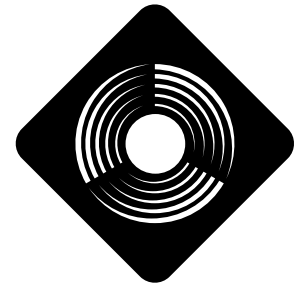


RENEWABLE ENERGY AND SUSTAINABILITY



RENEWABLE ENERGY
THE INFINITE POWER
OF TEXAS

FACT SHEET 1 A RESOURCE FOR CLASSROOMS AND TEACHERS

Highlights

- ◆ A new energy era is dawning
- ◆ Earth is a spaceship
- ◆ Renewable energy use is sustainable
- ◆ Global warming can upset the balance of life
- ◆ Sustainable energy is the fuel of the future-starting now

New Energy Era

Many scientists believe that by the year 2030, when students in school today are grown and have their own families, they will be using new sources of energy.

Instead of building new coal-burning power plants to generate electricity for your home, your house may have a roof with special shingles that convert sunshine into electricity.

Or out in the countryside, there will be farms with something new. Among the grazing cattle



"WE DO NOT INHERIT THE EARTH FROM OUR PARENTS, WE BORROW IT FROM OUR CHILDREN." CHIEF SEATTLE

and fields of crops will be huge towers with slow-turning propellers that convert wind energy into electricity.

Your house could have large, south-facing windows that gather free light and heat from the sun. And your refrigerator and other appliances may only use one-half to one-fourth the energy of those we use today.

Today we rely mostly on fossil fuels – coal, oil

and natural gas. There is only a limited supply. In other words, they are nonrenewable resources. Fossil fuels also create pollution when they are burned. The renewable energy you may use cannot be used up, and it does not make pollution. It is sustainable energy.

Earth is a Spaceship

As we orbit the sun through space, we carry with us a limited supply of air, fresh water, coal, oil and natural gas. All of our trash and pollution must stay with us "on board" our spaceship. As world population grows we use more supplies. Pollution also increases.

Spaceship earth is so huge that in the past, people believed that its resources would never run out. Some also thought that it could not be hurt by pollution. Recently, many people have decided that we are treating the earth badly.



SPACESHIP EARTH All of our trash and pollution must stay with us "on board" our spaceship.

This is not fair to future generations who will inherit this planet.

Sustainability

Sustainability means that we make sure we meet our energy needs now without preventing future generations from meeting theirs.

Eventually, we will run out of nonrenewable energy supplies like coal, oil and natural gas. Long before that, the pollution caused by using these energy sources will become a serious problem.

RENEWABLE ENERGY SOURCES:

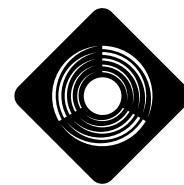
- solar thermal • solar electricity • wind
- biomass • hydroelectric • geothermal
- energy efficiency

NON-RENEWABLE ENERGY SOURCES:

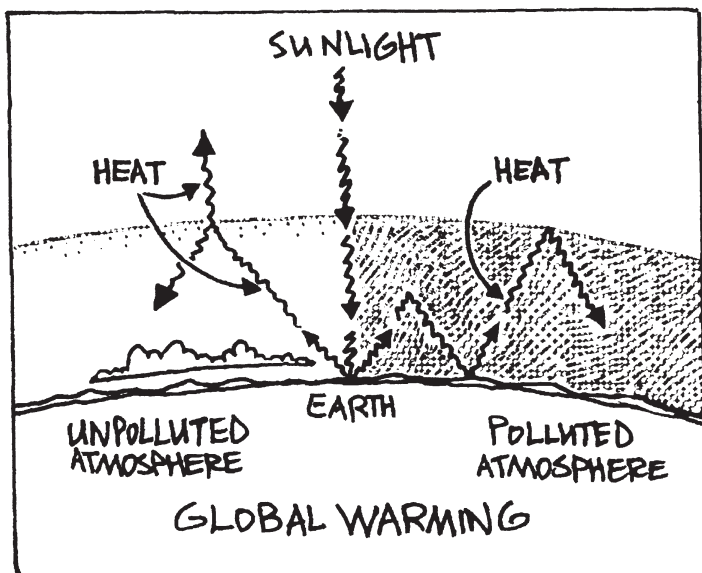
- coal • oil • natural gas • uranium

Global Warming

Today, scientists are concerned about global warming. The earth and its atmosphere act like a greenhouse – light from the sun strikes the earth and changes into heat. The atmosphere surrounding earth acts like the glass on a greenhouse. Light can pass through the atmosphere (or glass) but heat cannot escape as easily. This causes a gentle warming on our planet as heat builds up. Some heat is lost to space. It creates a delicate balance for life on earth.



