ENERGY STAR® Action Workbook for Congregations

February 2014

EPA United States Environmental Protection Agency

ENERGY STAR® is a U.S. Environmental Protection Agency program helping organizations and individuals fight climate change through superior energy efficiency. Learn more at energystar.gov/buildings.

About the Workbook

The United States (U.S.) Environmental Protection Agency's (EPA) ENERGY STAR® program and the U.S. Department of Energy's (DOE) Building Technologies Office (BTO) collaborated through the National Renewable Energy Laboratory's (NREL) Commercial Buildings Research Group to create this workbook.

This workbook is intended to serve as a resource and planning guide for clergy, staff, and laypersons of houses of worship who want to increase the energy efficiency of their facilities by implementing realistic and cost-effective energy improvement projects. It is available with the accompanying appendices at www.energystar.gov/WhiteHouseEnergyStewardship.

Acknowledgements

First and foremost, the authors thank the faith community and worship facility representatives, owners, and operators who volunteered their facilities for the data collection effort that preceded the creation of this document. This workbook would not have been possible without them. The authors would also like to thank the Rev. Mitch Hescox, President and CEO of the Evangelical Environmental Network (EEN), and Ms. Jennifer Haglof from the National Association of Evangelicals (NAE) for their help in initiating this project and bringing the worship facilities together. Additionally, the authors thank the member organizations of the National Religious Partnership for the Environment: Coalition on Environment and Jewish Life (COEJL), National Council of Churches (NCC), the U.S. Conference of Catholic Bishops (USCCB), and the Evangelical Environmental Network (EEN) for their review and comment on the original draft document. Other key contributors include Interfaith Power and Light (IPL), GreenFaith, Catholic Coalition on Climate Change (CCCC), and the Hindu American Seva Communities.

Disclaimer

All energy, water, and monetary savings listed in this document are based upon average savings for end users and are provided for educational purposes only. Actual savings will vary based on energy, water, and facility use, national weather data for your locality, energy prices, and other factors. Greenhouse gas (GHG) emissions are calculated based on emission factors reported to the U.S. EPA by the electric utility provider serving your ZIP Code. Data referenced in this document is provided by the U.S. EPA and the U.S. DOE's NREL.

Table of Contents

A Message from the Administrator 1
Introduction 2
Step 1. Make a Commitment to Saving Energy 5
1.1 Advocate for Energy Efficiency 5
1.2 Why Energy Efficiency is Key to Your Stewardship Goals 5
1.3 Sell Your Project 6
1.4 Create a Stewardship Team 9
1.5 Checklist - Make a Commitment 11
Step 2. Assess Performance 12
2.1 Understand Energy Benchmarking 12
2.2 Checklist - Assess Performance 15
Step 3. Set Goals 16
3.1 Evaluate Priorities and Set Goals 16
3.2 Prioritize Your Goals 17
3.3 Checklist - Set Goals 17
Step 4. Create an Action Plan 18
4.1 Walk Through the Building 18
4.2 Sure Energy Savers 18
4.3 Consider an Energy Audit 31
4.4 Find Funds 32
4.5 Checklist - Create an Action Plan 33
Step 5. Implement the Action Plan 34
5.1 Create a Communication Plan 34
5.2 Manage the Project - Implement the Energy Efficiency Upgrades 35
5.3 Checklist - Implement the Action Plan 36
Step 6. Evaluate Progress 37
6.1 Manage Maintenance and Track Progress 37
6.2 Measure and Verify Savings 37
6.3 Checklist - Evaluate Progress 38

Step 7. Recognize Achievements 39
7.1 Observe and Share Your Savings 39
7.2 Receive Recognition for Your Energy-Efficient Congregation 39
7.3 Checklist - Recognize Achievements 41

A Message from the Administrator

To America's Faith Community:

We at the U.S. Environmental Protection Agency are privileged to serve you and appreciate that we share the mission of protecting human life and health with so many faith traditions. This shared purpose includes environmental stewardship and the responsibility to protect the health of the most vulnerable among us, including our children and our senior citizens. Together, we are working to ensure clean air to breathe, safe water to drink, and healthy land to call home—for everyone. But we have a lot of steep challenges ahead—including chemical safety, water quality, air pollution and, of course, combating climate change.

With more frequent and extreme weather events, the harmful impacts of climate change are already upon us today—threatening families and local economies. We must act now to avoid its most devastating consequences—we owe it to our children to leave them a safer, healthier planet. In this effort, the faith voice is critical. There is none more credible than the religious community to speak to our moral obligation to act on climate change.

When President Obama unveiled his Climate Action Plan in June 2013, he outlined commonsense steps we can take to address climate change, such as cutting carbon pollution, protecting cities and towns from climate impacts we face today, investing in clean energy and wasting less energy in our homes and neighborhoods – including our places of worship. The plan reaffirms his belief, stated in his second inaugural address, that America must lead the transition toward a sustainable energy future to "preserve our planet, commanded to our care by God."

In the President's Climate Action Plan, EPA is charged with working with industry and state and local officials to develop commonsense carbon pollution standards for our largest source—power plants. With a shared mission to protect human health, America's faith community has strongly supported EPA action. However, the most significant action individual congregations working at the local level can take is simply to reduce energy waste and practice sustainability. Energy efficiency is one of the quickest, most cost effective ways for congregations to cut carbon pollution.

This ENERGY STAR *Action Workbook for Congregations*, along with ENERGY STAR strategic energy-management tools, training and technical support, can help your congregation save money and prevent pollution. During the past 20 years, the EPA has learned that most congregations can cut energy use, cut costs and cut emissions by about 30 percent from a typical baseline, often with no- or low-cost measures. This is money you can return to your ministry and mission, and in the process you will meet or exceed the President's goal for 20 percent energy savings in America's buildings. We invite your congregation to become an ENERGY STAR partner and join us in the fight against climate change today—to secure a safer, healthier, more prosperous future for generations to come.

Sincerely,

Gina McCarthy, Administrator
U.S. Environmental Protection Agency

Introduction

Energy efficiency is the fastest, cheapest, and largest single resource solution for simultaneously saving energy, saving money, and preventing GHG emissions. Through the market-based, voluntary, ENERGY STAR program, the U.S. Environmental Protection Agency (EPA) is helping the commercial building sector improve energy efficiency where Americans worship, work, shop, play, and learn. These efforts have helped create jobs, save money, and contribute to cleaner air and the protection of human health. These and future efficiency efforts are of critical importance, as commercial buildings are responsible for nearly 20 percent of all energy consumption in the U.S.

Thousands of American building owners and operators, including major corporations, state and local governments, school districts, universities, hospitals, and congregations, are already using ENERGY STAR tools and resources to realize significant energy and dollar savings, all while preventing GHG emissions. This free, online "ENERGY STAR *Action Workbook for Congregations*" was developed to help congregations like yours use these tools and resources to strengthen financial and environmental stewardship.

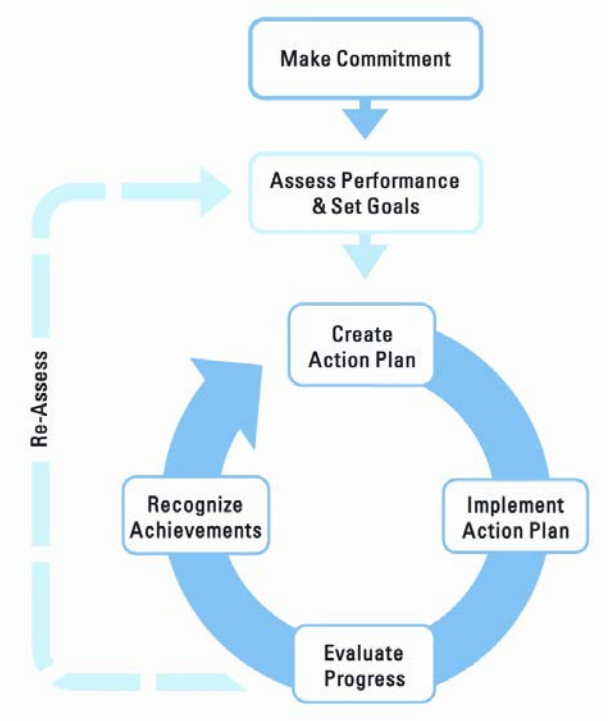

Figure 1. ENERGY STAR Guidelines for Energy Management

This action workbook walks you through the 7 steps of the proven ENERGY STAR Guidelines for Energy Management (Figure 1) tailored for worship facilities, and provides a strategic approach to implementing projects that will improve your property's energy performance. Most of the steps described in the workbook do not require much time or money, but are important in determining which actions make the most sense for your congregation. Often, simple operation and maintenance improvements requiring little or no investment can achieve significant savings. The ENERGY STAR Guidelines for Energy Management detailed in this workbook are summarized below. Let's get started!

Step 1: Make a Commitment to Saving Energy

Congregations of all sizes can make a commitment to save energy. Start by advocating ENERGY STAR partnership among the leadership of your congregation. Building improvement projects are more successful when all decision-makers feel confident about the expected results and have made a commitment to the planned actions leading to those results. More than 85% of Americans recognize the blue ENERGY STAR label that distinguishes not only consumer products, but homes and buildings meeting strict energy efficiency specifications—including worship facilities like yours.

Step 2: Assess Performance

Before starting any project, you need to assess your current energy performance to see how you compare. This is called "benchmarking." ENERGY STAR Portfolio Manager® is the EPA's free, online tool that can be used to benchmark your worship facility's baseline energy use, costs, and GHG emissions. Tens of thousands of active password-protected account holders are currently tracking the energy and GHG emissions performance of hundreds of thousands of buildings in Portfolio Manager. Houses of worship with performance ranked among the best are eligible for national ENERGY STAR certification.

Benchmarking your energy performance with Portfolio Manager generates EPA's 1 – 100 ENERGY STAR score. This score is the key to measuring savings. Your benchmark provides a baseline from which you can plan, manage, and track improvement projects toward success. **You can't manage what you don't measure.**

ENERGY STAR Portfolio Manager helps you track and assess energy and water consumption in your property. Enter consumption and cost data into your Portfolio Manager account to benchmark property performance with an ENERGY STAR score, assess energy management goals over time, and identify opportunities for savings and recognition.

Step 3: Set Goals

Congregations decide to focus on energy efficiency for a variety of reasons, including lowering utility bills, reducing energy consumption, and reducing pollution that is harmful to human health and the environment. Virtually all faith traditions teach stewardship of the earth and of its life-supporting natural resources. Portfolio Manager can assist in setting and achieving realistic savings goals for your congregation.

Step 4: Create an Action Plan

Now is the time for action in your house of worship. Step 4 highlights Sure Energy Savers—actions that many congregations can do relatively easily and with little or no expense. Typically, there are additional savings opportunities that are more clearly identified after the Sure Energy Savers are implemented. The Appendices to this document include worksheets to help with project action planning and decision making.

Step 5: Implement the Action Plan

This step includes implementing the energy efficiency plan you developed in Step 4, and then communicating the expected benefits and outcomes to the other members of your congregation. If larger upgrades are part of your plan, this may be the time to consider hiring a contractor; however, don't overlook the skilled and professional time and talent in your own congregation. Additionally, consider the valuable contribution your youth group can make in implementing the plan in the worship facility and in taking those same skills into people's homes, while gaining a deeper understanding of your faith tradition's teachings on stewardship and giving of themselves.

Step 6: Evaluate Progress

After the planned work has been completed, ensure that your congregation will sustain improvements in property operation and maintenance practices, maintain any new equipment and systems at peak performance, and track your energy and dollar savings. ENERGY STAR tools support your continual improvement over time. It is important to measure the outcome of your planning, labor, and any investments to ensure that you are making the most of your time and money for the long-term. If you begin by assessing your baseline performance in Portfolio Manager, it is easy to generate and track improvements with your 1 – 100 ENERGY STAR score and generate custom reports on your worship facility's progress.

