Diocesan Churches Implementing Energy Efficiency Projects

to reduce their carbon footprints and save money on their utility bills

At Convention 2022 the diocese set a goal for its churches to be Carbon Neutral by 2030.

In the past 3 years, led by the Commission on the Environment, individual churches have formed green teams, had their facilities assessed for energy efficiency, and created action plans to achieve carbon neutrality by 2030. Several churches have moved forward with projects to increase their energy efficiency and achieve this goal. Here is a summary of these projects:

St. Augustine of Canterbury, Rocklin
Submitted by Cindy Harton

Small changes can make a difference -
St. Augustine installed solar several years ago, so had already taken a major step toward energy efficiency. We had zones for our HVAC, and we had a smart thermostat in our fellowship hall that could be monitored remotely; however, we still had a manual thermostat in our sanctuary. The sanctuary is our largest space and least used, outside of Sunday mornings. It was a problem to monitor when someone would use that space, turn the heat up or the AC down but not reset it upon leaving, resulting in the HVAC running needlessly. We purchased and installed a smart thermostat, and we can now program both our large gathering areas remotely, and the system will automatically revert to the schedule if someone uses the heat or AC and does not reset it upon leaving. We can check it remotely and make any adjustments necessary. We now know that we are not wasting energy on cooling or heating a large empty space when no one is there.

St. Paul's Episcopal Church, Sacramento
Submitted by Douglas Clay

Going Green: St Paul's has been making changes for the past two years with the goal of decreasing our carbon footprint. These changes include:

- Replacement of all lights to LED bulbs
- Installation of fully programmable thermostats to control building temperatures
- Decreasing usage of plastics.
- Replacement of the oldest and most inefficient HVAC unit.

- Implemented building use practices to “right size” meetings and events so smaller meetings have a smaller energy use. Temperature is tightly monitored and controlled by use of a standard “unoccupied” power use.
- Eliminated non-compostable and non-recyclable waste for our coffee hours and sack lunch outreach program by switching from disposable cups to reusable, washable ceramic mugs.
- Actively promoting the full use of recyclable and compostable waste practices. The changes made to heating and lighting have resulted in sustained decrease in electricity use of 10% over two years and 45% decrease in gas usage over the same period. We look forward to continuing to decrease our carbon footprint.

Good Shepherd, Cloverdale
Submitted by Bob Scott+

We switched to Sonoma Clean Power's Evergreen rate which is comprised solely of renewable energy sources. Because our electrical use is so small this change to green electricity will only cost Good Shepherd an additional $100 / year. In addition, all lighting has been switched to LED..

The big items will be replacing the HVAC systems with all electric units and converting our gas water heater to electric. The units are in the mid-range of their lives so it probably won't occur for several more years.

St Barnabas, Mt Shasta
Submitted by Doug Hogin

At St. Barnabas in Mount Shasta we have a concept of improving our energy efficiency and reducing our carbon footprint. Tackling the easiest projects first, we have replaced incandescent and fluorescent lamps with LED, and will soon replace 2 older tank water heaters with tankless point-of-use heaters. We are exploring rooftop solar and heat pumps. We also have an ultimate goal of being mostly self reliant for electricity and not needing propane for heat.

Christ Church, Eureka

Submitted by Steve Preston

Since the spring of 2023, the Green Team has worked to guide Christ Church towards carbon neutrality. It promotes Creation Care – care for the earth and its resources as God’s gifts for sustaining life. Our goals are:

- To Reach Carbon Neutrality by 2030; and
- To Promote Creation Care through education and action

Our activities include:

- Serving as the set-up and clean-up team at 10:30 Coffee Hour on the 5th Sundays. This promotes Carbon Neutrality by significantly reducing waste, water consumption, and carbon emissions by using only reusable service items.
- Securing two professional Energy Efficiency Assessments to guide our carbon neutrality work.
- Creating a Carbon Neutrality Action Plan, which Vestry has approved.
- Implementing LED light conversions that have saved the church hundreds of dollars monthly in electricity charges.
- Proposing and implementing programs that reduce carbon emissions—we are

currently working on solar-energy production with battery-storage.
- Educating our members through our Green Team Tip-of-the-Month articles and the Season of Creation discussion series.

Grace, Fairfield
Submitted by Larry Lindsay

Early this year, both of our very old natural gas tank water heaters failed. We realized we only need hot water in a few locations, and except for the kitchen sink, the need is mostly hand washing. We decided not to replace the large gas heaters and instead installed small point of use electric heaters. The heater in the kitchen heats water on demand, so we never run out when dishes are washed, and it only consumes electricity when water flows. The small tank heaters have WiFi controlled switches and are programmed to only heat water when people are likely to be at the church. The old gas heaters of course ran 24/7 and heated much more water than was used. Our new heaters also provide instant hot water, thus preventing waste while waiting for the water to get hot. We've measured the electric consumption of the new heaters, and they appear to cost much less to run than the old gas heaters. Our next project is to install mini-split heat pumps to replace two of our gas furnaces and our window air conditioners. This project is just waiting for permit approval to begin. These projects are major steps to going fully electric in preparation for a future solar project.

Trinity Cathedral
Submitted by Lisa Harmon

Trinity Cathedral *is contributing to* Diocesan efforts to become carbon neutral while replacing the roof of its Great Hall, which had outlived its useful life. As part of the renovations, cathedral leadership made a decision to replace its 14-unit HVAC units, which were also at the end of their useful lives, with solar-powered heat pumps. The solar system will include both solar energy collection and battery storage The total cost of the system is estimated to range from $900,000 to $1.3 million, and the Vestry hopes to offset the cost through the pursuit of a federal tax rebate and a rebate from the Sacramento Municipal Utility District (SMUD). The Vestry estimates that the congregation will recoup the remaining installation cost over an estimated 11 to 12-year period through the use of on-site energy generation. The new system will eliminate the use of gas to power cathedral facilities.

St Michael's,Carmichael
Submitted by Rick Larkey

We have five years to complete this process. Our approach was to identify the "low-hanging" fruit, which means tackling cost-effective and easy-to-implement facility improvements. We began by hiring Colby May, the energy specialist contracted by the diocese. We followed up with his assessment by seeking advice from SMUD about relevant programs, which resulted in sizeable SMUD rebates that provided an incentive for us to act quickly to replace the following equipment, which lowered our carbon footprint while reducing our energy bills:

● Older gas furnaces in the church building complex with six heat pumps ● All fluorescent light with 290 LEDs (reducing lighting costs by up to 75%) ● Existing thermostats in the church and Johnstone Hall complexes with Smart Thermostats to allow us to manage equipment operation efficiently.
● Kitchen gas water heater with heat pump water heater.

The total cost of the projects was $120,136, which qualified for $56,179.90 in SMUD incentives and a state rebate for the heat pump water heater in the kitchen, which replaced the current gas water heater at no cost to us. This expenditure left a cost of $63,956, split between the church and the day school.

Is your church improving its energy efficiency and saving money on its utility bills and at the same time healing our planet? If so, please let me know what you are doing so we can share your efforts with the other churches. If not, and you'd like to know how to improve your energy efficiency, please contact me.

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