



# FAITH COMMUNITIES GO GREEN

LOWER YOUR  
FACILITIES  
ENERGY BILL



# Lower Your Facilities Energy Bill

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Would you like to spend less of your House of Worship money on gas and electric bills and more on programs? Here are 3 easy steps to achieve this goal.

## **Step 1. Do-It-Yourself projects and tips.**

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DIY projects to lower your energy consumption can be easy and have a very short payback period. What do we mean by payback period? Let's say you spend \$100 on energy efficiency measures and in 9 months you save \$100 on your utility bills. The payback is 9 months. It's that simple! After that, all the money you save on your utility bills can instead go towards programs. Generally, if DIY, these projects have a payback period of less than a year.

Air sealing can encompass the entire envelope of your building from weatherstripping drafty doors and windows to sealing electrical and plumbing holes in exterior walls to sealing lighting fixtures and wiring in your attic. If the top of a lower floor's walls are open to the attic (i.e., you can see inside the lower wall), seal those too. Most of these jobs can be accomplished using cans of expanding foam. For larger gaps, staple down thin foam board and seal around the board seams. Note that insulating the attic should only be done by professionals.

Crawlspaces with dirt floors often have humidity problems that make your air conditioning work harder. Covering the dirt floor with 6-mil polyethylene plastic sheeting fixes this problem. Overlap and tape all seams by 12 inches and run the sheet at least six inches up the crawlspace walls.

Sealing seams in your ductwork can save you money because about 20 to 30 percent of the air that moves through the duct system is lost due to gaps, causing your building to be heated and cooled inefficiently. With some Mastic and/or aluminum tape, this work is easy to do.

## **Step 2. Buy electricity from renewable resources.**

A great option for houses of worship that are interested in reducing their carbon footprint is to purchase Green (i.e., renewable) electricity. A carbon footprint is the total amount of greenhouse gases (including carbon dioxide and methane) that are generated by our actions. This is one of the most significant actions your congregation can take to reduce your environmental impact.

Green electricity used to be far more expensive than brown electricity, but that's not true anymore. In most cases, the difference in price is around 0.01 cents per kWh, which for most small-medium sized buildings is less than \$100 per year.



When you buy Green electricity, the electricity that is delivered to your building won't be any greener. Your building will still receive electricity from Ohio's power grid, of which only 5% is generated from renewable sources. The difference is where your money goes. When you buy Green electricity, your money will purchase REC's (Renewable Energy Credits) that will help pay for such things as a wind turbine installation or a solar panel installation. So, while this action may not make your building's electricity any greener, it will help make our nation's overall electricity supply greener.

One warning! There are electric suppliers who are unethical. They offer you a great rate but fail to mention that it is a multi-year contract with an adjustable rate and that the rate typically goes up significantly after the first year.

Michael Forrester, Director of the City of Cincinnati Department of Environment and Sustainability, recommends the Energy Choice website to find a competitive rates with no surprises. Though the site is managed in Ohio, many of the utility companies are national. Not all source their energy from renewable resources. Do your research since all possible companies are listed. [Visit their site here.](#)



### **Step 3. Get an energy audit.**

Though you have taken steps to lower your energy bills and your carbon footprint, you would like to save more money and continue working to protect the environment.

Buildings used by the faith communities present unique circumstances. Much of the building area is not used heavily during the week. Some buildings were built before electricity consumption was a priority, resulting in cathedrals with extremely high ceilings and walls constructed with no insulation.

An energy audit is a thorough audit of the entire building to measure how much energy is used daily, monthly, and yearly, to understand the whole picture of the building's energy use. Audits present opportunities to save money by showing ways to reduce energy consumption. An energy auditor looks at all the building systems (from building envelope to lighting to mechanical to plug loads) and other factors for saving operational dollars and energy.

For example, it is expensive to replace incandescent light bulbs in high ceiling cathedrals due to the cost of hiring a company that installs the scaffolding needed to replace the bulbs once or twice each year. However, when you compare that cost to replacing the old bulbs with LED bulbs, you may not save money on the energy use from lighting the space, but you will save money on maintenance costs because the LED bulbs have considerably longer lifespans. There are LED lights that can last for 20,000 to 50,000 hours! This means you may not need to get back up there to replace bulbs for years.

An energy auditor will create a map of priorities, based on cost vs. the return on investment.

Before you get an audit, you should know that there are various levels depending on the amount of detail. Energility of Columbus, Ohio, explains the 4 levels of energy audits they use to build an energy plan including feasibility of site generation of renewable energy (See [Energility.com](http://Energility.com)). Price of an audit depends on the building footprint size and the audit level.

**Preliminary:** First step is a quick look – a review of the building utility bills, brief walk through of the building, and conversational review of energy savings opportunities.

**Level 1:** Review of the building utility bills, 1-hour walk through of the building, and 3–5-page report of energy and operational savings opportunities.

**Level 2:** Comprehensive review of the building operations, full day(s) walk through of the building, metering, and recording of system metrics (lighting levels, equipment efficiency, etc.), detailed report of energy and operational savings with financial analysis.

**Level 3:** Engineering grade audit includes Level 1 and Level 2 elements plus design and development of savings measures.

There is more guidance about energy audits in the Resource Section.

