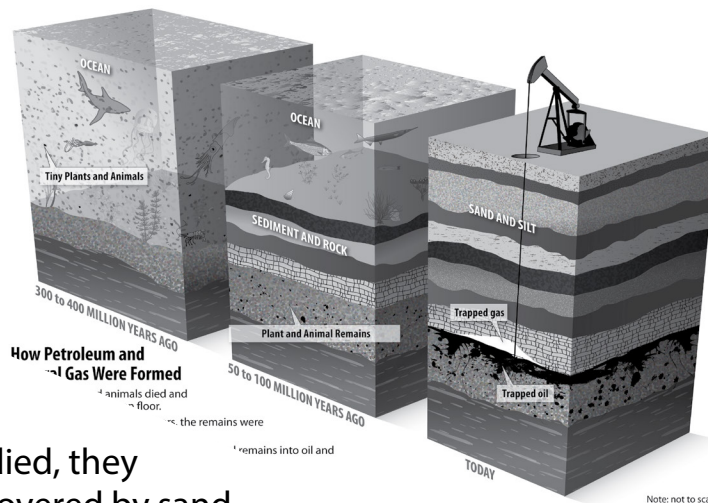


Natural Gas

Natural gas is similar to air—it is a mixture of gases you can’t see, smell, or taste. But it is different, too. It has a lot of energy in it. You can burn it to make heat. The early Chinese burned natural gas for heat to separate salt from sea water.

Natural Gas is a Fossil Fuel

Natural gas was formed in the Earth long before the dinosaurs lived. Oceans covered much of the Earth, filled with tiny sea plants and animals.



When the plants and animals died, they sank to the bottom and were covered by sand. Layers of dead plants, animals, and sand built up over time and turned into **sedimentary rock**.

Heat from the Earth and pressure from the rock layers above turned the remains of the plants and animals into natural gas and petroleum. Since natural gas is made from the remains of plants and animals, it is called a **fossil fuel**.

The plants and animals received their energy when they were alive from the sun. It was stored in them when they died. This is the energy in natural gas.

Natural Gas is Nonrenewable

The natural gas we use today took hundreds of millions of years to form. That’s why we call it a **nonrenewable** energy source. We can’t make more in a short time.

Garbage sometimes produces methane, the main gas in natural gas. **Methane** from rotting garbage is a **renewable** energy source because there will always be garbage and waste.

Drilling for Natural Gas

Natural gas is found underground in pockets of rock. We drill **wells** into the ground to reach the gas so that it can flow to the surface. Some wells are a mile or more deep!

The natural gas is piped from the wells to machines that clean it and remove any water. An odor like that of rotten eggs is added to the gas so that leaks can be detected.



Photo courtesy of istockphoto

Natural gas is transported through pipelines.

Transporting Natural Gas

We move natural gas from one place to another in **pipelines**. There are more than 2.4 million miles of pipeline all across the United States moving natural gas from wells to processing plants to our homes, factories, and buildings.

We Use Natural Gas Every Day

Almost everyone uses natural gas. Most homes use natural gas for heat. So do schools and hospitals. Many stoves and water heaters use natural gas, too.

Factories burn natural gas to make products like paper and cement. Natural gas is also an ingredient in paints, glues, fertilizers, plastics, medicines, and many other products. Industries like these use 35 percent of U.S. natural gas.

Power plants burn natural gas to make **electricity**. Natural gas is our number one provider of electricity and is often used in new power plants. 32 percent of our electricity comes from natural gas. Natural gas can be used to run cars, trucks, and buses.

Natural Gas is Cleaner to Burn

Natural gas is the cleanest burning fossil fuel. It doesn't pollute the air as much as coal or oil. That's why it is a good fuel for heating our homes and making electricity.

If connected end to end, natural gas pipelines in the U.S. would be long enough to stretch from the Earth to the moon three times!



Photo courtesy of EPA

Some city buses are fueled by natural gas.

Petroleum

Petroleum is a liquid that is found underground. Sometimes we call it **oil**. Oil can be as thick and black as tar or as thin as water. Petroleum has a lot of energy. We can turn it into different fuels—like **gasoline, kerosene**, and heating oil. Most plastics and inks are made from petroleum, too.

People have burned oil for a long time. Long ago, they didn't dig for it. They gathered oil that seeped from under the ground into ponds. It floated on top of the water.