Step 7: Recognize Achievements

Step 7 is the time to communicate your savings and accomplishments both internally and externally. After you've invested in improvements and quantified your energy and cost savings and your pollution reduction, it's time to celebrate the benefits in your community! Certify your facility as ENERGY STAR and share your story to educate and inspire other congregations in your community and your denomination.

Welcome to the ENERGY STAR *Action Workbook for Congregations*!

Step 1. Make a Commitment to Saving Energy

1.1 Advocate for Energy Efficiency

The prospect of increasing the energy efficiency of your worship facility may seem daunting at first. There may be concerns within the congregation that new technologies won't work as well as the old ones, or that they will change the appearance of your worship space. There may be doubts as to the validity of the energy and dollar savings expectations of your group. There may disagreements as to priorities, such as investing in costly high-profile improvements before low-cost/no-cost improvements. The appropriate sizing (and therefore the cost) of heating/air-conditioning or solar, or the payback on new windows are all highly dependent on the baseline level of efficiency. The first step toward improving your worship facility's energy performance is to educate the decision-makers that cost-effective, sustainable improvement of your building is achievable and in the congregation's best financial interest. Improving your building's energy efficiency will recover resources that your congregation can use to focus on its main missions. This section will explain:

- How energy efficiency relates to stewardship
- How to sell your project to decision makers and congregational members
- How to create a stewardship team.

1.2 Why Energy Efficiency is Key to Your Stewardship Goals

Faith traditions teach the importance of stewardship of natural and financial resources. Below are just a few of the important potential benefits of strategic and cost-effective energy stewardship:

- Save money that can be redirected to the basic faith-inspired mission of the congregation
- Reduce energy related pollution that threatens human life and health directly, and indirectly through damage to life-supporting ecosystems
- Conserve natural resources for future generations
- Improve the overall comfort and appearance of your worship space
- Extend the useful lifespan of your worship facility and its equipment
- Increase the asset value of the facilities owned by your congregation
- Support the credibility of capital campaigns by demonstrating that stewardship of funds is "practiced as well as preached"
- Improve the credit-worthiness of your congregation for financing new construction or remodeling
- Engage the time and talents of congregation members, especially youth groups
- Serve as a model of energy and financial stewardship for the homes and businesses of congregation members.

Money and Caring for Sacred Spaces

Congregations may not be concerned about the resale value of the worship facility, as they expect to inherit and bequeath care of the building over generations. However, the value of the building is an important factor in the congregation's financial strength when looking at funding or borrowing for expansion, remodeling, and maintenance. The vitality and diversity of the modern U.S. faith community also means that worship facilities are, in fact, often sold when congregations outgrow them. The growing incidence of repurposing commercial facilities into houses of worship may also increase the turnover in ownership.

The People: Stewarding the Stewards

Without the congregation of people, an empty, unused worship facility would be just a building. The living congregation brings together skills, knowledge, and productive passion. Many people can contribute to stewardship through their time and talents. Some members may bring professional engineering, architectural, or financial training; others may be skilled carpenters, gardeners, painters, electricians, or plumbers, or just be handy enough to get the job done right at no cost to the congregation. Any number of members, especially youth, may be looking for opportunities to contribute to the congregation and will be attracted to hands-on environmental stewardship.

When a congregation becomes serious about reducing energy waste, saving money, and preventing pollution, an inevitable question arises: What can members do in their own homes and businesses? Can't they also save money with energy efficiency? Yes, of course they can! ENERGY STAR is a resource for information specific to improving residential energy efficiency. Additionally, your congregation can hold classes to help members take the energy and money-saving knowledge and skills learned from your project home with them. Some congregations may want to hold friendly energy-saving competitions among members or with other local worship facilities. Small prizes (like CFL or LED bulbs) and recognition can be fun and can stimulate serious energy savings.

1.3 Sell Your Project

Introducing energy efficiency to your whole congregation is key to a successful energy project. It is essential that the leadership of your worship facility understand the importance and level of involvement the project will entail. In addition, be sure the congregation members are excited about the project. Promoting and selling the project to the members of the congregation up front will help the process run more smoothly and give confidence to those implementing it.

Talk to Decision Makers

In most congregations, one of the first and most important steps in implementing a new energy efficiency project is gaining the approval of the governing board and key staff. These positions may include the congregational governing board, facility caretaker, business administrator/treasurer, buildings and ground committee, and green team (if you have one). It is important that the facility caretaker and business administrator/treasurer understand that the new push for energy stewardship is in no way critical of past efforts. On the contrary, the project will offer a new level of recognition for any past efforts and for support of improvements they would likely have been implemented had the time, technical support, and finances been available. These people can be your strongest allies, and they will need to provide critical information on energy costs and the physical property as well. It is often better to ask for advice on an idea before offering a full proposal. Here are some key points that can help ensure success as you discuss your proposed project:

- **Explain the overall project in detail.** Before talking with those responsible for making decisions at your property, plan how you are going to present and advocate a change in operation and/or maintenance processes, property or equipment, and energy-consuming behavior. Make sure you are prepared to answer the following questions:
  - ✓ *Where do you notice room for improvement in your building's energy use?* These observations can address technology, infrastructure, and energy consumption habits.
  - ✓ *What benefits do you see the congregation gaining from an improvement in the building's energy use?* Consider immediate and long-term financial benefits, maintenance costs, personnel time and costs, convenience, and social benefits.
  - ✓ *What types of costs do you expect to encounter?* Consider financial, maintenance, personnel, and convenience costs.
  - ✓ *Who will be responsible for monitoring and managing the progress of your property's energy improvements?* Include all the potential parties.
- **Emphasize the savings.** The point in doing an energy efficiency project is stewardship, not only of the earth, but of your worship facility's resources and assets. Making smart choices on energy efficiency can save your congregation substantial money on a continuing basis.
- **Tailor the project to your worship facility.** An energy project is unique to your own congregation's needs, opportunities, and desires.
- **Highlight that you have many of the skills already on-site.** As you will see in this workbook, you can take advantage of the skills and abilities of your congregation members to do much of the needed work to improve the energy efficiency of your property.

Promote Energy Efficiency to Your Congregational Members

The congregation is not only the heart of the worship facility but also the main financial provider through donations and offerings. It is vital to the overall success of your project that the membership be involved in bringing it to fruition so that they have a stake in the outcomes. Although some congregants will be familiar with energy efficiency, not all will understand why it is important for the worship facility. Therefore, education is imperative. Here are a few key ways to get buy-in from your congregation:

> ***Ohev Sholom**, the first synagogue in the country to earn ENERGY STAR certification, focused on low/no cost efforts to improve energy efficiency. The key to the Washington District of Columbia-based synagogue's success was a focus on staff and congregant education and dedication to improving building operations.*

- **Highlight environmental stewardship, along with financial stewardship, as part of the religious service.** Many religious leaders have never spoken to their congregation about stewardship of the earth and its relation to religious doctrine, despite clear guidance within most faith traditions of its importance. People increasingly understand the impacts on human life and health—before birth and throughout life—of pollution such as mercury, carbon dioxide, particulate matter, and others.
- **Explain the project.** Don't hesitate to explain the project to your congregation. They will probably be pleased with efforts to improve the stewardship of your facility resources and to create a safer, healthier, and more comfortable place for worship.
- **Use multimedia.** Whatever type of multimedia is used in your worship service, it can be tailored to show the importance of environmental stewardship to human health and wellbeing. Whether it is done through skits, videos, songs or scripture readings, caring for the earth can be a recurring theme. Ask your youth group for help with social media communication and watch your message take off!
- **Provide educational materials.** ENERGY STAR has a great deal of information on general energy efficiency that you can use to educate your congregation, including resources on strategy, products, and equipment, and for building your own friendly competition and other materials to support your work.
- **Involve the congregation.** An energy project usually needs to be implemented from the top down, but the whole congregation can be involved. Different age groups can sign up to help implement various phases of the project that are appropriate, such as fundraisers, youth projects, and weekend work days.
- **Provide progress updates.** To create an enduring project, you need to update the congregation on its progress. How much money has the congregation saved on utilities? How have the saved funds been used to better the congregation? How have the efforts of all those involved contributed to improving the environment?

1.4 Create a Stewardship Team

Successful energy efficiency projects are tailored to individual congregational culture and resources. It is important to make these projects your own by taking advantage of existing resources or individuals who may already be undertaking efficiency efforts. Behind most successful energy efficiency projects lies a core team of dedicated individuals. For most congregations, two to three people may be the core of the stewardship team, while for larger congregations it could be five to 10 people. A single individual may be the full "team" for a very small property, and may simply need to take advantage of the skills of other members. A small group can reach consensus and start working quickly.

Regardless of the size of your congregation or of the property, the key to creating an effective team lies in finding enthusiastic people who will share the workload according to individual strengths, yet band together to overcome larger issues that may arise.

***Plantation Baptist Church** in Plantation Fla. was the first worship facility to earn the ENERGY STAR. Much of the energy savings at the facility is due to church staff managing energy onsite. For example, the church deacons are responsible for adjusting thermostats and turning off the HVAC units when not in use. Says Pastor Tom Hunter, "Our energy stewardship was motivated by our desire to obey the Word of God. A steward is someone who manages another's resources. We use the slogan 'Not wasting the Lord's money' to spearhead our energy management."*

Who should be Included in the Core Team?

Several key positions and people should be represented in the core team. Figure 2 describes potential members for your Core Team and their associated roles and responsibilities. One person may have skill sets to fill multiple roles, but care should be taken not to overburden anyone. Because of congregational differences, people with key skills may have many different titles or no title at all. In many cases, individuals may be volunteers from the congregation. The roles described are intended only to identify and describe the key skill sets, but if titles are an important part of your organization, feel free to use them.

Recommended Core Team Members Roles and Responsibilities	
Member	**Role / Responsibilities**
Team Leader	The role of the team leader is to spearhead the project, assemble a strong team, and organize the team's efforts. This person is instrumental at getting the project off the ground and provides leadership throughout. The team leader should be able to clearly communicate the purpose of the project, attract other team members, and should command respect and trust throughout the congregation.
Financial Representative	The financial representative should be familiar with the congregation's finances. This person should understand any financial constraints, the long-term plans and goals of the congregation, and should be able to communicate the project findings to the rest of the financial group or council. The financial representative should also take the lead in planning the project budget and securing funds, in conjunction with the congregation's treasurer or financial/accounting department.
Facility Operator/Caretaker	The facility operator or caretaker should understand the operations and maintenance procedures of the property. This person should be familiar with the current building condition, and be comfortable making high-level observations in this area.
Publicity/Outreach Coordinator	The publicity/outreach coordinator is responsible for explaining the project and its progress to the whole congregation. This person should be comfortable speaking to groups and answering questions. Their enthusiasm will be important for recruiting other participants, as needed–dedication and enthusiasm can matter more than expertise in this role!
Technical Mind	The technical mind team member should be comfortable thinking about technical problems and projects. Engineers, architects, scientists, and contractors, even business leaders without a background in buildings, can be a good choice to fill this role.
Computer Facilitator	The computer facilitator should be comfortable sending and receiving emails, using the Internet, and viewing online videos. This person might also work with the publicity/outreach coordinator to create presentations to show progress to congregation members, either in person or through social media.
Voice of the People	The voice of the people should be someone who has a good relationship with many diverse members of the congregation, especially those who aren't typically engaged in the decision-making process. This person can float new ideas and gauge responses.
Youth Representative	Environmental issues can be of great importance to many of today's youth who understand they are inheriting the earth from their elders. The youth representative on the team should be a member of your congregation who is seen as a leader in the youth community and is interested in contributing in the efforts to improve energy efficiency. This person can lead youth work groups or youth fundraising initiatives for the effort. Young people are often more interested and quicker to adapt to new software and electronic media–for example, social media, benchmarking with ENERGY STAR Portfolio Manager and generating progress reports.

