

## Reasons for Congregations to Use Less Energy

- Produce less atmospheric and water pollution
- Set an example for others to follow
- Do what is right
- Help avoid wars for oil
- Strengthen families and communities
- Using less of everything is spiritual – fasting, thrift, frugality, kindness, fairness, sacrifice for a greater good, ‘thou shalt not...’
- Lessen the expense and inconvenience of future generations who will have to live with the poisons and waste resulting from our extravagance
- Become more independent – freedom from dependence on electricity and gasoline
- Slow chemical reactions on building structure and contents
- Receive relatively high financial return on investments

## Houses of worship are not houses

- Insulation, replacement windows, high efficiency boilers have a better return on investment when applied to our houses because the heating load is constant.
- The majority of heat load occurs when houses of worship are not occupied.
  - They are not occupied most of the time. Vacant conditions are more important.
- Our governance is by committees; hired staff usually runs operations.
- Residences have one type of meter and rate; non-residential buildings have many more options for rates. Rates are more complicated – electric demand, interruptible gas, etc.
- There are far fewer houses of worship than there are houses.
  - Contractors often misapply residential technology to our buildings.

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## Priorities:

**Turn things off** because is more effective than turning something off. It doesn't matter how small or efficient a lamp, appliance, boiler, air conditioner or motor is – the greatest savings comes from turning it off and keeping it off. The more inefficient an appliance is, the greater the savings from keeping it off. Since religious buildings are used intermittently, there is less need to keep thing on. Keeping things off matters even more in houses of worship than in more heavily-used buildings.

**Buy the least expensive energy.** There are many forms of energy – green electricity, brown electricity, natural gas, propane, fuel oil, gasoline, and so on. Once a congregation has chosen the type of energy they want, they should continually seek to purchase the least expensive energy. Factors continually change. In the fall of 2000 we are facing much higher natural gas and fuel oil prices. Electric suppliers change their terms in a deregulated market. Each utility offers different types of rates; for example, congregations generally save money with time-of-use electric rates. Congregations can purchase contracts of fixed-price fuel oil. They can purchase transportation gas through marketers. Other factors are how energy costs are included in leasing space, whether or not a congregation needs to pay state sales tax or federal excise tax. Whatever choice they make in the type of energy purchased, they need to continually shop for better deals.

**Tune systems to optimal performance.** Building operators should continually adjust water temperatures, air temperatures, dampers, the height of pilot light flames, and so on. Hire a qualified heating contractor to tune oil and gas burners. Use natural ventilation instead of compressor air conditioning on appropriate days.

**Purchase efficient replacements.** Everything is crumbling into dust. Congregations will eventually replace motors, air conditioners, heating systems, lamps, ballasts, and so on. The premium cost of more efficient equipment is usually justified when purchasing replacement equipment. Be very wary of cutting-edge technology without a track record of measured performance. NYSERDA can help. See [http://www.nyserdera.org/programs/Existing\\_Facilities/default.html](http://www.nyserdera.org/programs/Existing_Facilities/default.html)

**Purchase renewable energy.** Your congregation can install solar electric panels on your roof to generate electricity whenever the sun shines. NYSERDA can help. See <http://www.powernaturally.org/programs/solar/incentives.asp>

## Helpful websites:

Here are some websites that we find very helpful. If you have others you would like to recommend, please submit them to us.

### Weather:

Weather forecasting	<a href="http://weatherchannel.com">weatherchannel.com</a>
More specific weather history	<a href="http://www.wunderground.com/US/NY/New_York.html">http://www.wunderground.com/US/NY/New_York.html</a>

### Data Loggers:

Inexpensive data loggers	<a href="http://onsetcomputer.com">onsetcomputer.com</a>
Very inexpensive data loggers	<a href="http://www.ibuttonlink.com">www.ibuttonlink.com</a>

### Submeters:

Electric meters	<a href="http://www.electricalconnector.com">www.electricalconnector.com</a>
P3 Kill A Watt Meters	<a href="http://www.energyfederation.org">www.energyfederation.org</a>
Water	<a href="http://plumbingworld.com/wameters.html">plumbingworld.com/wameters.html</a>
“	<a href="http://measureanything.com/products">measureanything.com/products</a>
Natural gas	<a href="http://www.americanmeter.com/en/1947.shtml">www.americanmeter.com/en/1947.shtml</a>

