



Green Energy Builds Momentum

Homeowners taking steps to run their home on green energy see its advantages in lower utility bills, higher home values and improved health, but while they may not voice it often there is more motivating their actions. There is a quiet satisfaction in knowing they are contributing to a healthier neighborhood, a more robust power grid, and a sustainable future, not only for their family, but for other families as well.

As a response to the challenge of climate change and resource depletion green energy is gaining traction as a better way to design our homes and buildings. The goal is to power the structures we live and work in primarily through renewable energy sources such as solar, wind, and geothermal, while also optimizing energy efficiency to lower overall energy demand. Green energy homes go beyond just installing solar panels— they incorporate a variety of sustainable practices and technologies to create homes that are self-sufficient, environmentally friendly, and often more cost-effective in the long term.

This growing movement is evident across greater Louisville. Eco-friendly homes are becoming a key component of efforts to improve the life of residents while improving the environment.

A prime example of what can be done and the benefits to be gained lies just across the Ohio River at St. Meinrad's campus. This monastery, seminary and retreat center has actively pursued a green energy path for almost ten years. It includes an LED lighting initiative, a solar array and a geothermal HVAC system.



Section of solar field at St. Meinrad

These actions are reducing their greenhouse gas emissions and energy consumption. It's also provided a large degree of electricity independence from its local utility company. Director of Facilities Mark Hoffman cites the motivation behind their efforts as “trying to be good stewards of the earth, as well as reaping the monetary benefits.”

The installation of a geothermal plant allowed for the removal of an aging steam boiler and chiller systems while providing significant savings in heating and cooling costs.

The overall impact is impressive. A project overview issued by St. Meinrad boasts that it has reduced its “carbon footprint by 2,250 tons and overall energy usage by 48% annually. These efforts are projected to generate an annual guaranteed savings of \$513,079, along with a utility rebate of \$300,000 and a potential federal rebate

exceeding \$6 million.

“Together these efforts result in significant cost savings—expected to exceed \$19 million over the next 20 years—while also making Saint Meinrad Archabbey a model of sustainability and environmental responsibility.”

When the Goal is Zero

On the Louisville side of the river a small scale project shows how single-family homes can be designed and constructed to save energy and the home-owner's pocket book. “The Jenny” is a highly energy-efficient house in the St. Dennis neighborhood. The new owners just moved in this past December.

This unique house came to life through the efforts of River City Housing, a non-profit, single-family home developer focused on providing affordable, high-quality, and energy-efficient homes for its home buyers.

This three-bedroom house is so efficient that its renewable energy system offsets most or all of its annual energy use, thus becoming a “zero energy house.”

Kimberly Goode, Vice President of River City Housing, explains how The Jenny came about: “Jenny, (former River City Housing Construction Manager, Jennifer Jones Miller) along with our builder Sy Safi, of Ubergreen

Spaces + Homes and Certified Passive House Consulting did the initial planning and worked through the design process with Clive Pohl of PRP Architects to develop a home that would significantly reduce the costs of maintaining a home in this climate, reduce monthly utility costs, improve indoor air quality, and reduce our carbon footprint.”

The Home Energy Rating System (HERS) Index is the industry standard by which a home's energy efficiency is measured. A lower score means a more affordable, comfortable and energy efficient home. Average HERS scores can vary from a high of 64 in Indiana to 50 in Minnesota. The Jenny has a rating of 11. Initial estimates of its annual energy cost are approximately \$305, or \$25 per month.

This cost will vary depending on use of space, solar array production amounts and the resulting sell-back amount to LG&E in addition to the amount of energy use for occupant needs and lifestyle.

Goode cites another feature keeping this home's energy efficiency high, “The extremely airtight building envelope specific to our climate was created with continuous insulation on the interior and exterior of the home combined with a continuous air barrier/water barrier preventing infiltration of outside air and helps to reduce heating and cooling costs by up to 80%.”