Figure 2. Recommended Core Team Members Roles & Responsibilities

1.5 Checklist - Make a Commitment

Step 1 gave you the tools you need to get your congregation focused on improving your property's energy efficiency. You learned how improving the energy efficiency of your property is a form of stewardship, and how it will help your congregation meet other stewardship goals; you learned how to talk to your clergy, governing board and congregation about energy efficiency; and you learned how to create a stewardship core team. Now it's time for you to turn your words into actions! You can use the checklist below (Figure 3) to measure your progress towards completing Step 1.

What can I do?: Step 1 Checklist - Make a Commitment		
Task	Description	✓ when Completed
Become an ENERGY STAR partner and make a commitment	Go to: http://www.energystar.gov/joinbuildings. This simple action takes a few minutes and sets you on your way, with no obligation or cost. ENERGY STAR partners are plugged into the latest information on energy efficiency and have access to certain free technical support, case studies, tools, and public recognition of success.	
Gain the support of your clergy and governing board	The clergy, governing board and staff of your congregation represent the key facility decision makers. Their support is critical to successful projects.	
Motivate your congregation	Your congregation members are the primary source of financial support for your property, as well as a source of time and talent for promoting and implementing many energy efficiency projects. Member understanding and involvement in projects will strengthen their personal commitment for your organization's stewardship initiative.	
Create a stewardship team	This core team can be a large or very small group, or even an individual who is committed to moving the projects forward. Consider a contributing role for the youth group.	

Figure 3. Step 1 Checklist - Make a Commitment

Step 2. Assess Performance

Benchmark and Start Saving NOW

It is necessary to know how your congregation is currently using energy in your property to help determine where to focus your team's efforts. Think about your property. Do you know the last time routine maintenance was performed on your HVAC system? Do staff and congregants always turn off items that are not in use? The answers to questions such as these should start to give you an idea of places where energy consumption can be reduced. Step 2 guides you through the process of creating an energy benchmark using the ENERGY STAR Portfolio Manager tool so you can identify how much energy your property is currently using.

2.1 Understand Energy Benchmarking

Your benchmark provides a baseline from which your core team can plan, manage, and track improvement projects toward success. You can't manage what you don't measure.

ENERGY STAR Portfolio Manager is a free online tool provided by EPA that you can use to benchmark the current energy use of your property. With Portfolio Manager, you can calculate your building's baseline energy consumption, track your building's energy and water use over time, and see how your building compares to other houses of worship nationwide through the 1 – 100 ENERGY STAR score. Armed with this information, the core team will be able to help your congregation make informed decisions on energy-efficient investments and continue to keep them informed about your progress.

By entering details about the property and consumption data for energy and water you can:

- Assess whole building energy performance
- Track changes in energy, water, GHG emissions, and energy costs over time
- Track green power purchases
- Create custom project reports
- Share data with others.

To benchmark your property, Portfolio Manager performs calculations with your utility data, and adjusts for the weather in your area and for some specifics about the property systems, equipment, size, and building use. The 1 – 100 ENERGY STAR score that the tool generates shows you the energy efficiency of your house of worship from any given start date and reflects your continuing improvement. The core team can then use this score to set goals for your building's energy efficiency, and work toward receiving recognition for improvements by qualifying for ENERGY STAR certification (for buildings that score 75 or higher). Earning the ENERGY STAR indicates that your property is among the most efficient

houses of worship in the U.S., but whether the congregation pursues certification or not, it can realize and accurately track significant savings using Portfolio Manager. For example, just achieving a 20% improvement can provide deep savings. By tracking energy use in Portfolio Manager, ENERGY STAR has found that buildings that start with lower ENERGY STAR score and higher energy use can achieve the greatest savings by benchmarking. In fact, buildings starting with below average energy efficiency in 2008 (those with a score under 50) saved twice as much as those buildings that started above average. EPA prepared the DataTrends series to examine energy and water benchmarking trends for the thousands of buildings in Portfolio Manager. The results of this diverse sample of buildings show that those buildings that consistently benchmark energy use save an average of 2.4 percent per year and buildings achieved a total savings of 7 percent and an ENERGY STAR score increase of six points over the three-year period of analysis.

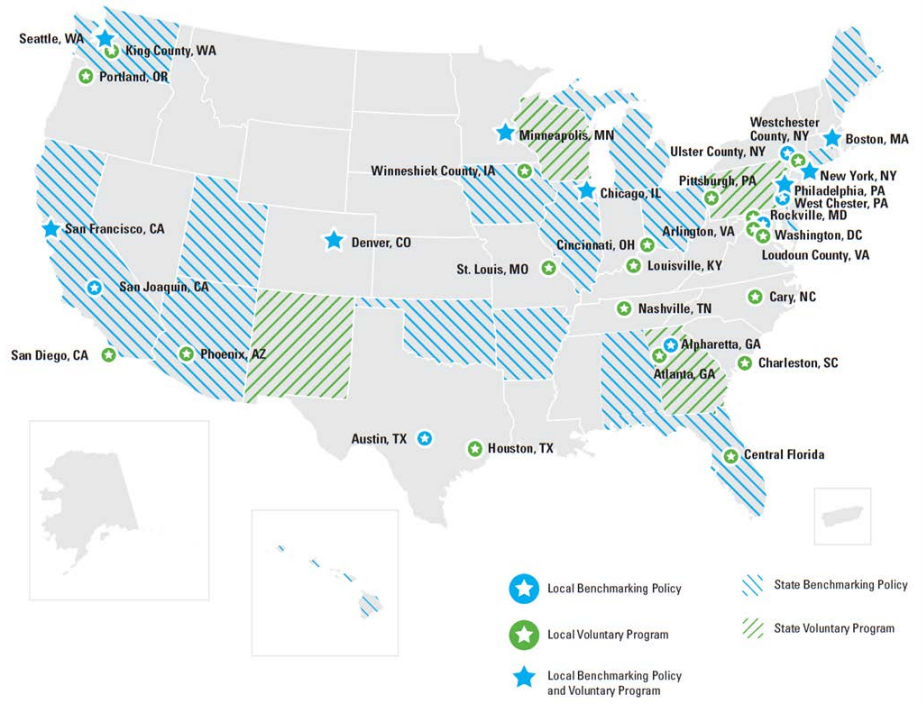

Figure 4. A Map of State and Local Governments Leveraging Portfolio Manager

Portfolio Manager is used by other national certification programs as well, including the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED), Green Globes system, the GreenFaith Energy Shield, and several Interfaith Power and Light faith affiliates. Dozens of city and state governments are also using Portfolio Manager for voluntary competitions and for mandatory tracking of GHG emissions.

Benchmarking Steps

A data collection worksheet to walk you through entering your building information into Portfolio Manager is provided in Appendix A: *Benchmarking your Property in Portfolio Manager*. A completed data collection worksheet will ensure you have all your information at hand when you set up your account. Appendix A also contains a section on what's new in Portfolio Manager.

Step 1 - Gather Data about Your Property

Before you can benchmark your property, you will need to gather information about your property and its energy consumption. A data collection worksheet to walk you through entering your property information into Portfolio Manager is provided in Appendix A: *Benchmarking your Property in Portfolio Manager*. A completed data collection worksheet will ensure you have all your information at hand when you set up your account. It is a good idea to nominate one member of your team to take the lead in setting up and managing the Portfolio Manager account and the data that is entered into it to make sure there is one point person for information management.

Step 2 – Set Up your Portfolio Manager Account

Appendix A: *Benchmarking your Property in Portfolio Manager* provides step-by-step instructions to create a Portfolio Manager account. Once you have established an account and entered the information from your data collection worksheet, you will be able to generate custom reports, charts, and data sets that will help your core team analyze the property's energy consumption.

Appendix A is intended to provide basic instructions to create an account and enter information from your data collection worksheet. For more detailed information, you can attend online Portfolio Manager training. Visit www.energystar.gov/buildings/training to sign up.

Energy meter data in your Portfolio Manager account can be updated every month. Maintaining data regularly ensures that progress reports remain current and relevant. Additionally, you can view your property performance results, including annual energy use, environmental performance, financial performance, GHG emissions, and water use (if you have included your water utility data). You can also compare performance during two different time periods.

In addition to displaying your property's performance results online, Portfolio Manager can adapt the data from your portfolio into a ready-made report. These reports will be useful for presenting project results to the congregation, demonstrating the property's history of stewardship to potential lenders, or sharing your success with other interested parties.

Step 3 - Interpret Your ENERGY STAR Score

Your initial ENERGY STAR score sets the benchmark by which your core team will be able to measure progress as you improve your property's energy efficiency. This score represents how your property's energy use compares to similar houses of worship on a scale of 1 – 100, with 1 being the least energy efficient and 100 being the most energy efficient. If your property has a score of 75 or above, it may be eligible to receive ENERGY STAR certification.

2.2 Checklist - Assess Performance

Step 2 gave you the tools and ideas you need to assess your property's energy performance. You learned how to benchmark your property's energy consumption using the ENERGY STAR Portfolio Manager tool. You can use the checklist below (Figure 5) to measure your progress towards completing Step 2.

What can I do?: Step 2 Checklist - Assess Performance		
Task	Description	✓ when Completed
Benchmark your property's energy performance using Portfolio Manager	Portfolio Manager is a free, easy way to accurately assess your property's energy use, both over time and compared to similar worship facilities nationwide. Portfolio Manager will also help your team set energy efficiency goals and document achievements. Get started at www.energystar.gov/benchmark.	

Figure 5. Step 2 Checklist - Assess Performance

Step 3. Set Goals

By this point you've created an energy stewardship team, become more familiar with your property's energy consumption, and established an energy benchmark using Portfolio Manager. Now it's time to evaluate your priorities and set goals. Step 3 will help you identify the goals that are most important to your core team. The Portfolio Manager tool includes tabs specifically for planning and goal setting, which will help you:

- Set targets and baselines for individual buildings or an entire portfolio of buildings
- Identify properties that reach a particular energy target
- View performance tables with current baseline performance information and median and target levels
- Note other energy certifications (e.g. LEED, GreenFaith, Green Globes)
- Track your energy projects
- Use the Target Finder functionality for new construction to save energy and property information of your new building design for comparison against actual performance and the national median for worship facilities
- Generate documentation for "Designed to Earn the ENERGY STAR" recognition.

3.1 Evaluate Priorities and Set Goals

Congregations decide to invest in energy efficiency for a variety of reasons. In some cases, different decision makers have different reasons for being interested in a particular project - some may be focused on the internal benefits, such as reducing the money spent on utilities, while others may be interested in external benefits, such as reducing the carbon footprint or other emissions harmful to human health. Often, investing in energy efficiency can maximize both internal and external benefits.

When setting project goals, it is important to start out by setting the scope of the project, especially to determine if it is organization-wide or specific to one aspect of the property. Your team should look at short and long term goals to see what work is most feasible at different time periods. It is also helpful to review your benchmark energy use, and evaluate past projects and best practices. Ideally, the goals for the project should link to any organization-wide strategic goals so they can align. You may want to review the goals of other congregations to see what worked best for their projects.

