

St Teresa Energy Report February 2020

St Teresa's Parish is providing our sixth annual report on energy use, cost, and greenhouse gases (GHG) emissions. Measuring and reducing greenhouse gas (GHG) emissions is an important part of our mission to care for God's creation.

2019 Summary

- As of July 2018, all of St Teresa's electricity sources are zero emission 100% renewable.
- At the priory, rooftop solar power saved us a cumulative \$8,200 over the last 3 years; accumulation of annual savings will help us recoup the system cost of \$24,800 by 2026.
- At both the church and the priory, we used more gas in 2019 than in any other year from 2013 to 2018, despite somewhat warmer weather in 2019 vs. 2018.
- The church building was recertified in 2019 as an Energy Star Building through the US EPA's Energy Star program – it means we are using gas and electricity efficiently. In San Francisco, we are the only church of any kind to be Energy Star certified in 2019.
- Total greenhouse gas emissions from the parish in 2019 were about 4% higher than in 2018, and 15% lower than in 2013 (earliest year for which we have data).

Background to St Teresa's Energy and GHG Emissions Inventory

In his 2015 Encyclical¹, Pope Francis recognized global climate change as "one of the principal challenges facing humanity in our day." Scientists agree that the impacts of global climate change are typically felt "first and worst" among the poor and those least able to adapt, increasing social injustice worldwide. St Teresa's Parish has been working to reduce emissions through renewable energy and energy efficiency, and to report our results annually since 2015.

About St Teresa's voluntary report on Energy, Cost and GHG Emissions

WHO: St. Teresa's Catholic Parish is providing this report in our capacity as the operator of parish facilities owned by the Catholic Archdiocese of San Francisco.

WHAT: The report provides data for energy use (mainly natural gas and electricity), cost, and the resulting emissions of the GHG, Carbon Dioxide (CO₂).

WHEN: The report covers calendar year 2019, and includes data for 2018, and for our baseline comparison year 2013, the earliest year for which we have complete data.

WHERE: The report covers energy use in the church building at 1490 19th Street and the priory at 390 Missouri Street, in San Francisco, California USA.

WHY: Our intention in preparing this report is to try to reduce our emissions of GHGs over time and to encourage others to do likewise.

HOW: This report is prepared using commonly-accepted methods for GHG accounting, and it is based on data from our PG&E gas and electricity bills. This report is made voluntarily, and for information only.

¹ Pope Francis' Encyclical, *Laudato Si', Our Common Home*, ¶25 (signed May 24 and published June 18, 2015)

Trends in Use, Cost and Emissions

Energy Use. From 2013 to 2019, the overall trend at St Teresa’s is using less electricity, but more gas. Big electricity savings at the priory in particular have more than offset smaller increases in electricity use at the church.

Total Energy Cost. Total cost in 2019 was \$7,425, vs a cost of \$8,136 in 2013. The reduction in total energy cost is \$710. The largest factors changing our total energy costs in 2019 are

- 1) generating solar power on the priory rooftop, which provides all electricity used at the priory plus a net electricity surplus to the grid (big savings of \$2,669), vs none in 2013
- 2) rising prices of gas and electricity (added cost of \$1,754) relative to prices in 2013
- 3) increased use of electricity and gas at the church, and increased use of gas at the priory (added cost of \$1,050) relative to our use in 2013
- 4) reduced use of electricity at the priory in 2019 vs 2013 (added savings of \$845)

Greenhouse Gas Emissions. There are no emissions associated with our use of electricity since the sources are 100% renewable. Our greenhouse gas emissions are due entirely to our use of natural gas for space heating, water heating, cooking and drying. Our annual emissions are about 4% higher than last year, and about 15% lower than in 2013 (earliest year for which we have data). At present, we have no affordable renewable alternative to natural gas.

St Teresa's Energy and Greenhouse Gas Emissions Inventory

Year	2013	2018	2019
Gas – church	1,547 therms	1,561 therms	1,761 therms
Gas – priory	986 therms	1,116 therms	1,124 therms
Total gas cost	\$2,792	\$4,008	\$4,592
Scope 1 emissions²	29,679 lbs CO ₂	31,368 lbs CO ₂	33,794 lbs CO ₂
Electricity – church	8,673 kWh	10,354 kWh (5,455 SuperGreen)	10,533 kWh All SuperGreen
Electricity – priory	15,354 kWh	10,695 kWh All Solar	10,341 kWh All Solar
Net electricity surplus from priory to grid	-	1,803 kWh All Solar	1,642 kWh All Solar
Total electricity cost	\$5,344	\$2,571	\$2,831
Scope 2 emissions³	10,259 pounds CO ₂	1,254 pounds CO ₂	0
Total cost of energy	\$8,136	\$6,579	\$7,423
Total emissions	39,938 lbs CO₂	32,622 lbs of CO₂	33,794 lbs of CO₂

² Scope 1 emissions are those resulting from direct combustion of natural gas and lamp oil on our premises.

³ Scope 2 emissions are those resulting from the production of electricity obtained from the power grid.

Changes in Energy Costs at St Teresa's between 2013 and 2019

positive numbers represent increased costs
(negative numbers in parentheses) represent savings

	Generating solar power in 2019 vs none in 2013	Added cost of higher energy prices in 2019 vs 2013	Cost of using more energy in 2019 than in 2013	Value of using less energy in 2019 than in 2013	Net effect
Gas at church		\$524	\$303		\$827
Gas at priory		\$717	\$258		\$975
Total gas		\$1,241	\$561		\$1,802
Electricity at church		\$435	\$473		\$908
Premium for 100% renewable SuperGreen at church		\$78	\$16		\$94
Electricity at priory	(-\$2,669)			(\$-845)	(-\$3,514)
Total electric	(-\$2,669)	\$513	\$489	(-845)	(-\$2,512)
Total energy	(-\$2,669)	\$1,754	\$1,050	(\$-845)	(-\$710)

If we hadn't reduced electricity use and generated solar power at the priory, our total energy cost in 2019 would have been \$10,227 instead of the actual cost of \$7,423.

Renewable Resources. Rooftop solar power has been providing all the electricity used in the priory since 2017, plus an annual net electricity surplus to the grid (for which we are reimbursed). In order to source the electricity for the church building from 100% renewable resources, St Teresa's made an early switch of power providers to the non-profit CleanPowerSF, effective July 2, 2018. CleanPowerSF offers standard Green electricity that is 40% renewable, including some large hydropower from out of state. We voluntarily elected the SuperGreen 100% renewable product instead, which is sourced 100% from wind power projects in California. At that time, SuperGreen electricity cost 1.0 cent per kWh more than CleanPowerSF's standard Green electricity. It was a modest increment on the average price of electricity, around 25 cents per kWh. This change was approved by St Teresa's Finance Council in early 2018 so as to make the April deadline for changing over in July 2018.

In September 2019, the premium price for SuperGreen power decreased from 1.0 cent per kWh to 0.75 cent per kWh. Originally budgeted by the Finance Council for a cost of \$120 per year (\$10 per month), the actual cost to our parish in 2019 was \$94 (~\$8 per month), in part because the premium dropped during the year. CleanPowerSF also pays more (7.5 cents per kWh) for our priory's net electricity surplus than PG&E (2.95 cents per kWh) did.

Overall, St Teresa's expects to recoup our investment in the priory's rooftop solar power system, while maintaining an affordable supply of renewable electricity for the church building.