

Grab a clipboard and take this map along on your treasure hunt. Focus on uncovering opportunities to save. When you find something, make notes about location; tools, materials, or expertise needed; or further research required. Feel free to add to or modify this list to suit your own needs.

Facility Name _____ Floor _____ Date _____ Team _____



Facility Management and Benchmarking

- Managing costs starts with knowing your baseline use, from which to track savings. Start by printing the Data Collection Worksheet for “Worship Facility” found on this menu. This Worksheet will list all you need to benchmark your property in the free, online Portfolio Manager® tool for tracking energy, water and recycling/materials management.
 - Create your account at <https://portfoliomanager.energystar.gov/pm/signup>
 - Learn more at <https://www.energystar.gov/benchmark> and find all Portfolio Manager training and tech support at <https://www.energystar.gov/buildings/training>.
- After you enter energy data, a 1 -100 ENERGY STAR® score will compare your property to other U.S. Worship Facilities. A 75 or higher score is eligible for ENERGY STAR certification.
 - You will also see your EUI (Energy Use Intensity is approximately energy use/sq.ft.) for which national median is 58.4 for Source EUI (kBtu/ft²) and 30.5 Site EUI (kBtu/ft²) for Worship Facilities. Many congregations can do much better than the national median EUI.
- Educate and encourage congregational staff and members to report leaks, turn off lights not in use, recycle and support your environmental stewardship efforts.
- Adopt a purchasing/procurement policy that specifies EPA’s ENERGY STAR, WaterSense® and Safer Choice® labeled products when applicable. Customize your policy letter from our template.

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TIP:

- Download the ENERGY STAR Action Workbook for Congregations for more strategies, action items, and ideas at <https://www.energystar.gov/congregations>. See the 30-minutes ENERGY STAR for Congregations recorded webinar. Start and support a Green Team of members and employees. Find resources to Build Your Own Competition for savings.



Lighting

- Consider purchasing an inexpensive light meter (under \$30) to assess whether any areas are over-lit, compared to requirements or design levels.



- During daytime and evening hours, identify where lights have been left on in unoccupied spaces (including worship area, offices, restrooms, classrooms, conference rooms, kitchen, family room, hallways, storage, library, etc.).
- During the day, look for “day-burners” – that is, exterior and parking lot lighting that is on and should only be on at night, and which has a failed or dirty light sensor.
- If upgrading your exterior lighting, consider “shielded” fixtures to direct the light where needed and reduce “light pollution.”
- Identify and assess opportunities to use automated lighting controls:
 - Occupancy/motion sensors for low-traffic areas.
 - Timers or daylight sensors to turn off exterior and parking lot lights during the day.
 - Dimming controls in locations where natural lighting (e.g., near windows, skylights, light tubes) can temporarily supplement or replace fixture lighting.
- Confirm that lighting controls are installed to “see” what they must and are operating as intended.
- Assess cleanliness of lamps/fixtures (dust, bugs, any debris) and the need to institute a regular cleaning plan for maximum light output.
- Identify where reflectors can be practically added to amplify existing lighting.
- Consider opportunities for de-lamping, and de-energize and/or remove ballasts that are not in use.
- Evaluate the opportunity to upgrade to more energy-efficient lighting options:
 - Replace T12 fluorescents with T8s or T5s with electronic ballasts (removing obsolete magnetic ballasts) or consider the use of tubular LEDs (TLEDs).
 - Upgrade incandescent and CFL bulbs to LED (especially for task lighting or specialty/decorative applications).
 - Replace incandescent or CFL exit signs with an LED model, or LED retrofit kit.
 - Recycle/dispose of all fluorescent tubes/CFLs and magnetic ballasts properly at your lighting or building supply store.
- Review ENERGY STAR product information, calculators and find local retailers and rebates at <https://www.energystar.gov/products>; lighting, fans, and more lighting facts at www.energystar.gov/lighting.

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TIP

- Consider an “all utility audit” to look for billing errors and proper rate classification for electricity, natural gas, heating oil, water/sewer, and telecommunications. The auditing firm is paid a pre-agreed percentage only after your refund is complete. If there is no refund due, you have confirmed you are not overpaying.





Building Envelope

- Inspect doors and windows to identify gaps, cracks, or other openings that can be weather-stripped, caulked, filled with foam insulation, or, otherwise, closed. This includes doors, windows, HVAC system joints, vents, and ducts. The idea is to be sure any indoor/outdoor air-exchange is not accidental but is deliberate ventilation. Consider using a “smoke pencil” from the hardware store to detect leaks.
- If new windows must be purchased anyway, consider the incremental costs and savings of high-efficiency windows – which will cost more and save more.
- Generally, keep doors closed to the outside and to any unheated or uncooled areas.
- Consider installation of solar film, awnings, vegetation or insulated curtains for east and west windows to block summer heat gain and allowing solar gain in the winter through south-facing windows. Likewise, depending on your climate, consider blocking heat loss through windows in the winter.
- Consider strategic landscaping to save money on water bills and space cooling in the summer and heating in the winter. See tips and information at <https://www.epa.gov/watersense/outdoors>.
- Inspect attic insulation levels and identify inadequacies to be addressed. If a major remodel opens walls, consider adding insulation.
- Check on the roof: take photographs and notes on any damage, cracked shingles or other surface aging. Note if the roof is still under warranty. In the attic, look for signs of leaks, membrane cracks/holes, or damaged insulation.
 - Depending on “street view” aesthetics and other issues, consider that white, reflective paint can significantly reduce heat gain and even extend the life of some roofing.
- Congregations can use much of the information on “residential” products and savings resources at https://www.energystar.gov/products/building_products for facility.