The Winchester Unitarian Society (WUS) in Winchester Mass. dealt with high heating costs each winter and used annual congregant donations to cover the heating bill. Instead of using the funds to cover the costs in 2007, the newly formed Building Committee challenged itself by setting specific goals to spend that money on energy-saving programs instead of energy use. In the first year, WUS used the $7,000 special appeal funds to implement heating upgrades and by the next winter had saved enough money from the heating bills to implement even more upgrades. The teamwork of the Building Committee and the congregants working together allowed them to make significant changes.

Some types of goals may include:

- A specific reduction in energy use (such as 20% overall savings over 12 months)
- A specific reduction in GHG emissions
- A more comfortable working/worship environment such as lighting quality or temperature (measured through specific user feedback such as surveys of staff and congregants)
- An increase in congregants participating in property issues—such as bringing in the youth group or other types of volunteers.

3.2 Prioritize Your Goals

Once your team has set its goals, you will need to prioritize them. You should include other key decision makers at your congregation in this process to evaluate how well the proposed project aligns with the congregation's priorities, and how far it moves the team toward accomplishing its goals. Prioritizing your energy efficiency goals can also help your team look at what may be feasible to accomplish in a specific time period—such as over the next year versus over the next five years.

Another important thing to consider when setting goals is cost. ENERGY STAR has financial calculators to help guide your financial decisions about energy efficiency, calculate the cost of delay, and meet your energy performance goals through the Cash Flow Opportunity (CFO) Calculator.

3.3 Checklist - Set Goals

Step 3 walked you through the process of setting goals for your project prior to creating an action plan. These goals will be overall markers for achievement—by doing a walk-through of your property and setting an action plan (Step 4: Create an Action Plan) you can add more specifics to these goals.

You can use the checklist below (Figure 6) to measure your progress towards completing Step 3.

What can I do?: Step 3 Checklist - Set Goals		
Task	Description	✓ when Completed
Evaluate priorities and set project goals	Once you have your 1 - 100 ENERGY STAR score, your stewardship team can consider what types of overall project goals you would like to set. It is important for your team to sit down with other key decision makers and evaluate how well the goals align with your congregation's priorities.	
Prioritize project goals	Work within your congregation to determine which goals will best meet its energy efficiency needs and which are the most important to focus on in the near term.	

Figure 6. Step 3 Checklist - Set Goals

Step 4. Create an Action Plan

Once your team has assessed the current energy use of your property by benchmarking it in Portfolio Manager**,** and has set overall goals for improved efficiency, it is time to create an action plan for implementation. Some key points to remember when creating an action plan are to:

- **Create performance targets** for each part of your congregation to track progress towards achieving goals. Friendly competition with recognition of achievements has proven surprisingly effective for congregations and in whole communities as well.
- **Set timelines** for actions and hold regular meetings among the core team and other key participants to evaluate progress, completion dates, milestones, and expected outcomes.
- **Establish a tracking system** to monitor and manage the progress of action items. This system should track project activities, assignments, and milestones. Portfolio Manager is an excellent way to track and measure energy use as well as the timing of project implementation.

This step identifies several different activities that will help you create an effective action plan. These activities include walking through your building to identify Sure Energy Savers (Section 4.2) and other opportunities for improvement, and then considering having a professional energy audit done. If you determine that a professional audit is required, information is included here on how to find an auditor and what type of energy audit may be best for your property. Finally, Step 4 highlights different funding mechanisms that are commonly used to finance efficiency upgrades.

4.1 Walk Through the Building

Take a look at your property to see what energy efficiency improvements can be made. While doing this walk-through, utilize the Sure Energy Savers listed in Section 4.2 (and the tips found in Appendix B: *Savings Assessment Worksheets*) to identify which low-cost, no-cost actions can be implemented in your building. Your team should also evaluate the performance of all energy-using systems and equipment at the property. You may consider performing an energy audit to identify further areas that can be improved—this audit may cost more, but usually identifies areas for larger savings. Professional service providers could be helpful and could provide an objective perspective or specific expertise not available in your congregation. ENERGY STAR maintains a list of Service and Product Providers (SPPs) online, or you can check with your utility company. However, before paying for a full energy audit, review and work through all the Sure Energy Savers to determine which low- and no-cost actions you and your team can do without outside help.

4.2 Sure Energy Savers

It's easy to start improving the energy efficiency of your worship facility with little expertise or money. There are many reliable, low-risk actions that your team and congregation can take, most of which are relatively simple. In this section you will find a list of basic low- or no-cost actions (Sure Energy Savers) to

consider for your property, divided into the following components: 1) Lighting, 2) HVAC, 4) Windows and Walls (Building Envelope), 5) Office Equipment, 6) Kitchen and Food Service Equipment, and 7) Water.

Figure 7 shows the relative annual energy use of each of these components in houses of worship. Each component is measured for small, medium, and large houses of worship. As you can see, heating is by far the most expensive component for small- to medium-sized houses of worship, while lighting is typically the most expensive for large houses of worship. This graph gives you an idea of the savings you could realize. Although most of the recommendations presented in in this section are low- or no-cost, some may require additional analysis to determine if they make financial sense for your congregation.

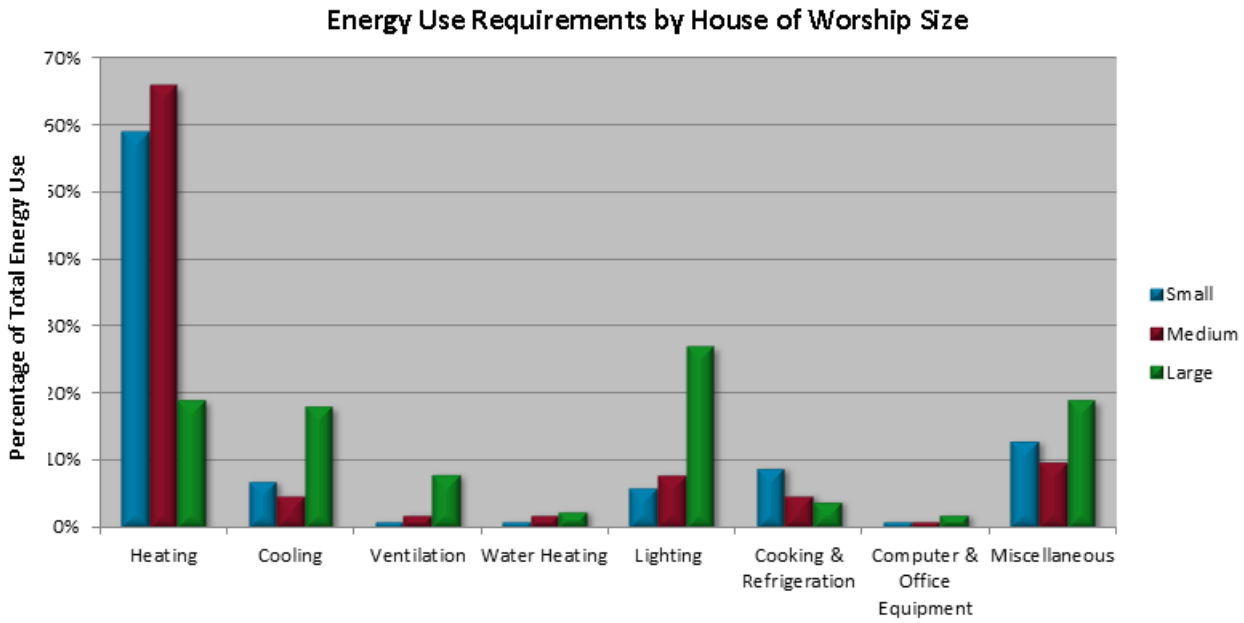

Figure 7. Comparison of energy use requirements by House of Worship Size (small is under 100 seats; medium is 100 - 250 seats; and large is any facility over 250 seats); based on Commercial Building Energy Consumption Survey (CBECS) 2003 data courtesy of Energy Information Agency, USDOE at http://buildingsdatabook.eren.doe.gov/CBECS.aspx.

Appendix B: *Savings Assessment Worksheets,* includes more specific information for each component, as well as detailed worksheets that can help with your team's analysis. For example, if you would like to calculate the financial payback and the estimated savings before deciding to install light-emitting diode (LED) exit signs, there is a worksheet in Appendix B to help your team do this (worksheets are included as noted in specific sections).

Before investigating professional assistance, implement some or all of the following Sure Energy Savers if they make sense for your property. Take the checklist that follows each component description with you and walk through your property to identify areas for improvement. Afterwards, your team can either "do it yourself" if there is the expertise on staff/among members, or you can hire a professional.

Sure Energy Savers Component 1: Lighting

The lighting systems in a worship property are integral to a safe, functional, and comfortable environment. Traditionally, lighting needs were met with incandescent bulbs because of their low initial cost, warm color, and dimming capabilities. However, incandescent bulbs are very energy inefficient and radiate significant waste heat. Today, new energy-efficient, long-life bulbs provide features similar to incandescent bulbs at affordable prices. The result is a tremendous diversity in currently installed lighting equipment with varying efficiencies that could represent energy saving opportunities. This section discusses the two basic ways to achieve energy savings in your lighting system—installing more efficient equipment, and/or changing the way you operate the lights. This means turning lights off when unneeded, maintaining the lighting systems (keeping them clean and properly lamped), and illuminating spaces only to the light levels required to suit the task. For large worship facilities of 250 seats or more, lighting is typically the most expensive Sure Energy Saver Component.

LIGHTING - WHAT CAN I DO?

Use the following information to consider each lighting suggestion as it may apply to your property, and check it off when completed on the Lighting checklist that follows (Figure 9). Appendix B.1: *Lighting Worksheets,* provides more information on specific activities.

- **Turn off lights (and other equipment) when not in use.** As shown in Figure 8, high utility costs often include paying for energy that is completely wasted by equipment left ON for long periods while not in use. You may wish to visit the property at a time when everything is supposed to be turned off and make a list of places where the lights were left ON. Also, ensure that exterior lighting—typically not needed during the day—is turned off during the day. Different types of automatic controls can turn lights ON when needed and off when not.

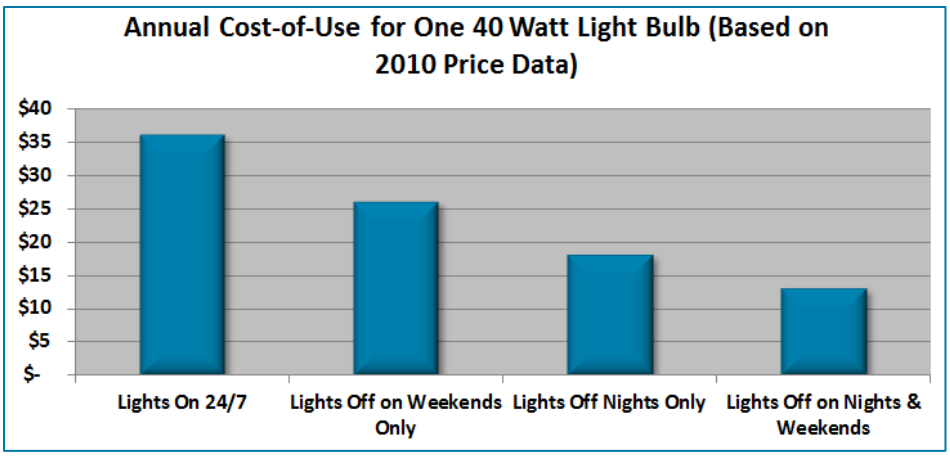

Figure 8. The cost of use for one 40 Watt bulb on an annual basis (based on 2010 average commercial price of electricity (10.91 cents/ kWh) from EIA).