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GLOBAL WARMING Pollution in our atmosphere traps more of the sun's heat energy causing global warming.

We are upsetting the balance by burning fossil fuels. They produce gasses like carbon dioxide (CO_2) that trap more heat and cause excessive global warming.

Because of this concern, some scientists recommend that we change the way we use energy. They argue that we could cut our energy use by 50 percent just by improving the efficiency of lights, machines, buildings and cars. And they suggest that by the year 2030, half of this reduced amount could come from renewable resources such as the sun and wind.

New Energy Technology

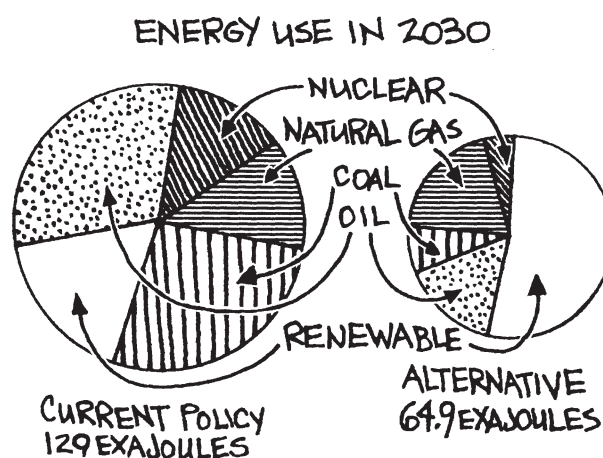
We are starting to change the way we use energy. New energy technology, like compact fluorescent light bulbs, are available today. One

compact fluorescent bulb uses one-fourth the energy of a typical incandescent bulb. It also saves more than \$30 over its lifetime.

Wind farms are being built that produce energy more cheaply than burning fossil fuels. Roof shingles that make electricity directly from sunshine are available now, although they are still expensive.

The cost of using sustainable energy will continue to drop. A new era of energy use is dawning. Clean, inexhaustible energy can power the future of this generation.

Sustainable energy is the fuel of the future - starting now!



FUTURE ENERGY USE The United States now uses about 90 Exajoules of energy in a year. By the year 2030, half of all our energy could come from renewable sources if we learn to use energy more efficiently.



Helpful Organizations

Comprehensive educational source for renewables:

CENTER FOR RENEWABLE ENERGY AND SUSTAINABLE TECHNOLOGY (CREST)

1612 K St, NW, Ste 202
Washington DC 20006
(202) 293-2898
solstice.crest.org

Educational resources on Texas renewable energy:

TEXAS SOLAR ENERGY SOCIETY

P.O. Box 1447
Austin, TX 78767-1447
(512) 326-3391
e-mail: info@txses.org
www.txses.org

Research and Education on Solar Energy and Efficiency

ENERGY CENTER

University of Texas, El Paso
P.O. Box 68-660
El Paso, Texas 79968, USA
(888) 879-2887
www.wattwatchers.utep.edu

A family event that provides renewable energy booths, seminars and workshops

RENEWABLE ENERGY ROUNDUP AND SUSTAINABILITY FAIR

P.O. Box 9507
Austin, TX 78766-9507
(866) SUN-FAIR
www.RenewableEnergyRoundup.com

Resources

FREE TEXAS RENEWABLE ENERGY INFORMATION

For more information on how you can put Texas' abundant renewable energy resources to use in your home or business, visit our website at www.InfinitePower.org or call us at 1-800-531-5441 ext 31796. Ask about our free lesson plans and videos available to teachers and home schoolers.

ON THE WORLD WIDE WEB:

Spirit Lake Wind Powered School
www.spirit-lake.k12.ia.us/html/dist/wind.htm

Debate on Renewable Energy www.txses.org

Global Warming
www.environmentaldefense.org/programs/GRAP
www.epa.gov/globalwarming

Find Out About Your Electricity
www.edf.org/programs/energy/green_power/x_calculator.html

Center for Excellence in Sustainability
www.sustainable.doe.gov

Learn about petroleum supply www.oilcrisis.org

CD-ROM:

The Sun's Joules - Available from www.learningteam.com/

POSTER:

Our Energy Resources are Outstanding in the Field, VERA, 1997 (Available from State Energy Conservation Office, 800-531-5441 ext 31796, or from the web at www.InfinitePower.org)

BROCHURE:

Texas Renewable Energy Resource Assessment, VERA, 1995 (Available from State Energy Conservation Office, 800-531-5441 ext 31796)



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