Petroleum is a Fossil Fuel

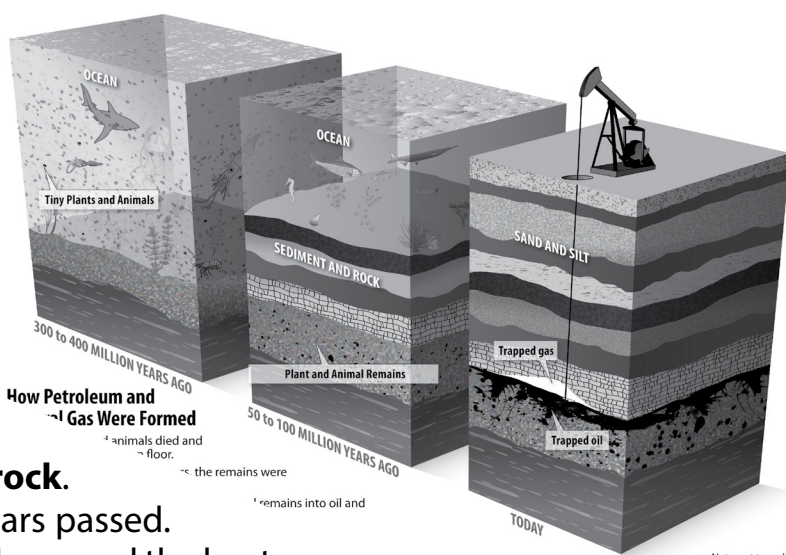
Long before the dinosaurs, oceans covered most of the Earth. They were filled with tiny sea animals and plants. As the plants and animals died, they sank to the ocean floor. Sand and sediment covered them and turned into **sedimentary rock**.

Hundreds of millions of years passed. The pressure of the rocks above and the heat from the Earth turned them into petroleum and natural gas.

Petroleum is called a **fossil fuel** because it was made from the remains of tiny sea plants and animals. The energy in petroleum came from the energy in the plants and animals. That energy came from the sun.

Petroleum is Nonrenewable

The petroleum we use today was made hundreds of millions of years ago. We can't make more in a short time. That's why we call petroleum **nonrenewable**. The United States doesn't produce enough oil to meet our needs. We import 40 percent of the oil we use from other countries.



We Drill Oil Wells

Petroleum is buried underground in tiny pockets in rocks. We drill oil **wells** into the rocks to pump out the oil. The typical well is about one mile deep. Texas is the state that produces the most oil.

A lot of oil is also under the oceans along our shores. Floating oil rigs are used to reach this oil. Most of these wells are in the Gulf of Mexico.



An oil rig pumps oil from a well.

After the oil is pumped to the surface, it is sent to **refineries**. At the refineries, it is separated into different types of products and made into fuels. Most of the oil is made into gasoline. The oil is moved from one place to another through **pipelines** and by ships and trucks.

We Use Petroleum Every Day

What would we do without petroleum? Petroleum is our most used energy source. Many people would have to make big changes in their lives if they couldn't use petroleum. Most of our cars, trucks, and planes are powered by fuel made from oil. Our factories use oil to make plastics and paints, medicines and soaps. We even burn oil to make electricity.



Petroleum Can Pollute

Petroleum keeps us going, but it can damage our environment. Burning fuels made from oil can pollute the air. **Pollution** from cars is a big problem in many parts of the country. Oil companies are making cleaner gasoline and diesel fuel every year.

Oil can pollute soil and water, harming the animals that live in the area. Oil companies work hard to drill and ship oil as safely as possible. They try to clean up any oil that spills.



Photo courtesy of gettyimages

Petroleum fuels can contribute to air pollution.

Propane

Propane is the gas we use to fuel our backyard grills. It is a lot like natural gas—you cannot see it, smell it, or taste it, but you can burn it to produce heat energy.

Propane has been around for millions of years, but no one knew it. It is buried underground in **sedimentary rocks** with natural gas and petroleum.

Propane wasn't discovered until 1912. The scientists knew they had found a good, new energy source. One year later, people were using it to heat their homes.

Propane is a Fossil Fuel

Propane is a **fossil fuel**. It was formed hundreds of millions of years ago, long before the dinosaurs. Like oil and natural gas, it was formed from tiny sea animals and plants.

The plants got their energy from the sun. This is the energy in propane. Propane's energy came from the sun.

Propane is mixed with natural gas and petroleum when it comes from the ground. It is separated out at natural gas processing plants and oil refineries.

Propane is Nonrenewable

The propane we burn today was made a long time ago. It took hundreds of millions of years to form. We can't make more propane in a short time. It is a **nonrenewable** source of energy.

We get propane from **petroleum** and **natural gas**. Our supply of propane depends on our supply of these other fossil fuels.



Pipelines are used to transport propane and natural gas to a processing facility.

Propane is Portable

When propane comes out of the ground, it is a gas. But when it is put under pressure, it becomes a liquid. A lot more liquid can be put into a tank than gas. A tank of propane gas might last a week. The same sized tank of liquid propane could last five years!

Liquid propane is portable—that means it is easy to move from place to place. We use small tanks of liquid propane for our barbecue grills. One tank can last all summer.



A propane grill.

We Use Propane Every Day

Many farms in the United States use propane to dry crops, run tractors, and heat barns. Businesses use propane for heating and cooking. Most of the carts and vehicles that we drive inside buildings use propane for fuel. It is a clean burning fuel.

Some cars and buses use propane for fuel. It is a very clean fuel. It doesn't pollute the air like gasoline. Engines must be changed to use propane though, and that is expensive.

Some people in the country don't have natural gas pipelines near their homes. They use propane instead. They put big propane tanks outside their houses. Delivery trucks bring the propane right to their houses.



This forklift is fueled by propane.



Propane is stored in a large tank. It is used to provide energy for heating, cooking, and drying clothes.