- **Ensure that appropriate lighting levels are maintained.** Too much light causes glare—and it costs more. Fine-tuning the bulb wattage (or lumens), type, or layout can improve visual quality and reduce energy use. For more information about conducting a lighting assessment, see Appendix B.1.1: *How's the Lighting? Conducting a Lighting Assessment*.
- **Replace incandescent bulbs with ENERGY STAR qualified CFLs and/or LEDs.** Consider CFLs and LEDs for your recessed lighting, pendant fixtures, and accent and spot lighting applications. CFLs and LEDs cost about 75 percent less to operate than incandescent bulbs, and last about six times longer; generating about 75 percent less heat. Although LEDs are more expensive to purchase up front than CFLs, they use less energy and last longer over the lifetime of the bulb. Additional benefits to LEDs include superior dimming ability over CFLs, better color rendering, and they contain no mercury. ENERGY STAR certified CFL and LED bulbs are available in a variety of shapes and sizes for any application—including recessed cans, track lighting, table lamps, and more. You can even find certified bulbs that are dimmable. If you see an opportunity, there is probably a replacement option available. In particular look for lights that are ON most often and are easily accessible. For more information on the savings possibilities when switching from incandescent bulbs to CFLs or LEDs, see Appendix B.1.2: *Efficient Light Sources and Ballasts*.
- **Upgrade older T12 fluorescent bulbs with magnetic ballasts to more efficient T8 or T5 fluorescent bulbs with solid-state electronic ballasts.** Because T12 bulbs are no longer manufactured, it is timely to upgrade to more efficient T5 or T8 bulbs**.** T5 (less than 1" diameter) and T8 (1" diameter) fluorescent bulbs with modern electronic ballasts use less energy than older T12 (1.5" diameter) fluorescent bulbs while providing the same amount of light. In areas of the property where T12s are used for many hours per week, a T12 to T8 or T5 upgrade can pay back the costs quickly, but will require both bulb and ballast changes. For more information on the savings possibilities when upgrading fluorescent bulbs, see Appendix B.1.2: *Efficient Light Sources and Ballasts*.
- **Install LED exit signs.** LED exit signs can save in electricity costs and dramatically reduce maintenance for lamp replacement. The current fixtures at your property may accept a simple screw-in lighting element to replace the traditional inefficient incandescent bulbs that burn out frequently. If it does not, you may want to consider a new LED-illuminated exit sign, which saves about 90 percent over the incandescent fixture's lighting electricity costs. The low risk of LED bulbs burning out can increase property safety. For more information on LED exit signs, see Appendix B.1.3: *LED Exit Signs*.

- **Install occupancy/vacancy sensors.** Install wall-mounted occupancy or vacancy sensors in high-use areas to automatically turn lighting off when no one is present. If occupants forget to turn the lights off when they leave the space, occupancy sensors turn the lights off after a pre-set time, and turn them back on when people re-enter the room. Vacancy sensors automatically turn lights off, but the user must manually turn them back on. Vacancy sensors generally create greater energy savings than occupancy sensors because there are times when occupancy sensors will turn the lights on even when the occupant doesn't necessarily need the lights on. This is particularly true in any space

with windows. For more information on occupancy/vacancy sensors, see Appendix B.1.4: *Occupancy/Vacancy Sensors*.

- **Install daylight-responsive lighting controls.** Daylight-responsive lighting controls typically consist of dimmable or switchable ballasts and drivers (installed in the fixtures) and a photocell (typically mounted on the ceiling). These components work together to turn lights on and off (or dim) automatically based on available daylight, thus producing energy savings while maintaining the proper illumination levels for the space. The performance of daylight controls depends on customizing the lighting set point to the requirements of each individual space. The sensor's installed position should also be carefully considered to ensure that it is accurately tracking task light levels. Also, keep furnishings from obstructing the sensor's line of sight. For more information on this, see Appendix B.1.5: *Daylight Dimmers/Photo Cells*.

What can I do?: Lighting Checklist	
Task	✓ when Completed
Turn off lights (and other equipment) when not in use	
Ensure that appropriate lighting levels are maintained	
Replace incandescent bulbs with ENERGY STAR qualified CFLs and/or LEDs	
Upgrade older T12 fluorescent bulbs to more efficient T8 or T5 bulbs by retrofitting fixtures	
Install LED exit signs	
Install occupancy/vacancy sensors	
Install daylight-responsive lighting controls for areas within 15 feet of a window	

Figure 9. Lighting Checklist

For more lighting information and links to further guidance on lighting, see Appendix B.1.6: *Additional Online Resources for Lighting Equipment*.

Sure Energy Savers Component 2: Heating, Ventilation and Air Conditioning

The HVAC systems in a worship facility represent the largest portion of most congregations' utility bills. Worship facilities have unique needs compared to other buildings because of their energy-use patterns. Most commercial buildings require relatively constant heating and cooling, but worship facility energy use tends to be higher on weekends and lower during the rest of the week (with occasional spikes for special meetings and other functions). Because most congregations use the majority of their facilities only a few days a week, controlling your energy use to meet these needs will help the property reach optimal energy efficiency. See Appendix B.2: *Heating, Ventilation, and Air Conditioning (HVAC)* for more information. Review the following items to consider each HVAC suggestion as it may apply to your property, then check it off when completed on the HVAC checklist that follows (Figure 10). Small- and medium-sized houses of worship typically spend the bulk of their energy budget on HVAC.

HVAC - WHAT CAN I DO?

- **Keep exterior doors closed while running the HVAC.** This simple action will help avoid wasteful loss of heated or cooled air.
- **Install a programmable thermostat to control the HVAC system.** These thermostats allow you to optimize HVAC operation based on your building's scheduled use, and can be overridden as needed for unscheduled events. To ensure that congregation members, staff, and visitors always enter a comfortable facility, this "smart thermostat" can be scheduled to turn on the HVAC for a certain amount of time before arrival.
- **Check the accuracy of the thermostats.** Building thermostats can become dirty or damaged over time, causing them to read an incorrect temperature. This can lead to over-heating or over-cooling of the building and to higher utility bills. Your property's thermostats should be checked annually to make sure that they are working properly by comparing them to a thermometer. Ideally, your property's regular professional HVAC tune up should confirm the accuracy of the thermostat.
- **Change the filters.** To ensure maximum efficiency and air quality, HVAC filters should be cleaned and replaced at least quarterly, maybe more depending on how much the system is used. During high heating and cooling seasons or during other times of intense use, it is recommended to replace filters on a monthly basis.
- **Clean heating and cooling coils.** For the highest system efficiency, the place where air/water enters the HVAC system should be kept clean. Whether in an air handler or in a rooftop unit, the methods for cleaning include compressed air, dust rags or brushes, and power washes. In addition, check baseboard heating systems for dust buildup, and clean them if necessary.
- **Clear the clutter.** Make sure that fan coil units and baseboards are not blocked or covered by chairs, books, boxes, or file cabinets. Besides creating a fire hazard, blocking these units prevents proper air circulation. Always keep the area around supply and return vents clear.
- **Schedule special events (such as choir practice or community events) and cleaning duties on the days just before and after major services.** This will help to ensure that the building is warmed or cooled on consecutive days to reduce energy consumption. Only heat or cool the part of the building where the event is occuring.

When to Replace an HVAC System?

All equipment has a certain useful lifetime. This lifetime may be extended with regular maintenance, but at some point the equipment will need to be replaced. Replacement can be an opportunity to invest in energy efficiency, and can impact energy costs for years to come.

Because major HVAC equipment typically has a long useful life and a major impact on energy consumption, special attention should be paid to this equipment. Replacement of major HVAC equipment is expensive. When the equipment is 1-2 years from the end of its useful life, planning for a replacement should start so your congregation is not taken by surprise and ends up purchasing a less efficient but easily available model. Appendix B2 presents a full case study on running the equipment to failure versus replacing it before the end of its life.

*Concerned about **night setback** and its effect on the pipe organ? The Associated Pipe Organ Builders of America says that temperatures as low as 45 degrees Fahrenheit will not cause damage to the organ; so normal setback ranges of about 55 degrees Fahrenheit to 60 degrees Fahrenheit should not be an issue.*

- **Use fans when a room/area is occupied.** Comfort is a function of temperature, humidity, and air movement. Moving air can make a higher temperature and/or humidity feel more comfortable. Using ceiling fans allows the thermostat to be set as much as three to five degrees higher and the room feels just as comfortable as a lower temperature. Fans are most effective when the air movement is felt on the skin, and are a good choice for offices and other areas where occupants are in one place.
- **Tune-up the HVAC system with an annual maintenance contract.** Just like a new car, even a new ENERGY STAR qualified HVAC system will decline in performance without regular maintenance. An annual maintenance contract automatically ensures that your HVAC contractor will provide pre-season tune-ups before each cooling and heating season. This is also a good time and the right person to check for possible leaks in the property's duct system. Your congregation saves energy and money, and by paying annual maintenance fees up front, the system may last years longer.

What can I do?: HVAC Checklist	
Task	✓ when Completed
Keep exterior doors closed while running the HVAC	
Install a programmable thermostat to control the HVAC system	
Check the accuracy of the thermostats	
Change the filters as needed, checking monthly	
Clean heating and cooling coils	
Clear the clutter	
Schedule special events and cleaning duties on days just before and after major services	
Use fans when a room/area is occupied	
Tune-up the HVAC system with an annual maintenance contract	

Figure 10. HVAC Checklist

Sure Energy Savers Component 3: Windows and Walls (Building Envelope)

Your property's building "envelope" or "shell" includes windows, walls, roof, and insulation. Addressing leaks that allow unwanted air infiltration into the building envelope can often eliminate a major energy drain. Outside air can enter a building through a variety of places, most commonly the windows, doors, walls, and roof. Outside fresh air can be good, but only as controlled ventilation, not as accidental infiltration. Investigate the following options to improve your building envelope then check each item off when completed on the Windows and Walls checklist that follows (Figure 11). See Appendix B.3: *Building Envelope Assessment Guidance* for more information.

BUILDING ENVELOPE - WHAT CAN I DO?

- **Plug air leaks.** Sealing leaks will help prevent the escape of heated or cooled air from your property. Attic air sealing is the first priority. Many air leaks and drafts are easy to find because they are easy to feel—like those around windows and doors. But holes hidden in attics, basements, and crawlspaces are usually bigger problems. Sealing these leaks with caulk, spray foam, or weather stripping will have a great impact on improving occupancy comfort and reducing utility bills. For

more guidance on finding the leaks in your building, see Appendix B.3.1: *Check for Problems with the Building Envelope*, Appendix B.3.2 *Check Exterior Walls*, and Appendix B.3.3: *Check Roof and Attic Space*.

- **Replace windows and window shadings.** Replacing old, single-pane windows with new ENERGY STAR windows can be an effective way to save energy in your building. However, replacing windows can be costly and should be a "last resort" after any possible maintenance, such as re-glazing, caulking, weather-stripping, and after other upgrades that are more cost-effective are completed. Adding shading, or installing window films against summer heat gain or insulating curtains against winter heat loss, can be relatively easy and inexpensive ways to save energy as well. For more tips on both replacing windows and adding shading, see Appendix B.3.4: *Check Windows and Shading*.
- **Minimize unconditioned air flow through doors.** When unconditioned air enters your building, it can increase the heating or cooling load on the HVAC system, and your costs. Because doors are holes in the building envelope, they should be inspected to make sure that they are keeping air out. For more information on doors, see Appendix B.3.5: *Check Doors*.

For more information on your property's building envelope, see Appendix B.3.6: *Additional Online Resources for Building Envelope Guidance*.