### Equipment:

Office equipment ratings	<a href="http://aceee.org">aceee.org</a>
Heating systems (Holohan)	<a href="http://heatinghelp.com">heatinghelp.com</a>
Lighting specifications	<a href="http://www.newbuildings.org">www.newbuildings.org</a>
Lighting research	<a href="http://lrc.rpi.edu">lrc.rpi.edu</a>
Green buildings (LEED)	<a href="http://usgbc.org/programs/leed.htm">usgbc.org/programs/leed.htm</a>

### Energy:

Electric and fuel prices	<a href="http://www.bloomberg.com/energy/">www.bloomberg.com/energy/</a>
Forecasting end of fossil fuels	<a href="http://www.dieoff.com/">www.dieoff.com/</a>

### Electric Utilities:

Electric restructuring	<a href="http://eia.doe.gov/cneaf/electricity/chg_str/tab5rev">eia.doe.gov/cneaf/electricity/chg_str/tab5rev</a>
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### Religious environmental:

EPA Energy Star Congregations	<a href="http://epa.gov/congregations">epa.gov/congregations</a>
Catholic Environmental Justice Program	<a href="http://www.nccbuscc.org/sdwp/ejp/index.htm">www.nccbuscc.org/sdwp/ejp/index.htm</a>
Environment and Jewish Life	<a href="http://coejl.org/home.shtml">coejl.org/home.shtml</a>

### Global climate change:

National Oceanic and Atmospheric Admin.	<a href="http://cpc.ncep.noaa.gov/products/predictions/">cpc.ncep.noaa.gov/products/predictions/</a>
Intergovernmental Panel on Climate Change	<a href="http://ipcc.ch/">ipcc.ch/</a>
UN Framework Convention on Climate Change	<a href="http://unfccc.de/">unfccc.de/</a>
NASA Goddard Institute for Space Studies	<a href="http://giss.nasa.gov/research/impacts/altscenario/">giss.nasa.gov/research/impacts/altscenario/</a>

### Major clock thermostat manufacturers:

White Rodgers	<a href="http://white-rodgers.com/techelp_lead.htm">white-rodgers.com/techelp_lead.htm</a>
Honeywell	<a href="http://www.honeywell-thermostat.com/">www.honeywell-thermostat.com/</a>
Lux	<a href="http://www.luxproducts.com/">www.luxproducts.com/</a>

## How to create interest in energy?

Energy management is not something that we do once and for all. Instead, these activities are a series of repeated rituals. But how do you keep members of property committees and the congregation interested in energy? We have several suggestions:

**Keep records.** You can't play any game without keeping score comparing energy use day to day, month to month or year to year.

**Read meters morning and evening.** By reading your electric, gas and water meters first thing in the morning and last thing in the evening, you can determine how much electricity, water and fuel is used overnight. High water use may be due to leaks. High electric use may be due to outside lighting, refrigeration, lights in vending machines and other controllable loads. High gas use may be due to warmer than necessary interior temperatures. Your clock thermostat may not be saving you as much money as it could.

**Install data loggers.** iButtons from Dallas Semiconductor can record temperatures for up to a year inside your building. Hobos from Onset Computers not only record temperatures, but light, relative humidity and amperage. Data from these loggers can show you if you are using energy when the buildings are actually occupied.

**Visit your buildings at 3am.** Early morning visits, when no one is supposed to be in your building, can reveal many interesting ways to reduce energy use. Space temperatures may be unnecessarily warm, or lights may have been left on by mistake. Sounds, sights and smells can tell you how to reduce overnight energy use.

**Publicly display utility invoices.** Sometimes, members of the congregation think that worship and education spaces use about the same amount of electricity, fuel and water as their homes. If you post your utility bills each month on a public bulletin board, you can stimulate interest in reducing costs.

**Visit other religious buildings knowing their consumption.** If you know that a similar building uses less fuel and electricity than yours does, you can learn a lot by visiting with the people who operate it. Such visits without utility data in hand, however, are not valuable.

**Read energy management literature.** Corporations, government agencies, utilities, environmental groups and many other places have free or low-cost literature that can perk up interest in energy.

**Go to expositions and conferences.** In the New York City area, there are yearly expos and conferences specializing in commercial lighting, building maintenance and electric use. There are home shows, too. And occasionally, a national professional association holds their convention at a nearby convention center, often with free admission. For example, check out <http://www.javitscenter.com/>

**Log onto web sites.** We have listed many energy websites in this handout. Check them out.

**Hire an energy consultant.** If you can't do the above, or just plan run out of energy to enliven your energy management programs, call Andrew Rudin at 215-635-1122. I can help get you going again. Note this is the lowest on the list.