

Energy Stewardship Guide for Congregations

This Guide has been prepared by the Energy Stewardship Task Force of the National Council of Churches to help congregations of any faith use less energy in their facilities for worship, fellowship and education. It can also help other faith-based institutions reduce their energy use and costs. The Guide suggests some basic steps to conserve energy that do not require any special knowledge or significant expense. It describes the kind of assistance you can expect to receive from a professional energy consultant. It suggests a number of other avenues and resources for conserving energy. There is also a list of professionals who have worked successfully with congregations on energy stewardship projects.

WHY USE LESS ENERGY?

God has called people of faith to help restore the integrity of creation. Every time you switch on a light, a computer, or an air conditioner, you use electricity. Even when you are not using electricity directly, the building you are in is apt to be using energy. Our society's use of energy is causing many problems for human beings and the non-human aspects of creation. Among the most serious problems are changes in the earth's climate due to burning fossil fuels in electric plants, buildings, and vehicles.

As God's people, we have a special responsibility to participate in God's healing of creation by using less energy in the places we dedicate to worship and service. Using less energy also saves money, which is why many businesses and corporations have invested in energy efficiency and conservation. Religious institutions should consider this too, both to protect God's earth, and so money spent now on energy can be used for God's service.

Finding the time and resources to take responsible action toward restoring the integrity of creation is always a challenge. Some of the measures discussed here are relatively simple. Others require careful investigation to decide if they are appropriate, and careful planning to undertake them. Energy stewardship is a continuing responsibility. By taking one step at a time and being persistent, the benefit to your congregation from knowing you are acting as good stewards of God's creation by using less energy will be significant.

Energy stewardship is especially important if your congregation is planning a renovation, addition, or new building. Any project of this kind involves a major investment in design and equipment which can be expected to last for many years. We now know that energy costs will rise and energy conservation will become increasingly important in the foreseeable future. Thus good stewardship requires that energy conservation be a primary objective as you select an architect and begin to consider your options and opportunities.

HOW TO GET STARTED

Appoint a team of three to seven people to lead your congregation in making a commitment to good energy stewardship. An effective team may include members of the

building committee, the finance committee, the social ministry committee, the religious education committee, a pastor, custodian, and other volunteers.

The team needs individuals who are mechanically inclined, who are familiar with accounting and church finances, and who are detail-oriented. The team also needs individuals who are open to change and excited by possibilities, and those who can inspire, teach, and motivate others. These qualities are not all apt to be found in the same person. In most successful projects, one highly committed member of the team accepts primary responsibility for leadership.

Your congregation may have members already knowledgeable about energy conservation and efficiency through their professional or personal interests. Those who work in building construction and related fields can be especially helpful if they are attuned to these issues and familiar with relevant technologies.

The team should meet regularly to set goals, assign responsibilities, and monitor progress. Its plans may include ways of educating and involving the congregation, including its youth and children. Energy stewardship involves people more than buildings. It relates to everything we do, and to our children's future.

If energy stewardship is a new idea for your congregation, there are a number of basic steps to consider immediately. Once you have attended to these, the next step is to have a professional energy audit of your building(s), and to develop plans based on the energy consultant's report.

If a major building project is being planned, the team should inform itself about options to consider in new construction and report to the building committee before prospective architects are interviewed.

BASIC STEPS TO REDUCE ENERGY USE

These involve attending to aspects of your building's lighting, heating and cooling, water heating, and refrigeration that do not require special knowledge, technical expertise, or significant expense.

Find Out How Much You Use

Many congregations pay little attention to how much electricity, gas, fuel oil, and water is actually used, even though the utility bills provide this information every month. Keeping track of how much you use on a regular basis is one of the best ways to educate members of the congregation about the problem and motivate them to do something about it. It's the only way to know if your energy stewardship projects are succeeding.

Lighting

Replace incandescent bulbs with compact fluorescent bulbs. They last at least 10 times longer than incandescent bulbs and use 1/4 the energy. Newer models are less expensive and easier to use than the earlier ones. The more a light is used, the more important it is to switch from an incandescent to a fluorescent bulb. Replace incandescent bulbs in exit signs with light-emitting diodes (LEDs). Because these signs run continuously (8,760 hrs./yr.), this is one of the most effective ways to cut energy use and costs. Use only what you need. Educate congregation members to turn off lights when they leave rooms. Make use of daylight whenever possible.

Sell compact fluorescent light bulbs (CFLs) as a fundraising project for your youth, service, or mission group. The Church of the Brethren sells CFLs in bulk at a discount, with promotional materials, for resale as a fundraiser. For information about the project call the Church of the Brethren at 800/323-8039 or visit <http://www.brethren.org/genbd/BP/CFL/index.htm>.

Heating and Cooling

Have a specialist inspect and maintain your system annually. Be sure to change or clean the filters twice a year. Set back the heat and turn off air conditioning when space isn't used. Contrary to some myths, it's the easiest way to save energy and money. Seven-day, programmable thermostats work well and are simple to use. In winter, set the thermostat to 55 degrees F whenever space isn't used, or as low as possible without risk of freezing any pipes.

Will lower temperatures in the sanctuary damage the organ? The Master Organ Builders in Britain and Associated Pipe Organ Builders of America say temperature as low as 45 degrees F will not cause damage. At lower temperatures relative humidity is higher, so there is actually less risk of damage due to prolonged periods of very low humidity. The temperature around the pipes must be raised to the level at which the organ was tuned in order for it to play in tune.

