

Renewable Energy for the Home



RENEWABLE ENERGY
THE INFINITE POWER
OF TEXAS

HIGHLIGHTS

- Heating and cooling your home
- Drying clothes without gas or electricity
- Cooking with renewable energy
- Using renewable energy to pump water
- Playing and working the clean way

EARTH-FRIENDLY ENERGY

You can use renewable energy in your home now. Renewable energy comes from sources that we cannot use up, like the sun and wind. Renewable energy is earth-friendly energy. This type of energy does not hurt the Earth. Three examples of earth-friendly energy are the sun, water, and the wind.

Pollution is a big problem for people, plants and animals. Pollution is made from some types of energy that we use today like oil, coal, and natural gas. Using the sun, water, and wind makes less pollution.

Renewable energy is sustainable energy. Being sustainable means that it can meet our energy needs now and in the future without

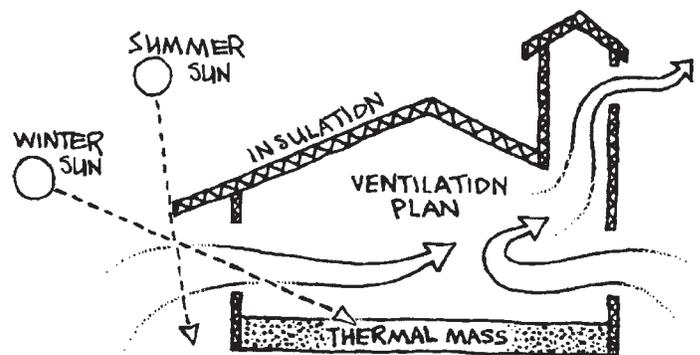
harming our environment or our health. Sustainable energy can also save money.

USING RENEWABLE ENERGY FOR YOUR HOME

HEATING YOUR HOME

● PASSIVE SOLAR ENERGY

Have you ever felt how hot it gets in a car on a sunny, winter day? The car feels hot because the sun heats it. The sun's rays can also heat your home. Passive solar energy does not use equipment to heat your home. Sunshine comes through your windows and heats the walls and floors inside your house. Windows in your home that face south allow sunshine in when the sun is low in the sky during the winter.



NATURAL HEATING & COOLING OF THE HOME Low winter sun through windows that face south help heat the home in the winter. Overhangs keep the high summer sun out, while windows allow cooling breezes through.

● WOOD STOVES AND FIREPLACES

Burning wood can be an earth-friendly, renewable source of heat. But the wood should come from dying or diseased trees, or trees that had to be cut down for other reasons. If wood is burned in the right type of stove or fireplace, it will not make much smoke. This means it will make less air pollution.

COOLING YOUR HOME

● SHADING WINDOWS

The windows that allowed the sunshine to heat your home in the winter need to be shaded in the summer to keep the heat out. A longer roof over these windows, called an overhang, can keep out the hot sun in the summer when it is high in the sky. You can also plant trees in front of these windows. Trees that shed their leaves in the winter are the best. One other way to make shade is to place an awning on the outside of the house, directly over the window.

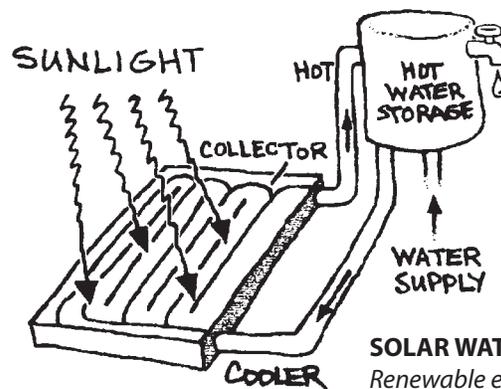
● THERMAL CHIMNEY

A thermal chimney happens when warm air rises to the top of tall spaces and cool air takes its place. To make a thermal chimney in a two-story house, open the first floor windows and a window at the top of the stairs.

DRYING CLOTHES

● CLOTHESLINE IN THE WIND

Hang your washed clothes on a clothesline instead of throwing them into an energy-guzzling dryer. You will be using free energy from the wind and sun to dry your clothes. The sun helps whiten and clean your laundry



SOLAR WATER HEATING

Renewable energy from the sun can be used to heat water for household use.

so you will not need harmful chemicals like bleach when you wash them.

HEATING WATER

● SOLAR WATER HEATERS

Water easily soaks up heat from the sun. A solar water heater uses a solar panel to heat water. Then the heated water is moved into the water tank in your home. A solar water heater can supply half or more of the hot water in your home.

COOKING WITH RENEWABLE ENERGY

● SOLAR COOKERS

A solar cooker works by focusing the sun's rays through one or two layers of glass and onto food that is placed in a box. You can make your own solar cooker that can heat simple foods like s'mores, hot dogs or nachos. You can also buy a solar cooker that can get as hot as the oven in your kitchen.

WATER PUMPING

● WINDMILLS

There are thousands of windmills used in Texas. Most of these windmills pump water

for animals on a ranch or farm. Windmills can be used to pump water for people, too.