What can I do?: Windows and Walls Checklist	
Task	✓ when Completed
Plug air leaks	
Replace windows and window shadings	
Minimize unconditioned air flow through doors	

Figure 11. Windows & Walls Checklist

Sure Energy Savers Component 4: Office Equipment

Office equipment used in worship facilities presents an often-overlooked opportunity for significant energy and cost savings. Surveys show a steady increase in the volume of electronic office equipment being used by congregations. This includes computers, printers, copiers, televisions, and small appliances such as coffee makers. Evaluating your office equipment use will help your congregation realize energy and monetary savings. See Appendix B.4: *Office Equipment Guidance* for more information.

Review the following information to consider each suggestion as it may apply to your property, and then check each item off when completed on the Office Equipment checklist that follows (Figure 12).

OFFICE EQUIPMENT - WHAT CAN I DO?

- **Always buy ENERGY STAR qualified products for your property when new office equipment is needed.** The ENERGY STAR label indicates highly efficient computers, printers, copiers, televisions and other small

appliances and equipment. Equipment that has earned the ENERGY STAR saves energy and money. Many of these products save energy by utilizing auto-power down settings which cause the unit to enter a sleep or off-mode when not used after a certain amount of time. In addition, they also consume less energy when in use. For guidance on assessing potential cost savings for these items, see Appendix B.4.1: *ENERGY STAR Qualified Office Equipment*.

- **Set computer power settings to save energy when not in use.** An average desktop computer consumes 58 watts when powered on and three watts when in a sleep state. Over 60 percent of computers in the United States are left powered on overnight. This wastes significant amounts of money and energy while generating excess heat on site and unnecessary carbon emissions at the power plant. Because the use patterns for computers in worship facilities can vary, it is important for the power settings to suspend the computers when inactive as opposed to following a typical office schedule (such as nights and weekends). For more information on computer power settings, see Appendix B.4.2: *Microsoft Windows Power States* and Appendix B.4.3: *Apple/Macintosh Power States*.
- **Replace cathode ray tube (CRT) computer monitors.** Older CRT monitors should be replaced by energy-efficient liquid crystal display (LCD) monitors to take advantage of the energy savings LCD monitors provide. It is important to dispose of CRT monitors properly through recycling because they may contain hazardous or toxic components. The average CRT monitor operates at 73 watts while an LCD monitor uses 28 watts. For more information on replacing computer monitors, see Appendix B.4.4: *Computer Monitor Power States* and Appendix B.4.5: *Computer Equipment Assessment*.

The Islamic Society of Boston Cultural Center (ISBCC) is the first mosque in the country to earn the ENERGY STAR certification. ISBCC is also a member of Massachusetts Interfaith Power and Light (MIP&L), a national organization that assists congregations with better environmental stewardship practices. ISBCC took advantage of MIP&L's offer of a comprehensive environmental assessment to their facility and combined that with their local utility company's energy-efficiency program offer to receive electrical and gas audits at no cost. The MIP&L and the utility assessments helped to identify areas of improvement and led to upgrading more than 70% of the lights in the building, adding motion sensors in bathrooms, and installing reducers on the faucets to save on water and energy.

- **Utilize "Smart Power Strips".** Smart power strips address a key energy-wasting issue: the fact that many appliances and other equipment pull a slight energy load, even when turned off (also called the "vampire effect"). Many devices can be plugged into the same power strip, which can then be turned off to ensure that the appliances are not drawing any power. Power strips are relatively inexpensive and are widely available. They can be used for office and kitchen equipment that "stays on" even when turned off, such as a television, coffee maker, or stereo system.
- **Control amplifiers, receivers, and other audio equipment.** Amplifiers use an average of 34 watts when turned on but are not playing, and can use from 250 watts while in use for a smaller facility, up to 1,500 watts while in use for a medium-size facility. Because there is no predictable use pattern for a property, the best power-saving strategy is to manually turn them on/off and educate users about energy-efficient operation.

Receivers use about 35-50 watts when turned on but not playing, and three watts when in standby mode. It is generally good practice not to unplug or remove all power from receivers for extended periods of time because many receivers can lose their stored settings after a few days. The optimal power management strategy is to educate the users of this equipment to switch the device to standby when not in use.

- **When replacing televisions, buy ones that have earned the ENERGY STAR label.** Non-ENERGY STAR qualified televisions should be replaced when financially appropriate with energy-efficient LCD or LED-LCD televisions. You can use a tool such as ENERGY STAR's Qualified Television Search to find televisions matching your specifications and sorted by least energy use. For more information on ENERGY STAR office equipment and televisions, see Appendix B.4.6: *Office Equipment and Televisions*.
- **Develop an education and/or training program to encourage energy conservation.** Educated staff and congregants can make significant contributions to load reduction by simply turning off office equipment when it is not in use, and enabling energy-saving settings for computers and monitors. ENERGY STAR has free training and educational resources available online, including pre-recorded trainings that users can access any time of day.

For more information about office equipment, see Appendix B.4.7: *Additional Online Resources for Computer and Office Equipment*.

What can I do?: Office Equipment Checklist	
Task	✓ when Completed
Always buy ENERGY STAR qualified products when new equipment is needed	
Set computer power settings to save energy when not in use	
Utilize "Smart Power Strips"	
Control amplifiers, receivers, and other audio equipment	
Replace cathode ray tube (CRT) computer monitors	
Buy replacement televisions that have earned the ENERGY STAR label	
Develop an education and/or training program to encourage energy conservation	

Figure 12. Office Equipment Checklist

Sure Energy Savers Component 5: Kitchen and Food Service Equipment

Many worship facilities have kitchen areas where occupants can prepare coffee, lunch, snacks, or congregational dinners. Microwave ovens, coffee machines, stoves, and refrigerators are common in these areas. Microwave ovens and stoves generally consume energy in direct proportion to the need to prepare or warm foods, refrigerators run continuously, and coffee machines may be left on longer than necessary. There are also additional opportunities to improve energy efficiency if your building has a larger commercial kitchen. See Appendix B.5: *Kitchen and Food Service Equipment* for more information. Review the following items to consider each suggestion as it may apply to your property, then check it off when completed on the Kitchen and Food Service Equipment checklist that follows (Figure 13).

Kitchen and Food Service Equipment - What can I do?

- **Purchase ENERGY STAR qualified commercial food service equipment.** Certified refrigerators and freezers are, on average, 30 percent more energy efficient than standard models. There are also ENERGY STAR certified dishwashers, fryers, griddles, hot food holding cabinets, ice machines, ovens/stoves, water coolers, and steam cookers. For more information, see Appendix B.5.1: *Commercial Food Service Equipment Guidance*.
- **Check current refrigerators.** While your property's old refrigerator may still look good and work well, it could be costing your congregation over $300 per year to run, while using a significant amount of energy—in fact, more than twice the energy of a new ENERGY STAR qualified model. By properly recycling a refrigerator manufactured 20 or more years ago and replacing it with a new product that has earned the ENERGY STAR label, your congregation can save up to $1,100 and prevent up to 26,000 pounds of GHG emissions. For more information on making sure your old refrigerator is disposed of properly, see EPA's Responsible Appliance Disposal (RAD) Program at www.epa.gov/rad. For more information on ENERGY STAR refrigerators, see Appendix B.5.2: *Refrigerators*.

  Even new refrigerator units can be run inefficiently, however. To help improve performance, position the refrigerator away from heat sources such as ovens and dishwashers, and leave a space between the wall and the refrigerator to allow air to circulate—this keeps the coils cooler so the refrigerator doesn't have to work as hard. Keeping the coils clean on the outside of the refrigerator is a great way to save energy as well. Also, consider unplugging the refrigerator when it is not in use, especially if it is only used for special events. Be sure to contact the manufacturer or consult the manual of your specific refrigerator model for usage, but it is generally recommended to unplug the refrigerator if it will not be used for a period of four weeks or longer.
- **Have walk-in refrigeration systems serviced at least annually.** This includes cleaning, refrigerant top off, lubrication of moving parts, and adjustment of belts. This will help ensure efficient operation and longer equipment life.
- **Use multiple refrigerators only when necessary:** Work to reduce the use of multiple refrigerators: Consider consolidating cooling needs into a single refrigerator and consider turning off an extra unit that is not needed.
- **Check your water cooler.** A typical bottled water cooler can use more energy than a large residential refrigerator. An ENERGY STAR model requires about half as much energy as a standard unit, which reduces your utility bills. For more information, see Appendix B.5.3: *Water Coolers*.
- **Always buy ENERGY STAR qualified vending machines.** Improving your property's refrigerated vending machines results in cost savings and reduced building cooling load. Standard refrigerated beverage vending machines use about 50 percent more power than ENERGY STAR qualified machines. Talk with your property's vending operator about replacing non-ENERGY STAR vending machines with new or rebuilt models that conform to the latest ENERGY STAR performance standards, and use software or occupancy sensors to further increase their performance. For more information, see Appendix B.5.4: *Vending Machines*.

What can I do?: Kitchen and Food Service Equipment Checklist	
Task	✓ when Completed
Purchase ENERGY STAR qualified commercial food service equipment	
Check your refrigerators and freezers	
Have walk-in refrigeration systems serviced at least annually	
Check your water cooler	
Always buy ENERGY STAR qualified vending machines	

Figure 13. Kitchen & Food Service Equipment Checklist

Sure Energy Savers Component 6: Water—Hot and Cold

You may wonder what water use and saving energy have to do with each other. In most cases, electricity or natural gas is used to heat water, and this costs money. The more hot water your congregation consumes, the more it will benefit from optimizing water use. Additionally, treating and pumping water and wastewater may well be the number one use of electricity by your municipality. You can save water, energy, and money with the EPA's WaterSense program.

The EPA created WaterSense to help American consumers and businesses use water more efficiently. Reducing water use lowers the costs associated with operating and maintaining equipment, as well as the energy needed to heat, treat, store, and deliver water throughout the property. WaterSense promotes water-efficient products and practices to help commercial and institutional facilities save water, energy, and operating costs. More information on the recommended actions below is available at http://www.epa.gov/watersense.

Review the following information to consider each suggestion as it may apply to your property, and then check each item off when completed on the Water checklist that follows (Figure 14).

WATER - WHAT CAN I DO?

- **Conduct a water assessment to identify major water uses within the property.** Look for opportunities for savings, and track your property's water use in Portfolio Manager.
- **Find and fix leaks.** Small leaks add up to many gallons of water and dollars wasted each month. Water conservation saves energy and money, especially for hot water. Since electricity is also required for purification of drinking water, treatment of waste water, and pumping of water, fixing leaks will save energy.
- **Use water-saving** faucets, showerheads, toilets, **and** urinals **to save water.** WaterSense-labeled products can save a great deal of water and therefore energy. For example, WaterSense toilets use 20% less water than those manufactured following the current federal standard. Additionally, replacing just one older, inefficient urinal with a WaterSense-labeled model could save your property approximately 4,600 gallons of water per year.

- **Insulate water heaters.** Install an insulation blanket on water heaters that are more than seven years old, and insulate the first three feet of the heated water "out" pipe on both old and new units.
- **Purchase an ENERGY STAR qualified water heater when buying a new water heater.** In areas of infrequent water use, consider tank-less water heaters to reduce standby storage costs and waste. For more information on efficient water heaters, see Appendix B.6: *Water Heater Guidance*.
- **Set water temperature only as hot as needed.** Typically hot water should only be heated to 110 to 120 degrees Fahrenheit. This prevents scalds and saves energy. Remember to check local codes for specific temperature requirements.
- **Optimize the amount of water used in heating and cooling systems.** Evaluate cooling towers, chillers, and other large systems to ensure they are running as efficiently as possible. Eliminate single-pass cooling systems wherever possible by re-circulating water or reusing the water for another purpose instead of sending it down the drain.