Caulk and weather-strip around doors and windows, where service lines enter the building, and in gaps between wood and masonry in the basement and around a chimney. A 1/8-inch crack running 4 feet along the bottom of a door is comparable to a four square inch hole in your wall. If you feel drafts around doors and windows, look for places where heated air is escaping, like open chimneys, hatchways to crawl spaces, or ventilation systems that work well in the summer but should be closed in the winter. Close curtains at night in the winter and during the day in the summer to keep heat where you want it.

Hot Water

Turn the water heater down to 110-120 degrees. If you think health regulations require higher temperatures, check again. It's more common for regulations to require a setting no higher than 120 degrees to prevent scalding, and most sanitizing dishwashers heat their

own water. Wrap your water heater with a three-inch insulation blanket if it is more than five years old.

Refrigeration

Refrigerators are one of the most costly energy-users, and they are more energy efficient full than empty. Try not to use more refrigerators than are really needed, and be sure they are operating properly. Make sure there is adequate clearance - one inch on each side and three inches in the back. The door gaskets need to be in good condition. Replace them if a dollar bill easily slips out of the closed door.

Consider unplugging electric drinking fountains. In temperate climates, water from pipes running under ground will about 60 degrees which should be sufficiently cool. Disconnect the ballast to the lights inside soda machines.

Encourage members of the congregation to help reduce energy use by publicizing your goals, reporting on progress, and displaying your electric and fuel invoices where all can see them.

THE NEXT STEP

Have an energy audit by a professional energy consultant. An energy audit of your building(s) will assess the condition of the building's tightness, and the functioning of its heating, cooling and electrical systems, and major equipment. There are a number of nonprofit organizations and for-profit companies that provide energy consulting to congregations. You should also contact the US EPA Energy Star Congregations program at 888/STAR-YES, or <http://www.epa.gov/congregations>. They will send you their Congregations Guidebook on Energy Efficiency at no cost, and can give you a list of Energy Service Companies, called ESCOs, that are Energy Star certified. In addition, you should contact your local utility. They may offer or be able to direct you to no cost or low cost energy audit services.

Recommendations based on an audit may include:

- ways to purchase electricity or fuel at a lower cost;
- installing new controls for lights, heating and air conditioning, or other equipment;
- converting fluorescent light fixtures from larger T-12 tubes (12/8" diameter) with magnetic ballasts to smaller T-8 tubes with electronic ballasts;
- reconfiguring the heating and/or cooling system to improve efficiency;
- replacing existing equipment or appliances with more efficient ones;
- adding insulation or modifying windows to reduce heat transfer.

An energy audit is a significant undertaking for which the congregation should expect to pay. While the fee may seem high, almost every congregation finds that an audit quickly pays for itself in reduced energy costs. Some energy consultants may offer to do a "walk-

through" inspection in order to estimate or determine the cost of a more thorough audit. The report from an energy audit will serve as a basis for developing a plan to invest over time in energy conservation and efficiency. Your energy consultant may be able to help arrange financing for energy conservation projects, or know of a contractor who is willing to be paid through savings in energy costs. Many denominations have funds to assist congregations with facility improvements through grants or loans. This may include the cost of an audit and investments in energy efficiency and conservation. In addition, many communities have programs to assist nonprofit organizations with energy upgrades.

OTHER PATHS TOWARD GOOD ENERGY STEWARDSHIP

When replacing an appliance or other equipment, be sure to buy an energy efficient model and recycle the old one. This is especially important for a refrigerator, hot water heater, heating and cooling equipment, computer or copier. To get reliable information on energy efficiency before making a purchase, look for Energy Star labels, which were developed by the EPA to identify more efficient models.

Talk with a plumber about replacing standard toilets with low flush toilets. Although water consumption may seem unrelated to energy use, a lot of energy is required to pump, purify and deliver water and then to treat it after it is used, and good stewardship of water resources is also important in and of itself.

Educate members of the congregation about ways to use less energy at home and why using less energy is important. The congregation is apt to use much more energy in its households than in its place of worship. If the basic steps described here are taken in homes, it would have an even greater effect on reducing energy use. Help people of all ages understand the effects on the environment of producing and using energy, and they will see why conserving energy is so important.

Initiate action to reduce energy use in your denomination's institutions. Denominational offices, schools, hospitals, retirement communities and nursing homes use much more energy than most houses of worship because they are larger and used intensively for longer periods of time. Members of your congregation may have influential relationships with some of these institutions. They could inform the institution's governing board or building administrator about the Energy Stewardship Guide and promote its use.

Buy a renewable electricity product, block, or certificate when it becomes available. Renewable electricity comes from solar, wind, lower impact hydro, or biomass generating facilities. In states where customers can choose their electric supply company, buying a renewable product means that electricity is delivered to the regional distribution system based on the amount you use. Buying a block or certificate insures that a specified amount of electricity from renewable sources will be delivered to the distribution system.

The nonprofit Center for Resource Solutions has developed a Green-e label based on standards developed for local markets with representatives of electric supply companies,

government, and consumer and environmental NGOs. The Green-e label assures that you are directly or indirectly promoting investment in new renewable electric generating capacity.

At this time renewable electricity costs more than conventional electricity to produce, so it is apt to cost somewhat more to buy. Most congregations can easily offset the additional cost by taking some of the basic steps to reduce energy use described in this Guide. But remember, the cleanest energy is the energy we don't use.