Case Study: All Saints Parish (Episcopal), Brookline MA

All Saints Parish undertook a comprehensive environmental stewardship effort, with new heat generation, new distribution, new controls, and improved lighting. By reducing its gas consumption, All Saints will save approximately $17,000, with significant reductions in pollutants both on- and off-site. All Saints has used a small part (about 14%, or $2,400) of this savings to purchase 100% renewable electricity, further reducing pollution from their buildings. Specifically:

These are the major energy conservation capital actions:

- **Heating** — On demise of the 30-year-old steam boiler, a high efficiency (90+%) gas-fired hot water boiler was installed. All steam radiators were removed. Highly efficient hot water radiation was installed together with new well-insulated distribution piping. Nine new heating zones were created, each with an in-space programmable thermostat. A central digital controller was installed for master
- **Storm Windows** — Plexiglas interior storm windows have been installed. The Parish purchased the plexiglas cut-to-fix, velcro and other materials. Parishioners did the installation, saving 75% of the quoted contractor cost.
- **Electric Fixtures and Lamping** — NStar completed an audit, and installed energy efficient replacement fixtures and lamping, including ballasts.

These are the major energy conservation management actions…

- **Heating** — Each heating zone can be set for 4 changes on each of the 7 days of the week. The typical weekly activities for each space are programmed, with special uses accommodated by a manual reset. All thermostats are programmed for night set-back to 58 F, so that even if a user overrides the normal setting and forgets to set back, efficiency objectives are met. The zoning also permits variation in call temperatures based on solar gain for spaces, as some portions of the building have a significant southern exposure.
- **Electricity** — By Vestry vote, the Parish purchases 100% of its electricity as renewable resource generated. Aggressive management of switches and equipment to be sure equipment is turned off when not needed. Motion-detection or timer switches are installed in infrequently used spaces, such as the basement.
- **Fuel** — A three-year bulk-purchase contract is in place with a well-head gas supplier, reducing the cost of the gas itself by at least 10% as compared to KeySpan retail prices.

These are the outcomes…

- **Heating** — 34% reduction in consumption between the last full year of the old steam system and the first full year of efficient operations. Rebates totalling about $4700 were received because of the energy efficient equipment.
- **Comfort** — Each space is warm when needed. With the improved insulation from the storm windows, the spaces also "feel" more comfortable. KeySpan rebated about $700 for the storm window installation.
- **Electricity** — There is a 4+% reduction in electricity use comparing the last quarter of 2001 (initial period of efficient fixtures) to the last quarter of 2000.

This is the Environmental impact…

By reducing gas consumption from 22160 to 14170 therms, All Saints saves approximately $17,000. Also:

- CO2: 118 lbs/btu emission offsets (94,000 lbs). **Reduces global warming**
- NOx: .0006 lbs/btu emission offsets (.5 lbs). **Reduces smog**
- SO2: .0922 lbs/btu emission offsets (74 lbs). **Reduces acid rain**

Simply by purchasing 100% renewable electricity for the church buildings and rectory (for a cost of approximately $2,400), All Saints Parish will significantly reduce pollution sent into the environment. Specifically:

- Carbon Dioxide (CO2): 1.48 lbs/kwh emission offsets (112,999 lbs). **Reduces global warming**
- Nitrogen Oxide (NOx): .0019 lbs/kwh emission offsets (145 lbs). **Reduces smog**
- Sulfur Dioxide (SO2): .0093 lbs/kwh emission offsets (708 lbs). **Reduces acid rain.**

Even after purchasing renewable electricity, the net savings for All Saints is approximately $14,600!

ASP received EPA's EnergyStar Congregation of the Year award in 2003.