St. Frances Cabrini Catholic Church in West Bend, Wis., is the first Catholic facility to earn the ENERGY STAR. Through funds from the church's operating budget and grants from WI Focus on Energy, the facility found the process of making itself more efficient fairly low-effort. In addition to changing lighting ballasts and bulbs, the church found that they saved a great deal of energy and water by changing water control valves in the kitchen, and looking at how water was used for cleaning. Although the upgrades have made for a more efficient facility, most of the changes have had no visual impact for congregants.

- **Practice water-efficient landscaping.** Planting native and regionally-appropriate plants on the grounds of your property can reduce the need for extensive outdoor watering in the summer. Reducing the amount of turf grass can also save water—turf grass receives the highest percentage of irrigation water in traditional landscaping, much more than landscapes planted with a mix of trees and shrubs. If an irrigation system is used, be sure it has been installed correctly and have it checked for leaks on a regular basis to avoid wasting water. Native trees and other plants can shade and cool your "micro-climate" by several degrees and are less vulnerable to local insect pests than non-native species.

For more information about water use in worship facilities, visit the WaterSense website to learn about *WaterSense at Work,* Best Management practices designed to help facilities reduce their water use at http://www.epa.gov/watersense/commercial.

What can I do?: Hot and Cold Water Checklist	
Task	✓ when Completed
Conduct a water assessment to identify major water uses within the property	
Find and fix leaks	
Use water-saving faucets, showerheads, toilets, and urinals	
Insulate water heaters	
Buy the most efficient model possible when purchasing a new water heater	
Set water temperature only as hot as needed	
Optimize the amount of water used in heating and cooling systems	
Practice water-efficient landscaping	

Figure 14. Hot & Cold Water Checklist

4.3 Consider an Energy Audit

After you and your team have gone through the Sure Energy Savers, an energy audit can help identify additional specific areas for improvement. An energy audit is basically a survey of your property's energy efficiency that is typically conducted by a professional and which takes into account specific energy consuming items, rates of energy consumption, and energy costs.

Consider reaching out to your state Interfaith Power and Light (IPL) Affiliate or an organization like GreenFaith to see if they offer energy saving programs or services in your area for low/no cost. A list of state IPLs can be found on their website.

There are different types of audits that can examine your property in different levels of detail. Depending on your congregation's expertise and the level of detail you would like to have done, your current staff or a member of your core energy stewardship team could perform an audit. In other cases, your facility may need to hire a professional auditor. Usually professional audits make sense for larger facilities with longer operating hours and more complex systems. For larger or more complex facilities, an audit can identify ways to enhance the energy efficiency of current equipment, in addition to technically viable and cost effective investment projects that will reduce property energy use and operating costs.

If you are considering replacing your HVAC system or another large system, the installation contractor can provide a more specific cost benefit analysis of different equipment choices as part of their service—this analysis can serve as an equipment-specific audit.

To cover the cost of an energy audit at your property, if warranted, ask your utility and your state energy office if they offer free or low cost energy audits, financial incentives, or other technical support. You may also have skilled or professional members of your congregation who can help with the audit and may be willing to do it free of charge. If you do not have access to free/low cost audits, completing the Portfolio Manager benchmarking task described in Step 2: Assess Performance, and implementing the Sure Energy Savers before paying for an audit is a useful strategy. Benchmarking serves some of the purpose of a preliminary audit, as it allows your team to see how much energy your worship facility consumes per square foot compared to other worship facilities.

As described above, implementing the Sure Energy Savers allows your congregation to start saving on utility bills at no or little cost. Completing these tasks before hiring an energy auditor will allow the auditor to focus on projects that your congregation would not have been able to implement alone, and lower the amount of time the auditor spends evaluating the building, thus decreasing the audit cost.

For more information on energy audits, including how to decide when one may be needed, the types of audits available, and information on managing the process, see Appendix C: *Audits and Professional Assistance.*

4.4 Find Funds

After you and your energy stewardship team decide which energy projects to undertake, you will need to consider how best to fund those projects. This is a key component of any energy efficiency project. Knowing what funding is currently on hand, what could be raised quickly, and what could potentially be found elsewhere is important when deciding which projects are feasible and when to do them. It is a good practice to look at how funding availability fits into the congregation's overall property management plan.

If your team is focusing on smaller scale energy efficiency upgrades, you may be able to use funding from the congregation's general operations and maintenance budget, from funds already saved through efficiency, from small fundraising projects, or from a dedicated donation by a congregant. For projects that may require a larger investment, there are many traditional and nontraditional financial resources available.

Additionally, a well-designed upgrade may provide your property with a positive cash flow from energy savings and pay off the investment for new equipment. It is important for your team's financial representative to look closely at the best investments for your congregation over time. For more information on the different ways to finance upgrades, see Appendix D: *Project Financing*.

4.5 Checklist - Create an Action Plan

Step 4 included information about many possible upgrades and other activities that could be part of your team's energy efficiency action plan. This section gave you information to help you complete the tasks listed in the checklist below (Figure 15) to create an action plan.

What can I do?: Step 4 Checklist - Create an Action Plan		
Task	Description	✓ when Completed
Do a "walk-through" survey of your property	Walk through each building of your property and make an assessment using the Sure Energy Savers (and tips in Appendix B: *Savings Assessment Worksheets*) to identify which low-cost, no-cost actions can be implemented in your building. Maintain and evaluate the performance of all energy-using systems and equipment.	
Implement Sure Energy Savers and adjust energy use behavior	Learn and use "best practices" for property and equipment operation and maintenance. Before you start thinking about paying for high-end energy efficiency solutions, start with the low- and no-cost alternatives that you can implement using your own resources. The before and after 1 - 100 ENERGY STAR score may show surprising improvement.	
Audit your available resources	Ask your utility and state energy office or faith-based service provider if they offer free or low cost energy audits, financial incentives, or other technical support. Do you have skilled or professional members who can help? Decide if you will need help from a professional service or product provider. Many tasks may be well suited and interesting to your youth group.	
Determine if projects require funding and how best to secure it	Cost-effective funding is key to a good return-on-investment. Some projects may be attractive to targeted donations. Savings from Sure Energy Savers may fund some projects, while others may require serious capital investment. Worthwhile projects may or may not require significant funding.	

Figure 15. Step 4 Checklist - Create an Action Plan

Step 5. Implement the Action Plan

Having a regularly updated plan in place to manage your projects and track their progress will help your energy stewardship team stay organized. In your tracking system, you should record not only the human, financial, and physical resources committed to projects that are currently being implemented, but also routine maintenance activities for existing infrastructure. Keeping track of what's happening with both new and existing infrastructure and equipment will ensure that your congregation gets the most value out of the resources they have invested in their worship facility.

The size and complexity of the energy efficiency projects your congregation undertakes will most likely be the main factor in deciding who will manage the project implementation. For something as simple as replacing HVAC filters or replacing incandescent lamps with CFLs, members of your team, facility staff, or congregants could complete the work. Depending on the skills available to your team, installing caulking and weather-stripping, ceiling fans, occupancy sensors for lights, LED exit signs, and programmable thermostats may be "do-it-yourself" projects not requiring outside help.

A more complex project, however, such as designing and replacing your property's entire lighting system, will require the help of someone who has experience managing that type of project, such as an energy services company (ESCO) or a private energy contractor. In these cases, your team should keep a record of the contractor's progress, and periodically review how their progress compares to the tentative schedule in the contract. This step will help communicate the plan to your congregation, effectively manage the efficiency upgrades, and keep the project on time and on budget.

__The St. Paul African Methodist Episcopal (AME) Church__ in Detroit, Mich., earned an ENERGY STAR in certification in 2013 by conducting upgrades over the course of three months in the facility. Using staff expertise, the church facility manager updated the lighting with LEDs on timers, sealed ducts and holes in the building, and with a local contractor, updated the boiler with a timer and special controls. All the work was done through facility management funds and staff labor so there was no special fundraising was needed.

5.1 Create a Communication Plan

Although your team may be all set to move forward with project management and implementation, it is important to create awareness, educate and motivate your congregation regarding energy efficiency and the benefits of the project. This will help them understand the goals of the project and give them advance notice of possible changes to the property. The communications plan does not need to be complex, but should keep everyone in your congregation up to date on what the team has done, where the project currently stands, and what is still needed to be accomplished. It is helpful to provide timelines and other visual highlights of project milestones, planned deliverables, and progress. The Publicity/Outreach Coordinator from your stewardship team could be the contact person for questions about the project. ENERGY STAR has a Communications Toolkit with many resources that can help you create and implement a communication plan.

5.2 Manage the Project - Implement the Energy Efficiency Upgrades

If members of the stewardship team or the congregation will be implementing the upgrades that are part of the project, your management of those tasks will consist of recording resources and deadlines, as opposed to micro-managing the project as a whole. Make sure you keep track of:

- **Who** is responsible for implementing each of the project upgrades
- **Where** (and in how many places) in your property the project upgrades be implemented
- **What** your energy use was pre-project and how it has improved by using the ENERGY STAR Portfolio Manager tool to create a benchmark pre-upgrade
- **What** financial resources are devoted to the project and how they are being spent
- **When** the project upgrades will be completed.

Where you choose to store this information is up to you and your stewardship team; however, you should make sure that the project records are kept together to avoid fragmenting your knowledge of the progress made in your buildings' energy efficiency improvements. A permanent record of the project will be a valued artifact by, and of interest to, future congregants as part of the history of your house of worship.

If there is not a member of your staff or congregation who is qualified or able to perform the work, you will most likely need to bring in a contractor. For detailed information on working with contractors, including selecting a qualified contractor, negotiating a contract, and managing a contractor see Appendix E: *Working with Contractors*.

5.3 Checklist - Implement the Action Plan

In Step 5 you focused on implementing the action plan—both by performing energy efficiency upgrades and by communicating the work to your staff and congregation, and if needed, hiring and managing a contractor. You can use the checklist below (Figure 16) to measure your progress towards completing Step 5.

What can I do?: Step 5 Checklist - Implement the Action Plan		
Task	Description	✓ when Completed
Create a communication plan to create awareness, educate, and motivate your members regarding the benefits of the project and overall energy efficiency	Use freely available ENERGY STAR information, tools, calculators and materials to enhance your ability to "do it yourself" using members' time and talents, and to help the congregation understand when professional assistance is necessary.	
Manage your projects	Establish a consistent method for tracking the progress of your projects and maintenance tasks. The powerful features of Portfolio Manager will help.	
If larger improvements are needed, select a contractor and negotiate a contract	Select a contractor with whom your stewardship team will be able to cooperate, and negotiate a contract that cost-effectively implements your projects. This is the time to hire a contractor if it is deemed necessary, negotiate based on competing bids, and name a congregation member or other team to manage the work.	

Figure 16. Step 5 Checklist - Implement the Action Plan

Step 6. Evaluate Progress

It is important to evaluate the progress of your project through a formal review of both energy use data and the activities carried out as part of the action plan as they compare to your performance goals. Monitoring progress can help your stewardship team and the congregation look toward the future and create new action plans, evaluate the elements of your action plan that worked and what didn't work, and set new performance goals for future projects. Custom reporting features in Portfolio Manager can help monitor progress, evaluate current actions, and set performance goals.

6.1 Manage Maintenance and Track Progress

As you continue to invest in energy efficient equipment and infrastructure, the maintenance required at your congregation's property will also increase. Managing your property's maintenance is an important part of making sure that the project upgrades made continue to benefit the property for their entire useful life. Keep a consolidated, organized record of the maintenance tasks for your property, the date by which they must be performed, and verification that they were performed by that date.

It is good practice to continuously assess energy performance as your property implements energy efficiency projects. Continue updating Portfolio Manager each month to track how your property's energy and water consumption has changed over time, how much money the congregation has saved and, correspondingly, how much carbon has been saved. In addition, talk to your congregation about energy issues to see if they have noticed any changes in comfort, aesthetics, or usability experienced as a result of the project.