The Jenny

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A study of Louisville’s weather patterns not only helped in construction design but it also helped to maximize residents’ comfort, as Goode explains, “Climate-specific energy modeling and daylight modeling were used as a guide to optimize several features in the home, allowing it to retain the sun’s natural heat in the winter and repel it in the summer. For example, in the summer when the sun sits higher an overhang feature that extends over the windows will block excessive sun exposure, so the home requires less cooling. Yet in the winter months when the sun sits lower, it allows sun exposure to enter and passively heat the home during cooler months while increasing natural light inside the space which is also good for the occupant’s circadian rhythm.”

The Jenny not only shows what can be done, it will serve as an inspiration for future home constructions and help set expectations for new-home buyers. Goode is optimistic, “(We) hope that sharing information about the benefits of this zero-energy ready, passive home for our homeowners and the environment will inspire more developers to consider incorporating more green-building techniques into their projects.”

Epiphany Goes Underground

Closer to home, Epiphany took steps back in 2021 to replace its energy-eating heating and cooling system in Epiphany House. The ancient system that was in place was vastly inefficient with the old boiler and pump operating at just 55% efficiency and provided spotty comfort to the parish staff.

The Environmental Concerns Committee, now the Creation Care team, took the lead on finding an alternative energy-efficient and cost-saving system to replace it. The committee explored solar panels and geothermal systems and presented options for the Parish Council to consider. It was decided that the grounds layout and existing duct system of Epiphany House favored a geothermal system.

After the committee invited three contractors

to visit our site and submit bids a local company was selected and the work on the geothermal system began in early fall of 2022.

Rather than burning fossil fuels a geothermal heat pump basically uses the free renewable solar energy already stored deep underground on our property.

Geothermal systems come with strong endorsements. The Environmental Protection Agency, the Department of Energy, consumer and industry groups, and geothermal system owners have given geothermal heating and cooling a reputation as the world’s greenest and most energy-efficient system.



Geothermal drilling in Epiphany House’s sideyard

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What Do Green Energy and Recycling Have in Common?

The global push toward sustainability emphasizes the need to adopt practices that preserve the environment. Key to this transition are investments in green energy and recycling batteries.

Green Energy

Green energy sources, such as solar, wind, and hydropower, are pivotal in combating climate change. These sources generate electricity without emitting greenhouse gases and reduce dependency on fossil fuels. Beyond healthier environments, communities can achieve energy security and lower their carbon footprint by adopting green energy. Combining renewable energy systems with advanced storage technologies, such as recyclable batteries, fosters a circular economy that both meets energy needs and preserves the environment.

Recycling Batteries

Batteries power our modern world, but improper disposal leads to environmental harm. Batteries contain hazardous materials such as lead, mercury, and cadmium, which can leach into soil and water, causing pollution and threatening health. Recycling not only reduces waste, it minimizes the need for raw materials, and recovers valuable resources like cobalt and lithium. This not only protects ecosystems but also reduces the energy used in mining and manufacturing new batteries.



Together, recycling batteries and advancing green energy create a synergistic approach to a cleaner, more sustainable future. These efforts make for a healthier planet for generations to come.

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After drilling down several hundred feet just yards from the back porch of Epiphany House, the geothermal system draws heat from the underground well created. The temperature in the well stays at approximately 54 degrees year round. A heat pump and a system of underground pipes makes this a highly efficient source of heating and cooling all year.

As Epiphany House had used 46% of all natural gas used on the Epiphany campus prior to the geothermal system, the impact on natural gas expenses has been substantial.

The average cost for natural gas for the entire campus for the prior three years averaged \$11,344. For 2025 the natural gas cost was only \$6,422 for all of Epiphany.



Construction site of Epiphany's geothermal well.

What Happens After You Recycle?

(Last November Jeanna Danhauer took a tour of the Smurfit Westrock Recycling Facility. Here is an account of what she learned from that tour.)

