



## **JANUARY**

### **Energy**

#### **What is Energy?**

Energy is defined as “the ability“ to do work. Food is the energy source our bodies use so that we can exercise, eat and read. Energy from the sun gives us light. It dries our clothes when they are hanging outside. It helps plants grow.

To make electricity, we use the earth’s resources to obtain coal, oil and natural gas. We are now starting to tap into more clean energy sources too, like the sun, wind and earth.

#### **The Energy We Live By**

Currently, most of our energy comes from coal, oil and natural gas. These are also known as “fossil fuels”, because they were formed deep under the earth during dinosaur times.

The problem is that fossil fuels can't be replaced - once we use them up, they're gone forever. And we are at the point where they are starting to get tapped out. Fossil Fuels also can cause pollution.

Fortunately, we do have another option- RENEWABLE ENERGY. Renewable energy is made from resources that Mother Nature will replace, like wind, water and sunshine. Renewable energy is also called “clean energy” or “green power” because it doesn’t pollute the air or the water. Renewable Energy comes in many forms, including Wind Power, Solar Power, Biomass (derived from natural material like wood) and Geothermal (tapping in to the Earth’s core temperature). All are options worth looking in to for at least part of your home energy use.

#### **Energy Isn’t Free**

Remember, all our heating and air conditioning uses energy. Every time we turn on the lights, computer, and TV; every time we take a shower, throw in a load of laundry or run the dishwasher, we are tapping in to the Earth’s precious resources. And while we certainly need to do all these things, it’s important to be mindful that these resources are not limitless. So try to be efficient, and conserve where you can. Because whether we are powering up with fossil fuels or renewable energy, we, as consumers, NEED to reduce demand. We NEED to think before we use.

## TEN EASY WAYS TO SAVE ENERGY

- 1. DO shut off the lights when you're done using them**, and turn off the TV, computer, video games, fans and other electrical stuff when you leave the room.
- 2. DO lower the thermostat during the winter.** To keep warm without wasting energy, put on a sweatshirt or snuggle under a blanket.
- 3. DON'T leave the refrigerator door open.** Every time you open the door, up to one-third of the cold air can escape.
- 4. DO replace a burnt-out light bulb with a new compact fluorescent bulb.** Fluorescent bulbs use 75 percent less energy, and they last 10 times longer.
- 5. DO remind grown-ups to use cold water in the washing machine.** Hot water won't get the clothes any cleaner, and it wastes a lot of energy.
- 6. DO turn off dripping faucets.** One drop per second can add up to 165 gallons of hot water a month - that's more than one person uses in two weeks!
- 7. DON'T take a long bath – take a short shower instead.** It might take 25 gallons of hot water to fill the bathtub, compared to only seven gallons for a quick shower.
- 8. DO close the curtains during hot summer days to block the sun.** During the winter, keep the curtains open.
- 9. Help a grown-up put plastic sheeting on windows.** Blocking cold drafts is called “weatherizing” and it can save a lot of energy.
- 10. Plant a tree to help shade your house on hot summer days.**

## **RENEWABLE ENERGY**

### **Some Interesting Facts**

#### **WIND POWER:**

- In 200 B.C., people in China and the Middle East used windmills to pump water and grind grain.
- The first modern wind turbine was built in Vermont in the early 1940s.
- Wind farms currently produce enough electricity to meet the needs of more than 600,000 families in the United States.
- The largest wind turbine in the world, located in Hawaii, stands 20 stories tall and has blades the length of a football field.
- An average wind speed of 14 miles per hour is needed to convert wind energy into electricity.

#### **SOLAR POWER:**

- The first big solar power plant opened in California in 1982.
- More than 10,000 homes in the United States are powered entirely by solar energy.
- Enough sunlight falls on the earth's surface every hour to meet world energy demand for an entire year.
- Albert Einstein won the Nobel Prize in 1921 for his experiments with solar power and photovoltaics.

#### **BIOMASS**

- Biomass energy uses natural materials like trees and plants to make electricity. That can also mean waste products like trash. When biomass energy is burned, it releases heat
- Biomass- from sources like wood and paper- is the second-most common form of renewable energy we use in the United States, providing enough electricity to power more than two million homes.
- In Iowa and Wisconsin, biomass energy from landfills and dairy farms is being used to make electricity.

## **GEOHERMAL ENERGY:**

- “Geo” means "from the earth," and "thermal" means "heat," so this type of energy is found under the earth. The hot lava from a volcano and the hot steam from a geyser both come from underground heat – and we can use that same type of heat in our homes.
- Here’s how it works: about four feet underground, the temperature of the earth stays the same all year long - about 55 degrees. A geothermal heating system uses pipes buried more than 4 feet deep in the Earth.
- We can also use geothermal energy to make electricity. A geothermal power plant works by tapping into steam or hot water reservoirs underground; the heat is used to drive an electrical generator.
- Most geothermal plants are located in the western United States, where hot water reservoirs are common. The Geysers power plant in northern California is the world’s largest geothermal power plant, producing enough electricity to light up more than 22,000 homes.

If you want to find out more about the energy check out these websites:

- [alliantenergykids.com](http://alliantenergykids.com)
- [ecomall.com](http://ecomall.com)
- [energystar.gov](http://energystar.gov)
- [energyquest.ca.gov](http://energyquest.ca.gov)

Sources:

All the info was taken from the web sites: [alliantenergykids.com](http://alliantenergykids.com) and [energyquest.ca.gov](http://energyquest.ca.gov)