Green Castle Baptist Church *in Louisville, Ky. has a very efficient facility– mainly due to their work in combining several technologies including high efficiency lighting, efficient windows, a tight building envelope, and a highly efficient HVAC system that is computer-controlled for different zones throughout the facility. The computer controlled HVAC allows the facility manager to automate the heating and cooling of the facility for higher efficiency. Green Castle Baptist Church earned the ENERGY STAR in 2010.*

6.2 Measure and Verify Savings

As you design your project, it is good practice to incorporate a means to measure and verify the energy savings that result. Once the project is complete, your stewardship team can do the measurement and verification, which includes a formal review of energy use data and the activities carried out compared to the project's performance goals. These results will provide feedback on how everything is operating, the congregation's return on investment, and what new performance goals can be set. The results may also highlight areas where further investment is warranted. The data can then be communicated to the congregation to showcase the work done to date. Portfolio Manager is designed to make analysis accurate and reporting easy and effective.

How to Measure and Verify Savings

To measure how much energy your project has saved, you will need to have set a benchmark on how much energy your property was using pre-upgrade, which you did when you first entered your data into

Portfolio Manager in Step 2: Assess Performance. As described in that section, this tool provides calculations such as national weather data and emissions for the utility company serving your Zip Code area, and allows you to factor in changes in energy prices, your property's square footage, and its hours of operation.

Portfolio Manager can run different savings data based on the project information entered, such as the amount of energy and water saved, reduced carbon dioxide emissions, dollars saved, and others. Your team can also run a Statement of Energy Performance (SEP) report from the tool at any time. This report communicates information about your property's energy performance in a format that is both understandable and easy-to-highlight to your congregants. If your team chooses to apply for an ENERGY STAR label for your congregation (more information on this option is available in Step 7: Recognize Achievements), the SEP, validated by a Professional Engineer or Registered Architect, can be used to verify project savings. ENERGY STAR hosts a growing list of Licensed Professional Volunteers who will provide free verification of worship facility data. However, your quickest and best verification resource may be the licensed professional members in your congregation or volunteers from the community.

6.3 Checklist - Evaluate Progress

In Step 6 you reviewed the importance of progress evaluation through managing maintenance and tracking progress, as well as measuring and verifying savings. It is important to understand the outcome of your team's labor and to ensure that you are making the most of your congregation's investment. You can use the checklist below (Figure 17) to measure your progress towards completing Step 6.

What can I do?: Step 6 Checklist - Evaluate Progress		
Task	Description	✓ when Completed
Report progress to your congregation	Generate a "Statement of Energy Performance" within Portfolio Manager. Have discussions with your congregation on how the improvements are affecting property comfort and usability in addition to the savings and emissions reductions.	
Measure and verify your savings	Observe the benefits of your congregation's investments. Use Portfolio Manager to assess the effect of the project on your property's energy consumption and to plan continuing improvement.	

Figure 17. Step 6 Checklist - Evaluate Progress

After your energy stewardship team has completed these tasks, you may feel like you're finished with the process of improving your building's energy efficiency. Indeed, most of the hard work is done! All that is left to do is to receive appreciation and recognition for your team's efforts, and encourage other facilities to practice energy stewardship with your story. Continue on to Step 7: Recognize Achievements, where you will learn how to share your congregation's story and gain official recognition for all of your team's hard work.

Step 7. Recognize Achievements

7.1 Observe and Share Your Savings

By this point, your team has most likely seen many positive results from its efforts. The possibility of realizing such internal benefits are usually what inspire most congregations and decision makers to develop an energy management strategy in the first place. After your congregation has improved its energy use behavior, perhaps tweaked operations and maintenance practices, upgraded its building's equipment and technology where cost effective, reduced energy consumption, and realized financial savings, it may seem like all the work is done! However, now is the time for your congregation to also capture external benefits by communicating savings, challenging others to save, and gaining recognition.

First, it is important to recognize the hard work and dedication of your energy stewardship team to achieve savings within your congregation. Make sure you publically recognize team members, workers, other collaborators, and supporters. You can do this in the congregation's newsletter, on its website, and publically during worship services.

Second, what about congregations and facilities outside of your building walls? Other congregations may not have connected the ideas of energy conservation and stewardship, or they may not know where to start on energy efficiency projects of their own. You can help these congregations become better stewards by inspiring and challenging them to improve their buildings' energy efficiency. This step will show you how to share your congregation's story and gain recognition for all its good work.

Lakewood Church in Houston, Texas, is the nation's largest regularly used worship facility seating 16,000. When the utility bills grew to nearly $1.5 million annually, the church decided to make some changes including creating an energy-efficiency program. "We are a non-profit church organization and our primary income is the donations and tithes of our members," says Lisa Ward, who oversees the energy-efficiency program. "Lakewood Church understands the great responsibility of demonstrating good stewardship of those financial contributions. The savings of more than $360,000 the church has realized in the first year of the program leaves no doubt that continuing the process is in the best interest of the church and the people it serves."

7.2 Receive Recognition for Your Energy-Efficient Congregation

Earning recognition for your congregation's successful energy use reduction is not necessarily about bragging rights or being unduly prideful in your achievement. Your congregation's stewardship success is a powerful tool to help other congregations learn about efficiency—and a powerful witness to the stewardship teachings of your faith tradition for other congregations across the faith community.

Additionally, the youth in your congregation may be observing your team's environmental stewardship actions for consistency with your congregation's teachings much more closely than you realize. These observations can constructively engage young members of the congregation in practical, hands-on expressions of their faith at home, at school, and in the community, as well as within your worship

facility. Young members may be your best resource for communicating your success story through Facebook, YouTube, Twitter/Vine and other media. You can also use the ENERGY STAR Resource on Planning a Communications Strategy.

Consider that the commitment of your congregation and its leaders not only deserves fair notice, but that your congregation's example can multiply the stewardship benefits it has achieved by inspiring others to emulate your team's efforts through their own actions. Other congregations can learn from your experience in overcoming obstacles, financing improvements, when do-it-yourself is the best approach, when a professional is needed, how innovative solutions may have been created, and even facing problems your congregation has not yet solved. They may even share a possible solution with your congregation. The ENERGY STAR Communications Toolkit has a number of valuable resources to help your congregation share its work and results. Additionally, ENERGY STAR has a number of success stories on its website that showcase exceptional results and would be pleased to work with you to share your story.

Earning the ENERGY STAR for Existing Buildings

ENERGY STAR, now recognized by more than 85 percent of the American public, offers ENERGY STAR certification for buildings, just as certain consumer products and new homes can earn it by documenting a high level of energy performance.

Worship facilities are eligible to receive the ENERGY STAR when the Portfolio Manager tool scores the energy use of the building at 75 or higher on EPA's 1 – 100 ENERGY STAR scale. This score is based on such inputs as 12 months of energy utility billing data, property square footage, and critical equipment and operating characteristics. A score exceeding 75 indicates energy performance in the upper quartile of U.S. worship facility energy efficiency. The integrity of the score is assured by the requirement that all data be verified by a licensed Professional Engineer or a Registered Architect. To assist worship facilities in earning certification, ENERGY STAR has compiled a database of licensed professionals offering data verification free of charge. ENERGY STAR enthusiastically promotes the success stories of certified worship facilities as a means to educate and encourage other congregations to complete their own efficiency projects.

New Construction Designed to Earn the ENERGY STAR

Many congregations have the opportunity to do-it-right the first time by insisting on new building design and construction that address the costs and benefits of energy efficiency in a businesslike bottom-line approach. The incremental cost of optimal energy efficient design, materials, and systems for new construction is much smaller than having to retrofit poor design and cheaper first cost equipment that costs more to operate in the long run. EPA works closely with the American Institute of Architects, and with its participation, created online tools to help other architects design for optimal energy performance and long-term cost savings. Based on this partnership, design projects that receive an EPA energy performance score of 75 or higher from the online Target Finder tool are eligible for "Designed

to Earn the ENERGY STAR (DEES)" recognition. A design project that achieves Designed to Earn the ENERGY STAR meets strict EPA criteria for estimated energy performance. It signifies that the building is poised to achieve top energy performance—and may be eligible to earn ENERGY STAR certification, once built.

Participating in Challenges and Competitions

Energy efficiency challenges are popping up across the country as a way to involve similar property types or whole communities to work in competition or in collaboration to save energy and reduce GHG emissions over a specific period of time. Since 2010, Worship facilities have competed in the ENERGY STAR National Building Competition, while other local and regional energy challenges include at least a few congregational facilities.

If your congregation is interested in setting up or participating in a competition, see the ENERGY STAR Guide to Energy Efficiency Competitions which can take you step-by-step through the process. ENERGY STAR also highlights the achievements and lessons of congregations through online success stories. If you are interested in working on a success story to showcase your congregation's efforts, you can contact the ENERGY STAR Team.

Other Energy Stewardship Programs

A large and growing number of denominational, interfaith, state, and local organizations offer programs supporting and recognizing the greening and environmental stewardship success of congregations of all sizes. ENERGY STAR has a list of resources on programs of interest to congregations which highlights what organizations from different faiths are doing with regard to environmental stewardship and energy conservation.

As discussed earlier, through ENERGY STAR, EPA focuses on improving energy performance in buildings as a method of reducing GHG emissions. An additional certification program is LEED, which looks at various aspects of green building and awards recognition to buildings that meet certain standards.

The EPA believes that energy efficiency is the first step to going green, and that all green buildings should be energy efficient. Energy efficiency savings can also be used to pay for other green features. Using ENERGY STAR tools and resources and recognition, where available, will ensure that your congregation's green buildings (whether certified by LEED, GreenFaith, Green Globes, or another system) are truly energy efficient. Additionally, state affiliates of Interfaith Power and Light such as Georgia IPL, Michigan IPL, Greater Washington IPL, and Ohio IPL are working with local groups to highlight more opportunities for energy efficiency in their areas.

7.3 Checklist - Recognize Achievements

In this final step, you looked at different ways to share your congregation's story and recognize its achievements through possibly applying for ENERGY STAR certification, participating in energy savings challenges and competitions, and through other programs. It is important to highlight the hard work of your energy stewardship team to your congregants and to other congregations to keep the momentum

moving forward. You can use the checklist below (Figure 18) to measure your progress towards completing Step 7.

What can I do?: Step 7 Checklist - Recognize Achievements		
Task	Description	✓ when Completed
Provide internal recognition	Publically recognize those who made the project succeed. These may include staff, volunteers, and donors.	
Tell your congregation's story	Share your team's results with other congregations and others in your community through traditional and social media, such as local newspapers, community "bulletin board" websites, Twitter, and Facebook.	
Contact ENERGY STAR about writing a success story	To receive a fill-in format, or to just learn more, contact us at: energystarcongregations@energyandsecurity.com.	
Build an energy stewardship challenge and learn how other communities are using ENERGY STAR resources	People enjoy friendly competition that supports a good cause and inspires excellence. Check out the *ENERGY STAR Guide to Energy Efficiency Competitions* guide at: www.energystar.gov/competitionguide.	
Apply for ENERGY STAR certification	ENERGY STAR certification is recognized by 85% of Americans as the mark of excellence in energy efficiency, environmental and financial stewardship. Your community will appreciate your congregation's contribution to environmental protection. Go to: http://www.energystar.gov/buildings/about-us/how-can-we-help-you/recognition?s=mega and learn more about eligibility.	
Keep in touch with ENERGY STAR not only with your congregation's successes, but when you need help	Just visit: www.energystar.gov/buildingshelp.	

Figure 18. Step 7 Checklist - Recognize Achievements

Congratulations for all your hard work and thank you for your energy stewardship!