

What Are Fossil Fuels?

Cynthia Peters

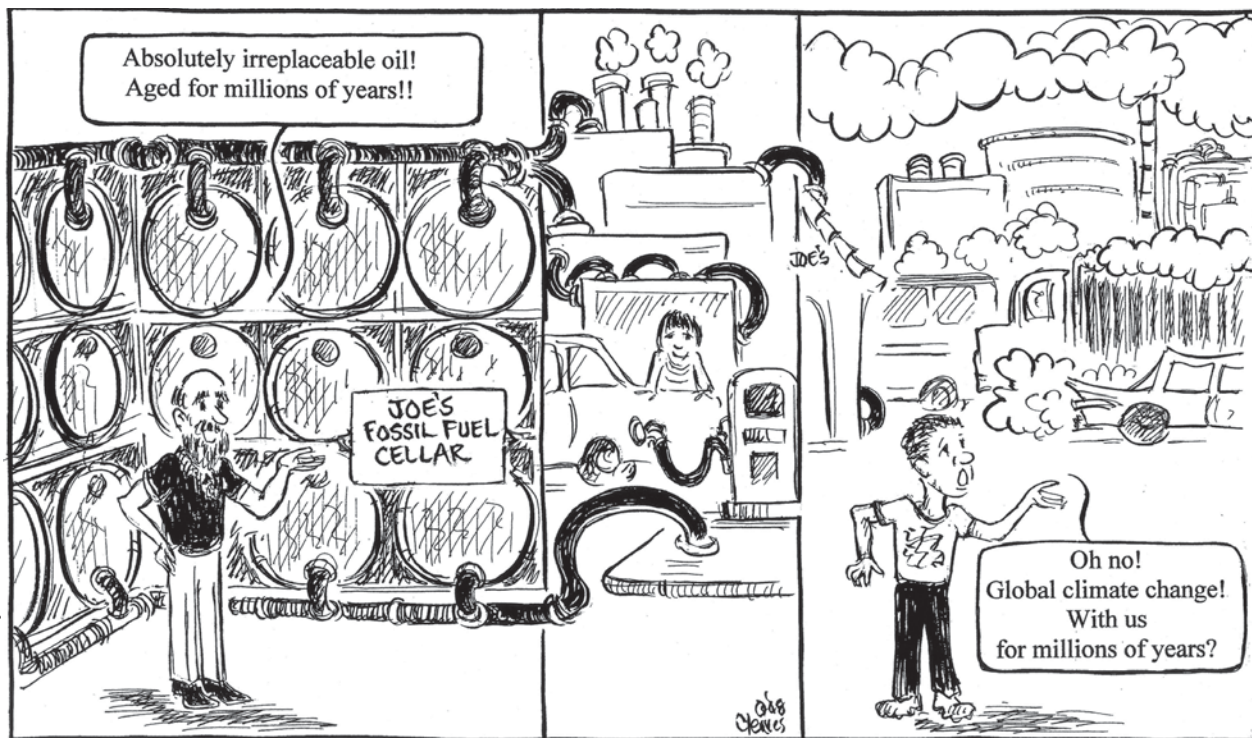
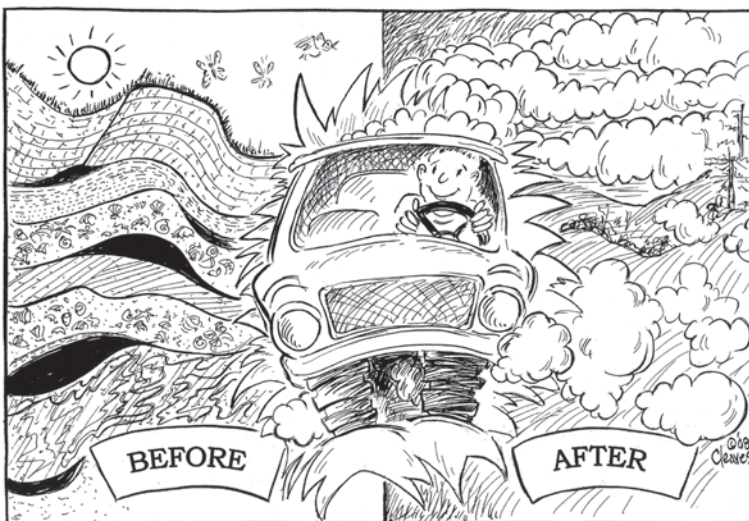
A fossil is a plant or animal preserved from a long, long time ago. *Fossil fuels* come from layers and layers of dead plants or animals squeezed together for millions of years and heated at just the right temperature until they turned into oil, coal, or natural gas.

Oil comes from billions of very tiny water plants that sank to the bottom of the ocean when they died. There they got covered by rock, which created a sort of oven. The little plants cooked in this oven for a long time until it turned into oil. Today, we use oil (or petroleum) mostly to run our cars.

Coal started out as fallen trees and plants. The plants were gradually buried, and the water was

forced out, leaving a dark paste called peat. Over millions of years, the peat hardened into coal. Today, we use coal mainly to provide electricity.

Natural gas (or methane) comes from dead swamp plants that decomposed deep down in the earth. The pressure and heat caused a chemical reaction that changed the energy stored in the dead



Illustrations by Ann Cleaves

plants into natural gas. Today, we use natural gas to heat our homes and cook our meals.

You can think of fossil fuels as solar energy that has been trapped and concentrated in billions of plants and animals over millions of years. When we burn fossil fuels, we are releasing millions of years worth of stored energy into the *atmosphere* very quickly.

It takes about 100 tons of ancient plant life to create 1 gallon of gas. It takes a lot of years of sunlight to grow that much plant life. In fact, the “recipe” for making oil, coal, and natural gas is so precise and takes so long that it would be impossible to recreate it.

Yet our economy is based on fossil fuels. Think of all the *petroleum-based* products you use in your life. Think of all the industries that use fossil fuels. Our economy is based on something that will run out someday, and we don’t have a way to make more. An economy based on fossil fuels is not a *sustainable* economy.

Nor is it sustainable for our earth. For millions of years, the earth has stored and released *carbon* in a balanced way. (The diagram on the next page shows two kinds of *carbon cycles* – one balanced, the other out of balance.) But now we are releasing carbon very quickly. (See the “Keeling Curve” on p. 7.) All the carbon from oil, coal, and gas has been out of circulation, stored in the ground, for millions of years. When we burn it, we release it into the *atmosphere*.

This causes the carbon cycle to be out of balance. More *greenhouse gases* in the atmosphere (see p. 6) cause global warming.

Cynthia Peters is the editor of *The Change Agent*.

Take it Further

Discuss the graphic on the next page—
“Two Carbon Cycles.”

Do you think “balance” is important in nature and in your life? Talk about some aspects of your life that are balanced or not balanced.

Quiz: What Are Fossil Fuels Used For?

Fill in the blank...



Oil is mostly used for...



Coal is mostly used for...



Natural gas is mostly used for...



Sources: *The Down-to-Earth Guide to Global Warming*, Laurie David and Cambria Gordon, 2007; and a talk by Justin Podur, York University professor of environmental studies.