

# Energy Usage Team

Energy usage represents the largest negative environmental impact and the second highest fixed cost for most religious institutions. The energy we use in our facilities comes from many sources, which each impact the environment detrimentally:

- Electricity often comes from coal-fired power plants, with the coal sourced from Appalachia, where Mountaintop Removal occurs—literally the tops of mountains are blown apart to gain access to the coal inside. Waste from these mining activities is dumped in nearby bodies of water, causing them to disappear, and contaminating the groundwater.
- Oil, often used to heat older buildings, is a non-renewable resource that releases greenhouse gases during combustion, and is tied to disasters like the recent Gulf Coast spill.
- Natural gas is a cleaner burning fuel, but its extraction contaminates groundwater in the communities where it is gathered (through a process called hydrofracking).
- Nuclear power produces waste that is toxic for thousands of years, and can never be safely disposed.
- The burning of fossil fuels creates particulate matter air pollution which is connected to asthma, cardio-vascular disease, pulmonary disease, lung cancer, and a host of illnesses. Urban communities, children, the elderly and the chronically ill suffer the worst impacts of this pollution.

Understanding energy usage comes down to two things: people and technology. You must look at how the building is used and operated by the community, and examine the appliances and other technologies that are used. There are many no and low-cost energy conservation opportunities in houses of worship, you just need to identify them!

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**Walk through the building and answer the questions as if you were a professional auditor.**

1. Programmable thermostats, unlike traditional dial models, automatically adjust temperature in a building according to the time settings you program into them. Are programmable thermostats used in the building?

Is the thermostat programmed according to the schedule within the building?

2. At what level is the temperatures set back/up when the facility is not in use?

**Temperature when in use (note winter and summer)**

**Temperature at night and when not in use (note winter and summer)**

3. Is the facility divided into different temperature zones, meaning there are multiple thermostats, each of which heats/cools particular areas of the building? If so, please describe the location of the thermostat for each zone, and the rooms it regulates.

Zone	Location of Thermostat	Rooms Regulated
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4. Are meetings and events scheduled to maximize heating and cooling of the building? For instance, smaller events held in smaller rooms, and events held together in one zone.
5. Has the house of worship implemented any other technologies to better regulate temperature, for instance through devices on the radiators?
6. Does the congregation reduce electricity usage through any of the following lighting activities?

- Compact fluorescent light bulbs (CFLs) or LED lighting
- T-8 or T-5 tubular fluorescent lighting, instead of T-12 lighting? **Clues:** T-12 lighting flickers when on, and you can look at excess bulbs in the storage closet, which will have the rating (T-12 or T-8) etched on the end of the bulb.

If they have T-12 lighting, count up the number of bulbs. This will help us estimate potential savings.

Number:

- Light sensors in areas where lights are often left on, such as bathrooms
- LED Emergency Exit signs? **Clue:** Look underneath the exit sign—do you see normal size light bulbs, or tiny ones (tiny ones are LED)? Look in front of the sign—do you see two distinctly lit areas, representing where the two incandescent light bulbs are situated? Are the signs newer or much older? Newer signs tend to be LED.

7. Does the house of worship use ENERGY STAR appliances? **Clue:** Look for the Energy Star label:



8. Does the house of worship shut off all electronic appliances, including computers, overnight?
9. When computers, copiers and other equipment is used intermittently throughout the day, does the congregation use 'standby' or 'energy saver' mode to save energy?
10. Does the House of Worship use refrigerators that were made before 2001, the year when energy standards for refrigerators improved? **Tip:** Look for the date on the label on the door
11. Are there opportunities to consolidate the contents of two or more refrigerators into one unit and shut the other off? Please describe.
12. Are there areas of the building(s) in need of insulation or weather-stripping – such as around doors, and around/in between windows? **Clue:** Look around windows, doors and in the ceiling—can you see holes or light passing through? Are air conditioning units left in windows in the winter? Are doors or windows kept open when a room is air conditioned or heated?
13. Does the congregation have single-paned windows? Where?
14. Does the institution encourage members and staff to conserve energy through signs or newsletter articles?
15. Does the congregation chart its energy use in spreadsheets or ENERGY STAR's Portfolio Manager tool or OhIPL's Energy Stewards?

### Questions to Answer:

1. Why is it important for congregations to reduce energy? Consider environmental impact and finances.
2. What are key energy conservation opportunities you learned about through this audit?
3. What can the house of worship do differently to save energy?