



YEAR of SCIENCE 2009

The yearlong celebration of science continues...

Energy Resources: The YoS2009 April Theme



Image from Science@Cal web site (<http://scienceatcal.berkeley.edu/>)

An exploration of energy integrates physics, chemistry, earth science, biology, and the social sciences. In fact, energy has a connection to all of the 12 themes explored during the Year of Science 2009. Likewise, energy has a connection to every major facet of our everyday lives. We use energy to cook our food, to generate electricity for our lights and for the electrical appliance that make our lives easier. We use energy to move our cars, planes, boats, and products from place to place – bringing food to our tables, bringing us to our jobs, and allowing international commerce to happen in little or no time.

We capture solar energy to heat homes and to generate electricity from photovoltaic cells. We build wind turbines to capture the mechanical energy in the wind to generate electricity. We drill for and produce petroleum and natural gas thousands of feet below the surface of the earth and the ocean. We grow crops for food and use waste products for energy. We harness nuclear energy in the nucleus of an atom of uranium to generate electricity.

Nothing is more essential to life than energy. Some species can do without free oxygen. DNA probably wasn't the first medium to convey information from one generation to the next. But regardless of the raw materials, life goes nowhere without a constant input of energy.

-- James Hrynshyn, www.yearofscience2009.org/

Biologically, energy keeps us alive and allows us to think, work, and play. We can connect with others and learn more about the world around us because of the electricity that powers our computers, our cellphones, and all of the technology that we use each day.

BUT, WHAT IS ENERGY?

- Energy is the ability to do work or produce change and is manifested in the form of light, heat, motion, sound, growth, and technology.
- Energy is classified into two, broad groups: renewable and nonrenewable. Nonrenewable sources are petroleum, coal, natural gas, uranium, and propane. These sources cannot be replenished in a short period of time. Petroleum, for example was formed millions of years ago from the remains of ancient sea life. Renewable energy sources are biomass, geothermal, hydro-power, wind, and solar. These sources can be replenished in a short time. Day after day the sun shines, the wind blows, and the water cycle continues.

CELEBRATING ENERGY AND OUR ENERGY RESOURCES

Using energy resources most efficiently requires better technology and informed personal decisions. Which lightbulb we purchase, which car we drive, and whether we turn off the lights when leaving a room impacts our energy needs. We must improve energy efficiency, reduce our waste and consider the impact of our choices on our economy and our environment. This month, celebrate what energy allows us to do and the smarter ways to use energy wisely each day.

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Image from: http://www.yearofscience2009.org/themes_process_nature/