

GASSING UP WITHOUT AIR POLLUTION

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You've probably been to a gas station to get some gasoline for a car. Gasoline, a type of fuel, is what most cars use for energy. Just like you need food for energy, cars need fuel for energy. Without fuel, a car is pretty useless. You know this well if you've ever been in a car that ran out of gasoline.

You may have seen smoke or noticed a smell coming out of car exhaust pipes. The smoke and smell come from gases that are emitted when gasoline is burned. Some of these gases can cause problems in the atmosphere. One of the gases, sulfur dioxide, forms acid rain when it combines with water in the atmosphere. Another gas, carbon dioxide, can cause the climate to change. Chemists are working to find other kinds of fuels that don't harm the earth's atmosphere. One solution to this challenge is to get the energy more directly from plants, instead of gasoline.

Unlike humans and cars, plants make their own energy. Plants grow using just sunlight, water and carbon dioxide from the atmosphere. This makes plants a very good source of energy. In fact, gasoline is formed from plants. When plants die and are buried under mud and rocks, they slowly change into a mixture of fuels, including gasoline. It takes a very long time underground for a plant to turn into gasoline. Humans are using gasoline much more quickly than it is being made. We might run out of gasoline someday.

So chemists have considered using plants directly as a source of fuel. Chemists make a fuel called biodiesel from vegetable oil. Vegetable oil comes from plants that can be grown by farmers each year. Instead of waiting thousands of years for gasoline to be made, farmers and chemists can work together to make biodiesel in one year. Biodiesel can even be made from vegetable oil left over from making fries at fast food restaurants. In the process, garbage becomes fuel.

Remember the smell of the fumes from car exhaust? When you burn biodiesel, it smells like french fries! The exhaust fumes from gasoline not only smell bad, they are

bad for the atmosphere. Many cars have devices called catalytic converters, to remove some of the exhaust fumes that are formed from burning gasoline. It is better to find ways to prevent those gases from forming in the first place.

Using biodiesel instead of gasoline produces less exhaust fumes. Biodiesel has more oxygen atoms in it than gasoline does, and the extra oxygen helps biodiesel to burn better. The fumes from biodiesel are also safer for the atmosphere – they won't cause acid rain or change the climate. Unlike burning gasoline, burning biodiesel does not emit sulfur dioxide. And burning biodiesel doesn't add more carbon dioxide to the atmosphere. The carbon dioxide released when biodiesel is burned is the same carbon dioxide the plants removed from the atmosphere as they grew.

Biodiesel is just one alternative fuel that can prevent air pollution in earth's atmosphere. You can prevent air pollution by using less gasoline. Instead of riding in a car, you might choose to walk, ride a bicycle or use public transportation. By the time you start driving, you may choose to buy a car that doesn't use gasoline for energy.