

Zero Carbon Home in Dubuque, Iowa

Tim and Mary Moothart aim for a zero carbon lifestyle

As Tim and Mary spoke to me over the phone about their desire for a zero carbon lifestyle, the workmen were on the roof of their home installing solar panels.

As Catholics, they have studied the social justice teachings of the church and were encouraged and inspired to reduce their environmental impact on the earth.

“The world is changing,” Mary says, “and if our grandkids are going to have resources, we have to be accountable now.”

Tim and Mary wanted to do more than change light bulbs, which is a good step, but not enough.

So after some soul-searching discernment they decided to try to get as close to a zero carbon lifestyle as they can.

“We’ve been given the gift of being able to afford this,” Tim says, “and the Pope’s recent reminder in his encyclical that we are all accountable for our actions has affirmed our decision to make these investments.”

They had always been conscientious about energy usage, using a programmable thermostat to adjust the temperature in their home to save energy. But they decided they could do better, so they installed a geothermal system about 8 yrs ago. The geothermal cost more than a traditional heating and cooling system but installing the cooling tubes in the ground horizontally rather than vertically helped reduce the investment. The payback on the system through energy savings was predicted to take 10 yrs, but they achieved it in 7 years, 3 years ahead of schedule.



Tim and Mary and their grandchildren

Catholic Social Principle #7: We show our respect for the Creator by our [stewardship of creation](http://www.usccb.org/beliefs-and-teachings/what-we-believe/catholic-social-teaching/seven-themes-of-catholic-social-teaching.cfm). Care for the earth is a requirement of our faith. We are called to protect people and the planet, living our faith in relationship with all of God's creation. This environmental challenge has fundamental moral and ethical dimensions that cannot be ignored.
<http://www.usccb.org/beliefs-and-teachings/what-we-believe/catholic-social-teaching/seven-themes-of-catholic-social-teaching.cfm>

And the temperature of their home is more comfortable than it used to be. To work most efficiently the system is kept at a steady temperature around the clock.

Water is heated by a traditional electric hot water heater that is tied into the geothermal system that preheats the water, so the hot water heater only has to boost up the temp from the preheated state. This way they use far less electricity to heat water.

Once their home's needs were all switched to electricity, the next step for the Mootharts was to put up a new roof to prepare for solar panels. This is often a necessary move because the panels last longer than a typical asphalt roof. They put a steel roof on the back of the house where the panels were to go, and an asphalt roof on the street side of the house for aesthetic reasons.

Solar panel installation is also cheaper and easier on a steel roof because the connecting wires go on outside of the building, in contrast to passing the wires through holes in an asphalt roof.

The Moothart's goal was to match the output of the solar panels to their annual usage of electricity.

So they engaged Solar Planet to install 18 panels, with an annual output projected to be 7167 kWh. 12 of the panels face south and 6 face west in order to fit them all on the roof of the house.

Mootharts took advantage of the state and federal tax credits that provide a write-off of 18% and 30% respectively, which significantly

“Reducing greenhouse gases requires honesty, courage and responsibility, above all on the part of those countries which are more powerful and pollute the most.” Pope Francis, *Laudato Si, Praise Be, On Care for our Common Home*. Read it here http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html

“A gas cooking stove is not the best way to be a good steward of resources, since we have electricity available from renewable resources,” Mary says.



lowers the cost of the installation.

They project to reach payback in 7.5 yrs through the savings of electricity expenses.

The net metering agreement with Alliant Energy also helps them reach payback. Alliant will give the Mootharts kWh credits on their bill in the summer when they will produce more than they consume, and in the winter when they use more to run the geothermal unit and lighting, they will draw on that credit. This way they will come out even at the end of year.

Read more on Alliant's website about installing renewables in your home.
<http://www.alliantenergy.com/AboutAlliantEnergy/EnvironmentalCommitment/CustomerOwnedGeneration/index.htm>

Read more about Alliant and MidAmerican's net metering offerings here:
<http://www.iowawindandsolar.com/products/incentives/residential.html>

Tim and Mary also drive a Ford Fusion hybrid sedan that gets 46 miles per gallon on average, and they may consider an all-electric vehicle down the road as the technology improves to allow them to drive longer distances.

“For love of our grandchildren and everyone's grandchildren we act out of our belief voiced by the Pope in his recent encyclical,” Mary says, “Intergenerational solidarity is not optional, but rather a basic question of justice, since the world we have received also belongs to those who will follow us.”