

## Getting to Know: Issues of Fossil Fuels

The need for energy is all around us. Whenever you are watching TV, helping to cook dinner, or riding the bus to school, you are using energy. Our entire society depends on energy to function.

The problem is that all of that energy has to come from somewhere. There are many possible sources of energy, but few are as easy, cheap, or convenient as fossil fuels. Fossil fuels play a very important role in keeping our society running smoothly. However, as you will see, this energy source has many drawbacks.



Cars are one example of how we use fossil fuels to power our lives.

### ***What are fossil fuels?***

*Fossil fuels* are nonrenewable energy sources that come from the decayed remains of plants and animals. Fossil fuels do not come from the petrified remains in stone that we often think of as "fossils." Fossil fuels include substances like coal, oil, and natural gas. In today's world, fossil fuels are the most widely used sources of energy.

### ***How are fossil fuels used to generate energy?***

Most electricity production in the world depends on burning fossil fuels. Some fuels like coal can be burned in their original form, whereas others, like oil, are converted into gasoline and other fuels. Burning fossil fuels releases the energy that was stored by the plants and animals whose remains formed the fossil fuels.



**Misconception 1:** *If fossil fuels come from the remains of dead plants and animals, doesn't that mean that they are renewable resources?*

A fossil fuel is formed from the remains of an organism that lived long ago. It takes millions of years for plant and animal fossils to turn into fossil fuels. This process is so slow that, for all practical purposes, fossil fuels are considered to be nonrenewable.

## What are some of the issues surrounding fossil fuel use?

There are several issues with fossil fuels that are cause for concern. For instance, fossil fuels are nonrenewable, which means that at some point, our supply of fossil fuels will run out, and we will have no means of replacing them. Pollution is another problem. When fossil fuels are burned, gases and chemicals are released that harm the atmosphere.

One of the main problems associated with fossil fuel pollution has to do with the greenhouse effect. Usually, greenhouse gases such as carbon dioxide help keep Earth warm enough to support life. However, burning fossil fuels adds additional carbon dioxide into the atmosphere, upsetting the natural balance of gases and causing extra warmth to be held in the atmosphere. This contributes to increasing temperatures around the world, also known as *global warming*. Many scientists believe that global warming could have far-reaching effects on Earth's climate.

Another problem caused by burning fossil fuels is acid rain. As we burn fossil fuels, chemicals are released that mix with water vapor in the air. When that vapor condenses and falls as rain, it carries the toxic chemicals with it. Acid rain can be very harmful to plants and animals and can even corrode buildings, statues, and other structures.



Pollution is one of the main drawbacks of fossil fuels.



### **Misconception 2:** *I thought all fossil fuels were liquid, like crude oil. Is this true?*

Oil is a liquid. However, other fossil fuels such as coal are solid. Natural gas is neither a liquid nor a solid. Fossil fuels can therefore be solid, liquid, or gas!

## *I understand the drawbacks to fossil fuels. Are there other ways to generate electricity?*

Fossil fuels are not the only way to generate electricity. Some alternatives to fossil fuels include nuclear power, solar power, wind power, hydroelectric power, and geothermal power. However, all of these alternatives to fossil fuels have their own tradeoffs and drawbacks. We have yet to find a perfect solution to our energy problems.



### **Misconception 3:** *Someone told me that global warming is just a myth and that it doesn't really exist. Is that true?*

Global warming is, unfortunately, a documented reality. Global temperature increases over the past few decades have been definitively recorded. There is also overwhelming evidence that points to increased carbon dioxide in the air as the cause of the global increase in temperatures.