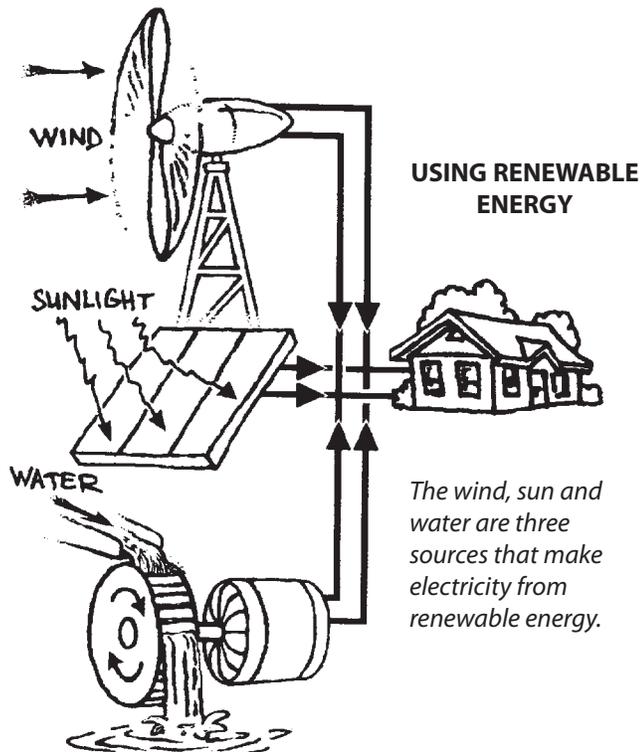
ELECTRICITY GENERATION THE RENEWABLE WAY

● **SUN**

Solar electric systems change sunlight into electricity. This electricity can be used in places that are not connected to power lines, like on a ranch far away from a city. It can also be used in places that are connected to power lines, like your house.

● **WIND**

Wind is a powerful source of energy. The power of wind can be seen in a hurricane or tornado. Wind energy can be collected with wind turbines. Wind turbines change the wind into electricity. The mountains of west Texas and the plains of the Panhandle are very windy. Windy areas like this are good places to have wind turbines.



● **WATER**

Using water to create energy is one of the oldest types of renewable energy ever used. Ancient Egyptians used water as a power source to move stone. The use of water for energy is called hydropower. Hydropower, or waterpower, has been used for grinding grains in gristmills. When early pioneers first came to the Texas prairie, a gristmill was one of the first buildings they built. A gristmill grinds grain into flour that was needed to make bread. Today hydropower is one of the cheapest ways to make electricity. Hydropower does not create air pollution. But sometimes dams can hurt plants and animals in the water and can make the water bad. Waterpower is a good renewable energy source, but we have to be careful to protect the animals and plants that depend on the water.

PLAYING & WORKING THE CLEAN WAY

● **ENERGY SAVING TOYS**

Many toys require batteries or electricity to make them operate. Look for solar-powered toys such as race cars and speedboats. Or choose toys where you have to supply the power, like a bike or a skateboard. Battery operated toys can be powered by special batteries that are re-energized in a solar-powered charger.

● **ENERGY SAVING TOOLS**

Do you mow the lawn at home? Using a manual push mower instead of a gasoline powered one is better for the environment. Manual mowers, trimmers and rakes use human power, which is renewable, and they cost less to buy and use. Solar flashlights and lanterns that can be re-charged, and portable solar showers and water filters are also good choices.

WATER PUMPING

- **WINDMILLS**

There are about 80,000 windmills operating in Texas. Most of these pump water for livestock, but windmills can be used to pump water for people as well.

PLAYING & WORKING THE CLEAN WAY

- **ENERGY SAVING TOYS**

Many toys require batteries or electricity to make them operate. Look for solar powered toys such as race cars and speedboats. Or choose manual toys for which you supply the power. Battery operated toys can be powered by reuseable batteries Re-energized in a solar recharger.

- **ENERGY SAVING TOOLS**

Mowing the lawn is more fun, and better for the environment, with a manual push mower instead of a gasoline powered one. manual mowers, trimmers and rakes use renewable human power and cost less to buy, operate and maintain. Solar rechargeable flashlights and lanterns, portable solar showers and water purifiers are also good choices.

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 1-800-531-5442 ext 31796. Ask about our free Teacher Resource Guides and CD available to teachers and home schoolers.

ON THE WORLD WIDE WEB:

solstice.crest.org

www.nrel.gov

www.eren.doe.gov

BOOKS:

THE PASSIVE SOLAR ENERGY BOOK

Edward Mazria, Rodale Press, 1979.

SAVING ENERGY

Jacqueline Dineen, Raintree Steck-Vaughn, 1995.
Grades 3 through 6.

RENEWABLE ENERGY

Jacqueline Dineen, Raintree Steck-Vaughn, 1995
Grades 3 through 6.

THE PASSIVE SOLAR HOUSE/USING SOLAR DESIGN TO HEAT AND COOL YOUR HOME

James Kachadorian, Chelsea Green Publishing Co. 1997.



RENEWABLE ENERGY
THE INFINITE POWER
OF TEXAS

InfinitePower.org

Financial Acknowledgement This publication was developed as part of the Renewable Energy Demonstration Program and was funded 100% with oil overcharge funds from the Exxon settlement as provided by the Texas State Energy Conservation Office and the U.S. Department of Energy. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

State Energy Conservation Office

111 East 17th Street, Room 1114
Austin, Texas 78774
Ph. 800.531.5441 ext 31796
www.InfinitePower.org

Texas Comptroller of Public Accounts
Publication #96-808 (08/06)