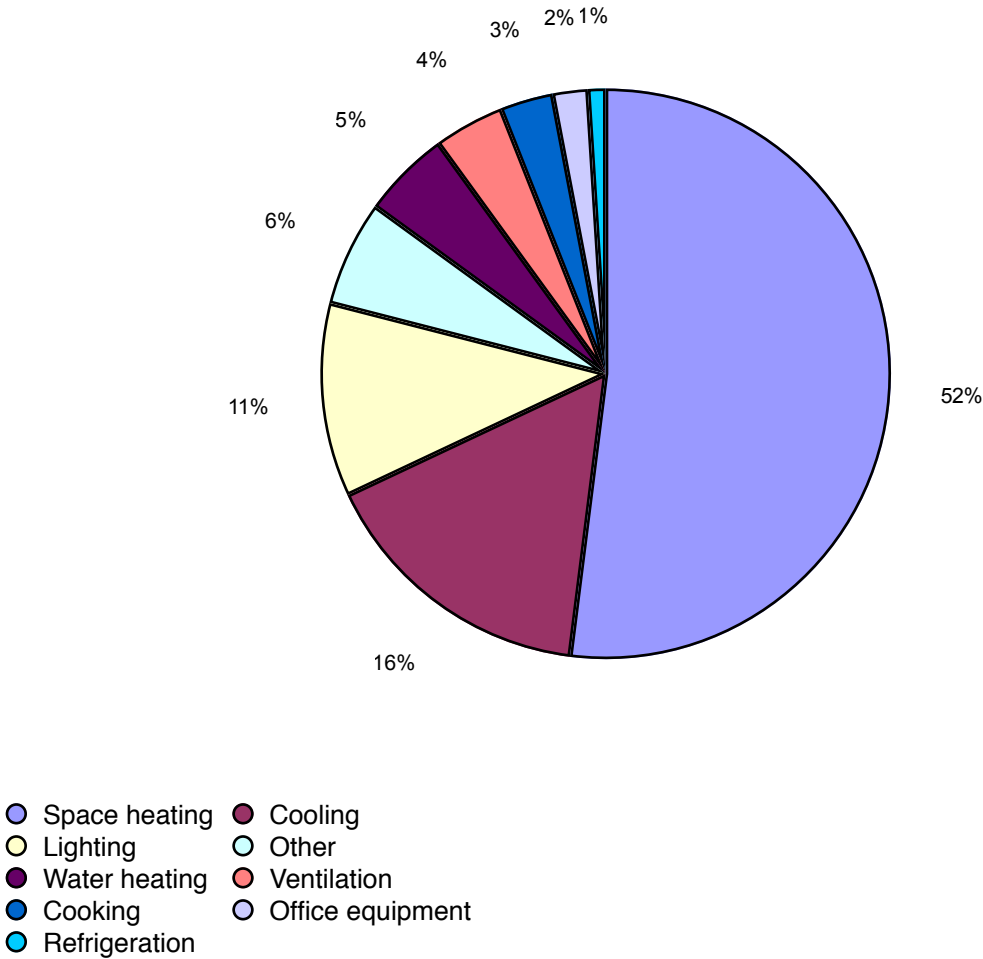


Energy Management For Congregational Buildings

Sources: www.eia.gov/oog/info/ngw/ngupdate.asp
 www.xcelenergy.com/
 www.energystar.gov/

A typical Congregational Building's energy usage is as follows in the U.S.A.

Office equipment	2%	Space heating	52%
Lighting	11%	Cooling	16%
Cooling	16%	Lighting	11%
		other	6%
Sub total	29%	Water heating	5%
		Ventilation	4%
Cooking	3%	Cooking	3%
Space heating	52%	Office equipment	2%
		Refrigeration	1%
Sub total	55%		100%
Ventilation	4%		4.5
Water heating	5%		41.5
Refrigeration	1%		
Other	6%		
Sub total	16%		
Total	100%		



Congregational Buildings in the U.S. use on average	4.5 Kilowatt-hours (kWh) / square foot / year
	41.5 Cubic feet of natural gas / square foot / year
	Based on \$.10 / kWh
	\$6.50 / mmBtu
	/ Square Foot / year
\$0.72	56.9 Kbtu / Square Foot / Year

No- and low-cost energy saving tips

Many Congregational Buildings can benefit from low- or no-cost measures to reduce energy consumption.

TURNING THINGS OFF

- * **Lights.** Turn off lights when they are not in use.
- * **Plug Loads.** Plug loads are electrical devices such as computers, task lights, and fans that are plugged into electric outlets. Plug loads like microwaves, computers and televisions may continue to draw power even when the appliance is turned off. For maximum energy savings, unplug these appliances.
- * **Vending Machines.** Disconnect the ballasts for advertising lights in vending machines.

TURNING THINGS DOWN

- * **HVAC temperature setbacks.** Use programmable thermostats to adjust temperature settings when spaces are not in use.
- * **Heating and cooling for occupancy.** Certain parts of a congregation - like your worship space - are only used during specific times of the day or week. Make sure that HVAC settings are at minimum levels during non-use periods.
- * **Water heaters.** Where possible, turn down water heaters on low-occupancy days.

CLEANING AND MAINTENANCE

- * **Check air-conditioning temperatures.**
- * **Change Filters.** Change air conditioner filters every month.
- * **Clean condenser coils - Clean evaporator coils.**
- * **Check the cabinet panels.** On a quarterly basis, make sure the panels to your rooftop air-conditioning unit are fully attached.
- * **Check for airflow.** Hold your hand up to air registers to ensure that airflow is adequate. If there is little airflow or dirt and dust are found at the register, have a technician inspect your unit and duct work.
- * **Check the economizer.** An economizer that's stuck in the fully open position can add as much as 50% to a buildings energy bill.
- * **Water use and water heating.** Insulate your hot water pipes by wrapping the first 3 to 6 feet of hot water supply with pipe insulation.

LIGHTING MEASURES

- * **Fluorescent Lamps.** If your facility uses T12 fluorescent lamps, relamping with modern T8 lamps and electronic ballasts can reduce your lighting energy consumption by 35 percent.
- * **Smart lighting design in parking lots.**
- * **Daylighting.** Light shelves, installed high on the inside of a window, will shade and prevent lare in the bottom 6 feet of a floor.

HVAC

- * **High-efficiency HVAC units.** A highly efficient packaged air-conditioning/heating unit can reduce cooling energy consumption by10%.
- ***Zoned HVAC.** In HVAC, a zone consists of a number of rooms that have a similar function and experience similar heating and cooling needs. Consider a separate HVAC system for more frequently used zones in the building that have a similar function.