I joined a group of eight others and we gathered at the administration building parking lot where we were welcomed by our guides, Ryan and Hailey. From there we were ushered to a conference room where we watched an onsite video of the area we would be touring. Ryan instructed us on safety rules we needed to observe. In addition to the long pants and closed toed shoes we had been instructed to wear, everyone was given safety goggles, a hard hat, and heavy duty work gloves. Our group was divided into two and we rode via two golf carts to the recycling plant.

The city of Louisville has a contract with Westrock Recycling to do Single Stream Recycling from households. That means individuals can put all their recyclables into one bin; Westrock trucks that collect the recycling items take their loads to the Materials Recovery Facility (MRF). The trucks drop their loads at the MRF and workers move the material via bulldozer to the sorting belt.

This plant collects, sorts, and processes cardboard, mixed paper, sorted office paper, glass, certain plastics, metal cans, and aluminum. Baled recycled items are shipped by rail to companies in Alabama, New York, Michigan, Ohio, Indiana, Georgia, Texas, and six sites in Kentucky.

Upon arrival at the recycling plant we walked from our golf cart up concrete and metal stairs to the sorting belt. There we observed four employees pulling unwanted items off the conveyor belt and tossing them into chutes. Their job was to pull off anything that could get tangled up in the machinery, such as plastic bags, plastic film, or anything ropelike. Any items in black plastic bags were pulled off the line because the unknown contents could be harmful



to workers.

As we climbed up more stairs, we watched a “screen” conveyor belt where large cardboard was carried along on top of the screen and dropped into an area forming good-sized piles. The piles were bundled and stacked. Meanwhile smaller items fell through the screen to different conveyor belts.

We continued climbing up and down stairs and around to other areas and saw a variety of different items sorted still further. In one operation a strong magnet pulled steel and tin containers away from the line, in another operation an eddy current made aluminum cans jump separating them from the other materials.

There were some places where employees worked manually to sort unwanted items. We watched as one woman pulled plastic bottles off a section of the conveyor belt. A new machine was designed to help, but it erratically pulled large plastic items like milk cartons off the line; as the new machine was not reliably efficient yet some kinks were still to be worked out.

With all the running machinery, the decibel level in the plant was quite high. The conveyor belts are huge and I could see how plastic bags or any rope-like item could bring the work to a halt. While the area is under a roof, there are no walls. So, workers are subject to weather

After Recycling

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conditions. As it happened, the day I visited was cold and rainy.

Given the nature of the operations, the plant does get a bit messy. Items smaller than about two inches litter the floor; periodic cleaning occurs to add them to the landfill.

In addition to learning how the various materials are handled and sorted, I learned what recyclable plastic can be used for. PET plastic is made into carpet, HDPE plastic is used in making drain tiles and ADS plastic for plumbing, and LDPE Film is used to make palletized plastic.

This plant now operates as a merger of WestRock and Smurfit, an Irish company. Their merger was finalized in 2024. The merged company specializes in corrugated packaging solutions for businesses. Their web site has



some success stories highlighting replacing plastic with their paper based products.

<https://www.smurfitwestrock.com/>

(Tours are available once a month from March through November by contacting Karen Maynard, Solid Waste Education Manager for Louisville Waste Management District. (Due to limited space and safety reasons in the facility, tours are limited to a maximum of 10 people.)

The Answer May Be Blowing In The Wind

According to the Harvard T.H. Chan School of Public Health, the burning of traditional energy sources like coal, oil, and natural gas release pollutants that can contribute to early death, heart attacks, respiratory disorders, stroke, asthma, and other health problems in humans. China sees wind as a huge tool in mitigating these problems. Their wind turbines are becoming a major weapon in their renewable energy arsenal that's helping reduce harmful air pollution. No weapon is bigger than their new wind turbine installed at Tongyu, China. It is the world's largest onshore wind turbine in existence. Its blades are 430 feet long. It can power 160,000 homes. This wind turbine has set two new global records: largest single-unit capacity and largest rotor diameter (885-foot rotor) for onshore turbines.

Worried About Air Leaks In Your Home?



Using a high-tech thermal camera makes it easy to find air leaks in large areas, and some models have a laser pointer to help you pinpoint leaks in smaller areas. The camera instantly shows temperature changes by changing the color on the screen.