HVAC

- Ensure that HVAC system components are being maintained regularly. If not by qualified staff, then consider an annual maintenance contract to “tune-up” HVAC, both pre-heating and pre-cooling seasons. Qualified staff or a professional should implement the full HVAC maintenance list. However, everyone can help remember to:

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TIP:

- Use your Zip Code in the rebate finders for ENERGY STAR® and WaterSense® labeled products to check on utility or retail vendor cash rebates before you buy any products. Utilities may have pre-purchase application requirements.



- Replace filters on a regular schedule; monthly during heating/cooling season.
- Ensure free airflow to and from supply/return registers (clear furniture, books, papers, or other materials).
- Ensure that electronics and heat sources are located away from thermostats.
- Use window shades/curtains to block excess heat and educate staff about when to use them.
- Identify and prevent any instances of simultaneous heating and cooling. Ensure that individual space heaters are not being used when the HVAC system is heating or cooling. The use of such personal devices may indicate larger heating or cooling issues that should be addressed at the system level.
- Ceiling fans and personal fans can help with energy savings by making rooms feel cooler during summer months. A smart thermostat can be programmed to pre-cool or pre-heat spaces for comfort an hour prior to occupation rather than maintaining the comfort level when not occupied.
 - Depending on outside temperature, programming can be set to turn off the HVAC 15-30 minutes before space use ends for additional savings
- Read about “smart thermostats” and implementing a temperature setback policy for heating/cooling when the building is unoccupied (including any special considerations for summer/winter months).
- Have a plan for HVAC failure on the hottest/coldest day of the year. Know the anticipated useful life of your current system, have your contractor “right-size” the new HVAC system to account for your new level of efficiency and reduced demand so you do not pay more for a larger system than you need.
- An Energy Management System (EMS) can be programmed and potentially remotely-control the HVAC and other major equipment.
- See ENERGY STAR HVAC products and resources at https://www.energystar.gov/products/heating_cooling and evaluate the savings for higher SEER/IEER Rated equipment for new installations and retrofits.

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TIP:

- Consider “load shedding” to avoid demand charges during your utility system’s “peak demand” time of day. This means understanding your utility’s time of day rates and avoiding the use of as much of your equipment as possible during this time. Ask your utility about programs and financial incentives for customers to avoid contributing to peak demand.



Office Equipment/Plug Load

- Identify any new office equipment that will be needed soon. Start looking for ENERGY STAR certified equipment options, use the online savings calculators and look for available rebates.



- Identify any equipment left on overnight (including equipment left in sleep/idle or screen saver mode), that should be turned off when not in use.
- Ensure that power management settings are activated on office equipment such as computers, monitors, printers, and copiers.
- Identify where power strips can be used for easy disconnect from power source. Consider the use of advanced power strips.
- Be sure staff know to unplug rechargeable devices once charged.
- Be sure vending machines are turned off or put in sleep mode at the end of the day with a timer. Consider installing motion/occupancy-based vending machine controls.
- Review ENERGY STAR office products and resources at https://www.energystar.gov/products/office_equipment; see ENERGY STAR vending machines at https://www.energystar.gov/products/other/vending_machines and water coolers at https://www.energystar.gov/products/other/water_coolers.

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Kitchen/Food Service Equipment

- If the congregation anticipates purchasing new kitchen equipment, review the ENERGY STAR models, calculate savings and find rebates in advance.
- Many congregations have residential type refrigerators, which should be replaced if 9-10 years old. Commercial refrigerators/freezers are much larger are typically silver/stainless steel.
 - Dispose of old refrigerators properly. See the EPA's Responsible Appliance Disposal Program at <https://www.epa.gov/rad>.
- If possible, be sure heating equipment is not near cooling equipment.
- Identify worn and/or leaky door seals/gaskets on refrigerators and freezers. Close the door on a dollar bill or piece of paper, and if it is easily pulled out, replace the gasket. Many websites have "DIY" videos and instructions. Some replacement gaskets claim to be "universal" but it is best to purchase using the appliance brand and model number. Regularly clean the gasket with soapy water to keep it free of debris.
- Check that refrigerator coils are clean and free of obstructions.
- Verify oven thermostat accuracy and have recalibrated if necessary.
- Establish and post operating procedures for cooking/baking equipment (for instance, preheating only when necessary, turning down/off equipment when not in use).



- Ensure that range hoods and exhaust fans are only running when the range is being used, or until excessive heat is removed.
- Ensure that unused appliances are unplugged or on a power strip that is shut off.
- Determine if low-flow pre-rinse spray valves can be installed.



Water: Hot and Cold

- Survey water use to identify major uses; find and fix any leaks—especially hot water leaks.
- Typically, set temperature 110 – 120 degrees or per local code to prevent scalds and to save energy and money.
- Consider “tankless” heaters (on-demand) for low-use areas.
- Insulate 7-year or older water heaters and the first 3’ of heated water “out” pipe.
- Check out ENERGY STAR water heating product information and calculators; find local retailers and rebates at https://www.energystar.gov/products/water_heaters.
- See EPA’s WaterSense® program for water saving labeled products and rebates, for indoor/outdoor water efficiency tips, and best practices at www.epa.gov/watersense.

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TIP:

- Check if your denomination or faith community has resources linked from ENERGY STAR.
- Celebrate your success and recognize contributors. Help your guests and employees achieve savings at home and at guests’ workplaces and Bring Your Green to Work.





Treasure Map FOR WORSHIP FACILITIES

ADDITIONAL NOTES:

