

## St Teresa Energy Report February 2019

St Teresa's Parish is providing our fifth 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.

### 2018 Summary

- As of July 2018, all of St Teresa's electricity sources are 100% renewable; we have done this affordably
- Rooftop solar power at the priory saved us a cumulative \$5,500 as of the end of 2018; accumulation of annual savings will help us recoup the system cost of \$24,800
- Renewable electricity reduced our Scope 2 GHG emissions in 2018 by about 7,200 lbs of CO<sub>2</sub>, a savings of 20% on what our total emissions would have been without renewables
- The church building was certified as an Energy Star Building through the US EPA's Energy Star program in May 2018 – it means we are using gas and electricity efficiently
- Colder weather in 2018 resulted in increased use, cost and emissions from natural gas at both the church and the priory; as a result, our total GHG emissions in 2018 were about 10% higher than in 2017, though still 17% below our baseline year emissions in 2013

### Background to St Teresa's Energy and GHG Emissions Inventory

In his 2015 Encyclical<sup>1</sup>, 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 voluntarily 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 (CO<sub>2</sub>).

**WHEN:** The report covers calendar year 2018, and includes data for 2017, 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.

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

## Trends in Use, Cost and Emissions

**Natural Gas.** In 2018, we experienced our coldest winter weather since 2013. Due to our increased need for heat, we experienced higher use, higher costs and higher emissions for natural gas than we did in 2017. The rising price of natural gas also contributed to increased costs.

In the interest of saving natural gas, we had an evaluation of the efficiency of water and space heating systems at the priory in 2018. These systems are old, and not as efficient as new ones. However we found that the cost of early replacement is not justified by the expected energy savings. We will continue our practice of buying high efficiency devices and systems when the old ones wear out.

There is currently no practical renewable alternative to natural gas. While it would be possible to heat space and water with (renewable) electricity, the cost of electricity is prohibitive for us. The only practical way for us to reduce emissions from natural gas in the near term is to use less of it.

**Electricity.** In 2018, our efforts to save energy resulted in our lowest consumption of electricity of the past 5 years. Due to the rising cost of electricity, we still paid more for electricity than we did last year. However, energy efficiency and renewable energy have helped us reduce our electricity-related emissions from 10,259 pounds CO<sub>2</sub> in 2013 to 1,254 pounds CO<sub>2</sub> in 2018. Electricity-related emissions will be entirely eliminated in 2019.

### St Teresa's Energy and Greenhouse Gas Emissions Inventory

Year	2013	2017	2018
<b>Gas – church</b>	1,547 therms	1,227 therms	1,561 therms
<b>Gas – priory</b>	986 therms	996 therms	1,116 therms
<b>Total gas cost</b>	\$2,792	\$3,348	\$4,008
<b>Scope 1 emissions<sup>2</sup></b>	29,679 lbs CO <sub>2</sub>	26,048 lbs CO <sub>2</sub>	31,368 lbs CO <sub>2</sub>
<b>Electricity – church</b>	8,673 kWh	10,451 kWh	10,354 kWh (5,455 SuperGreen)
<b>Electricity – priory</b>	15,354 kWh	10,813 kWh All Solar	10,695 kWh All Solar
<b>Net electricity surplus from priory to grid</b>	-	2,089 kWh All Solar	1,803 kWh All Solar
<b>Total electricity cost</b>	\$5,344	\$2,500	\$2,571
<b>Scope 2 emissions<sup>3</sup></b>	10,259 pounds CO <sub>2</sub>	3,387 pounds CO <sub>2</sub>	1,254 pounds CO <sub>2</sub>
<b>Total cost of gas and electricity</b>	<b>\$8,136</b>	<b>\$5,848</b>	<b>\$6,579</b>
<b>Total emissions</b>	<b>39,938 lbs CO<sub>2</sub></b>	<b>29,435 lbs CO<sub>2</sub></b>	<b>32,622 lbs of CO<sub>2</sub></b>

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

<sup>3</sup> Scope 2 emissions are those resulting from the net production and delivery of electricity from the grid.