You can also conduct a building pressurization test. Turn off all combustion appliances; close all exterior doors, windows, and flues; turn on exhaust fans that blow air outside; then walk around with a burning stick of incense. The smoke will react to an air leak.

The ABCs of E-Waste

Have you recently acquired new electronics? Wondering what to do with that old smartphone, TV, computer, or other electronic gadget? Maybe you have a tangled mass of cords and chargers taking up space! These are all examples of e-waste.

What is e-waste?

According to The United States Environmental Protection Agency, “‘E-waste’, ‘electronic waste’, ‘e-scrap’ and ‘end-of-life electronics’ are terms often used to describe used electronics that are nearing the end of their useful life, and are discarded, donated or given to a recycler.”

Why not toss them in the trash?

E-waste can become a threat to health and the environment if they are not disposed of or recycled appropriately.

According to the World Health Organization:

- E-waste is one of the fastest growing solid waste streams in the world.
- Lead is a common substance released into the environment when e-waste is recycled, stored or dumped using informal activities, including open burning.
- In 2022, an estimated 62 million tons of e-waste were produced globally. Only 22.3% was documented as formally collected and recycled.

Where can I recycle e-waste in Louisville?

At the Louisville Waste Reduction Center working cell phones, tablets, and laptops can be donated to be refurbished and reused! Chargers and cords accepted also through Louisville’s Done With IT program. This includes



a shipping program for up to ten pounds for the above items. A small fee of 99 cents will get you a mail-in label. You prepare the packaging, attach the label, and send it in through UPS. No fee if you personally drop off a limit of up to three phones, tablets, or laptops.

You can visit the Louisville Waste Reduction Center at 636 Meriwether Ave. Hours are Tuesday through Friday 8 am to 5 pm and on Saturday 8 am to 3 pm.

Additional types of electronic items and systems, working or not, can be accepted for recycling. A list of 14 items and further details can be found at the LouisvilleKy.gov website, under the Public Works menu, click on “Electronics Recycling”.

Best Buy’s recycling program allows for up to three items for free. Check out their website bestbuy.com for details. Other electronics retailers such as Staples, Office Max and Office Depot also accept office related e-waste with certain restrictions. Call the store or visit their corporate websites for more information.

The Creation Care Team would love your feedback on this issue of *Common Home*. In addition, let us know if there is particular climate change topic that you've experienced, have seen in the news or read about in *Laudato Si'* that you'd like to see covered. Email us at commonhome914@gmail.com.



The Lighter Side of Climate



Q. What would make lightning better than solar power?
A. If, like solar power, it came free of charge!



Q. What do wind turbines think of energy efficiency?
A. They're pretty big fans.



Q. A dangerous surge of electricity walks into a bar.
A. The bartender says ... "Why the long phase?"



Q. What does the pirate hope to find in insulation?
A. Rrrrr-value.

Why Home Owners Love Solar

- Zillow reports that properties with a rooftop solar panel system sold for 4.1% more compared to homes without a solar power system. For a \$300,000 home, that could provide a \$12,000 boost to the sale price.
- Probably more important to the home-owner is that while living in a solar-powered home the amount of harmful air pollution is greatly reduced. In addition, when extreme events occur, such as power outages, solar powered homes can bounce back more quickly.
- A reoccurring benefit is how solar can significantly reduce your monthly energy bill. Many home owners with solar panels find their only electrical charge for most months is the basic service charge, which can be less than \$15.00.
- As many solar installers are locally owned companies, solar is providing hundreds of local jobs.
- Some of the nation's bigger homebuilders are installing solar-powered streetlights in the new subdivisions they are building. In addition, these lights have dimming options combined with a motion sensor for reducing light pollution without impacting safety.
- Beyond home installations, solar farms are bringing benefits too. They are found to be hubs creating biodiversity enhancement. It's found that the structural complexity they introduce into the environment provides crucial shelter and habitat for various species.

