

## Humans Interact with the Environment

### Handout 13

#### Energy in History

The sun is the best and strongest source of energy we have. Through all of human history the sun has provided light and heat for people all over the world. When people discovered how to make fire, they had a way to keep warm during long cold nights- and they had light, too! In ancient times people began to use animal power to help do the heavy work. Before long, ancient inventors found ways to use the wind to move big ships and to pump water from rivers. Later people began to use the power of river water to turn millwheels. Water powered mills were used to saw lumber, grind grain, and even turn machinery.

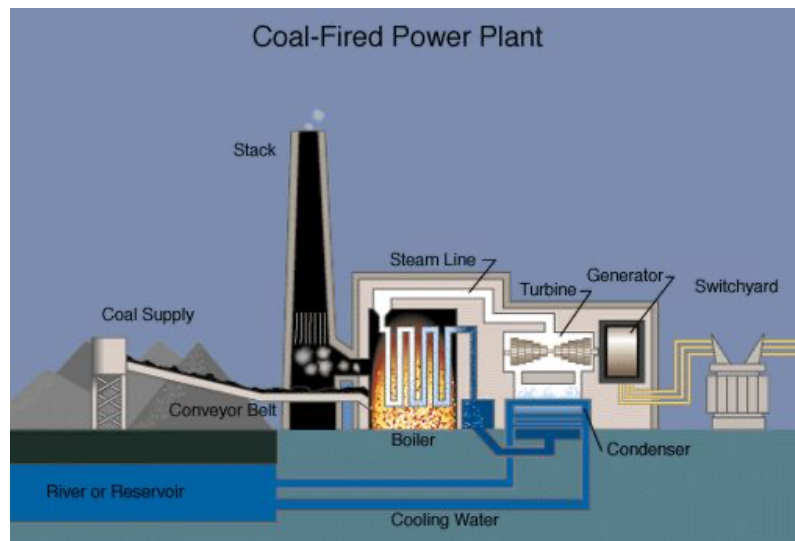


“becalmed” in a big ocean waiting for the winds to blow again.

Each of these power sources from the environment had advantages and disadvantages. The sun gives great light during the day, but at night or on cloudy days, it leaves us in the dark. Animals must be fed and watered all the time, whether they have work to do or not. Water power works great in normal times, but when rainfall fails or there is a flood, the mill no longer gets the job done.

And sailors in ancient times sometimes found themselves

The industrial revolution made energy needs more important to people in Europe and the United States. Factories full of machinery manufactured goods. The machines needed large amounts of energy. Burning wood was not sufficient. People began to turn to fossil fuels- coal, oil and natural gas. Burning fossil fuels has many benefits. Most of the energy we use today depends on burning coal or oil. Cars and trucks run on gasoline or diesel fuel. Most of the electricity in the United States is produced in plants that burn coal or oil to heat



water. The water becomes steam, and the steam turns huge turbines to make electricity. One unintended consequence of burning fossil fuels has been an increase in air pollution. Mining for coal and drilling for oil are dangerous occupations, and the processes have risks for the environment. Because the United States does not produce enough oil and coal to meet all our needs, we must buy it from other oil producing countries.

Today many people are experimenting with alternative energy technology to meet energy needs. Alternative energy sources use the natural environment to make energy.



Solar panels capture the power of the sun. Hydroelectric dams make electricity from water power. Windmills generate electricity by harnessing the power of the wind. Ethanol is a fuel that cars and trucks can burn. It is usually made from corn. Nuclear generating plants can make a huge amount of energy from a tiny amount of radioactive fuel.



To do the best job, each alternative energy facility must be in the right location. Alternative energy facilities can have disadvantages. They can be expensive, and building them changes the land around them. One reason for our country to use more alternative energy is that we will use less coal and oil.